Raise the Roof: Cognitive Associations of Homelessness and Implications for Problematic Substance Use

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Thesis submitted in partial fulfilment for the award of

Doctor of Philosophy (PhD)

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December 2025

Declaration

Dearbhaím leis seo gurb é mo shaothar féin amháin an t-ábhar seo atá á leagan isteach agam i gcomhair measúnaithe ar an gclár staidéir le haghaidh na dámhachtana Doctúir Fealsúnachta (PhD), agus go bhfuil gach cúram réasúnach glactha agam a dheimhniú, agus tá na rialacháin agus dearbhú a bhaineann le hIntleacht Shaorga Ghiniúnach comhlíonta agam, ar feadh m'eolais, gur saothar bunaidh é seo nach sáraíonn aon dlí cóipchirt, agus nár baineadh as saothar aon duine eile é ach amháin agus a mhéid go luaitear agus go n-aithnítear an saothar sin laistigh de théacs mo shaothairse. Deimhním leis seo nach bhfuil aon uirlisí Intleachta Saorga Giniúnach (Gen AI) úsáidte agus an tráchtas á chruthú.

Sínithe: Lorna ní Chroídheáin Uimhir Aitheantais: 14305511 Dáta: 06/12/24

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Acknowledgements

It takes a village to raise a child...

I would argue it takes as much to produce a PhD.

My journey to my PhD was an interesting one, full of serendipitous events. Having my undergraduate thesis into the psychology of eating behaviours supervised by Dr. Styliani Vlachou was the first step. I thoroughly enjoyed these meetings with Stella and the conversations we shared about research and life. Following graduation, I applied to work for Dublin Simon Community and was posted in their problematic substance use treatment services. During my time in this role, I was lucky enough to become this organisation's first staff member hired for research purposes. This research led me back to Dr. Vlachou at a time when DCU's School of Psychology was offering funding to potential Research Master's students. Dr. Vlachou introduced me to Dr. Fassbender, and together the three of us were successful in our application for this funding. During this year, we once again approached Dublin Simon Community to check their potential interest in collaboration on a project investigating cognitive predictors of PSU recovery for people experiencing homelessness; and so, I became this organisation's first PhD scholar…

I could never have achieved this PhD alone. As such, before commencing my thesis into this topic of irrefutable importance, I must extend my sincerest thanks to several individuals, without whom these pages would not exist. Foremostly, to my academic supervisors, Drs. Styliani Vlachou and Catherine Fassbender. I fundamentally could never have undertaken this task without your expertise, sharp insight, and openness (*and* humour!). I am extremely grateful to have had you both as my supervisors for this journey.

To my family; Bridget, Pat, Seanon, Peter, and Eimear. I again thank you all for bearing with me through the stressful moments and for unwaveringly believing in me, regardless of pursuit. You are the best cheerleaders I could have ever asked for! To my uncle

John, aunt Val, and cousins Kayleigh and Mia, for hosting me throughout this project's data collection stages. To my uncle Mike, for the carshares to Dublin and the sauna! To my aunt Mag, for being the solid back-up mother everyone should have.

To Mahshid, Devika, Gaurav, and Dovy, for getting me through my first year as I continued work with Dublin Simon Community while conducting my preliminary PhD stages during the Covid-19 pandemic - you all helped to keep me sane and laughing! To my undergraduate psychology friends Amy, Ciara, Robin, Sarah, Hensey, and Aileen - for being amazing human beings always. To my college friends Ellen, Jane, Clare, Lauren, Kate, Tom, Brian, Mark, Andrew, Colm, and Kevin for somehow making me always feel like myself. To my childhood friends Áine, Michaela, Sarah, Grace, Raidín, and Kate, for always allowing me to come home. To Jojo and Colleen, for traversing Ireland's peaks with me. To Leah, whose mathematical prowess enabled me to overcome several sticky situations throughout this project; I am indebted. To Shane, from experimental piloting, to cooking dinners, modelling, and Editor-in-Chief! To Tommy, Becky, Charlotte, Laura, and Mathilde, for the very consistent silliness and craic! To Precious and Andrea, for having my back and believing in me. To Maria, for walking this journey hand-in-hand with me. To Pablo, for helping us both. To Ed and Eavanna, for guiding the initial stages of my work with people experiencing homelessness and problematic substance use with such resilience, optimism, and continuous laughs! To my PhD pals Shauna, David, Shannon, Orla, Aideen, Abbie, Chloe, Lorna, and Ciara; thank you for understanding why I was doing this when everyone else seemed to think I was crazy! I will never express fully how important these people, and several others who I could not include, are to me and to the completion of this project. I simply would not be here today if it were not for you.

Dedication

I wish to dedicate this PhD thesis to my two grandmothers, Babs Crean née Naughton and Peg Banville née Corish, both of whom sadly passed away during the completion of this project. You are forever in these pages.

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List of Abbreviations

AA	Alcoholics Anonymous
AAPC	Annual Average Percentage Change
ADHD	Attention-Deficit/Hyperactivity Disorder
APA	American Psychiatric Association
ASI	Addiction Severity Index
AUD	Alcohol Use Disorder
CBT	Cognitive Behavioural Therapy
CNS	Central Nervous System
COPD	Chronic Obstructive Pulmonary Disease
CSO	Central Statistics Office
CTC	Coolmine Therapeutic Community
CCTV	Closed Circuit Television
DALYs	Disability-Adjusted-Life-Years
DC	Desire for Control
DCU	Dublin City University
DD	Delay Discounting
Detox	Detoxification
DSC	Dublin Simon Community
DRIE	Drinking-Related Internality-Externality Scale
DSM-V-TR	Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision
DUD	Drug Use Disorder
EbE	Experts by Experience
EFT	Episodic Future Thinking
ERT	Episodic Recent Thinking
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
ETHOS	European Typology on Homelessness and Housing Exclusion
EUDA	European Union Drugs Agency
FEANTSA	Fédération Européenne d'Associations Nationales Travaillant avec les Sans-Abri
FEQ	Future Events Questionnaire
GP	General Practitioner
HAP	Housing Assistance Payment
HF	Housing First
HIV	Human Immunodeficiency Virus
ICF	Informed Consent Form
IE	Internal-External (Locus of Control Scale)
ID	Intellectual Disability
IHME	Institute for Health Metrics and Evaluation
IPC	'Internal', 'Powerful Others', or 'Chance'
IPV	Intimate Partner Violence
LGBTQI+	Lesbian, Gay, Bisexual, Transgender, Queer, and Other
LoC	Locus of Control
LSD	Lysergic acid diethylamide
MeSH	Medical Subject Headings
MTP	Methadone Treatment Protocol

NGO	Non-governmental organisation
NICE	National Institute for Health and Care Excellence
NPS	New Psychoactive Substances
OECD	Organisation for Economic Co-operation and Development
PASS	Pathway Accommodation and Support System
PEH	People Experiencing Homelessness
PICOS	Population, Intervention, Comparison, Outcome, and Study design
PIS	Participant Information Sheet
PoC	Proof of Concept
PRISMA	Preferred Reporting Items for Systematic reviews and Meta-Analyses
PSU	Problematic Substance Use
QUIPS	Quality in Prognosis Studies
RLE	Recent Life Events
SES	socio-economic status
SMI	Serious Mental Illness
SUD	Substance Use Disorder
SWiM	Synthesis Without Meta-Analysis
TBI	Traumatic Brain Injury
TF	Treatment First
TOP	Transparency and Openness Promotion
TP	Time Perspective
UN	United Nations
UNODC	United Nations Office on Drugs and Crime
vmPFC	Ventromedial Prefrontal Cortex
VSF	Volunteer Screen Forms
WHO	World Health Organisation
ZTPI	Zimbardo Time Perspective Inventory

Abstract

Thesis Title: Raise the Roof: Cognitive Associations of Homelessness and Implications for Problematic Substance Use

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Problematic substance use (PSU) affects 39.5 million people worldwide, an increase of 45% in the past decade. Homelessness is a chronic and growing issue, affecting approximately 100 million people globally. The bi-directional relationship between PSU and homelessness, including the inhibition of housing acquisition via PSU and of difficulties maintaining sobriety through homelessness, is well-established. Cognitive research has identified numerous traits which may be trained to optimise PSU recovery; of these, time perspective, affectivity, and self-control appear central. Meanwhile, a body of work documents executive function disparities between individuals with and without homes. However, despite the high co-occurrence between PSU and homelessness, the implications of these for PSU recovery appear considerably unexplored.

The major hypothesis underlying this body of research is that cognitive adaptations associated with homelessness increase risk of PSU. The traits Desire for Control, Locus of Control, Affective Forecasting, and Recent Life Events were investigated. Firstly, this project aimed to delineate the relationship between Locus of Control and abstinence in PSU treatment clients. Secondly, to reveal potential differences in cognitive traits relative to stable and independent accommodation. Thirdly, to investigate possible variance in the role of these traits for sobriety in PSU treatment clients, dependent on residential stability. Finally, to examine the potential ability of a simple intervention to adjust relevant traits and substance use in people experiencing homelessness.

A systematic review examined the role of Locus of Control in PSU treatment client recovery. Cognitive assessments and residential histories of 60 adult PSU treatment clients were compared and independently correlated with treatment outcomes. Efficacy of an episodic future thinking intervention via Internality was investigated with people experiencing homelessness in detoxification treatment.

Our major findings indicate that moderated Locus of Control and particularly Internal Locus of Control beliefs may best facilitate optimal PSU treatment outcomes, irrespective of housing status. This trait may also be modifiable using a brief cognitive reframing intervention with people experiencing homelessness in detoxification treatment. Significant differences between homeless and housed groups on selected cognitive variables were not revealed. Future research and practice should consider the potential impact of homelessness on cognitive traits pertinent to PSU treatment.

Chapter One. Introduction

1.1 Project Introduction

Problematic substance use (PSU) is a psychological condition in which the individual uses psychoactive substances in a way that negatively impacts their health and well-being (Tiffany et al., 2012). It is highly prevalent, with latest global figures indicating that alcohol and drug/substance use disorders affect 400 million and 64 million people, respectively (United Nations Office on Drugs and Crime [UNODC], 2024; World Health Organisation [WHO], 2024). This is concerning, considering the detrimental personal and societal impacts (Manthey et al., 2021; Whiteford et al., 2015). Research has identified a collection of cognitive traits that can be therapeutically trained to promote abstinence and recovery; many surround time perception, emotion regulation, and self-control (Bickel et al., 2023; Brooks et al., 2017; Tang et al., 2016). Despite this, abstinence and recovery remain atypical and permeated by relapse (Fleury et al., 2016). Thus, fine-tuning existing research is required.

PSU and homelessness are strongly associated (McVicar et al., 2015). International consensus defining homelessness appears elusive, seemingly due to its complexity (Amore et al., 2011). However, it is a dynamic social process of micro and macro constituents (Lee et al., 2021; Maguire, 2017). Most recent estimates suggest 100 million people are currently homeless worldwide, with a further 1.6 billion inadequately housed in informal settlements such as slums (United Nations Human Settlements Programme [UN-Habitat], 2021). This is another worldwide crisis with serious health and economic sequelae (Bowen et al., 2019; Culhane, 2008; Gaetz, 2012; Zaretzkt et al., 2008). Cognitive disparities between homeless and housed individuals are repeatedly revealed (Depp et al., 2015; Stone et al., 2019). However, the potential interaction of these disparities with regard to treatment for PSU appears underexplored.

This chapter provides overviews of PSU, homelessness, their interactions, current treatment landscapes, and knowledge of cognitive processes relating to both. Project hypotheses and aims are then introduced.

1.2 Problematic Substance Use

Background literature and justification for the methods and operational definitions used throughout this thesis regarding PSU are provided in this section.

1.2.1 Definitions of Problematic Substance Use, Abstinence/Relapse, and Treatment Outcomes/ Recovery

1.2.1.1 Clinical Definitions. '*Substance Use Disorders*' (SUDs) are a group of disorders, classed under '*Substance and other Addictive Disorders*', in the most up-to-date version of the psychiatric diagnostic statistical manual, the DSM-V-TR (American Psychiatric Association, 2022). They are classed through satisfaction of the principal criterion '*A problematic pattern of use leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a 12-month period of time.*' Table 1.1 outlines the 11 diagnostic criteria under their domain of effect.

Table 1.1

Substance Use Disorder Diagnostic Criteria as Outlined in the DSM-V-TR (2022)

Impaired control
Substance is often taken in larger amounts or over a longer period than was intended
There is a persistent desire or unsuccessful efforts to cut down or control alcohol use
A great deal of time is spent in activities necessary to obtain, use, or recover from its effects
Craving, or a strong desire or urge to use
Social problems
Recurrent use resulting in a failure to fulfil major role obligations at work, school, or home
Continued use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of alcohol
Important social, occupational, or recreational activities are given up or reduced because of the substance
Risky use
Recurrent use in situations in which it is physically hazardous
Use is continued despite knowledge of having a persistent or recurrent physical problem that is likely to have been caused or exacerbated by (drug)
Physical dependence
Tolerance- Increased or decreased need
Withdrawal- syndrome- or taken to relieve or avoid withdrawal symptoms

As per the DSM-V-TR, meeting any two to three of the diagnostic criteria indicates a '*mild*' form of the condition/disorder, four to five a *'moderate*' state, and six or more a *'severe'* form of SUD. These disorders are individually diagnosed according to the misused psychoactive substance which fall under the following broad categories: '*Alcohol', 'Cannabis', 'Hallucinogens', 'Inhalants', 'Opioids', 'Sedatives/ Hypnotics', 'Stimulants', 'Tobacco',* and *'Other'*. However, diagnosis refers to the specific substance in question, not its overarching category; for example, '*methamphetamine*', not *'stimulant'*. Consequently, a

polysubstance user may be concurrently diagnosed with several clinical diagnoses, such as 'severe heroin use disorder, moderate cocaine use disorder, and mild benzodiazepine use disorder'. '*Remission'* is classed by the same manual in two stages; '*Early Remission'* when '*after full criteria are met, none have been met for at least three months'*, and *'Sustained Remission'* when the same symptom reversal (i.e., full criteria are not met) has occurred for 12 months or more.

1.2.1.2 Operational Definitions Used in The Current Thesis. Although coined *Substance Use Disorders* (SUDs) by the American Psychiatric Association (APA), these conditions are described as *Problematic Substance Use* (PSU) throughout this thesis. The justification for this is multifactorial. As this project focuses on people experiencing homelessness (PEH) and substance misuse, who frequently encounter substantial difficulties accessing healthcare (Omerov et al., 2020), and, according to recent systematic review and meta-analysis experience significantly reduced access to General Practitioners (GPs) in Ireland (Ingram, Buggy, Elabbasy, & Perrotta, 2024), it is highly likely that the participants contributing to this project do not have *clinical diagnoses* as outlined in section 1.2.1 for their condition(s). In this way, referring to these participants as having SUDs would be inaccurate and interfere with the potential integration of this research to the field more broadly. Including only diagnosed individuals could bias results towards those for whom mental health services are more easily accessed, misrepresenting the actual homeless population. I proffer that people attending residential PSU treatment services are almost certainly using psychoactive substances to a degree that is problematic and warrants investigation (also wishing to seek treatment or stop using substances is a diagnostic criterion under the DSM-V-TR). Consequently, *attending treatment is utilised as a proxy for PSU in the experimental studies of this thesis*. More theoretically, I propose that the word *disorder* connotes chronicity, antagonising the idea of possible *recovery*. Alternatively, *problematic* holds a

more transient implication, of possible alleviation. For these reasons, *Problematic Substance Use* (PSU) is used to describe the issues faced by the participants who contributed to the experimental components of this project. Our use of this phrase is supported throughout contemporary academic literature, with similar defence (Brophy, Dyson, & Rittenbach, 2023; Carver et al., 2020; Cherner et al., 2017; Delker et al., 2014). However, please note that the phrase Substance Use Disorder (SUD) is retained within the systematic review described in Chapter Three to reflect the terminology used by the research compiled to create this piece. In the context of the systematic review, it was viewed to be the most appropriate term to capture the representative literature in the field to best address the review's research questions.

Although the DSM-V-TR uses the term 'remission' to describe alleviation of PSU symptoms, the phrase more frequently used throughout the academic literature, practice, and policy is 'recovery' (Best et al., 2018; Hoeppner et al., 2019; Jones, Noonan, & Compton, 2020). 'Recovery' encapsulates more holistic criteria than the biomedical terms 'remission' or 'rehabilitation' which identify the issue as one that is chronic and/ or recurring; a perspective that is contested as being a societal construction rooted in AA models due to the heterogeneity of symptoms, trajectories, personal and social factors among people with PSU, and also as undermining the agency and motivation for recovery of those affected (Wiens & Walker, 2015). 'Recovery' avoids the moral associations made by the traditional terms 'reformation' and 'redemption', the former closely tied to the criminal justice system and the latter to spiritual atonement; both of which are now implicated in the stigmas associated with the issue (El-Guebaly, 2012; Inanlou et al., 2020; White, 2007). Although a relatively fluid construct across the academic literature, several recent investigations have worked to identify agreements in the field and to construct working definitions of PSU recovery (Ashford et al., 2019; Inanlou et al., 2020; Witkiewitz et al., 2020; Zemore et al., 2023). These broadly agree that PSU recovery is an individualised process, rather than a goal, which produces enhanced

well-being via the reduction of substance use (Brophy et al., 2023). Similarly, relapse is a ubiquitous term in the PSU literature that is measured according to several definitions; recent concept analysis compiled and analysed this to construct a working definition of relapse as a regression in the recovery process, prompted by a return to the previous behaviour of substance use, despite the intention to stay abstinent (Moon & Lee, 2020). While total abstinence from all substances may be required for individuals with more severe forms of the issue (Ashford et al., 2019; Kaskutas et al., 2014; Schoenberger et al., 2022; White, 2007), the parameters of substance use and well-being are ultimately the decision of each individual in recovery (Inanlou et al., 2020; Okrant, 2019; Schoenberger et al., 2022; Witkiewitz et al., 2020). This complicates quantitative measurement of PSU recovery (Okrant, 2019). While abstinence duration is often utilised (Laudet, 2007; White, 20007), this operationalises recovery as an endpoint that must be sustained rather than a process without time limit and a personalised pathway. Recognising this, measurements such as reduced substance use and DSM-defined and presented symptoms are acknowledged as more reflective empirical referents (Borkman et al., 2016; Brophy et al., 202; El-Guebaly, 2012; Laudet 2007; White, 2007). Within cognitive psychological investigations specifically, measurements of substance use are far more commonplace (Athamneh et al., 2023; Emery et al., 2022; Gilbey & Wilcockson, 2024; Rezapour et al., 2021; Sliedrecht et al., 2021). With respect to the empirical investigations of the current thesis, research participants are attendees of abstinence-based rehabilitation/treatment programmes; thus, cessation of, or at least reduced, substance use is a significant recovery goal. Therefore, for the dual purposes of ecological validity and comparison with the broader field, frequency of substance use episodes during treatment is assessed as a proxy for PSU recovery within the experimental investigations described in this thesis. As our assessments measure group, rather than individual, substance use they can be understood to reflect reduced group substance use, which is an appropriate

indicator of PSU recovery regardless of whether complete abstinence from substances is within each individual's PSU recovery plan. Again, to reflect the literature included in this piece, other proxies for PSU recovery, such as duration or intensity of substance use episodes as well as treatment engagement, are included in our systematic review.

1.2.2 Negative Consequences of PSU

Annually, 0.6 million deaths are related to psychoactive drug use with a further 2.6 attributable to alcohol consumption, accounting for 5.8% of all global deaths (WHO, 2024b). The harms caused by PSU, as outlined by the DSM-V-TR's criteria, are multifaceted and considerable (Nutt et al, 2007). Regarding alcohol misuse, medical research suggests alcohol consumption contributes to over 200 physical, mental, and accidental health issues. These include falls, burns, and drowning, alongside liver cirrhosis, diabetes, heart diseases, various cancers, and mental health issues such as depression and anxiety (Rehm et al., 2017; WHO, 2014, 2018). However, the harms of alcohol are not limited to the individual; in 2019, of 298,000 global deaths from alcohol-related road crashes, 156,000 were due to someone else's drinking (UNODC, 2024). Alcohol consumption during pregnancy increases the risk of miscarriage, pre-term, and stillbirths, alongside foetal alcohol spectrum disorders (FASDs; UNODC, 2024). Alcohol is also a key driver of intimate partner violence (IPV) and sexual assault (Finney, 2004; Foran & O'Leary, 2008; McKinney et al., 2010; Radcliffe & Gilchrist, 2016; Zaleski et al., 2010). All this considered, alcohol use can be attributed to 99.2 million, and 4.2% of all, worldwide Disability-Adjusted-Life-Years (DALYs; Degendardt et al., 2018).

Drug association to illness and mortality varies by type (Peacock et al., 2018; Pinel & Barnes, 2023; Shahbazi et al., 2018; UNODC, 2024; Walker et al., 2017). While the direct physical health hazards of chronic opiate use, such as reduced sex drive, pupil constriction and menstrual irregularity, are surprisingly minor (Al-Gommer et al., 2007; Babakhanian et

al., 2012; Chawla et al., 2021; Darke, 2011; Dhingra et al., 2019; Firth, 2004; Grönbladh, & Öhlund, 2011; Grover et al., 2014; Madrid et al., 2018; Pinel & Barnes, 2023), it accounts for the second highest number of SUD treatment admissions (33%), the majority of overdoses (69%), and the largest proportion of healthy life lost to premature death and disability (71%; UNODC, 2024). This is due to the highly addictive nature of these substances combined with their illegality; maintaining opiate addiction often leads to poverty, criminal activities, and other unsafe practices such as needle sharing which accounted for over half of all new human immunodeficiency virus (HIV) infections in 2022 (Albery et al., 2013; Bobashev et al., 2019; Brown, 2004; Crean et al., 2021; Edelman et al., 2015; Kaestner, 1999; Kane, 2002; Mateu-Gelabert et al., 2016; O'Gorman et al., 2016; Smart, & Reuter, 2022). Due to its prevalence and increasing chronicity of use, cannabis yields considerable harms, such as increased risk of psychosis, motor fatalities, as well as the largest proportion of SUD treatment admissions (38%); however, its use is rarely fatal (~0%; UNODC, 2024). Stimulant drug misuse has (re)surged in recent years, with Western and Central European cocaine consumption increasing 80% from 2011 to 2022, as per wastewater analyses (UNODC, 2024). Concurrently, the more potent 'crack' cocaine form which is chemically altered to a smokable substance is underlying an increasing proportion of cocaine use disorder treatment admissions in these areas of the world (UNODC, 2024). Taken together, drug use can be linked to 31.8 million, and 1.3% of all, DALYs (Degenhardt et al., 2018). Further, and of critical importance, the burden of drug use disorders, as measured by the average annual percentage change (AAPC) of deaths and DALYs, has increased exponentially over the past three decades, particularly in high-income countries (Shen et al., 2023). More worrying still, this trend in rising substance use-related deaths per 1,000 of the global population is expected to continue over the coming decades (Kim et al., 2025).

Unfortunately, the adverse effects of PSU are not contained to illness and injury. These conditions often significantly strain the person's social network to the point of breakdown (Boden et al., 2013; Di Sarno et al., 2021; Ólafsdóttir, 2020). This results in disaffiliation, lack of support, loneliness, and marginalisation which then work to perpetuate the PSU (Abbas et al.,2021; Aldrigde et al., 2018; Christie, 2022; Hosseinbor, et al., 2014; Ingram et al., 2020; Ingram et al., 2020; Jahan et el., 2024; Lander et al., 2013; Pompili et al., 2010; Unterrainer et al., 2017). Individuals with PSU often struggle to fulfil daily tasks (Abdel-Baki et al., 2017; Davies et al., 2015; Gabrielsen et al., 2024; Kronenberg et al., 2014). This impacts their ability to maintain employment, causing financial pressure (Dagher & Green, 2015; Nolte-Troha et al., 2023; Tambling et al, 2021), which can motivate criminal activity to satisfy the steep costs associated with such substance use patterns (Achilli et al., 2024; Caudy et al., 2015; Moore et al., 2019; Prince & Wald, 2018; Scott, 2021). This financial and social pressure can then in turn perpetuate the PSU, resulting in a cycle of marginalisation, antisocial behaviour, and inadvertent self-harm (Du Rose, 2017; Sierka, 2015).

Additionally, PSU bears further societal burdens (Manthey et al., 2021). As ability to partake in the workforce dissipates from affected individuals, tax contribution is reduced and welfare demand is augmented (Chaloupka et al., 2000; Fuhrmann-Berger, 2018; McCollister, & French, 2003; Shield et al., 2015). This pressurises public systems in myriad ways, affecting society at large. The consequent estimated economic costs of PSU are stark (Copello et al., 2010; de Oliveira et al., 2015; Shield et al., 2015). Healthcare is particularly affected, due to the multitude of direct and indirect health consequences stemming from these conditions (Urbanoski et al., 2018; Wei et al., 2021). Last but not least, activities associated with obtaining and using some of these substances impacts community health, wellbeing, and

security (Barrett et al., 2014), which also weighs on judicial and punitive systems (Oteo Pérez et al., 2015; Schmidt et al., 2018).

1.2.3 Prevalence of PSU

1.2.3.1 Global PSU Prevalence. PSU affects approximately 2.2% of the global population or 464 million people (Castaldelli-Maia, & Bhugra, 2022; UNODC, 2024; WHO, 2024). Alcohol use disorders are most prevalent, at 1.5% of the population, followed by cannabis (0.32%), opiates (0.29%), amphetamine (0.10%), and cocaine (0.06%; Castaldelli-Maia, & Bhugra, 2022; Degenhardt et al., 2018). However, prevalences in the problematic use of various substances differ inter-continentally, with Europe experiencing the highest proportion of Alcohol Use Disorders (AUDs), at 2.9% of the combined population, followed by Oceania (2.6%), South America (2.4%), North America (2.1%), Asia (1.2%), and Africa (0.7%; Institute for Health Metrics and Evaluation [IHME], 2024). Meanwhile, drug use disorders are most prevalent in North America (2.4%), followed by Oceania (1.7%), Europe (0.9%), South America (0.8%), Asia (0.5%), and Africa (0.3%; IHME, 2024).

1.2.3.2 European PSU Prevalence. With national surveys indicating that 8.4% of the European population have used cannabis in the last year, and 1.5% are daily users, this is by far the most commonly used illicit substance in Europe (European Union Drugs Agency [EUDA], 2025). Cocaine is the second most commonly used illicit substance in Europe, the rate of which is increasing rapidly; in 2023 EU member states reported a record amount of cocaine seized for the 7th year in a row (EUDA, 2025). While globally, cocaine use is at an all-time high, this increase is starkest in Western and Central Europe where an 80% increase between 2011 and 2022 has been indicated through wastewater analyses, alongside a 60% increase in treatment demand for problematic use of this substance during the same period (WHO, 2024). Moreover, of those requiring treatment for problematic use of cocaine between 2011 and 2022 in Western and Central Europe an increasing proportion primarily

use its more potent free base form ‘crack’ (WHO, 2024). MDMA is the second most commonly used stimulant after cocaine but is rarely cited as a reason for entering PSU treatment (EUDA, 2025). Amphetamine, methamphetamine, and synthetic cathinones[1] are further central nervous system (CNS) stimulants; while amphetamine was historically the most common in Europe, the presence of synthetic cathinones is becoming more widespread (EUDA, 2025). Opioids are present in 69% of European overdose deaths; heroin remains Europe’s most commonly used illicit opioid and is responsible for a large share of the disease burden attributed to illicit substances (EUDA, 2025). However, the cohort of heroin users in Europe appears to be ageing (EUDA, 2025). While the route of heroin administration appears to be shifting from injection to other routes like smoking, this substance is being increasingly used in combination with other substances; as heroin is a respiratory depressant, this poses a particular risk of overdose (EUDA, 2025). Currently, synthetic opioids such as fentanyl are scant in the European drug market (EUDA, 2025). Non-controlled benzodiazepines continue to pose a threat to European health; mimicking CNS depressants used to treat insomnia and anxiety, these street tablets are still available in more than two thirds of European countries. GHB, a further CNS depressant, was the fifth most common drug reported by Euro-DEN Plus hospitals in 2023 (EUDA, 2025). Ketamine is an authorised medical anaesthetic and as such is subject to different regulatory controls. Because of this, monitoring the illegal ketamine market is more challenging. However, indicators such as drug seizures suggest illicit use of this substance is increasing (EUDA, 2025). While still low, ketamine PSU treatment admissions have risen from 300 in 2018 to 1380 in 2023 and doubled from 2022 to 2023. New Psychoactive Substances (NPSs) are being developed at an alarming rate to avoid legal control; these include synthetic cannabinoids, synthetic opioids, and synthetic cathinones. In

[1]*Note.* Synthetic Cathinones are New Psychoactive Substances (NPS), the uptake of which has increased rapidly in recent decades (Karila et al., 2015). They are amphetamine analogues which go by the name ‘snow blow’ (Giese et al., 2015; Soares et al., 2021).

keeping with development rates since 2016, 47 NPSs were first detected in 2024. However, record quantities have been seized in the past two years (EUDA, 2025).

1.2.3.3 Irish Prevalence of PSU. Surveys of drug use in the Irish population have been carried out every four years since 2002 (Health Research Board [HRB], 2025). These surveys show that the proportion of 15-64 year olds living in Ireland who had ever used illicit drugs increased from approximately 19% in 2002 to 27% in 2019 (HRB, 2025). The current proportion has been stable since approximately 2014; however, of those using illicit substances an increasing prevalence uses multiple (HRB, 2025). The number of deaths per annum attributable to drug use has increased by 87%, from 431 in 2002 to 806 in 2019 (HRB, 2025). The drugs being used appear to be shifting; past year cannabis use has decreased from 2014 to 2019 while ecstasy and cocaine use increased (HRB, 2025). Nonetheless, cannabis remained the most commonly used illicit substance within the last year at 91% of the population, followed by cocaine (49%), ecstasy (31%), and ketamine (24%; HRB, 2025). Males and females exhibited similar levels of substance use, excluding Lysergic acid diethylamide (LSD) and psilocybin 'magic' mushrooms which were more commonly used by males (HRB, 2025). Mean age of commencing the use of various substances has not changed throughout this period, remaining between 18 and 21 years of age (HRB, 2025).

Internationally, Ireland has the 16th highest rate of AUD, at 3.2% of the population, and the 8th highest rate of Drug Use Disorder (DUD), at 1.2% of the population (IHME, 2024). According to data collected from 22 European hospitals as part of the Euro-DEN project, Ireland, Norway, and the Netherlands exhibit the highest levels of acute drug toxicity hospitalisations (European Monitoring Centre for Drugs and Drug Addiction [EMCDDA], 2024). Of these, Ireland showed the second highest proportion of drug toxicity hospitalisations that include heroin (25%) after Norway (26.73%). Further, Ireland reported the second highest prevalence of cocaine use in Europe (4.8%) after the Netherlands (5%)

and the 7th highest drug toxicity presentations including benzodiazepines (EMCDDA, 2024), while in 2024 synthetic nitazene opioids mis-sold as benzodiazepines resulted in mass poisonings among vulnerable community and prison cohorts (EUDA, 2025). Furthermore, women constitute the fourth largest proportion of overdoses in Ireland, compared to other European countries (EUDA, 2025). Drug use prevalence is highest in Ireland's most and least economically advantaged areas; however, the negative impacts of drug-related activities are strongest in the country's least affluent areas (HRB, 2025).

1.2.4 Intersectional Stigma

Intersectionality theory postulates that people live with numerous interrelated attributes that exist along various dimensions ranging from privilege to marginalisation (Rosenthal, 2016). These attributes interact in distinct ways, such that, for example, to be a black woman is not equal to the additive disadvantages of being black plus being a woman (Hancock, 2011). These dimensions are created via stereotypes to enforce power dynamics (Link & Phelan, 2014). Their valences are thus heavily influenced by macro, meso, and micro political and cultural structures and are consequently sensitive to both time and space (Dhamoon & Hankivsky, 2011; Winker, & Degele, 2011). In this way, individuals often experience varying degrees of entitlement and oppression in concert (Pescosolido & Martin, 2015).

Stigmas are socially constructed negative associations linked to arbitrary personal attributes which come to function at a subliminal level (Major & O'Brien, 2005). They inflict a plethora of negative consequences on targets, such as impeding housing and employment opportunities, disrupting interpersonal relationships, and undermining mental and physical health (Krendl & Perry, 2023). In fact, they are recognised as a fundamental cause of health inequities (Hatzenbuehler et al., 2013). Stigmas exist within intersectionality (Williams & Frederick, 2015). The multidimensional origins of stigmas are similar to and often overlap

with those concocting intersectionality dimensions (Pescosolido & Martin, 2015). 'Intersectional stigma' describes the unique stigmas faced by individuals who live with multiple compounding stigmatised attributes (Earnshaw, 2020). In this way, these stigmas act as a 'complex within a complex' (Turan et al., 2019).

Individuals with SUD tend to endure more incisive and pervasive stigmatising beliefs than those with other mental health issues (Room et al., 2001; Rundle et al., 2021; Schomerus et al., 2011). This results in greater public desire for social distance from those affected in comparison with other mental illnesses (Kilian et al., 2021). The observable paucity of academic literature examining SUD stigma processes when compared to those of other mental illnesses reflects this (Corrigan et al., 2016; Krendl & Perry, 2023; Kulesza et al., 2013). The increased stigmatisation of individuals with SUD appears linked to the societally perceived choice to enact these behaviours (Schomerus et al., 2011), paired with the inadvertent harms they often inflict on others via passive smoking (Khoramdad et al, 2020), neglectful parenting (Walsh, et al., 2003), motor crash fatalities (WHO, 2016), and increased aggressive behaviours (Beck & Heinz, 2013; Parrott, & Eckhardt, 2018). As such, SUD stigma is theorised to serve a societal function by enforcing perceived '*acceptable'* non- to moderate substance use boundaries (Phelan et al., 2008). However, this strategy is inherently flawed (Earnshaw, 2020). SUDs are not exclusively controlled by the individual; they have biological, social, and environmental underpinnings (Merikangas, & McClair, 2012). Consequently, they cannot be prevented by stigmas (Schomerus & Corrigan, 2022). Stigma also impedes treatment access and recovery outcomes via shame and undercut self-esteem (Crapanzano et al., 2018).

1.2.5 Treatment Access and Coverage

Latest estimates suggest only approximately one in 11 individuals with PSU access various types of treatment worldwide, a decrease from preceding years (UNODC, 2024).

These figures vary substantially across regions, with reduced access in lower-income countries. In comparison with Africa at 2.8%, Europe has the highest treatment coverage at around 26%, which further rises to about one in three for Western Europe. The socioeconomic characteristics of those accessing treatment across global subregions appear similar; with the exception of African nations, the level of education of people in PSU treatment tends to be lower than that of the general population and the proportion of people without access to stable housing stands at around 10% (UNODC, 2024). In Ireland, latest reports indicate that approximately 8,163 individuals were treated for problematic alcohol use in 2023 and 13,295 for problematic drug use in 2024 (Lynch, Tierney, & Lyons, 2025; O'Neill, Ní Luasa, Lyons, & Carew, 2024). From 2022 to 2023, this number increased at the drastic rate of 9.7% (HRB; 2025b). The mean age of those using alcohol was 44 for females and 42 for males, with females comprising 36% (O'Neill, Ní Luasa, Lyons, & Carew, 2024). Twenty-five per cent (25%) of those with alcohol as their primary substance also used other drugs, mainly cocaine and/or cannabis, and 57% of those with alcohol as their primary substance of concern had children (O'Neill, Ní Luasa, Lyons, & Carew, 2024). Primary cocaine use represents a rapidly increasing proportion of the drug using cohort, which jumped from 21.2% in 2022 to 24.2% in 2023 (HRB, 2025b). Furthermore, 25% of these report problematic use of the more potent smokable form, crack cocaine (Lynch, Tierney, & Lyons, 2025). As with alcohol, cocaine was the most commonly cited substance among polydrug users, mostly in combination with alcohol, cannabis, or opioids (HRB, 2025a; Lynch, Tierney, & Lyons, 2025). In 2024, cocaine was the primary concern for the largest proportion of those using substances other than alcohol at 40%, while opioids accounted for 25%, cannabis 17%, and benzodiazepines 13% (Lynch, Tierney, & Lyons, 2025). Females accounted for 30% of those attending PSU treatment for drugs; in 2024 their mean age was 35, while for males it was 33 (Lynch, Tierney, & Lyons, 2025). Mirroring other European

countries, the Irish opiate using population appears to be increasing in age but decreasing in numbers (EUDA, 2025; HRB, 2025b).

1.2.6 Women

PSU disproportionately affects disadvantaged genders, including women (UNODC, 2024). Although men make up over three quarters of the global drug-using population, women who use substances face greater harms from their use and barriers to accessing treatment (European Monitoring Centre for Drugs and Drug Addiction [EMCDDA], 2023; Simpson & McNulty, 2008). Many of these harms and barriers stem from conventional gender roles and power structures. Women are more likely than men to be introduced to substance use or heavy substance use by their partners; they are also more likely to ask their partners to inject them. Women who use substances are more susceptible to gender-based violence and sexual assault than men (Plaza-Hernàndez et al., 2023). They are also considerably less likely to enter treatment; while one in seven men with PSU enter treatment worldwide, just one in 18 women do the same (UNODC, 2024).

1.3 Homelessness

1.3.1 Defining Homelessness

1.3.1.1 Defining Homelessness Globally. Defining homelessness, a form of poverty discussed only since the latter half of the last century, and the understanding of which has varied considerably across time and space, is complex (Cross et al., 2010; O’Sullivan, 2023). Initially understood as a labour issue explained via individual-level indolence and targeted via punishing means of survival beyond the labour market such as begging, charity, and prison-labour, understanding of homelessness has been transformed into a systemic issue stemming from lack of affordable housing options (Bloom, 2005; Fowle, 2022; O’Sullivan, 2023). The length of time required to be considered as experiencing homelessness, from one to 30 nights, has also been contested over the past decades (Lima, Hearne, & Murphy, 2023;

Toro, 2007; Toro & Warren, 1999). While understood to be a shared global phenomenon, in acknowledgement of the significant international economic inequities in existence, definition as such often includes only the most extreme forms such as rough sleeping (marginally or un-sheltered in a sleeping bag and/ or tent), emergency shelters, squatting (living in usually derelict buildings unknown to the owners and illegally), and informal settlements including slums and shanty towns (Busch-Geertsema et al., 2016). However, while individuals residing in self-constructed basic dwellings in countries where this is not the norm may be considered 'homeless', in regions where makeshift houses are widespread, only those sleeping without shelter may fall into this category (Allen et al., 2020; Cross et al., 2010; Speak, 2019).

1.3.1.2 Defining Homelessness in Europe. A previous *European Typology on Homelessness and Housing Exclusion* (ETHOS) by the European Federation of National Organisations Working with the Homeless (Fédération Européenne d'Associations Nationales Travaillant avec les Sans-Abri; FEANTSA) mandates absence of physical structure, social control, and legal tenure (Busch-Geertsema, 2010; FEANTSA, 2007). However, this has been denounced as reflecting only a small fraction of those considered homeless by the standards of the Global North by only accounting for those sleeping rough or in emergency shelters who are included in census counts, but ignoring those sofa surfing (staying on family or friend's couches and often moving through a series of one to the next after short periods of time) or squatting who have roofs but lack privacy and ownership (Amore et al., 2011). Several contemporary researchers refer to a '*continuum of homelessness*' which runs from the stably housed, to those precariously housed and/ or at risk of homelessness, to those in temporary accommodations or non-homeless institutions, to those on the street or in emergency shelters (Toro, 2007). In this way, the original FEANTSA ETHOS is lauded as more culturally inclusive, recognising the so-called "hidden homeless"; those staying with family and friends or squatting because they have nowhere else to go

(Pleace & Bretherton, 2013). While these people have physical roofs, they lack control over the physical, social, and legal domains of their accommodations; they are not observed in census counts, but experience what FEANTSA describe as “housing exclusion” (FEANTSA, 2005). This considered, homelessness may be better understood as a culturally-relative state of psychological distress, stemming from a lack of ‘home’, rather than ‘house’ (Pleace & Hermans, 2020). In this respect, the word ‘home’ goes beyond physical roofed structures to hold cultural, emotional, and psychological dimensions - often pertaining to security (Meers, 2023). The most recent ETHOS put forth by FEANTSA more closely reflects this understanding (FEANSTA, 2017). While it does not attempt to harmonise transnational definitions, it provides shared language for communication. It segregates individuals experiencing homelessness into four main categories with 13 subcategories along a spectrum of homelessness, presented in Table 1.2.

Table 1.2

The European Typology of Homelessness and Housing Exclusion (ETHOS) Created by FEANTSA

<table>
<tr><th colspan="2"></th><th>Operational Category</th><th>Living Situation</th><th>Generic Definition</th></tr>
<tr><td rowspan="6">Conceptual Category</td><td rowspan="2">Roofless</td><td>1. People living rough</td><td>1.1 Public or external space</td><td>Living in the streets or public spaces, without a shelter that can be defined as living quarters</td></tr>
<tr><td>2. People in emergency accommodation</td><td>2.1 Night Shelter</td><td>People with no usual place of residence who make use of overnight shelter, low threshold shelter</td></tr>
<tr><td rowspan="4">Houseless</td><td>3. People in accommodation for the homeless</td><td>3.1 Homeless hostel
3.2 Temporary accommodation
3.3 Transitional supported accommodation</td><td>Where the period of stay is intended to be short term</td></tr>
<tr><td>4. People in women's shelter</td><td>4.1 Women's shelter accommodation</td><td>Women accommodated to experience of domestic violence and where the period of stay is intended to be short term</td></tr>
<tr><td>5. People in accommodation for immigrants</td><td>5.1 Temporary accommodation/ reception areas
5.2 Migrant workers' accommodation</td><td>Immigrants in reception or short-term accommodation due to their immigrant status</td></tr>
<tr><td>6. People due to be released from institutions</td><td>6.1 Penal institutions
6.2 Medical institutions*
6.3 Children's institutions/ homes</td><td>No housing available prior to release
Stay longer than needed due to lack of housing
No housing identified (e.g. by 18th birthday)</td></tr>
</table>

	Insecure	7. People receiving longer-term support (due to homelessness)	7.1 Residential care for older homeless people 7.2 Supported accommodation for formerly homeless people	Long stay accommodation with care for formerly homeless people (normally more than one year)
		8. People living in insecure accommodation	8.1 Temporarily with family/ friends 8.2 No legal (sub)tenancy 8.3 Illegal occupation of land	Living in conventional housing but not the usual place of residence due to lack of housing Occupation of dwelling with no legal tenancy illegal occupation of a dwelling Occupation of land with no legal rights
		9. People living under threat of eviction	9.1 Legal orders enforced (rented) 9.2 Re-possession orders (owned)	Where orders for eviction are operative Where mortagee has legal order to re-possess
		10. People living under threat of violence	10.1 Police recorded incidents	Where police action is taken to ensure place of safety for victims of domestic violence
	Inadequate	11. People living in temporary/ non-conventional structures	11.1 Mobile homes 11.2 Non-conventional building 11.3 Temporary structure	Not intended as place of usual residence Makeshift shelter, shack or shanty Semi-permanent structure hut or cabin
		12. People living in unfit housing	12.1 Occupied dwellings unfit for habitation	Defined as unfit for habitation by national legislation or building regulations
		13. People living in extreme over-crowding	13.1 Highest national norm of overcrowding	Defined as exceeding national density standard for floor-space or useable rooms

**Includes drug rehabilitation institutions, psychiatric hospitals, etc.*

1.3.1.3 Defining Homelessness in Ireland. As a European country of the Global North, Ireland's conceptualisation of homelessness largely mirrors that provided by FEANTSA (2017). The Housing Act, 1988 details that '-A person shall be regarded by a housing authority as being homeless for the purposes of this Act if- (*a*) there is no accommodation available which, in the opinion of the authority, he, together with any other person who normally resides with him or who might reasonably be expected to reside with him, can reasonably occupy or remain in occupation of, or (*b*) he is living in a hospital, county home, night shelter or other such institution, and is so living because he has no accommodation of the kind referred to in paragraph (*a*), and he is, in the opinion of the authority, unable to provide accommodation from his own resources.' In practice, Ireland's local authorities tend to appreciate each form of homelessness explicitly detailed in FEANTSA's (2017) ETHOS, as is also indicated by this Act. Consequently, in keeping with the legislative and practical understanding of homelessness in Ireland and Europe, the types of homelessness outlined in FEANTSA's (2017) ETHOS are those encapsulated by any reference to homelessness throughout the remainder of this thesis.

1.3.2 Prevalence of Homelessness

1.3.2.1 Global Prevalence of Homelessness. The nebulous consensus surrounding a global "homelessness" definition renders worldwide prevalence estimates exceptionally difficult to ascertain (Deleu et al., 2023; Pleace & Hermans, 2020). Compounded by financial and time constraints, the most recent attempt, and widely referenced count, was made by the UN almost 20 years ago in 2005 (UN-Habitat, 2020, 2021). However, a more recent attempt by the Organisation for Economic Co-operation and Development suggests about half of the world's countries have a homeless population of more than one per 1,000 people (OECD; Herre & Arriagada, 2024). Due to the shortcomings surrounding a cohesive international definition discussed above, these estimates tend to focus only on the highly visible city centre

street and emergency shelter homeless individuals (Drilling et al., 2020; Robinson, 2006). This ignores large proportions of 'hidden' homeless individuals who keep away from these areas, are only homeless in these ways for short periods of time, or as per their alias, 'hide' (Agans et al., 2014; Deleu et al., 2023). The result is the sole enumeration of chronically homeless individuals who face the most barriers to exiting homelessness and are not as endangered in these most explicit homeless locations (O'Sullivan et al., 2020). This leads to a distorted portrayal of an issue which mostly affects lone men with high and complex needs; typically, addictions and other mental health issues (Daly, Craig, & O'Sullivan, 2018; Cloke et al., 2001).

1.3.2.2 Prevalence of Homelessness in Ireland. Ireland's homelessness counts indicate that this is a critical issue for this country. Currently standing at approximately 15,747, Ireland's homeless population has increased 77.4% in the past five years (Department of Housing, Local Government, and Heritage, 2020; Department of Housing, Local Government, and Heritage, 2025). Of these, almost one-third (4,844) were children, while only 4% are over 60 years of age (Central Statistics Office [CSO], 2022; Department of Housing, Local Government, and Heritage, 2025). In the most recent Irish census, just under 40% of the country's homeless population were female (CSO, 2022). While approximately 65% are Irish, 45% are non-Irish citizens mostly from Romania (15%), other European countries (10%), and Africa (6%; CSO, 2022). Approximately 36% of Ireland's homeless population have a disability or long-lasting condition; the most prolific being psychological or emotional (CSO, 2022). However, despite Ireland's comprehensive definition of 'home-lessness' which is in keeping with contemporary definitions of the international Global North, these estimates similarly only refer to those accessing emergency accommodation. Thus, indicating that approximately 0.29% of Ireland's approximate 5.38 million population almost certainly underestimates the gravity of the issue within this country and, as described

above, most likely caricatures the extent to which it affects males. Unfortunately, further research into homelessness trends in Ireland indicate that this caricature is then further exaggerated by the ‘institutional circuit’ of temporary accommodations, hospitals, prisons, and psychiatric institutions operating in this country which often do not meet the needs of their services users but instead ‘perversely perpetuate and maintain people in an endless loop of expensive unstable short-term residences in a variety of institutional settings’ (Bashir et al., 2021; Daly, Craig, & O’Sullivan, 2018; Hopper et al., 1997).

1.3.3 Intersectionality and Gender

The gross oversimplification of homelessness to city centre street and emergency shelter dwellers heralds our next issue; the misrepresentation of underprivileged groups in homeless populations (Bretherton, 2017; Toro, 2007). This occurs through various means (Bretherton & Mayock, 2021). One relates to that mentioned above; the spatially-determined inclusion criteria of homelessness counts within narrow and arbitrarily drawn parameters around easily reached and easily definable “homeless” spaces in city centre streets and emergency shelters. Disadvantaged groups avoid these native male-dominated spaces for obvious interpersonal safety reasons such as physical or sexual abuse (Sikich, 2008). This reality is underscored by the almost ubiquitous ‘bedding-down’ of many homeless women electing the streets with male partners who abuse them, due to its relative safety to sleeping alone and ‘unprotected’ (Meyer, 2016; Moss & Singh, 2015; Scott, 2007; Watson 2011). A second relates to social care administration internationally whereby lone women with children tend to be classed as ‘family’ homelessness and those who become homeless escaping IPV and finding solace in women’s refuges as “domestic abuse” (Sikich, 2008). As both childcare following separation and IPV disproportionately affect those identifying as women, these administrative defaults depict homelessness as a male-centred issue, disregarding the types of homelessness faced by women (Cano & Gracia, 2022; Ferraro,

2012; González, & Rodríguez-Planas,2020; Hakovirta et al., 2021; Savage, 2016; Williams, 2011). In a similar fashion, internal migrant homelessness is often labelled 'asylum seeker' or 'refugee' (Pleace, 2010). The cross-sectional methods typically used to quantify an inherently transient population further gloss over the specific issues faced by disadvantaged homeless people (Schneider et al., 2016). Counting individuals sleeping on the streets on a single night is a common method employed by national governments; however, this method overlooks the temporarily homeless, those beyond the city centre, and those hiding (Gabbard et al., 2007; Tsai & Alacón, 2022). Female, family, LGBTQI+, youth, elderly, and immigrant, homelessness, to name but a few, are all more readily characterised by hiding, sofa-surfing, squatting in informal settlements, or admission to more specialised 'non-homeless' services (Early, 2005; Kimbler et al., 2017; Morton et al., 2018; Newbold, 2010; Page, 2016). While less recognised than those dominating the visible spaces, these 'hidden' homeless share a lack of control of their physical surroundings and thus privacy, safety, legal rights and exhibit similar complex needs (Bretherton, 2017; Bretherton & Mayock, 2021). Unfortunately, it does appear to be "a man's world - even when you're homeless" (Hamilton, 2007).

1.3.4 Irish Travellers

A caveat to this very global understanding of homelessness exists however, particularly within the Irish context where this PhD is set. Irish travellers are a distinct ethnic minority group comprising 0.6% of the Irish population (Central Statistics Office [CSO], 2022). Genetically Irish, their diversity is cultural (Gilbert et al., 2017); it relates to their nomadic lifestyle resembling that of homeless populations in the Global North (Aspinall, 2014; Cullinane, 2021). They often have no land ownership, meaning they move from place to place for unknown periods of time and regularly live in cramped conditions with poor access to basic facilities such as water and sewage (McElwee et al., 2003; Watson et al., 2017). Discrimination against this group is routine and relatively socially acceptable among

sections of the Irish general public (Cihan Koca-Helvaci, 2016; Fanning, 2018). This is fostered by governmental policies which, rather than respecting and supporting the culture, have historically taken an assimilationist approach (Haynes et al., 2021). This stigma has resulted in poor education and healthcare outcomes such as significantly lower life expectancy (Abdalla et al., 2013; CSO, 2022; Fay, 2019; Kennedy et al., 2023; Kenny & Binchy, 2009; McGorrian et al., 2012; Quirke et al., 2022).

Despite these ostensible similarities, the Irish traveller and Irish homeless populations are distinct groups; the fundamental difference between them being *choice*. Although not in settled houses, Irish travellers are not displaced. Their nomadic lifestyle is a culture in which they opt to participate. This ties back to the ETHOS definition described above, which emphasises *control* of physical structure, social environment, and legal tenure (FEANTSA, 2005). Further, and importantly, they have security of community, unlike many PEH (Bower et al., 2018; Griffin, 2012). In this way, it is actually possible for a traveller to become homeless, should they become excluded from this community (Devine et al., 2020; Hearne, 2020). In fact, due to their extreme societal marginalisation and consequent disadvantage, as outlined in Section 1.2.4, they are at increased risk. This is evidenced in their significantly increased prevalence within the Irish homeless population, at approximately 7.5% (CSO, 2016).

1.3.5 Causes of Homelessness

Understanding of the mediating factors contributing to homelessness is as complex as our understanding of homelessness itself (Anderson & Christian, 2003; Baron, 2004; Hardin & Wille, 2017; Johnson et al., 2017; Rukmana, 2020). The parameters of homelessness appear to be as political and ideological as they are theoretical and empirical (Feldman, 2004; Lancione, 2013; Schiff, 2003). The distinction between house and home, as well as the idea of a human right to either, are yet to be drawn, if in fact they can or should (Meers, 2023).

These topics cannot escape political and ideological influences as they pertain to societal organisation; whether housing should be an endemic right legally protected from the negative effects of capitalism (Hennigan, 2019; Kolocek, 2013; Leijten & De Bel, 2020; Mikkola, 2008; Mitchell, 2020). Thus, although the majority of discussions and research into this topic centre around its causes, they are muddied by dominating political perspectives (Farrugia & Gerrard, 2016). This considered, the prevailing consensus appears to be that homelessness results from labyrinthine interplays of structural and personal factors (Hoolachan, 2024; Rukmana, 2020). Such structural factors may include inadequate housing provision, institutional care, and/or mental health care services (Batterham, 2012; Colburn & Aldern, 2022). Personal factors relate to relationship breakdown, IPV, lack of skills, running away from abusive or neglectful homes, and/or mental ill-health (Johnson et al., 2015). This emphasises its existence beyond lone men, whose street and shelter homelessness is somehow caused by complex needs experienced by much larger segments of the population who do not become homeless, such as PSU and mental ill-health.

1.3.6 Negative Impacts of Homelessness

The effects of homelessness are prolific and profound, ranging from physical to psychological, emotional, and social (Fornaro et al., 2022; Richards & Kuhn, 2023; Om et al., 2022). In terms of physical effects, PEH are repeatedly found to exhibit premature physical ageing that impacts daily functioning (Cronin et al., 2025; Dawes et al., 2022; Kiernan et al., 2021). Chronic conditions like HIV and Chronic Obstructive Pulmonary Disease (COPD), alongside accidents and injuries are overrepresented in homeless populations (Bhunu, 2015; Burki, 2013; Dombrowski et al., 2025; Feodor Nilsson et al., 2014; Lewer et al., 2019; Nguyen et al., 2019; Thakarar et al., 2016; White et al., 2025). PEH exhibit significantly higher rates of hospital admission and increased mortality than their housed counterparts (Feodor Nilsson et al., 2014; Reilly et al., 2020; Romaszko et al., 2017; Subedi et al., 2022;

White et al., 2025). People sleeping rough on the street experience increased exposure to extreme weather conditions such as high heat, cold weather or a storm, and thus also bear the physical health effects of this, sometimes including death (Akhanemhe et al., 2025; Bezgrebelna et al., 2021; Noor et al., 2025; Perrich et al., 2025; Richard et al., 2023; Zhang et al., 2019). So extreme are the physical health impacts, that specialised health screens for PEH are recommended for physicians (Gordon et al., 2019). Psychological mental illness is also observed to a much larger extent in homeless than housed populations; particularly PSU, depression, and schizophrenia (Barry et al., 2024; Fazel et al., 2008; Gutwinski et al., 2021; Hossain et al., 2020; Schreiter et al., 2017; Smartt et al., 2019). Moreover, PEH exhibit extremely high levels of self-harm, suicidal ideation, suicide attempts, and death by suicide (Armoon et al., 2024; Ayano et al., 2019; de Campos et al., 2025; Giannouchos et al., 2024; Nilsson, et al., 2025). Regarding interpersonal violence, PEH experience higher levels of both physical and sexual assault (Carrillo Beck et al., 2022; Ellsworth, 2019; Tyler & Wright, 2019; Xu et al., 2016). PEH are an exceptionally marginalised population, who experience extreme stigmatisation from the domiciled public which exerts its own plethora of negative physical and psychological health impacts (Batterham, 2020; Canham et al., 2024; Meanwell, 2012; Reilly et al., 2022; Schreiter et al., 2021).

1.3.7 Exiting Homelessness

These effects of living in such extreme living conditions of regular forced nomadism, imminent interpersonal or environmental danger, marginalisation, and destitution further work to impede the return to stable independent housing (Desjarlais-deKlerk, 2018; Nilsson et al., 2019; Nilsson et al., 2020). Moreover, they impact the transition from homelessness to housing, with newly-housed individuals regularly losing tenancies due to perpetuating mental ill-health, namely PSU and PTSD, which are regularly linked to continued other health issues (Boland et al., 2018; Crane & Warnes, 2007; Gabrielian et al., 2016; Iaquinta, 2016; Marshall

et al., 2024; Nilsson et al., 2019; Patterson et al., 2015). These ‘homeless in a home’, evidence the lasting psychological effects exerted by homelessness on the individual, even following the restoration of housing (Aubry et al., 2016; Boland et al., 2018; Crane et al., 2016; Gabrielian et al., 2017; McCabe & O’Connor, 2016; North et al., 2010; Raphael-Greenfield & Gutman, 2015; Roebuck et al., 2024; Van Straaten et al., 2017). For this reason, a variety of supported living accommodations for individuals exiting homelessness have been developed (Bowpitt, & Jepson, 2007; Canham et al., 2022; Pleace & Quilgars, 2003). These typically include drop-in social care and medical assistance, in recognition of the extreme circumstances people exiting homelessness have recently lived through, to help them recover their physical and mental well-being to a level where they can healthily and sustainably maintain their own accommodation with dignity (Gutman et al., 2018; Onapa et al., 2022; Pilla, & Park-Taylor, 2022).

1.4 The PSU-Homelessness Intersection

PSU and homelessness are strongly associated (Stablein et al., 2021). Estimates suggest up to 58.5% and 54.2% of those experiencing homelessness in Western countries struggle with alcohol and substance dependence, respectively; prevalences which appear to be increasing (Fazel et al., 2008; Grinman et al., 2010; Kertesz, 2021; Laporte et al., 2018; Palepu et al., 2013; Sharman et al., 2016). Meanwhile, the United Nations suggests that approximately 10% of those accessing PSU treatment across the world are simultaneously homeless (UNODC, 2024). However, academic literature reports prevalences as high as 36% and 49.9% (Han et al., 2022; Kemp et al., 2006; Palepu et al., 2010). A recent systematic review and meta-analysis states that homeless people in Ireland are at significantly increased risk of illicit substance use (Ingram et al., 2024), and recent analysis of those who were homeless at time of death states that 86% had a history of PSU (Ríordan et al., 2021). Opioids were the most commonly implicated substances in the deaths of Ireland's homeless

population, followed by benzodiazepines, alcohol, and cocaine (Ríordan et al., 2021). Almost one in 12 (7.8%) of those attending PSU treatment in Ireland for alcohol, and 11.7% of those attending for drugs, concomitantly experience homelessness; a prevalence that is increasing, having stood at just 9.6% in 2017 (Lynch et al., 2025; O'Neill et al., 2024). Importantly, homelessness is more common among those with previous PSU treatment admissions, crack (21.2%) versus powder (5.1%) cocaine users, and injections drug users (34.8%; Lynch et al., 2025; O'Neill, et al., 024).

This overlap has been the focus of much speculation, giving rise to several explanatory theories (Baum, 2019; Coumans & Spreen, 2003). The social selection model posits that as individuals' chronic substance use persists their social and material capital depletes until they are isolated and destitute (Ayed et al., 2020; Johnson et al., 1997; Neale & Stevenson, 2015). Indeed, sizable portions of PSU treatment service users in the Global North depend on social welfare (UNODC, 2024). Although primarily caused by dysfunctional housing, health, and welfare systems, a collection of personal factors have been found to elevate homelessness risk (O'Sullivan, 2022; Shelton et al., 2009). While emphasising the crucial role of economic policy in placing certain groups at increased risk of homelessness, the recent "*Homelessness in the European Union"* report specifically acknowledges the empirical evidence that "excessive or persistent use of psychopharmacological substances" augments risk for specific individuals within these groups (O'Sullivan et al., 2023; Thompson et al., 2013). PSU has further been shown to exacerbate homelessness through interruption of tenancy attainment and sustainment (McNaughton, 2008; Moxley et al 2020; Post et al., 2022; Zhao, 2023).

Conversely, the social adaptation model posits that PSU and homelessness are so intimately linked because people use substances to adjust to homeless life (Johnson & Fendrich, 2007). Research has revealed PSU intensification through homelessness in

numerous ways (Austin et al., 2021). Some individuals commence substance use after becoming homeless, while existing substance may worsen in others, to moderate the physical or social intensity (Alexander et al., 2022; Betancourt et al., 2023; Johnson & Chamberlain, 2008). PEH also exhibit reduced PSU treatment admission and retention rates, as well as greater numbers of lifetime relapses, prolonging recovery and entrenching the condition (Friesen & Young, 2021; Hsu et al., 2024; Kertesz et al., 2003; Padwa et al., 2022; Zerger, 2002).

Despite apparent bi-directional influence, a more nuanced understanding of PSU and homelessness as exacerbating sequelae of common underlying factors is beginning to emerge (Bramley & Fitzpatrick, 2018; Padgett et al., 2016). Adverse life events such as trauma, poverty, and unreliable social networks combined with structural issues such as inadequate public services and capitalist economies initially increase risk of both conditions (Padgett et al., 2012; Vangeest & Johnson, 2002). As they are created and sustained, PSU and homelessness work to entrench one another forming a labyrinth of difficulties (Karadzhov, 2023). However, while good support for this model exists, homelessness appears to be more reliably preceded by PSU (McVicar et al., 2015).

1.5 Current Treatment Landscape

These models of the PSU-Homelessness Intersection are reflected in conventional treatment paradigms for people with comorbid PSU and homelessness. These paradigms initially approached this compound of issues by first targeting substance use, followed by housing when abstinence was stabilised (Orwin et al., 1999). This “Treatment First” (TF) approach follows a stratified path of professional PSU support to independent residence according to abstinence stability (Zerger, 2002). It usually starts with medical detoxification followed by residential full-time “high-support” recovery, “dry” houses, and “half-way” or transitional housing with minimal support or aftercare check-ins (Wong et al., 2006). Long-

term private accommodation is finally pursued when abstinence is demonstrated for lengthy periods of time (Schumacher et al., 2002). This approach was the prevailing paradigm for decades when understanding was that this combination of issues stemmed from substance use (Early, 2005; Orwin et al., 2005). It is biomedical in nature, focusing on the personal level factors of this phenomenon (Lyon-Callo, 2000).

The TF paradigm has come under critical review in recent years following appreciation of its individual level emphasis (Dordick, 2002). Enquiry revealed that many service users were not serviced by this approach, particularly those with "complex needs" such as dual diagnosis (National Institute for Health and Care Excellence [NICE], 2022). Such individuals often struggled to meet the standards set by this paradigm, vacillating through its stages with their social and mental health care needs deteriorating until it resembled a revolving, rather than exit, door for PSU and homelessness (Dyb, 2016; Hopper et al.,1997; Johnsen & Teixeira, 2010; Sahlin, 2005). The model was deemed to lack client-centredness and thus be ignorant to the complexity of this circumstance (Tsembris & Eisenberg, 2010; Watson & Rollins, 2015). The idea of housing 'readiness' was also scrutinised for refusing the basic human right to housing from some of society's most vulnerable people (Greenwood et al., 2013; Padgett et al., 2016).

To counteract this approach, and in keeping with the social adaptation model, 'Housing First' (HF) was designed (Johnson & Fendrich, 2007; Tsembris, 1999; Tsembris & Asmussen 2016). This paradigm posits the contaminating factor of these people's complex situations is their homelessness (McNaughton Nicholls & Atherton, 2011). It, thus, as per its name, primarily acquires service users' housing and applies relevant supports as necessary when settled (Tsembris, 2010). This approach does not dictate total drug and alcohol abstinence and thus is lauded to employ a harm reduction method which better recognises the complex nature of PSU recovery, including service users' holistic development as well as

potential substance relapse (Deegan, 1988; Zerger, 2002). This model was rapidly deemed an innovative solution to the quagmire and rolled out across North America and Europe (Baptista & Marlier, 2019; Sylvestre & Kerman, 2024). However, this action seems to have occurred prematurely to generally accepted empirical support (Groton, 2013; Munthe-Kaas et al., 2018; Woodhall-Melnick, & Dunn, 2016). HF is regularly hailed as a panacea for all the issues faced by PEH despite a minute literature body; of note, a large proportion of this body is also authored by the paradigm's creators using qualitative methods supported by quantitative scales designed *ad hoc* by the team (Lancione et al., 2018; MacNaughton et al., 2012; Schiff & Rook, 2012). Most of the work on this topic discusses its effects on housing, cost-effectiveness, and staff perspectives with a limited amount considering service user health and well-being (Gulcur et al., 2003; Lancione et al., 2018; McNaughton Nicholls & Atherton, 2011; Quilgars & Pleace, 2016). Indeed, HF appears to evidence relative success in achieving its primary aim of housing procurement and retention for its service users (Aubry et al., 2021; O'Shaughnessy et al., 2024). This is unsurprising considering the central tenet of this programme is housing provision regardless of social or psychological behaviours (Pleace, 2016). Its effect on mental health, substance use, physical health, and other social care needs, however, remains uncertain (Kerman et al., 2021). It stands to reason that this approach would protect service users from some of the injuries inflicted to these areas through the experience of homelessness (Atherton & Nicholls, 2008). In this way, HF appears to be a solution to homelessness and its associated afflictions, but not for pre-existing mental health or substance use issues (Busch-Geertsema et al., 2010; Edens et al., 2011; Kertesz et al., 2009; Lipton et al., 2000; Moledina et al., 2021; Padgett et al., 2006; Pleace & Bretherton, 2013; Tsai et al., 2010). Considering its reported cost-effectiveness, its rapid uptake may thus have political, rather than scientific or social, underpinnings (Aubry et al., 2021; Collins & Stout, 2021; Raitakari & Juhila, 2015; Sylvestre & Kerman, 2024; Tsai et al., 2010). Thus,

the need for PSU treatment for individuals with prior or comorbid homelessness remains exigent (Christenson et al., 2005; McNaughton Nicholls & Atherton, 2011).

1.6 Cognition

One of the most promising avenues for the enhancement of mental health treatments including those of PSU is targeted social, biological, neuroscientific, pharmacological, and cognitive psychological research (Amaro et al., 2021; Aoun et al., 2004; Butelman & Kreek, 2017; Cook et al., 2019; Davies et al., 2015; Kilbourne et al., 2018; Lake & Turner, 2017; Melugin et al., 2021; Moustafa, 2020; Tanabe et al., 2019). Cognitive research specifically identifies thought patterns, mechanisms, and functions correlated with certain behaviours or psychological conditions and potential methods to adjust these if desired; it is thus easily integrated into treatment (Eysenck, 2013; LeMoult & Gotlib, 2019; McKay et al., 2015; Shin et al., 2014; Steinglass et al., 2019). It has made exciting advancements in the field of PSU, progressing our understanding of both prevention and treatment (Copersino, 2017; Neighbors et al., 2019; Verdejo-Garcia et al., 2019). Some of the key thought traits consistently identified as correlating with increased or problematic use of substances include truncated time perspective, reduced cognitive control in various forms, and negative affect (Baker et al., 2004; Barrós-Loscertales et al., 2020; Dalley et al., 2011; Davies & Filippopoulos, 2015; Dean et al., 2020; Fieulaine, & Martinez, 2010; Groman & Jentsch, 2012; Hogarth, 2020; Kassel et al., 2007; Koob & Volkow, 2010; Kräplin et al., 2020; Kwako & Koob, 2017; Lui & Rollock, 2020; Paasche et al., 2019; Wiers et al., 2013; Zdybek, 2016).

Interestingly, the vast majority of the literature on homelessness prevention and return to housing considers predictive factors, treatment modalities, and policy (Adams-Guppy & Guppy, 2016; Fazel et al., 2014; Fitzpatrick-Lewis et al., 2011; Hartmann MacNamara et al, 2013; Olukoju, 2017; Ponka et al., 2020; Sarnowska, & Gach, 2018; Schutt & Garrett, 2013; Sullivan, 2023). Within predictive factors, demographics such as mental health diagnoses,

socio-economic status (SES), and quality of interpersonal relationships are frequently discussed (Brakenhoff et al., 2015; Caton et al., 2005; Crane et al., 2005; Czaderny, 2020; Giano et al., 2020; Habánik, 2018; Nishio et al, 2017; Susser et al., 2021; Van Den Bree et al., 2009). Regarding cognitive factors, limited investigation beyond general intelligence and cognitive function emerges (Depp et al., 2015; Pluck et al., 2011; Pluck et al., 2012; Pluck et al., 2015; Spence et al., 2004; Stone et al., 2019). However, of the few studies considering cognitive psychological aspects, striking overlap with PSU literature can be observed; PEH exhibit augmented present and/ or attenuated future orientation, reduced cognitive control across various indices, and pronounced negative affect when compared with the general population (Dierst-Davies et al., 2011; Freyberger et al., 2008; Incekara-Hafalir, & Linardi, 2017; Leclair et al., 2020; Maddock et al., 2017; Milford, 2007; Pluck et al., 2008; Powell & Maguire, 2018). Despite this, investigation into potential factors underlying this phenomenon is scant. One theory suggests the precarity of homelessness in terms of urgent present needs and uncertain futures could promote present- over future-oriented thought, ipso facto increasing impulsivity and delay discounting (Cooper, 2015; Fieulaine, & Apostolidis, 2014). In fact, this predisposition actually appears to be somewhat advantageous in homelessness and possibly other crisis situations (Epel et al., 1999; Fieulaine & Apostolidis, 2014). While pursuing a potential causal relationship between homelessness and PSU, another set of authors concluded that such a relationship may not exist, and that these phenomena may instead be driven by shared underlying factors (McVicar et al., 2015). In this way, it is unclear whether these unconventional thought patterns actually precede or succeed homelessness (Backer & Howard, 2007). Nonetheless, the potential interaction of such homelessness-shifted cognition with PSU recovery, where the reverse traits have evidenced benefit, appears largely underexplored. This is the aim of the current thesis; to examine cognitive associations with homelessness and PSU, with particular respect to the cognitive

traits Locus of Control, Desire for Control, and Affective Forecasting and to examine their potential influence on treatment of PSU, in terms of recurrence of substance use (relapses).

1.7 Thesis Rationale

In summary, the preceding sections have primarily posited the widespread and often fatal issue of stark PSU recovery rates. They also described the significant overlap of the PSU and PEH communities, as well as the pronounced difficulties in attaining sobriety for PEH with PSU. Cognitive psychological research and interventions were then introduced, as well as their particular applicability to the separate and concomitant issues of PSU and homelessness recovery. Thus, in response to these preceding sections, the current thesis aims to primarily shed light on *how treatment of PSU in PEH may be scaffolded from a cognitive psychological angle.* In achieving this overarching project aim, several specific and cumulative aims were identified.

Stemming from my observation that temporal perspective and interpersonal control cognition appear pivotal to both PSU and homelessness, the current project aimed to target these traits in my investigations. Prior to experimental exploration with PEH with PSU, a prominently vulnerable group which is not regularly considered within PSU research, I decided it would be apt to first obtain a robust knowledge of the role played by these selected psychological factors during PSU with a general population. Upon deeper review of the literature, I observed several discrepancies within a wealthy body of work examining the role of Locus of Control (LoC) for PSU recovery. In response to this, I believed it important to better define this role; thus, my first specific aim was to *examine the role played by LoC to substance use outcomes for PSU treatment service users.*

Following this systematic review, I wished to conduct experimental investigations with PEH in PSU treatment. However, upon selection of my cognitive assessments, I noticed a substantial middle-class bias to items within. In acknowledging once again the particular

vulnerability of this population, I decided to *entreat an* Experts by Experience *group of PEH in PSU treatment and PSU treatment professionals to aid the design process of my experimental studies.* This formed my second specific aim.

Prior to investigating potential differences in the cognitive journeys to PSU recovery for currently housed and homeless individuals, I thought it prudent to first detail whether baseline cognitive differences may exist between these groups. Recognising the significant impact varying levels of psychoactive substances may enact on such an investigation under normal circumstances, I decided to recruit currently housed and homeless people early on in their PSU treatment programmes, i.e., within the first six months. Thus, the third aim of this project was to *examine whether baseline cognitive differences may exist between currently housed and homeless individuals*.

After baseline cognitive dispositions relative to the constructs detailed in Section 1.6 had been extracted, I aimed to see whether these may differentially predict treatment outcomes for currently housed and homeless peoples. Due to various unknowns regarding self-report substance use for people with PSU, I decided to use the number of recurrences of substance use, or relapses, during their first six months of residential treatment as an accepted empirical proxy. In this way, my fourth specific aim was to *investigate whether temporal perspective and interpersonal control cognitive may differentially predict substance use outcomes for currently housed and homeless peoples.*

In recent years, a brief, simple, and easily implementable cognitive-reframing intervention has demonstrated impressive efficacy in reducing the problematic use of various substances through the cognitive trait Delay Discounting (Stein et al., 2016). Once again acknowledging the vulnerability of my target population PEH with PSU, rather than exposing a large such sample to this relatively novel intervention, which could trigger stress or upset, I decided to run a Proof-of-Concept (PoC) investigation to trial its implementability with a

small sample of this population. Thus, my final aim was to *trial an investigation into the potential efficacy of a simple, brief, and easily implementable intervention with PEH in PSU treatment.*

1.8 Thesis Conspectus

This thesis comprises seven chapters. The current chapter, Chapter One, introduces the background research required to contextualise this project and the rationale for its performance. Chapter Two outlines the stakeholder engagement strategies employed to appropriate all measures and methods used throughout this project to this notably marginalised group. Chapter Three describes a systematic review conducted to investigate the potential role played by an interpersonal cognitive trait, *Locus of Control* (LoC), in PSU treatment service users' substance use recovery. Chapter Four details a between group comparison conducted on cognitive profiles of housed, homeless, and previously homeless PSU treatment service users. Chapter Five explores whether these investigated cognitive traits may differentially predict PSU recovery according to housing history. Chapter Six conveys the efficacy of a brief abstinence enhancing intervention via LoC with PEH in residential medical detoxification treatment. Chapter Seven discusses the potential implications of this project for the field and recommendations for future professionals who may wish to improve PSU recovery outcomes for individuals with, and without, homes.

Chapter Two. General Methodology

2.1 Introduction

The experimental research described in the following sections of this thesis are distinct but interact substantially. To elucidate the various ways in which these studies relate, this chapter will clearly detail the overarching PhD project methodologies as well as study-specific methodologies utilised throughout this project. It will also clarify how earlier studies informed later investigations. As described in Section 1.3, homelessness is a nebulous experience. Consequently, dividing participants into groups according to their homelessness experience required substantial empirical consideration which is described in this chapter. To highlight the potential impact of substance use, lifetime trauma, and comorbid psychiatric issues on the results obtained in subsequent chapters, Table 2.1 presents the characteristics of the three experimental groups comprising the longitudinal study in this PhD. One of the major investigative approaches employed throughout this project is *stakeholder engagement*. The research and theoretical foundations to this approach are firstly provided, followed by the specific methods used throughout this project. A reflection and critical analysis of these overarching processes is finally provided in the Discussion section.

2.2 Overview of Research Comprising this Thesis

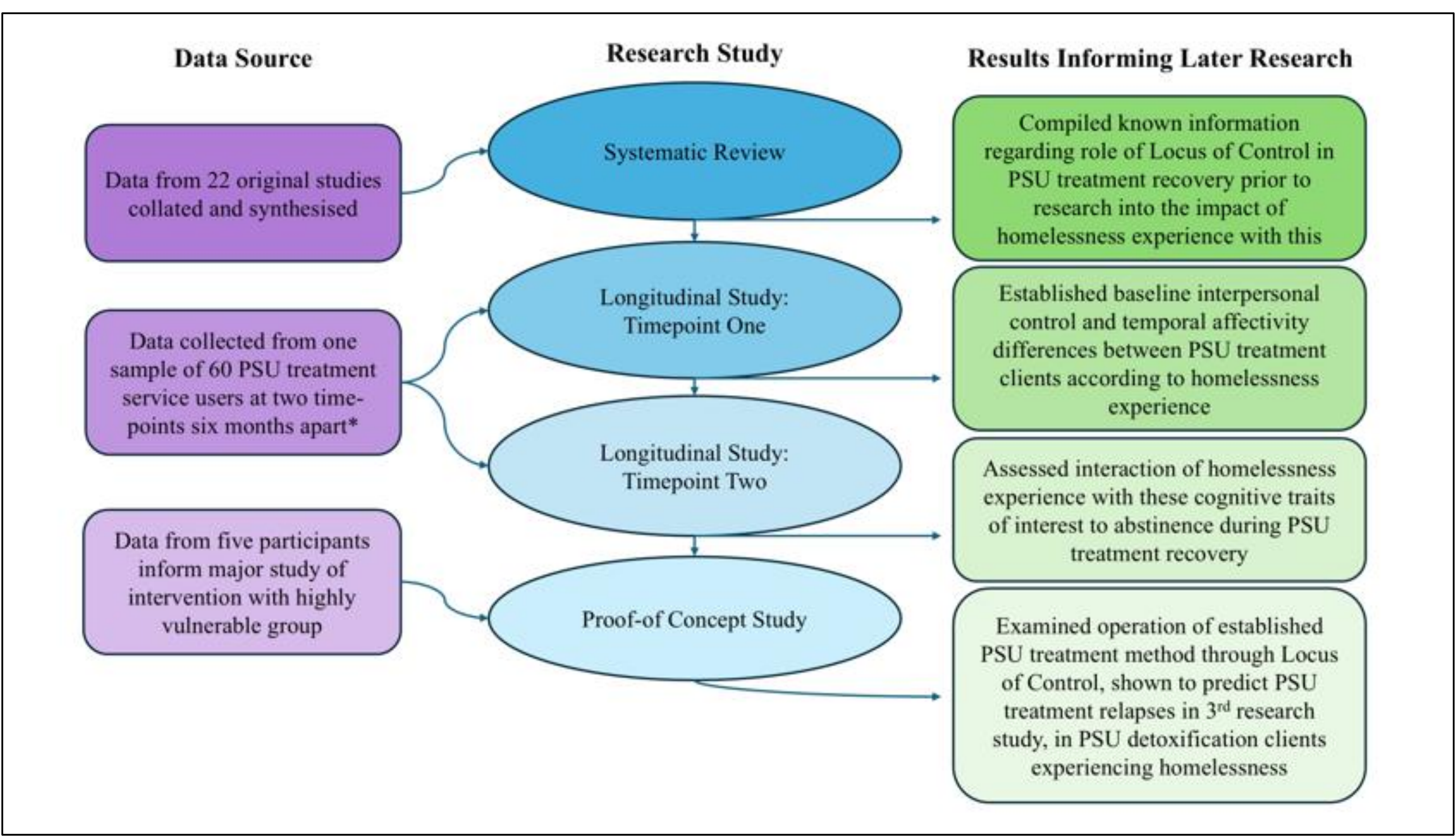
The research studies comprising this thesis are distinct but related. This section will overview the specific interplay between these studies: namely, how earlier studies inform subsequent studies and the origins of data for each study. It will describe the process by which the participants informing the major longitudinal study were separated into comparative groups according to their prior experience of homelessness, and finally, Table 2.1 outlines the traits of each group pertinent to the longitudinal study research questions and statistical analyses.

2.2.1. Interplay of Research in this Thesis

This PhD thesis comprises three research studies: one systematic review, one major longitudinal research study with two data collection timepoints and two separate research questions, and one Proof-of-Concept study trialling a novel research design. These are distinct studies answering unique research questions which, when combined, elucidate the specific role of a cognitive trait of interpersonal control for PSU recovery, how this and other cognitive traits pertinent to PSU may function differently in PEH, how these alterations may affect substance use recurrence/relapse during PSU recovery, and if a major study into the potential usefulness of an established cognitive PSU intervention with PEH in PSU detoxification treatment via identified cognitive traits of interest (within the thesis) is feasible. These studies were conducted in chronological order, and, as such, findings from earlier studies inform the research questions and inferences drawn from later studies. The ways in which these distinct studies interact are outlined graphically via flow diagram presented in Figure 2.1.

Figure 2.1

Flow Diagram Graphically Presenting Data Origins and Results Informing Later Research Directions for Each Study Comprising This PhD



*Data for one participant was not available at Timepoint Two, as their data did not save to the organisation's system – consent was obtained for my academic team to collect this information from this participant

2.2.2 Longitudinal Study Research Design

Chapters Four and Five of this thesis describe a longitudinal research study in which data was collected from 60 PSU treatment participants approximately six months apart during a residential PSU treatment admission. Housing histories and cognitive assessments of interpersonal control and temporal affectivity were conducted earlier in their treatment admission and consent to collect relapse data from their service providers was collected towards the end of their admission. The goals of this longitudinal study were bimodal;

- To investigate the interaction of homelessness experience with cognitive traits pertinent to PSU recovery, and
- To investigate the potential interaction with the role of these traits in abstinence during PSU recovery

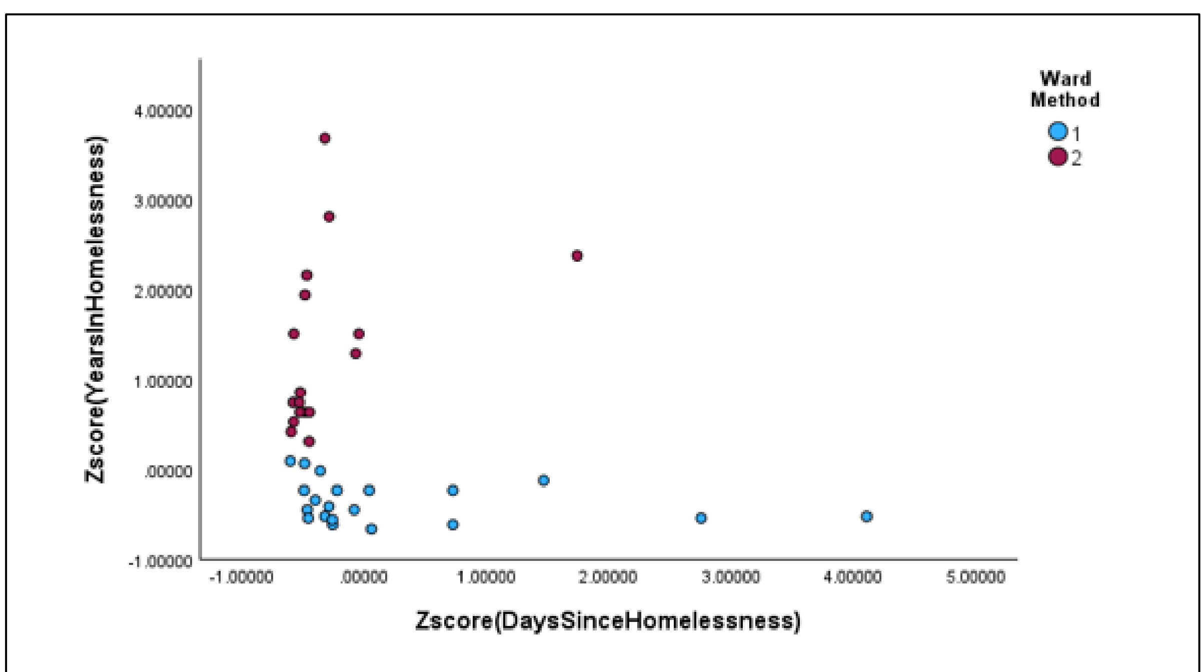
2.2.2.1 Division of Longitudinal Study Participants into Groups According to Homelessness Experience. To examine these hypotheses, conceptualisation of 'homelessness' for statistical analyses first had to be conducted. Prior to commencing timepoint one data collection, the original intention for these studies was to run comparative analyses between two categorical groups of participants either experiencing homelessness or housed. However, as initial assessments were conducted, the reality of homelessness as a state, not trait, variable emerged; i.e., participants described circumstances where they lived in a two-bedroom apartment for the nine months pre service entry but were between homeless hostels and rough sleeping on the streets for the eight years prior to this, or had been sleeping on a friend's couch for 5 weeks before treatment entry but with their partner and children for 12 years before that. Such assessments raised the question: "Who is more homeless?", or perhaps more specifically: "Whose cognition is altered by homelessness?".

Quantifying homelessness according to duration, time since, and severity, as per previous scales was considered (Argeriou et al., 1995; Farero et al., 2024; Milby et al., 2005).

However, this was deemed too sensitive due to the novelty of including homelessness as a variable in studies of PSU treatment. Thus, it was deemed more appropriate to more specifically categorise these participants. Consequently, an agglomerative hierarchical cluster analysis using Squared Euclidean distance and Ward's method was run in SPSS 30. Standardised z scores for 37 participants with any prior homelessness experience were input for two variables: 'Years in Homelessness' and 'Days Since Homelessness'. The most appropriate solution revealed by this analysis was a two-factor solution, as depicted in Figure 2.2.

Figure 2.2

Scatter Plot Revealing Two-Factor Solution of 37 Participants in Longitudinal Study With Any Homelessness Experience



This solution splits participants with homelessness experience according to the time in homelessness as opposed to the time since homelessness variable. However, it is notable in this scatter graph that cases tend to appear at the lower end of either or both variables, i.e., along either axis of the chart. In this way, it appears that participants who are currently homeless (until residential PSU treatment entry) tend to have been homeless for longer

periods of time, and those who now live in stable and independent accommodation, but have prior homeless experience, were in homelessness for shorter periods of time, while some participants with less time since homelessness were also in homelessness for shorter periods of time. It would appear that this third cohort at the intersection of the two more defined groups could be included with either group. Combining this observation alongside the existing literature on psychological function in homelessness which for homelessness duration is scant and indicates little to no psychological change (Scutella & Johnson, 2018), but for time since homelessness is well-established and indicates local yet not global psychological changes (See Section 1.3.7), it was accordingly decided to separate participants into the three categorical groups: 'Current Housed' with no homelessness experience, 'Current Homelessness' for those experiencing homelessness until treatment entry, and 'Prior Homelessness' for those with prior homelessness experience but who were in stable, independent accommodation at residential PSU treatment entry.

2.2.2.2 Characteristics of Longitudinal Study Participant Groups. Several characteristics are understood to systematically influence cognition, such as gender, age, and ethnicity. With respect to PSU populations, age of substance use onset and the quantity of substances consumed over time are of particular importance (Ramey, & Regier, 2019; Vonmoos et al., 2014). Chronic use of different substances is shown to exert distinct psychological changes which are compounded in polysubstance users (Bolla et al., 2000; Crowe & Stranks, 2018; Gruber et al., 2007; Goldstein et al., 2004; Verdejo-García et al., 2007). Thus, to accurately interpret findings from this PhD's longitudinal study, the characteristics that are known to impact PSU recovery must be outlined for each comparative group. Table 2.1 conveys this information for the 60 participants who completed residential history and cognitive assessments at timepoint one.

Table 2.1

Characteristics of the Three Groups Devised to Investigate the Interaction of Homelessness With Cognition and Abstinence During PSU Recovery

Variable	Current Housed	Current Homelessness	Prior Homelessness
N	24	24	12
Organisation	3 DSC (12.5%) : 21 CTC (87.5%)	10 DSC (42%) : 14 CTC (58%)	2 DSC (17%) : 10 CTC (83%)
Gender	16 M (67%) : 8 F (33%)	15 M (62.5%) : 9 F (38.5%)	10 M (83%) : 2 F (17%)
Age	M = 32.85 SD = 7.71	M = 39.17 SD = 9.63	M = 35 SD = 6.47
Ethnicity	23 WI (98%) : 1 WIT (1%)	24 WI (100%)	9 WI (75%) : 1 WIT (8%) : 2 CI (17%)
Years in Homelessness	M = .0008 SD = .00408	M = 5.88 SD = 5.08	M = 3.7 SD = 4.66
Days Since Homelessness	-	M = 124.21 SD = 92.66	M = 762.08 SD = 801.32
Years in Prison	M = 1.63 SD = 4.4	M = 3.7 SD = 7.9	M = 3.2 SD = 3.5
Age Substance Use Started	M = 14.13 SD = 3.42	M = 12.54 SD = 3.19	M = 12.17 SD = 1.9
Number of Substances Started in First Year of Substance Use	M = 1.42 SD = .78	M = 1.25 SD = .44	M = 1.17 SD = .39
Years of Substance Use	M = 18.58 SD = 7.96	M = 25 SD = 9.34	M = 20.5 SD = 5.71
Lifetime Relapses	M = 1.21 SD = 1.5	M = 2.96 SD = 3.99	M = 3.42 SD = 2.64
Days Since Last Psychoactive Substance Use	M = 136.96 SD = 138.35	M = 138.46 SD = 87.10	M = 108.08 SD = 64.69
Treatment Days Until Assessment	M =104.71	M = 7	M = 110.42

	SD = 100.57	SD = 90.69	SD = 65.86
Number of Problem Substances Entering Treatment	M = 2.46 SD = 1.18	M = 2.58 SD = 1.1	M = 2.17 SD = 1.19
Alcohol	17 (70.83%)	14 (58.33%)	6 (50%)
Cannabis	8 (33.33%)	8 (33.33%)	3 (25%)
Tablets	7 (29.17%)	9 (37.5%)	8 (66.67%)
Cocaine	20 (83.33%)	19 (79.17%)	5 (41.67%)
Heroin	5 (20.83%)	10 (41.67%)	4 (33.33%)
Ketamine	1 (4.17%)	1 (4.17%)	0 (0%)
Cathinones	1 (4.17%)	0 (0%)	0 (0%)
Methamphetamine	0 (0%)	1 (4.17%)	0 (0%)
Methadone	0 (0%)	4 (16.67%)	0 (0%)
Lifetime Trauma			
Brain Injury	0	1	0
Child Sexual Abuse	0	2	0
Intimate Partner Violence	0	2	0
Psychosis	3	4	1
Benzodiazepine Seizures	2	1	0
	1	1	2
Psychiatric Comorbidities	0 : 18 (75%) 1 : 4 (16.66%) 2 : 2 (8.33%)	0 : 22 (91.66%) 1: 2 (8.33%)	0 : 12 (100%)
Responsibility OCD	1	0	0
GAD	1	0	0
ADD	1	0	0
ADHD	1	0	0
Psychosis	2	0	0
Schizophrenia	1	0	0
Depression	1	1	0

EUPD	0	1	0
Psychoactive Medicines Current	0 : 16 (66.66%) 1 : 6 (25%) 2 : 2 (8.33%)	0 : 22 (91.66%) 1 : 0 (0%) 2 : 2 (8.33%)	0 : 10 (83.33%) 1 : 1 (8.33%) 2 :1 (8.33%)
Mirtazapine (Antidepressant)	1	1	0
Seroquin	1	0	0
Sertraline	1	0	2
Antidepressants	1	0	0
Amitriptyline	1	1	0
Anticonvulsant	1	0	0
Clotiapine (Antipsychotic)	1	0	0
Olanzapine	2	0	0
Mirap	1	1	0
Quilivant	0	1	0
Zopiclone	0	0	1
Disclosed Suicide Attempts Previous 18 Months	0 : 20 (83.33%) 1 : 1 (4.16%) 2 : 1 (4.16%) 3 : 1 (4.16%) 6: 1 (4.16%)	0 : 20 (83.33%) 1 : 3 (12.5%) 3 : 1 (4.16%)	0 : 10 (83.33%) 1 : 2 (16.66%)

Note. Data for just one participant was not available at timepoint two, as this data did not save to the organisation's system; this participant provided consent for their relapse during treatment data to be collected by my academic team.

[a]A reminder that clinical diagnoses were not assessed during the course of the research but were instead self-reported by participants. Therefore, it is possible that participants had undiagnosed conditions, measurement of which were beyond the scope of the current study.

[b]In the organisation row, DSC stands for Dublin Simon Community while CTC represents Coolmine Therapeutic Community. With regard to Gender, M stands for Male and F stands for Female. In Ethnicity, WI represents White Irish, WIT White Irish Travellers, and CI Caribbean Irish Individuals. Under Psychiatric Comorbidities, OCD represents Obsessive Compulsive Disorder, GAD stands for Generalised Anxiety Disorder**,** ADD reflects Attention Deficit Disorder, and ADHD Attention Deficit Hyperactivity Disorder.

2.3 Overview of Stakeholder Engagement in the Current Project

This PhD was funded through the Irish Research Council's Enterprise Partnership Scheme in collaboration with Dublin Simon Community, for whom I had worked for two years prior to the commencement of the project (EPSPG/2021/258). Terms and conditions of this scholarship stipulated that: 'The Enterprise Partner will nominate an Enterprise Mentor from the organisation to work with the awardee and their supervisor, to offer advice and to create a link with the Enterprise Partner's activities. Contact should be maintained between the enterprise mentor and the awardee throughout the duration of the scholarship'.

Three Enterprise Mentors were assigned to this project throughout its course, for reasons detailed in Section 2.3.2.1.2, below. My academic team met with these Enterprise Mentors at intervals deemed important to the project's ecological value and validity. This resulted in more frequent meetings during the project's design and experimental research data collection and analysis phases, and less often during the systematic review data collection phase. Each Enterprise Mentor offered insights and advice that were invaluable to the design and execution of my project, outlined in further detail in Section 2.3.2.1.2, below.

Beyond this contact with the DSC Enterprise mentors, appreciable stakeholder engagement activities were conducted with PSU service staff and users throughout the course of this project to assist with its design, implementation, and dissemination. The overall contribution of these activities to the current PhD project were considerable, and well beyond the stipulation of the funding body. Consequently, the current section will first discuss the research and evidence underpinning stakeholder engagement activities in research. It will then describe the specific stakeholder engagement activities conducted with staff and service users throughout the course of this project, and the contribution of these to the project's execution and ecological validity.

2.3.1 Literature Underpinning Stakeholder Engagement in Research

Stakeholder engagement refers to the involvement of relevant persons (patients, caretakers, healthcare professionals, etc.) in the scientific research being conducted into problems that affect them (Green et al., 2020; Trischler et al., 2018). In this way, the research is being conducted 'with' or 'by' members of the public, rather than 'to' or 'about' them (Holmes et al., 2019; INVOLVE, 2012). It is a methodological approach whereby the diverse expertise of individuals who engage with a complex issue in various ways are drawn upon to develop innovative solutions (Blomkamp, 2018; Heiss, & Kokshagina, 2021; Parsons et al., 2016; Vaajakallio et al., 2013). It responds to the limitations of top-down research approaches, where researchers advise readers on how best to deal with complex situations from outsider standpoints (Antonini, 2021; Austin et al., 2020; van Leeuwen et al., 2022). It can be employed by involving stakeholders in many ways at various stages of the research process from design and data collection to data analysis and report write-up (Cluley et al., 2022; Forbat et al., 2009). However, this flexibility complicates its operationalisation and consequent employability for infrastructure, guidance, and support (Biddle et al., 2021; Cartwright & Crowe, 2011). Consequently, the implementation of stakeholder engagement remains unreliable, with topics concerning individuals affected by multiple intersecting vulnerabilities culminating in considerable health and care disparities most acutely neglected (Moll et al., 2020; Price et al., 2018; Voorheis et al., 2023). This poor integration to health and research protocol prolongs uncertainty surrounding its efficacy (Forbat et al., 2009; Greenhalgh et al., 2019; Ives et al., 2013; Staley, 2013).

Despite promotion from various systematic reviews, the evidence behind stakeholder engagement has been criticised as weak and anecdotal with tokenistic and inconsequential implementation (Jones, 2021; Petit-Zeman, & Locock, 2013; Staniszewska et al., 2011; Staniszewska et al., 2008). However, conjunct with the abounding empirical support for

enhanced decision-making by diverse teams in industry (DiStefano, & Maznevski, 2000; Hunt et al., 2015; Li et al., 2016; Mannix & Neale, 2005), stakeholder engagement increases researcher exposure to alternative viewpoints, critically those of the affected (Maccarthy et al., 2019; Staley, 2015). Consequent research is thus more likely to consider applied issues and be reported using sensitive and accessible language (Hannigan, 2018; Reynolds et al., 2021; Staley, 2015); noteworthy considering the significant influence writing style exerts on readers' perceptions of issues (Rybe et al., 2021; Van den Besselaar, & Mom, 2022). This synergy is found to promote innovation and thereby more effective solutions to modern problems (Wolstenholme et al., 2017). Its benefit is so highly revered that several funding bodies and publishing journals now stipulate stakeholder engagement for consideration of collaboration (Bagley et al., 2016; Lang et al., 2022). Consequently, a proliferation of academic papers with relevant stakeholders listed as contributing authors has occurred in recent years (Price et al., 2018). Vis-à-vis, stakeholder engagement yields considerable benefits for researchers and stakeholders (Brett et al., 2014).

2.3.1.1 Stakeholder Engagement With Marginalised Groups and PEH Who Use Substances. As discussed, stakeholder engagement bridges the gap between health researchers and stakeholders, fostering enhanced solutions to complex problems (Banner et al., 2019; Drinkwater, 2021; Ormstad et al., 2021). This process is exceptionally important with marginalised groups, whose life experiences often vary substantially from the general population and, as per their marginalisation, are not as frequently accessed nor considered in the common zeitgeist (Weatherson, 2014; Wimmer, 2024). The more marginalised the population, the less their voices are heard, and the less their experience influences the policies which often affect them the most (De Abreu Lourenço et al., 2021; McGarry, 2024; Shevlin & Rose, 2022; Vaditya, 2018). Moreover, the more marginalised the population, the more

distinct their lifestyle is likely to be (Altay et al., 2021; Cooms et al., 2024; Gopaldas & DeRoy, 2015; Malik, 2021; Sifris, 2016).

The current project considers the potential psychological impacts of homelessness on PSU recovery. The importance of stakeholder engagement in research regarding individuals with multiple disadvantageous characteristics is regularly proclaimed in the literature (Kapilashrami et al., 2023; Reynolds et al., 2021; Roche, et al., 2020; Shimmin et al., 2017). Within this, PEH and individuals who use psychoactive substances are particularly highlighted (Donald et al., 2022; Foster et al., 2021; Gordon et al., 2019). PEH are an extremely marginalised group in contemporary societies, who rarely interact with mainstream society beyond specialised service staff (Belcher, & DeForge, 2012; Fitzpatrick & Stephens, 2014; Hughes et al., 2017; Mahlangu, & Kgadima, 2021; Watson et al., 2016). PEH also live vastly different lives from domiciled people, usually exerting minimal choice over where they live, who they live with, how long they stay, what they eat, when they eat, how long they sleep etc., as well as being considerably nomadic (Burn, 1992; Pable, 2012; Parsell, 2010; Slesnick et al., 2017). Not only is their day-to-day life completely different from individuals with houses, but they are also frequently affected by various traumas (Buhrich et al., 2000; Deck & Platt, 2015; Parsell, 2010; Radley et al., 2010; Simpson et al., 2018). Trauma has been shown to impact psychological functioning and perspective across several indices (Beck et al., 2009; Collins & Long, 2003; Gluhoski, & Wortman, 1996; Van der Kolk, 2003). These factors considered, PEH not only hold exceptionally different worldviews from otherwise matched housed samples (Hodgetts et al., 2012; Savonen et al., 2022; Shier et al., 2010; Sifris, 2016; Yavorski, 2021), but particularly and importantly from academics who mostly come from more privileged backgrounds (Morgan et al., 2022). Academics are also known to sometimes use language that is not up-to-date nor sensitive to their research population’s current circumstance (Atayde et al., 2021; Thelwall et al., 2023). Thus, the

requisite to employ stakeholder engagement methodologies with this group, to accurately research their situation, is evident (Agyei-Manu et al., 2023).

2.3.1.2 Experts by Experience Groups. As mentioned above, stakeholder engagement can be conducted at various stages of the research process from research design to report write-up and dissemination stages (Smits et al., 2020). One potent means by which researchers can integrate critical perspectives from the population of study into their work are 'Experts by Experience' (EbE) groups (Foster et al., 2021; Lloyd et al., 2023; Losada Durán et al., 2024; Van Oort, 2020). These groups are part of patient-centred care, an increasingly prioritised healthcare principle in which the opinions of health service recipients are considered throughout healthcare governance (Corring & Cook, 1999; De Witte et al., 2006; Pelzang, 2010). This principle stems from the recognition that healthcare is constructed to serve patients, and that as such, it would be obtuse to omit their perspectives from service design (Bamm et al., 2010; Delaney, 2018; Ferguson et al., 2013; Pulvirenti et al., 2014; Santana et al., 2018; Scrambler & Asimakopoulou, 2014; Stewart, 2001). While healthcare staff steer provision from their stance of education and training, the patients are the 'experts' of many of their needs and can shed light on numerous issues which could otherwise be overlooked (McLaughlin, 2009).

Although clear guidelines on how best to format these groups remain elusive (Boivin, 2021; Robinson, 2014), they typically include 'scene setting', 'cyclical processes', 'appropriate engagement' and 'cultural context' (Lloyd et al., 2023). Scene setting typically includes introducing Experts to project aims, their irreplaceable position and potential contribution as Experts, relevant policies and procedures, and session aims (Moltrecht et al., 2022; Morote et al., 2022). Cyclical processes refer to the iterative manner by which many investigators invoke EbE guidance, such that outcomes of one session are integrated to the study and then presented for further feedback in later sessions to ensure cohesion (Davison et

al., 2022; Zieschank et al., 2021). Appropriate engagement refers to adjustments made for vulnerable groups to reduce risk of stress or upset arising from their roles (Brooks et al., 2021; Povey et al., 2022). Recognising the cultural context identifies steps taken to consider the modus operandi of Experts and, if appropriate, integrate these to group sessions yielding more authentic responses and furthermore enhancing their representation in research (Culbong et al., 2022). While these are all powerful tools to tailor EbE groups to study aims, it must be noted that their efficacy appears linked to their relevance to specific study aims (Boivin, 2021; Lloyd et al., 2023).

2.3.2 Stakeholder Engagement Activities in the Current Project

Several stakeholder engagement activities were conducted with PSU service staff and service users throughout the course of this PhD. This section details first the activities conducted with staff from two separate PSU treatment organisations: DSC and CTC. It then describes formal and informal activities conducted with PSU service users across both organisations. Lastly, dissemination activities with PSU service staff and users are described.

2.3.2.1 PSU Service Staff. My academic research team collaborated with PSU service staff for bi-directional purposes at various stages throughout this project.

2.3.2.1.1 Dublin Simon Community. This project was partially funded by, and conducted primarily in collaboration with, the Irish homeless services non-governmental organisation (NGO) Dublin Simon Community (DSC). NGOs are formal, self-governing, voluntary organisations involved in helping individuals and communities to achieve their social, economic, and cultural goals which are disparate from corporate and bureaucratic organisations and do not distribute profits but are accountable to stakeholders (Kuruvila, 2015). DSC "supports people to exit homelessness, access and retain homes, and rebuild lives by delivering housing, health, and well-being services" (DSC, 2024a). These include PSU services, such as a blood-borne virus and drug stabilisation unit, an alcohol and

benzodiazepine medical detoxification unit, an early recovery unit, medium- and low-support transitional housing, as well as a recovery aftercare support worker (DSC, 2024b). As this project was partially funded by DSC, I ensured my aims and conduct were aligned with their organisational vision, mission, and values throughout (DSC, 2024a). To assist this, the organisation appointed an Enterprise Mentor to my project.

2.3.2.1.2 Enterprise Mentors. Three successive DSC Enterprise Mentors were assigned to this project during the course of this project. These Mentors influenced the course of this project, through advising queries presented by my academic team from their practice-based expertise, actively critiquing investigative methods suggested by my team, or generating novel additional practices to enhance the project's operation. These advancements were made through regular discussion and consensus regarding study aims, methods, and ultimate progress.

When initially approached to collaborate, Dublin Simon Community's Head of Specialist Services was appointed as this project's Enterprise Mentor. My academic supervisors and I met with this mentor on a regular basis, with respect for her own busy schedule, throughout the second year of this project. These meetings occurred at minimum quarterly, and more frequently during critical stages such as ethics applications and participant recruitment, to discuss project progress and future directions. This mentor was critical to informing practical guidance, such as CCTV coverage within their services, on-site support available, service user schedules, relevant staff contact information, toxicology tests used, various PSU programmes offered by their organisation, as well as programme features. My academic supervisors and I also regularly discussed changes to the current substance use climate in Ireland and Dublin specifically, as well as the particular profiles of DSC's various services' users. Following iterative discussion between this Enterprise Mentor, my academic supervisors, and I about study aims, I opted to change the investigative group for this PhD's

longitudinal study from this organisation's Detox to Recovery Service users. This decision enhanced participant sobriety, and reduced influence from varying residual psychoactive substances and quantities, as well as the effects of acute withdrawal on cognition. Results engendered would thus more exactly stem from unadulterated cognition as opposed to substance-affected cognition. Subsequent to this, the Enterprise Mentor arranged a meeting between my academic team and DSC's Recovery Service managers, which was beneficial to gain their potentially nuanced insights and feedback on the project as well as to delineate practical elements regarding its execution. Possibly the most important advancement made with this Enterprise Mentor, however, was the EbE group. Upon reading the cognitive assessments selected for this study, and having come directly from employment as a support worker in homeless PSU services, I couldn't help but notice a significant middle-class bias to scale items, both in terms of content and language. Many of DSC's Therapeutic Services' users initiated psychoactive substance use at particularly young ages. Early school dropout and unemployment are also over-represented in this sample. I thus decided to adapt my selected measures for use with PEH in PSU treatment; an endeavour which the Enterprise Mentor enthusiastically supported and suggested achieving this via an EbE group.

Halfway through this project's third year, DSC as an organisation underwent substantial changes to its managerial structure. This project's Enterprise Mentor was assigned the specific role of overseeing the construction of a purpose-built establishment for their Therapeutic Services, which comprised a full-time role in-and-of itself. The first Mentor's role in my project was thus re-allocated to her successor and former Recovery Service manager. This second Enterprise Mentor brought new insights, considerations, and priorities; all of which were reviewed earnestly. Perhaps most significantly, this Mentor highlighted the heightened risk of addiction supplanting (replacing one addiction with another) in early recovery; a factor which had not yet been considered by my academic team. One of the

cognitive measures selected by my team to assess my traits of interest takes the form of a computerised task in two parts. In the original version of this task, the second stage involved asking participants to guess whether the playing card back presented to them was higher or lower than five, excluding picture cards. This Enterprise Mentor spotlighted the notable resemblance of this task to “higher or lower” betting games, potentially triggering to alternative addictions for people in early PSU recovery. This observation was overwhelmingly supported by my team, and efforts to replace this element of the task without compromising its integrity commenced immediately.

This Mentor also highlighted the potential negative implication of relapse as ‘failure’ for participants via use of the phrase “recovery success” to describe abstinence in original study materials. This was further agreed upon and accordingly adapted. They supported my Dublin City University (DCU) and DSC Research Ethics Committee application amendments; both of which were approved, but required the amendments described in this section alongside EbE group feedback. They connected us with a list of PSU treatment services in Ireland to contact for potential collaboration through the provision of a comparative non-homeless sample for these investigations. They also supported the data collection phase of my longitudinal study, in terms of assessment room selection, contacting relevant managers, and arranging recruitment addresses. I further consulted this Mentor to validate descriptions given by participants if they mentioned using substances unrecognised by my academic team. This Mentor prioritised the implications that this project would have on the delivery of DSC’s Therapeutic Services. They ensured that the project’s aims would enhance their service delivery and arranged a slot for me to provide a talk about this work at their Full-Team Meeting at the beginning of my fourth PhD year.

This second Enterprise Mentor went on maternity leave halfway through this project’s final year. The third Enterprise mentor was a manager of one of the Recovery Services.

Similar to the first and second, this Mentor brought original ideas, perspectives and assistance to the project. They assisted with locating discharged service users and extracting outcomes data from service files for Study Two and Study Three, as well as assisting procedural considerations, ethics applications, and liaison with Detox Unit staff for Study Three. Prior to becoming Mentor, they also introduced the concept of a “Staff Info” poster (Appendix G) to convey all relevant study information, including roles of various members, agreed procedures, and how to communicate the study to service users; particularly important considering these under-resourced services often employ ‘flexi’ intra-organisational staff or ‘relief’ staff from social care agencies who may not be fully briefed to all service activities to cover unfilled shifts.

2.3.2.1.3 DSC Treatment Services Quality Team. My academic team also liaised with DSC’s Treatment Services Quality Team prior to receiving Ethics Committee Approval from their organisation. The most pertinent point raised by this team pertained to their service users’ capacity to provide consent to prospective data which had not yet been created. More specifically, this team maintained that their service users could not legitimately permit my academic team’s access to their personal treatment files to collect their potential substance use during treatment data following their discharge during their cognitive assessment which would take place earlier in their admission. They stated that as this was sensitive data, and most service users are likely to assume that they will not relapse early in their admission, their willingness to allow access to their potential substance use data may vary as a consequence of this potential use. Thus, my academic research team agreed in collaboration with the DSC Treatment Services Quality Team to acquire participants’ consent to access this data towards the end of their treatment admission or following their discharge. To facilitate this, Recovery Service managers would notify my academic team each time a service user was planned to discharge, or discharged unplanned, using their homeless services

identification number. This *Pathway Accommodation and Support System* (PASS) number is assigned upon registration as homeless in Ireland to facilitate continuity of care between relevant services. They are only identifiable to individuals with access to this integrated platform, i.e., homeless service personnel. In this way, my academic team would only be able to identify the PASS numbers shared with us by participating service users.

2.3.2.1.4 Coolmine Therapeutic Community. Coolmine Therapeutic Community (CTC) is another Irish NGO that "provides a range of quality community and residential services to empower people and their families to overcome addiction" (CTC, 2024a). These include segregated residential recovery services for men and women with or without children, community and day services, methadone detoxification, re-integration services, and lifelong aftercare (CTC, 2024b). This organisation services people with and without houses and was thus invited to collaborate via provision of access to a comparative sample for this project. Following agreement to collaborate, my academic team met with CTC's Residential Services managers to discuss project aims and pragmatic aspects regarding its execution. With exception to this organisation's slightly varied ethos and treatment approach, such as no phones and service users submitting and reviewing daily 'slips' of other service users' non-conducive behaviours ranging from messiness and slouching to possession and use of psychoactive substances, assessments with this cohort could remain largely similar to those with DSC's service users. Liaison with this organisation's Residential Men's and Women's Recovery Service Managers upheld for approximately 14 months from study three design and ethics application, through cognitive assessments, and until completion of participants' six-month treatment outcomes data collection. Importantly, due to my interest in the potential impact of homelessness on interpersonal control cognition and its role in PSU recovery, conversations with CTC staff also highlighted the possible confounding role of service users who were not in their services strictly by autonomous choice, but due to court-order, or

shock-pregnancy. This information was subsequently collected from all participants' during assessments and considered in data analyses. As part of my academic team's active collaboration with CTC, we were additionally invited to and attended the organisation's '50 Years' celebration, where considerable inspiration was drawn from the highly relevant words shared by Ireland's acting President and former poet, Michael D. Higgins "*Addiction is often seen as a character deficit of the lower socioeconomic classes; however, lower socioeconomic classes would not exist if it were not for the character deficits of the higher socioeconomic classes*".

2.3.2.2 PSU Service Users. DSC and CTC services users were consulted through formal and informal means throughout this project.

2.3.2.2.1 EbE Group for the Current Project. The major means through which the expertise of PSU service users was garnered came in the form of an EbE group as described in Section 2.3.1.2. This group was held upon reflection that the selected cognitive scales may include items that do not apply to a proportion of PEH in PSU treatment or may use language that is uncommon to this population. These sentiments are echoed in the literature for research with marginalised groups and PEH in particular; however, while most appear to corroborate the validity of generalised scales for use with this group (Auquier et al., 2013; Chum et al., 2016; Girard et al., Housing First Study Group, 2015; McCarty et al., 1994; Stone et al., 2019; Wong, 2000; Zanis et al., 1994; Zemmour et al., 2016), asymmetrical housed/ homeless interpersonal cognition results emerge particularly surrounding loneliness (Bower et al., 2022), and some research groups have pursued the creation of cognitive scales specifically for use with PEH (Sullivan et al., 2001). Considering in particular the current project's focus on interpersonal cognition, validation of the scales selected for use was deemed necessary.

Consequently, an EbE group was arranged following ethical approvals but prior to data collection with DSC Detox Service users. This cohort was selected to represent PEH early in residential PSU recovery treatment whilst avoiding Recovery Service users, who would be approached shortly thereafter to participate in the main study. As a substantial proportion of DSC's Recovery Service users enter from the organisation's Detox Service, this group was deemed highly similar, with the exception of being a few months earlier in their recovery journey. It was further less likely that this EbE would exclude large numbers of potential participants via recent exposure to study materials and collaboration in study design, as these service users do not exclusively progress to further DSC Recovery, but also to Recovery services provided by other organisations, while others may relapse before reaching this stage. In case the EbE group decided the selected measures required alteration for use with PEH in PSU treatment, relevant approvals were obtained from scale designers (Appendix E) prior to the occasion. These approvals further covered scale presentation via the psychology experiment software, SuberLab 6.0. Ethics approval was also obtained from both Dublin City University and DSC Ethics Committees prior to EbE group execution (see Section 4.2.5).

2.3.2.2.2 The EbE Group. One EbE group was facilitated by myself and one academic supervisor (C.F.) in the DSC Detox Service group meeting room. As DSC's Detox Service is an adult unit, all service users deemed by the service Project Worker likely to comprehend the group, as per their English language or cognitive capacity, were permitted to take part. My team's enthusiasm for female participants was also communicated to the service Project Worker in the week prior to the group. On the day of the group, the project worker informed all service users present in the unit, as they are permitted to leave for a few hours each day, that psychology researchers wished to speak to them about potentially helping with an upcoming project. Four male service users volunteered to attend the meeting;

service staff did not attend but left a walkie-talkie should anyone in the group become distressed and require assistance.

As described in Section 2.3.1.2, while EbE groups typically include ‘scene setting’, ‘cyclical processes’, ‘appropriate engagement’, and ‘cultural context’, these should be employed only to an extent that is beneficial to study aims and ecological validity. To ‘set the scene’, as per Lloyd et al. (2023), my academic supervisor and I firstly introduced ourselves, our professional backgrounds, and current projects. An overview of the present project’s background and rationale was then described, followed by its aims and proposed methods. The extremely beneficial assistance that the Detox service users present could potentially lend to the project’s ecological validity was then explained, with particular respect to its overarching hypothesis that the experience of homelessness may in fact alter cognition and how individuals respond to stimuli leading to the consequent potential need for psychometric measures, which are generally designed with middle-class Western citizens in mind, to be adapted for use with PEH in the early stages of PSU treatment.

At this stage in the EbE group, participants were asked if they would like to assist my team in tailoring these materials for use with PEH in PSU treatment; all stated that they would like to be a part of this process. Experts were then each presented with an informed consent form (Appendix F) and explained that help in terms of comprehension or answering could be provided if required. This ensured that the informed consent form in its entirety was accessible to all in attendance, reflecting Lloyd et al.’s (2023) ‘appropriate engagement’ guideline. Informed consent forms were completed without problem and stored in a locked cabinet in my office immediately following group cessation. All hitherto proposed study materials were then presented to the group for oral discussion and consensus, a method which both recognised the lower education levels of this group, demonstrating further adherence to Lloyd et al.'s (2023) ‘appropriate engagement’ guideline, and also worked with the Experts in

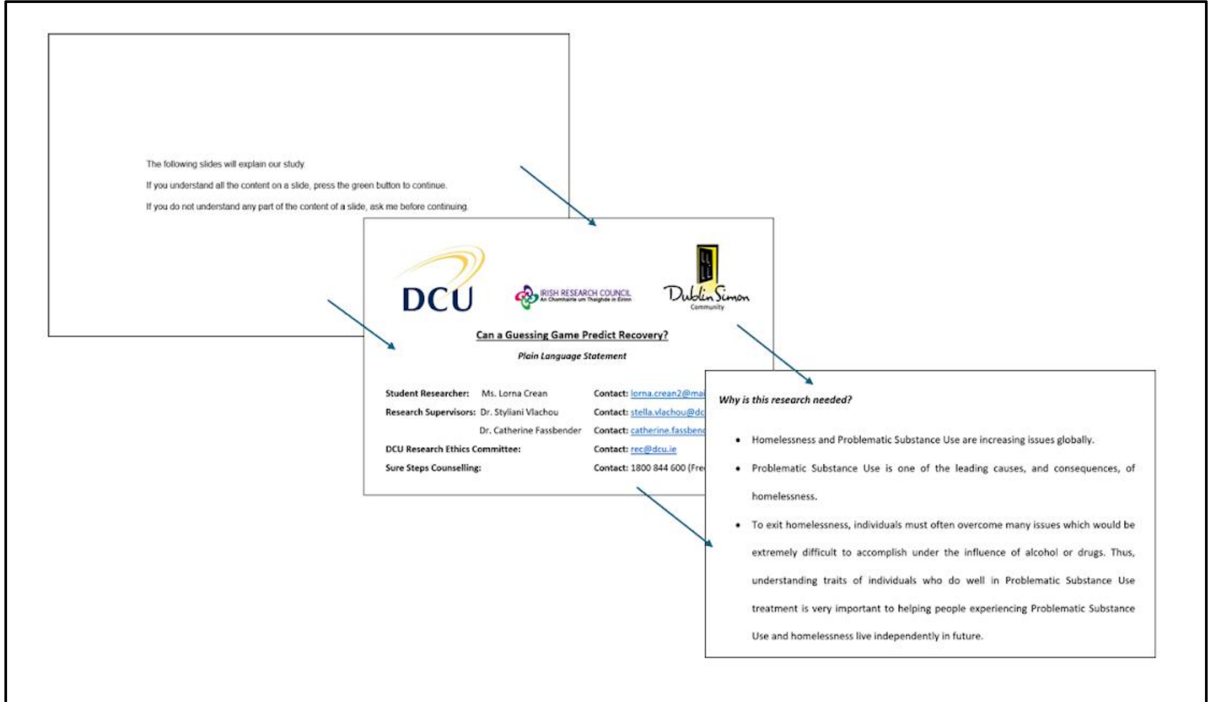
a way that they are familiar with, witnessing Lloyd et al.'s (2023) ‘cultural context’ guideline. The particular insights of interest to the research team were reiterated throughout the process, particularly those regarding language which might seem unfamiliar, outdated, or possibly confusing, and content which may not apply to some PEH in PSU treatment. However, it was also emphasised that all thoughts, suggestions, and feedback were welcome from the Experts' first encounter with these materials, which would be similar to that of prospective Recovery Service participants.

The participant recruitment poster (Appendix H), participant information sheet (PIS; Appendix J), informed consent form (ICF; Appendix L), debrief sheet (Appendix S), contact card (Appendix U), and treatment outcomes informed consent form (Outcomes ICF; Appendix W) designed by the research team were all considered appropriate in terms of language and content for use with PEH early in PSU treatment. Study scales, namely the Addiction Severity Index (ASI; McLellan et al., 1992), Multidimensional Locus of Control Scale (Levenson, 1973; Appendix P), Future Events Questionnaire (FEQ; Miranda & Mennin, 2007; Appendix Q), and Recent Life Events Questionnaire (RLE; Brugha et al., 1985; Appendix R) were further deemed suitable and relevant to PEH in early PSU treatment by the EbE group. To check if the Experts felt any of the potential replacement items prepared by my academic team could make these scales more inclusive to all PEH in PSU treatment, these were also shared. The Experts felt that these adaptations were unnecessary; they explained that even if a service user had no expectations to return to school or drive a car or receive multiple promotions in work, as per some of the items in the original scales, they would be fully capable of envisioning the likely impact or meaning of such an event. They thus felt that any PEH in PSU treatment could respond to these scales as aptly as people with these expectations, and importantly, people in stable and independent residence.

More broadly and theoretically, the Experts were asked if they felt that the cognitive traits selected were of potential relevance to PEH attempting to recover from PSU. They agreed with my hypothesis that the proposed thought patterns were of importance to PSU recovery and were also impacted by the extreme circumstance of homelessness. Lastly, the Experts' opinions regarding this project's implementation, namely in terms of materials presentation, was beseeched. My academic team proposed all study materials be presented and responded to using psychology experiment software, SuperLab 6.0. It was explained that this would take the format of one item per slide for the scales and approximately one paragraph per slide in bullet points for the forms. The researcher would read all forms and scales to the participants and they would respond or move forward using corresponding coloured buttons on a response pad. It was communicated that this was suggested to overcome literacy-based exclusion for people who may not have had the chance to finish school or for whom English is their second language, as I felt that these were important subsections of Ireland's current homeless population and did not believe these circumstances should influence their ability to participate. This method would also further standardise testing across participants. The Experts felt that this was a good way to enhance inclusivity and attain a more representative sample of Ireland's current homeless population. As the Experts did not feel any changes to my proposed study materials were required, formal re-iteration of this EbE group meeting as per Lloyd et al.'s (2023) guidelines was deemed inappropriate with these particular EbE group members and unnecessary to achieving this EbE group's *research design* aims. Figure 2.3 depicts a sample of my proposed PIS presentation via SuperLab 6.0.

Figure 2.3

Proposed PIS SuperLab 6.0 Presentation Shared With the EbE Group of PEH in PSU Treatment



Note. The first image explains to participants how to interact with the PIS, the second depicts the study title and relevant contact information, and the third is an example of how information sections would be presented.

2.3.2.2.3 Arranging Cognitive Assessments. Cognitive assessments took place across five PSU treatment service sites; one early recovery and two medium support houses run by DSC and one male and one female residential recovery service run by CTC. Upon hearing my recruitment address, the vast majority of service users decided to participate. This mediated an influx of assessments in various locations. These assessments were arranged privately between each participant and myself over the phone. PSU service staff were not informed which service users opted to participate so that no onus was felt to do so. However, while arranging an appointment with one client I explained that I would have to see if another potential participant could change their time to accommodate this time and call back to let them know. On hearing this, the client on the phone offered to arrange all DSC early recovery

appointments, as they often had dinner together and could easily work it out then. As this appeared to pose no bias to participation, potential impact on social care received, and offer the willing participant a great opportunity to actively contribute to community research, I agreed to this proposition from the service user and participant. All service users in this service had opted to participate, so sharing PASS ID's (used to volunteer) with the service user research assistant was not required. I told the organising participant the times that they were available to conduct assessments in their service that week and they called back the following day with all assessment times arranged. This collaboration continued for three weeks until all service users were assessed.

Similarly, all service users in CTC's men's service opted to participate following recruitment address. This organisation runs a tight midweek schedule for its service users, so I was advised by the service manager that weekends would be the best time to conduct the cognitive assessments. CTC runs a rank system, with service users admitted for longer periods receiving varying duties throughout their stay. When I arrived at the service on their first Saturday, they were met by one of the service users on duty. This service user set them up in a counselling room and then quickly arranged the three assessments for that day. This collaboration similarly continued for the subsequent month until all service users had participated.

2.3.2.2.4 Contact Cards. Following cognitive assessment, all participants of studies two and three were provided with a contact card containing information for my academic team, the Dublin City University Research Ethics Committee, and the DSC 'Sure Steps' PEH counselling services (Appendix U). They were informed they may use this information should they wish to discuss the study further following their participation, withdraw their data from the study, or experience any distress resulting from their participation. I decided to provide this information on a take-home card so that the participants were more likely to have

it should it be required at a later date. While most studies allow participants to take their PIS home following their participation, all materials of the current study are presented via a psychology experiment software. Without this nuance, I also feel this media is better suited to PEH in recognition of the often nomadic nature of their circumstance; many put the cards into the back of their phone cases, wallets or books. Several of the participants expressed considerable gratitude upon receipt of this gesture.

2.3.2.2.5 Follow-Up Reflection. As noted previously, DSC participants' consent to my collection of their potential substance use during treatment data was collected towards the end of their treatment admission or following their discharge, approximately six months following their initial assessment. I met each of these participants on a one-to-one basis to collect this consent in the same way as their initial assessment, via SuperLab 6.0. During these outcomes data ICF collections, I asked what the participants thought about the research process. CTC and Study Two participants were asked the same question immediately following their cognitive assessment, if they had time. Some felt the assessment seemed 'childish', while others expressed understanding its simplistic nature was to ensure clarity. A number mentioned the length of the *Desire for Control* (DC) task. Some Study Two participants didn't believe the DC game/ task could tell if they would relapse or not and similarly some Study Three subjects didn't feel the events read to them while answering the Locus of Control scale would influence their answers. Other words used by various participants to describe their experiences included 'insightful', 'inspiring', 'cool', 'great craic', 'therapeutic', 'confusing', or 'just… normal'.

2.3.2.3 Dissemination. My academic team committed to disseminating study findings as much as possible to relevant stakeholders soon after beginning my project. At the beginning of its final year, I presented my progress at a DSC Treatment Services Full-Team Meeting. The floor was opened to feedback and questions, receiving generally very positive

feedback, gratitude for the work, and further clarification. The DSC team were eager to ensure that they understood the potential clinical significance of the work, as far as my interpretation went. In doing so, I made sure to emphasise the suggestive nature of the findings until corroboration from future research.

In the second and third years I gave a guest lecture as part of DCU's Age Friendly University Introduction to Psychology programme titled "Substances, Substance Use, and Problematic Substance Use". As this lecture topic relates to the current project, this work, its background, and potential future directions were also shared with this group, many of whom were from economically disadvantaged areas of Dublin.

Preliminary talks with DSC and CTC managers regarding full project presentation to service users and staff following thesis submission have been held and will be arranged in Q1 of 2025. DSC further plans to share this project on their website and all social media platforms. My academic team will also share the project on all relevant media. My team will also present this project at DCU's School of Psychology Five Year Anniversary which will spotlight PSU in February 2025 to alumni as well as the local community, academics in the field, Dublin-based PSU treatment services, and other stakeholders. An RTÉ Brainstorm article and a podcast episode are also prepared and ready to be shared in the new year on relevant platforms.

2.4 Discussion

This Chapter first presented the overall methodology of this PhD and how the studies within it interacted. It discussed how the results of earlier studies informed the design of later studies. The first study of this PhD was a systematic review investigating the role of Locus of Control in SUD treatment client's recovery. This study revealed the specific relationship of this trait to PSU recovery, prior to investigating the interaction of homelessness with it and other related traits in later experimental studies. To identify the interaction of homelessness

with selected traits of cognition prior to exploring their role in PSU recovery, my first experimental study assessed these traits in 60 residential PSU treatment attendees. This data was then subsequently re-purposed approximately six months later in the second timepoint of this study when each participant's number of substance use episodes in treatment data was collected from service staff. This second timepoint was a substantial piece of work that required a second round of informed consent collection from each participant for this procedure. The second timepoint of this longitudinal study revealed that the internal LoC subscale of Levenson's (1973) multidimensional scales predicted the number of relapses during treatment, such that the more service users believed that they themselves determined their life outcomes (perhaps to the exclusion of other people, chance, or fate, as will be described in Chapter Three), the more likely they were to relapse. This finding was further in keeping with those of my systematic review, described in Chapter Three. For this reason, Levenson's LoC scale was incorporated to the third and final study of this PhD, which trialled the feasibility of a major study into the potential efficacy of a brief PSU intervention with PEH in alcohol and benzodiazepine detoxification treatment. Following from the findings of the longitudinal study, this Proof-of-Concept study examined whether this intervention may reduce substance use during treatment and also diminish Internal LoC scores.

I initially intended to conduct comparative analyses in my longitudinal study between Housed and Experiencing Homelessness groups. However, as participants of this study described their residential histories, the complexity of homelessness was further exemplified and separation into two such clear-cut groups was obscured. Considering the fluid definitions of homelessness currently in existence, as was described extensively in Chapter One, how best to explore the interaction of this experience with cognition during PSU treatment, and the potential impact of this on substance use, required consideration. I initially attempted to

answer this question statistically via cluster analysis; this revealed three groups, separated according to the length of time spent homelessness. However, further inspection of a scatter plot depicting these groups revealed that cases tended to exist along either axis; i.e., those who were still experiencing homelessness were experiencing homelessness for longer durations and those who had experienced homelessness in the past but were currently housed spent less time in homelessness. Importantly, several cases who were currently experiencing homelessness had also experienced homelessness for shorter durations of time. Reflecting on the homelessness literature currently in existence, which indicates arguable impact of homelessness duration but considerable post-homelessness impacts on cognition, I decided in consultation with my academic supervisors, to split my longitudinal study participants into three groups: ‘Current Housed’, ‘Current Homelessness’, and ‘Prior Homelessness’.

Reflecting the diverse pathways to homelessness, those who experience it are highly heterogenous. Lifetime trauma, such as child sexual abuse, suicide attempts, and brain injury are prevalent (Ayano et al., 2019; Miller et al., 2020; Stubbs et al., 2020; Sundin & Baguley, 2015). Mental health issues, such as depression, anxiety, PTSD, schizophrenia, and PSU are also over-represented (Barry et al., 2024). Further, comorbid mental health issues are common among people with PSU, to the point they have their own term ‘dual diagnosis’ (Holzhauer et al., 2019). Psychoactive substances of abuse and psychiatric medicines by their nature alter cognition in distinct ways (Bourin, 2021; Fareed et al., 2017; Harmer et al., 2017; Hunt et al., 2020; Meyer, 2025; Nutt et al., 2021; Tolomeo et al., 2021; Trifilieff & Martinez, 2014). To appreciate some of the ways in which my defined homelessness groups may differ on traits relevant to PSU, Table 2.1 conveys group prevalences and means for these variables. While this information is important to consider in interpreting the findings of my longitudinal study, it is important to note that some of the information presented within may be misleading, due to the complexity of both homelessness and PSU. Of particular interest,

Table 2.1 indicates notably less frequent co-occurrence of mental health diagnoses in the Current Homelessness than the Current Housed group, alongside a notably higher frequency of lifetime traumas. It is of crucial importance to note that I did not conduct clinical interviews with each participant and instead relied on their own self-report of diagnoses or clinical conditions. Considering the vast literature evidencing correlation between lifetime trauma and mental ill-health (Myers et al., 2015; O'Hare et al., 2014) and the substantially higher rates of mental health issues among PEH (Barry et al., 2024), it is my belief that the information presented in this table instead corroborates my justification for the use of the term PSU rather than SUD presented in Section 1.2.1.2, and exhibits the poorer access to mental health treatments and clinical diagnoses consistently recognised to be experienced by PEH (Ingram, Buggy, Elabbasy, & Perrotta, 2024; Omerov et al., 2020). Thus, it is my recommendation that the disparities observed between these three housing history groups in terms of comorbid mental health issues are not interpreted literally, and instead as unverified by clinical assessment. It is also important to note that the inclusion of this heterogenous group, as will be further detailed in Section 4.2.1.1 is critical to the ecological validity of this study in terms of representing PEH as they present, and not a more sanitised sub-sample.

As detailed in Section 2.3.1 stakeholder engagement is an effective tool used to streamline contemporary social research. For this reason, stakeholder engagement methodologies were employed with PSU treatment staff, PSU treatment service users, and the public throughout the current project. Treatment service staff were entreated regularly and by various means throughout this project's execution. As a financial and practicable stakeholder of this project, DSC assigned a sequence of staff to the formal position of its 'Enterprise Mentor'. I found this process both theoretically and pragmatically beneficial to my project's realisation. The focus of these Mentors on aiding their organisational aims, which directly service my project's target population, ensured that my project aims were directly applied to

the recovery of PSU during homelessness. They readily thought of aspects of recovery that could appear somewhat peripheral to academics, such as the ease with which individuals in early recovery can sometimes replace their PSU with other addictions such as gambling and proactively assisted the creative process through which I adapted my DC task to avoid this. They also took responsibility for the ease of collaboration with other members of their organisation, such as the Therapeutic Services Quality Team and Service Managers. Ultimately, when conducting research with an organisation, I strongly recommend designating a staff member specifically to the collaboration. The DSC Therapeutic Services Quality Team played a significant role in reviewing my ethics application to conduct my experimental studies with their service users. This team brought further insights to the potential philosophical understanding of consent and enhanced my project's respect for their service users' autonomy and self-governance. They also encouraged me to think more creatively and deeply about consent and its standardised procedures. In this way, organisational ethics boards also appear beneficial, as they are more likely to look at the issue from a divergent and possibly more practical stance than university ethics committees. Regular meetings and emails were shared with various managerial staff members from CTC throughout this project. While not as actively involved in steering this project as DSC, collaboration with this organisation was enthusiastic, optimistic, and supportive, buttressing our argument in favour of industry-based research.

PSU treatment service users were involved at various key stages throughout this project. Most formally, their participation via the EbE group was integral to piloting my project's proposed materials prior to use with a population as marginalised and disadvantaged as PEH with PSU. However, while this EbE group substantiated the content and language used in these materials it should be noted that one service user remarked early in the process that PEH 'weren't stupid'. My academic supervisor and I attempted to salve this comment by

clarifying that the EbE group was not being held in response to a different IQ, but the different *experiences* of PEH with PSU. However, a tension from this vocal service user that may have affected more of these vulnerable adults could be sensed for the remainder of the group. Further, many of the same items thought potentially unsuitable for use with this population were remarked upon by participants throughout the experimental studies, for the same reasons I had identified. Some of the LoC scale items such as clearing a mortgage or falling behind in work were difficult for some participants to imagine. The wording of some of these items, such as 'chiefly', 'protecting my personal interests', 'appealing to those in positions of power', 'people like myself', 'go to class', and 'fortune' regularly had to be further clarified for participants, who often still seemed ill-at-ease with the item afterwards. The FEQ presented similar issues with items relating to major career successes and major financial assets as well as the phrase 'socially inadequate'. The RLE posed no issues. As mentioned, the length of the DC task was regularly commented upon, by as many as half of the participants. A shortened version of this task may be warranted. Thus, the EbE group's promotion of the materials proposed for use in this study in their original state may have stemmed from the institutional distrust rife within this population rather than the materials' suitability (Harter et al., 2005; Patterson et al., 2015). Consequently, an alternative method to pilot study materials with this cohort may be to conduct a factor analysis of their responses to them paired with a reflective analysis of items that proved difficult to understand or not applicable, as per Bower et al. (2022). This could be further extended by also including a second measure with the proposed adaptations of the research team and repeating the process.

Participants' impromptu contribution via arranging many of this project's assessments themselves was exceedingly beneficial to the project's timeline and cohesion. It is possible that hours of calling participants back and forth to re-arrange appointments to suit one

another, send reminder texts the day before, as well as other issues that may have required resolving along the way, were saved. This freed time to ensure that SuperLab software and materials were all in working order prior to assessments, as well as to input and clean data as they were collected. This in particular transpired to be vital, considering the high participation rate for these studies. I felt that the organising participants were enthusiastic and grateful for the opportunity to be able to contribute to this project so constructively. All in all, I believe that this process is worth replicating in future research projects with this cohort.

The contact cards disseminated to participants of this project was a novel method to my academic team that does not appear to be widely utilised across the literature. I found this addition highly impactful; although no participants have contacted the team yet, many expressed gratitude for this accessible way to resolve any issues that could arise following their participation. I felt that these cards conveyed a greater sense of interest in my research population and thus encourage any researchers of human participants to integrate this procedure to their future projects. My follow-up reflections with participants were highly insightful and informative to my future practices. They highlighted the heterogeneity of this group, despite their shared cognitive processes which I aim to further delineate. This heterogeneity further justifies my endorsement of simple and clear measures for use with this group, to adeptly encapsulate accurate answers for all and not a more privileged subset.

This project's dissemination thus far has received considerable interest from PSU service users, staff, and members of the public. The genuine interest of these populations in this line of scientific inquiry was palpable, encouraging my pursuit. However, I noticed that, through their enthusiasm to enhance their treatment efficacy, the dissemination groups approached appeared eager to know how to integrate my findings to their recovery methods. In this way, I was careful to detail the expansive process of scientific inquiry of behavioural phenomena, and the consequent importance of systematic review. I believe that this

communication of scientific literacy may be of importance for stakeholder engagement dissemination more generally. My plans to further disseminate objectives, processes and outcomes following thesis submission are underway and will hopefully run smoothly.

Chapter Three. Systematic Review via Thematic Summary of PSU Treatment Service User Locus of Control as a Prognostic Factor of Substance Use Recovery

3.1 Introduction

In response to the literature review and introduction to the issue of PSU recovery for People Experiencing Homelessness (PEH) provided in Chapter One, this project seeks to investigate whether cognitive traits of interpersonal control or temporal perspective may differentially affect PSU recovery according to residential independence and stability. However, in ascertaining the relationship of these traits to PSU recovery in general samples, I observed a wealth of inconclusive literature regarding one of my focal traits; Locus of Control (LoC). In this light, the current Chapter will present a systematic review using thematic summary methodologies into the predictive ability of LoC for substance use in PSU treatment service users. It will first outline the rationale for this review, followed by my methods and primary results. A synthesis of these results is then presented before a comprehensive discussion.

3.1.1 Rationale

3.1.1.1 Problem. Substance Use Disorders (SUDs) are a crisis and growing health issue. Alcohol use causes 3 million or 5.3% of all global deaths, while drug use is reported to cause 750,000 deaths annually (World Health Organisation (WHO), 2018; Ritchie & Roser, 2018). Substance use also negatively impacts health, causing the loss of 30.9 million years of "healthy" life to disability or premature death per annum (Institute for Health Metrics and Evaluation (IHME), 2019). Despite these negative impacts on health, substance use is becoming more commonplace, seeing one of the fastest growth trends of 87 risk factors for death from 2010 to 2019 (IHME, 2019). Similarly, SUD prevalence is dramatically rising, from 29 million people, or 0.6% of the global population, in 2016 to 36.3 million, or .07% in 2021 (United Nations Office on Drugs and Crime (UNODC), 2021; UNODC, 2016).

SUD treatment varies in many ways, such as inpatient/outpatient, psychological/medical modalities, individual/group therapies, reduction/abstinence-oriented, and countless others. Treatment programmes cater every stage of the recovery process, from detoxification to sobriety-maintenance, and can thus last anywhere from days to years. Despite this array of treatment options, efficacy remains low; meta-analysis indicates as many as one-third relapse even prior to programme completion (Dutra et al., 2008) and up to 70% relapse within the first post-discharge year (Gossop, Marsden, Stewart, & Rolfe, 1999; Teesson et al., 2006). The potential impacts of relapse for the individual are stark; at best they return to the same level of problematic use and associated health, financial, and social consequences. At worst, they are at significantly greater risk of fatal overdose (Heale et al., 2003; Martins, Sampson, Cerdá, Galea, 2015). Thus, the importance of effective SUD treatment is evident.

Research of neurocognitive markers associated with SUD treatment success suggests traits worth targeting during treatment for enhanced outcomes. One such target cognitive trait is Locus of Control (LoC); the extent to which individuals believe they, more powerful others, chance, or fate, determine their life outcomes (Heidari, Ghodusi, Bathaei, & Shakeri, 2018). Broadly, this trait describes individuals who believe their life outcomes are mostly self-mediated to have an internal LoC, and an external LoC if they believe they result mostly from external forces (Rotter, 1966). LoC appears malleable, with previous research suggesting it changes with age (Sargent-Cox & Anstey, 2015), gender (Alves & Lopes, 2010; Eng, Gilsanz, Lacy, Schnaider Beeri, Whitmer, 2020; Wehmeyer, 1993), race (Zahodne et al., 2015; Zhang & Jang, 2017), culture (Jensen, Olsen, & Hughes, 1990), financial stability (Culpin, Stapinksi, Miles, Araya, Joinson, 2015), relationship strain (Nowicki, Iles-Caven, Gregory, Ellis, Golding, 2018), and across situations (Ersche, Turton, Croudace, Stochl,

2012; Oswald, Walker, Reilly, & Parker, 1992; Turnipseed, 2018). These findings indicate it is a potential target of interest for successful rehabilitation.

LoC has been found to predict early use (Bearinger & Blum, 1997; Squeglia et al., 2017), moderate the relationship between alcohol consumption and aggression (Purvis, Gallagher & Parrott, 2016), and distinguish light from heavy social drinkers (Seo et al., 2019). As LoC describes how individuals think about themselves in relation to others and the world, research in this area is critical, considering the highly social nature of SUD recovery. Service users in treatment work closely with treatment professionals on sensitive topics, often share accommodation with other service users, and must consistently reject old friends and individuals associated with their substance use post-discharge.

The original LoC scale (Rotter, 1966) has proven effective at predicting outcomes in various fields such academic and work performance (Findley & Cooper, 1983; Galvin, Randel, Collins & Johnson, 2018), life satisfaction (Hong & Giannakopoulos, 1994), and physical and mental health (Churchill, Munyanyi, Prakash, Smyth, 2020; Costello, 1982). Subsequent scales have differentiated between more specific internal or external factors, such as segregate external LoC factors ‘Powerful Others’ and ‘Chance’ (Lefcourt, von Baeyer, Ware, & Cox, 1979; Levenson, 1973; Reid & Ware, 1974) or target particular life domains like physical and mental health (Hill & Bale, 1980; Wallston, Wallston, & DeVellis, 1978; Wallston, Wallston, Kaplan, & Maides, 1976), personal economics (Furnham, 1986), road safety (Ozkan & Lajunen, 2005), academic achievement (Crandall, Katkovsky, & Crandall, 1965; Trice, Ogden, Stevens, & Booth, 1987), or alcohol or drug use (Donovan & O’Leary, 1978; Ludke & Schneider, 1996; Oswald, Walker, Reilly, & Parker, 1992). Such scales proliferated LoC research, generating more precise indications of its role in psychological function.

Despite this prolific research, to my knowledge, no systematic review of adult SUD treatment has examined LoC as a prognostic factor for sobriety outcomes. The current review aimed to address this gap. To promote inclusion of studies describing LoC with different terminology, synonymous LoC terms were included in my search strategy. Substance use outcomes were broadly defined as quantitative measures of substance use during or post-treatment, length of treatment stay, or post-discharge time sober. As meta-analytic synthesis was initially intended only quantitative studies were reviewed and thematic summaries (Gough, Oliver, & Thomas, 2017) utilise effect sizes.

3.1.1.2 Objectives. The overall aim of this review was to determine whether LoC beliefs in adults undergoing SUD treatment are predictive of successful recovery. Specific aims were to discover which LoC traits (e.g., internal, external) were predictive of success as measured by sobriety following treatment. It was hoped to achieve these aims via meta-analytic methodologies. Consequently, only studies using validated LoC scales and quantifiable measures of substance use, such as treatment or abstinence duration, were assessed. For this purpose, effect sizes were also calculated and transformed to a common metric for all analyses reporting required data.

3.1.1.3 Protocol. The protocol for this review was presented for feedback at the 2021 Psychological Society of Ireland Student Congress and Dublin City University's School of Psychology 2021 Postgraduate Research Conference. No changes were advised or made based on these presentations and the protocol was not published before conducting the review.

3.2 Method

3.2.1 Transparency and Openness

This review complies with the Transparency and Openness Promotion (TOP) guidelines (Nosek et al., 2015). Study protocol and pre-registration are explicitly reported.

PRISMA (Page et al., 2020) and SWiM (Campbell et al., 2020) reporting guidelines are observed. Data are appropriately cited. This review was not pre-registered.

3.2.2 Inclusion and Exclusion Criteria

This review's inclusion (Table 3.1) and exclusion (Table 3.2) criteria were defined using the PICOS tool (Higgins et al., 2019; Methley, Campbell, Chew-Graham, McNally, Cheraghi-Sohi, 2014). No changes were made to these pre-specified criteria. Authors of reports not providing information sufficient to judge eligibility or analyse data were emailed in search of this information.

Table 3.1

Systematic Review Inclusion Criteria

Participants	Substance addiction treatment service users, 18 years and older
Intervention	Aims to reduce substance use
Control	Not necessary, may exist
Outcome	Use of any specified substance, measured via quantitative substance use follow-up assessment, sobriety duration, or treatment duration
Study Design	Quantitative, prognostic

Table 3.2

Systematic Review Exclusion Criteria

Criteria category	Specific examples
Age	Under 18 years
Language	Not available in English
Study design	Opinion pieces, letters, qualitative research, dissertations, book chapters, case studies, reviews, editorials
LoC not measured	Personal responsibility, personal control measure of theory of planned behaviour, embedded figures test, self-control
Subsequent substance use not measured	Measured at same time, other variables subsequently measured, no subsequent measures

3.2.3 Information Sources

Scoping searches to determine systematic review feasibility revealed considerable research of LoC as a predictor of SUD treatment outcomes. Search terms to comprehensively examine this topic were then developed using previous LoC and SUD systematic reviews and database MeSH terms in consultation with Dublin City University library staff (Table 3.3; Brorson, Arnevik, Rand-Hendriksen, & Duckert, 2013; Groth et al., 2019; Lappan, Brown, & Hendricks, 2020; Nafradi, Nakamoto, & Schulz, 2017). These were applied to all fields including earliest and latest publications in journal databases *PubMed, PsychINFO,* and *Web of Science* on 02/07/2021, returning a total of 5,050 papers (1,672, 2,176, and 1,202 respectively; see PRISMA flowchart Figure 3.1).

Table 3.3

Search Terms Applied to Journal Databases PubMed, PsychINFO, and Web of Science

Variable Category	Terms Used
SUD	(addict* OR substance OR drug OR alcohol* OR opiate OR opioid OR heroin OR cocaine OR cannabis OR marijuana OR inject* OR inhal*)
	AND
LoC	("locus of control" OR "hloc" OR "drie" OR "dr-loc" OR "internality*" OR "externality*" OR "powerful others" OR "control orientation" OR "control belief" OR "personal control" OR "perceived control" OR "perception of control" OR "control attribution" OR "control locus" OR "sense of control" OR "sense of responsibility" OR "responsibility attribution" OR "personal responsibility" OR "perceived responsibility" OR "self-determination" OR "self-direction" OR "treatment self-regulation questionnaire")
	AND
Treatment	(treatment OR therapy OR intervention OR program* OR detox* OR inpatient OR outpatient OR client OR patient OR recovery OR rehab* OR relapse OR recid* OR dropout)

3.2.4 Study Selection

Two independent reviewers (L.C., PhD candidate; C.O.B., systematic review-trained undergraduate student) conducted the title and abstract screen and full-text review using Covidence software. Conflicts were resolved via discussion and consensus.

3.2.5 Data Collection

Appendix A depicts data collected by two independent reviewers (L.C., PhD candidate; A.F., PhD candidate) using a tool designed by my research team in Microsoft Excel.

3.2.6 Methods for Assessing Risk to Internal Validity

Studies were categorised as *'low'*, *'moderate'*, or *'high'* risk of bias by two independent reviewers (L.C. & A.F.) using the *Quality in Prognosis Studies* tool (QUIPS; The Cochrane Collaboration Prognosis Methods Group, 2018), designed specifically to assess the quality of studies investigating predictive factors of health treatment outcomes. Studies were rated as low, moderate, or high risk of bias for various criteria under six headings (*'Study Participation'*, *'Study Attrition'*, *'Prognostic Factor Measurement'*, *'Outcome Measurement*', *'Study Confounding'*, and *'Statistical Analysis and Reporting'*), which were then considered to yield overall low, moderate or high risk of bias ratings for each study. Regardless of quality rating, all studies were included for data synthesis to minimise bias. However, results were considered in respect of their quality ratings.

3.2.7 Summary Measures

Meta-analysis of extracted data was initially intended. Consequently, effect sizes were calculated by my research team. Fifteen studies reported data required for the calculation of 30 effect sizes: nine Cohen's d, seven Pearson correlation, three Cramer's V, two odds ratio, one chi square, and one ANOVA f. As Cohen's d was produced for most studies, where

possible, other effect size metrics were converted to this measurement, following Campbell Policy's common metric for meta-analysis recommendation (Polanin & Snilstveit, 2016).

3.2.8 Methods of Synthesis

Excessive heterogeneity preventing effective meta-analysis became apparent as data were extracted and compiled. Thus, data were analysed via thematic summaries informed by effect sizes. Summaries were performed on the overall data set and various dimensions of difference deemed capable of influencing results, namely *'LoC Scale', 'Assessed Substances', 'Treatment Approach', "During/ Following Treatment Outcomes"*, and *"Biological Sex".* These were conducted according to SWiM guidelines, with results prioritised according to effect size and significance (Campbell et al., 2020).

3.2.9 Publication Bias and Selective Reporting

Authors of studies collecting LoC data of adult SUD treatment service users were contacted to see if they or the relevant treatment centre(s) possessed relevant substance use data. Authors of studies collecting LoC and substance use data from adult SUD treatment service users who did not report investigation of a relationship between these variables were contacted to see if such analyses were conducted or, if not, whether raw data still existed so my team could perform these analyses.

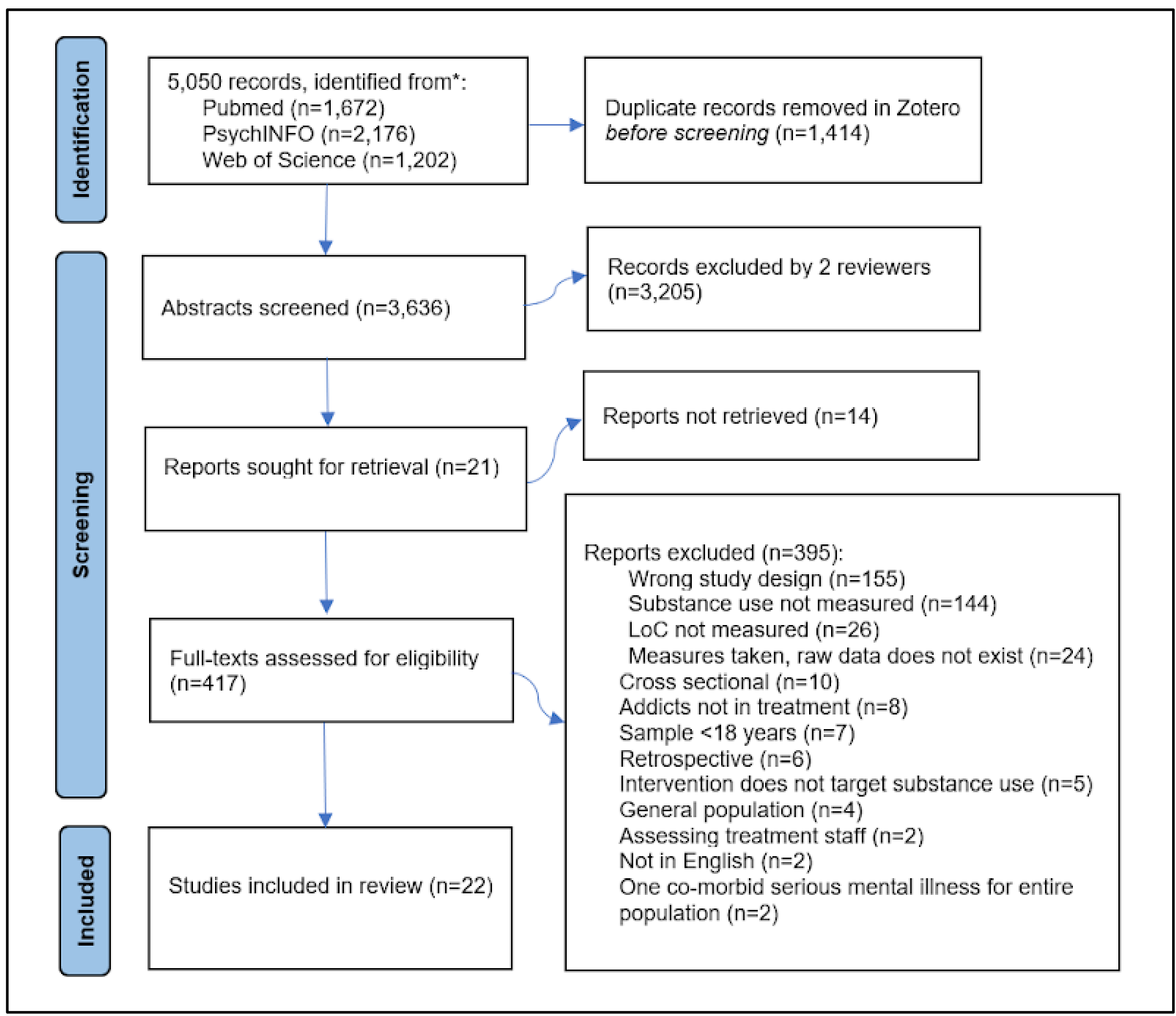
3.3 Results

3.3.1 Study Selection

The PRISMA flowchart depicted in *Figure 3.1* summarises the study selection process for this review.

Figure 3.1

PRISMA Flowchart Summary of Study Selection Process



During full-text review, authors of 34 studies measuring LoC in individuals attending SUD treatment were contacted to enquire whether subsequent substance use was also measured by their research, or the treatment centre's team, to qualify their research for review inclusion. Fourteen research teams collecting LoC and substance use outcome data from 2000 onwards, but not reporting the relationship between these variables, were contacted about their interest in performing these analyses. Earlier such studies were excluded immediately as raw data was presumed not to exist. After reasonable attempts at contact, data were not obtained from any of these authors due to no response, data destruction, or non-collection. Twenty-one papers inaccessible to my academic research team but apparently suitable for

inclusion were forwarded to Dublin City University's library staff and their authors contacted with the same follow-up procedure to request full access, obtaining 7 papers. In total, 409 studies were excluded at this stage, reducing the final collection to 22.

3.3.2 Study Characteristics

The 22 studies included in this review investigated a combined sample of 2,888 individuals. Of these, 1,829 (63%) were male, 414 (14%) female, and 655 (23%) from three studies were not defined. Thus, sex distribution of those identified was 82% male, 18% female. Ethnicity data for 269 participants was described across 8 papers. Of these, 52 (19%) were Caucasian, 140 (52%) Black, 7 (3%) Hispanic, 1 (0.4%) American-Indian, and 69 (26%) Turkish. Mean age was reported by 20 papers (Appendix A) and ranged from 26.3 (Snowden, 1978) to 50.8 (Query, 1983) years. Studies were conducted between 1977 and 2015. Eleven were conducted in the USA, two in India, and one each in New Zealand, Italy, Israel, Germany, Finland, Canada, Switzerland, Turkey, and Spain. Table 3.4 describes studies' dimensions of difference, or characteristics according to which this review's thematic summary analyses were performed.

Table 3.4

Dimensions of Difference Data of Individual Studies

Reference	LoC Scale	LoC Direction Favoured	Psychoactive Substances	Treatment Approach	Outcome Assessment	Biological Sex
Abbott, 1984	Rotter (1966) IE; Keyson & Janda (1972) DRIE	External (n=5); No direction (n=1)	Alcohol	Psychological	Three months post-discharge (n=1); One year post-discharge (n=5)	*M:* 74 (70%) *F:* 32 (30%)
Bowen & Twemlow, 1978	Rotter (1966) IE	No direction (n=1)	All severe problems with alcohol, several polydrug users	Biofeedback Plus Other Therapies	Discharge (n=1)	*M:* Not reported *F:* Not reported
Canton, Giannini, Magni, Bertinaria, Cibin, & Gallimberti, 1988	Validated Italian version of Rotter's 1966 scale (Nigro, 1983)	Internal (n=1); No direction (n=1)	Alcohol	Pharmacological with Counselling	Six months after initial evaluation (n=2)	*M:* 33 (76.7%) *F:* 10 (23.3%)
Caster & Parsons, 1977	IPC (Levenson, 1973)	Internal (n = 1); No direction (n = 5)	Alcohol	Psychological	*Ninety day program:* Discharge (n=1) *Recidivist program:* 4-6 months into treatment (n=1)	*M:* 98 *F:* 0
Dekel, Benbenishty, & Amram, 2004	IPC (Levenson, 1973)	Internal (n=4); No direction (n=1)	Heroin	Psychological	Post-discharge (M=15 months, SD=4.8 months; n=2)	*M:* 140 (84%) *F:* 27 (16%)

Elsesser & Sartory, 1998	IPC (Krampen, 1986)	Internal (n=8); External; (n=4)	Benzodiazepines	Psychological	Discharge (n=4)	*M:* 19 (43%) *F:* 25 (57%)
Hartman, 2000	DRIE (Keyson and Janda, 1972)	External (n=1)	Alcohol	Not specified	Discharge (n=1)	*M:* Over-represented *F:* Under-represented
Jones, 1985	DRIE (Keyson & Janda, 1972)	Internal (n=2)	Alcohol	Psychological	Discharge (n=2)	*M:* 34 (100%) *F:* 0 (0%)
Kivlahan, Donovan, & Walker, 1983	DRIE (Keyson & Janda, 1972)	Internal (n=1); External (n=1); No direction (n=4)	Alcohol	Psychological	Three, six, and nine months post-discharge (n=6)	*M:* 232 (100%) *F:* 0 (0%)
Kludt & Perlmuter, 1999	IP (Schewchuck et al., 1992)	No direction (n=2)	Heroin	Pharmacological with Counselling	Discharge (n=1); Early in treatment (n=1)	*M:* 9 (50%) *F:* 9 (50%)
Koski-Jännes, 1994	DRIE (Keyson & Janda, 1972)	Internal (n=4)	Alcohol	Not specified	Six and 12 months post-discharge (n=4)	*M:* 89 (84%) *F:* 17 (16%)
Leigh, Ogborne, & Cleland, 1984	IPC (Levenson, 1973)	No direction (n=6)	Alcohol	Not specified	Discharge (n=6)	*M:* 132 (77%) *F:* 40 (23%)

McGovern & Caputo, 1983	Eight most highly loaded items from Rotter (1966), based on Collins' (1974)	Internal (n=2)	Alcohol	Pharmacological with Counselling	Discharge (n=2)	*M:* 100 (100%) *F:* 0 (0%)
O'Leary, Rohsenow, & Donovan, 1976	IE (Rotter, 1966)	External (n=1); No direction (n=4)	Alcohol	Psychological	Discharge (n=5)	*M:* 153 (100%) *F:* 0 (0%)
Query, 1983	IE (James 1957)	Internal (n=1); No direction (n=1)	Alcohol	Electroconditioning	Two months post-discharge (n=1); Six months post-discharge (n=1)	*M:* 41 (100%) *F:* (0%)
Rao, Ray, Vithayathil & Nagalakshmi, 1984	IE (Valecha et al., 1980)	No direction (n=1)	Alcohol	Psychological	Six months post-discharge (n=1)	*M:* 27 (100%) *F:* 0 (0%)
Sarkar, Nebhinani, Kaur, Kaur, Ghai & Basu, 2013	IE (Menon, Wig, Verma, & Varanasi, 1988)	Internal (n=1)	Alcohol (n=19); Opioid (n=31); Alcohol & opioid (n=10); Other (n=9)	Pharmacological with Counselling	Six months after initial assessment (n=1)	*M:* 68 (98.6%) *F:* 1(1.5%)
Schofield, 1978	IE (Rotter, 1966)	*Males:* Internal (n=1) *Females:* External (n=1)	Alcohol	Psychological	Discharge (n=2)	*M:* 77 (77%) *F:* 33 (33%)
Snowden, 1978	IE (Rotter, 1966)	Internal (n=3); No direction (n=1)	Heroin	Pharmacological with Counselling	Seven weeks post-discharge (n=4)	*M:* 32 (76%) *F:* 10 (24%)

Soravia, Schläfli, Stutz, Rösner, & Moggi, 2015	Short IE (Jakoby and Jacob, 2009)	No direction (n=-3)	Alcohol	Psychological	Throughout treatment (n=3)	*M:* 339 (67%) *F:* 170 (33%)
Turkcapar, Kose, Ince, & Myrick, 2005	IE (Rotter, 1966)	Internal (n=1); No direction (n=1)	Alcohol	Pharmacological with Counselling	Six months post-discharge (n=2)	*M:* 69 (100%) *F:* 0 (0%)
Vielva & Iraurgi, 2001	DRIE (Keyson & Janda, 1972)	Internal (n=3)	Alcohol	Psychological	Six months post-assessment (n=3)	*M:* 161 (80%) *F:* 40 (20%)

3.3.3 Results of Individual Studies

Individual study results are presented in Table 3.4.

3.3.4 Assessment of Internal Validity of Individual Studies

None of the studies were rated high, 11 were rated moderate, and 11 low risk of bias. Two were deemed low risk of bias across all assessment domains (Elsesser & Sartory, 1998; McGovern & Caputo, 1983). Two studies providing ambiguous results from chosen LoC scales received moderate risk of bias ratings, due to otherwise sound methodologies (Kludt & Perlmuter, 1999; Soravia, Schläfli, Stutz, Rösner, & Moggi, 2015). No studies revealed high risk of bias on multiple evaluative domains.

Poor LoC scale description prevented adequate interpretation of results from three papers. Kudt and Perlmuter (1999) and Soravia, Schläfli, Stutz, Rösner and Moggi (2015) describe using Schewchuk's (1992) and Jakoby and Jacob's (2009) scales of internality-externality, respectively. While original scale papers describe separate internality and externality scores, only one test statistic, without scale direction, is reported by these research teams. Rao, Ray, Vithayathil & Nagalakshmi (1984) used Valecha's (1980) version of Rotter's scale, abbreviated to include only global and work-related items. However, the team did not specify scale direction and the original scale could not be accessed by my research team. Query (1983) examines service users in receipt of electroconditioning therapy, a notably divergent treatment approach from all other included papers and is the only to use James's (1957) precursor to Rotter's (1966) seminal scale, despite availability of Rotter's scale at the time. Results from this paper were also particularly difficult to understand and as such were interpreted cautiously. Despite not contributing substantially to analyses, these papers were retained to avoid biassing results.

3.3.5 Publication and Reporting Bias

Published investigations only were included in this synthesis to ensure peer-reviewed data quality. No non-reported data were included as all such data was destroyed by authors.

3.3.6 Adverse and Harmful Effects

No adverse or harmful effects of studies were identified during this review.

3.3.7 Synthesis of Results

3.3.7.1 Complete Data Set. Thirty-five continuum scale analyses of LoC as a prognostic factor of SUD treatment outcomes were conducted (Table 3.4). While four found better results for individuals with external LoC, 15 favoured internal LoC participants. No analyses finding better results for Externals had large effect sizes and an equal number were significant as non-significant. Conversely, almost twice as many results showing reduced substance use for Internals were significant as non-significant and effect sizes were equally distributed from small to large.

Inconclusive results were produced by 16 analyses. Twelve resulted from non-significance, including two from Kludt and Perlmuter's (1999) study reporting just one test statistic from a measure that appears comprised of two scales. Three came from Soravia, Schläfli, Stutz, Rösner, & Moggi's (2015) study, who also reported just one result despite apparent use of two-scale measurement. A chi square analysis from Query's (1983) paper using James' precursor to Rotter's LoC scale with electroconditioning treatment attendees found a u-shaped trend with abstained and similar drinking patterns exhibited by internal, but reduced drinking observed in external participants two months post-discharge. However, when re-assessed six months post-discharge, results favoured internality. Combined, continuum scale results indicate individuals with a greater sense of personal autonomy during SUD treatment are more likely to reduce substance use.

Twenty-nine analyses used the multidimensional subscales of, or based on, Levenson's (1973) *Internality, Powerful Others, Chance* measure (Table 3.4). Twenty-seven stemmed from completed assessments and two a multiple regression excluding internality which did not reveal prior t test significance (Dekel, Benbishty, & Amram, 2004). Thirteen analyses favoured internal and four external participants. While internality appeared mostly supported by low ratings on Chance and Powerful Others, analyses favouring externality tended to stem from low internality scores. Twelve analyses did not specify relationship direction. None of these were significant and calculable effect sizes were small to medium. However, six of these non-significant results likely stemmed from the small sample size of one study (Leigh, 1984). Therefore, it appears SUD treatment service users with more internal LoC or generalised low causal attributions are more likely to have favourable recovery outcomes.

Three studies described interesting post-hoc analyses. While Vielva and Iraurgi (2001) found internals more likely to be abstinent post-discharge, the result did not remain significant when LoC became part of two multiple regressions, indicating other variables may better predict outcomes. Although Bowen and Twemlow (1978) did not find LoC significantly correlated with treatment duration, they discovered score homogenisation the longer participants remained in treatment. Separately comparing biological male and female rehabilitation completers and dropouts, Schofield (1978) observed better outcomes in males with internal, but females with external, LoC. However, a very small sample of just five female dropouts reduces generalisability of this finding.

Interaction analyses were not included in the aforementioned summaries due to their exclusion of significant cohorts of participants. However, three studies conducting such analyses revealed intriguing results. Snowden (1978) revealed significantly better outcomes for those in receipt of LoC-matched covert sensitisation treatment and those with internal

LoC. Kivlahan, Donovan, and Walker (1983) found that while those who drank due to negative emotional states were more likely to succeed with an internal LoC, the opposite was true for those who drank due to negative physical states. These authors further found that LoC did not influence individuals with other ‘Reasons for Drinking’ investigated, namely; ‘Positive Emotional States’, ‘Interpersonal Conflict’, ‘Social Pressure’. Abbott (1984) found significant differences with large effect sizes favouring externality only when participants were analysed by cognitive functionality (measured by a booklet version of the Rod and Frame Test; Gregson & Abbott, 1979). However, as these studies were the only ones to conduct such analyses, findings are indicative only.

3.3.7.2 LoC Scale.

3.3.7.2.1 General LoC. Thirteen studies assessed general LoC in SUD treatment-attending service users; eight used Rotter’s (1966) seminal IE scale (Table 5), one used James’s (1957) precursor to Rotter’s scale (Query, 1983), one used Valecha’s (1980) version abbreviated to focus on work-related matters (Rao, Ray, Vithayathil & Nagalakshmi, 1984), one used Menon, Wig & Verma’s (1988) version adapted for use with a Hindi population (Sarkar, Nebhinani, Kaur, Kaur, Ghai & Basu, 2013), one used Schewchuk et al.’s (1992) I-P scale condensed from Levenson’s *Internality, Powerful Others, Chance* scale (Kludt & Perlmuter, 1999), and one used Jakoby and Jacob’s (2009) shortened scales of internality and externality (Soravia, Schläfli, Stutz, Rösner, & Moggi, 2015). While the first four of these scales measure generalised LoC on a continuum from internality to externality, the Schewchuk and Jakoby measures assess these poles using separate scales, altering their conceptualisation from “either/ or" phenomena to those which may “both” or “neither" present in an individual. Fundamentally and statistically, this inhibits comparability of results from these scales with those of the other scales. However, interpretability of results from these scales is further disrupted by authors reporting just one result. Consequently, these

analyses will be highlighted in all thematic summaries. Results from the study using James's scale will also be flagged, due to poor interpretability and unique use of electroconditioning.

Within the thirteen studies included in this summary, 25 analyses were conducted. Six found better outcomes for internal, and three for external participants; however, significance and effect sizes in favour of internal or external participants are negligible. Of note, one result finding better outcomes for internal participants stems from James's (1957) scale with electroconditioning treatment service users (Query, 1983). Relationship direction of 16 analyses could not be interpreted. This resulted from non-significance for 10 analyses, reporting just one result from measures consisting two scales for five (Kludt & Perlmuter, 1999; Soravia, Schläfli, Stutz, Rösner, & Moggi, 2015), and a u-shaped trend with internals achieving either 'abstinence' or 'drinking the same' while externals 'drank less' for one study (Query, 1983). Thus, internal general LoC beliefs early in SUD treatment seem to promote recovery.

3.3.7.2.2 Drinking-Related LoC. The Drinking-Related Internality or Externality scale (DRIE; Keyson & Janda, 1972) measures LoC surrounding alcohol use on an internal-external continuum. Six studies conducted 11 analyses with this scale to examine the relationship between DRIE scores and SUD treatment outcomes (Abbott, 1984; Hartmann, 2000; Jones, 1985; Kivlahan, Donovan, & Walker, 1983; Koski-Jännes, 1994; Vielva & Iraurgi, 2001). Nine analyses favoured internality; seven of these were significant with effect sizes equally distributed. Of the two favouring externality, one was significant with small effect size and one non-significant with no effect size data (Abbott, 1984; Hartmann, 2000). Further, the interaction effects observed by Kivlahan, Donovan, & Walker (1983) and Abbott (1984), described in the 'Complete Data Set' section of this paper, stemmed from DRIE analyses.

3.3.7.2.3 Internality, Powerful Others, Chance. Four studies used multidimensional LoC measures comprising three subscales to assess the extent to which individuals believe their lives are influenced by *'Internal'*, *'Powerful Others'*, or *'Chance'* variables. Three used Levenson's (1973) original scale (Caster & Parsons, 1977; Dekel, Benbenishty, & Amram, 2004; Leigh, Ogborne, & Cleland, 1984) and one used Krampen's adapted (1986) version (Elsesser & Sartory, 1998). Nine analyses of Internality and 10 of Powerful Others and Chance were conducted across these studies. Thirteen found superior outcomes for internal, and four for external, participants.

As this summary includes all analyses using multidimensional LoC scales, it matches the multidimensional scale section of the overall summary above. Thus, this summary will only further compare the two measures separately assessing three Loci of Control. Twelve t-tests between dropouts, completers, successful and unsuccessful completers of treatment were conducted using Krampen's (1986) IPC measure. Although two-thirds favoured internality, the only two significant results favoured externality. Thus, this scale may yield stronger support for externality than Levenson's scale. However, as this is the only study to use this scale, and to assess benzodiazepine users, this interpretation is speculative.

3.3.7.3 LoC Direction Favoured. Characteristics of studies finding results in favour of internal participants, external participants, or inconclusive results were compared. Some investigations produce both inconclusive and results in support of a particular direction (Table 3.4). Schofield (1978) observed better results for internal males but external females. These papers are included in both categories, with characteristics pertaining to the relevant result only analysed. Two papers (Elsesser & Sartory, 1998; Kivlahan, Donovan & Walker, 1983) finding equivalent results in favour of internal and external participants were considered 'Inconclusive'.

3.3.7.3.1 Internality. Twelve papers found favour for participants with internal LoC (Table 5). These were conducted across five decades and seven countries. Of the 11 papers describing sex distribution, 11% of participants were female and 89% were male. Five studies analysed inpatient service users, two outpatient, three both, and two did not specify residency. Five studied psychological interventions only, five pharmacological with psychological support, one electroconditioning treatment, and one did not specify an approach. Treatment durations varied from one week (medical detoxification) to over 43 months (AA meetings). Seven studies used IE scales, two DRIE, and two IPC. Nine assessed individuals with problematic alcohol use, one alcohol and opiates, and two opiates only. Five reported within-treatment, and seven post-treatment, outcomes.

3.3.7.3.2 Externality. Four papers found better outcomes for external participants (Abbott, 1984; Hartman, 2000; O'Leary, Rohsenow, & Donovan 1976; Schofield, 1978). These tended to be older and from western cultures (USA, N=3; New Zealand, N=1). Sex distribution of the combined sample was 78% male and 22% female with one result stemming from a female-only sample in the 1970's (Schofield, 1978). Two papers examined service users from inpatient and two from both inpatient and outpatient facilities. One (Hartmann, 2000) did not specify treatment approach and three described psychological treatment approaches. Two used Rotter's scale, one the DRIE, and Abbott (1984) used both, demonstrating a relationship between LoC and treatment outcomes with the DRIE only. All papers assessed individuals with alcohol use only. Three assessed LoC within treatment and one post-treatment outcomes.

3.3.7.3.3 Inconclusive. Fourteen papers found inconclusive results (Table 3.4). This resulted from non-significance for ten, equivalent results favouring both directions for two (Elsesser & Sartory, 1988; Kivlahan, Donovan, & Walker, 1983), a u-shaped trend for one (Query, 1983), and poor scale description for one (Rao, Ray, Vithayathil & Nagalakshmi,

1984). Six papers found inconclusive results and some favouring internality (Table 5), with only one reporting effect size calculation data (Caster & Parsons, 1977). This study produced three ANOVAs and two t tests with no direction and small to medium effect sizes but one t-test showing improved outcomes for internal participants with a large effect size. One paper reported four non-significant results without effect size data for inpatient treatment completion but favoured externality with medium effect size for aftercare completion (O'Leary, Rohsenow, & Donovan, 1976). One reported inconclusive results, one result favouring internality, and another favouring externality without effect size data (Kivlahan, Donovan, & Walker, 1983). One reported eight non-significant Internal results and two non-significant External results without effect size data, alongside two significant External results of large effect sizes (Elsesser & Sartory, 1998). Five papers did not describe relationship directions of any analyses; Bowen & Twemlow (1978) found one small effect size, Kludt & Perlmuter (1999) found one large and one small effect size, Soravia, Schläfli, Stutz, Rösner, & Moggi (2015) found two small effect sizes and did not report effect size calculation data for one, and Leigh, Ogborne, & Cleland (1984) and Rao, Ray, Vithayathil & Nagalakshmi (1984) did not report effect size calculation data.

These papers spanned five decades and eight countries. Sex distribution for those identified was 81% male, 19% female. Five investigate inpatient facilities, six outpatient, and three do not specify residency. Treatment durations last from 10 days to 13 months. Nine papers used IE scales, one the DRIE, and four multidimensional scales. Ten assessed alcohol, three heroin, and one benzodiazepine users. Nine assessed within treatment, and five post-treatment, outcomes.

3.3.7.4 Psychoactive Substance.

3.3.7.4.1 Alcohol. Thirty-one analyses from 14 studies investigate the relationship between continuous LoC measurement scores and subsequent alcohol use in alcohol use

disorder (AUD) treatment service users (Table 3.4). Although four analyses favoured external (Abbott, 1984; Hartmann, 2000; O'Leary, Rohsenow, & Donovan 1976; Schofield, 1978), fourteen favoured internal participants. Further, while the distribution of significant and non-significant analyses supporting externality was equal, twice as many analyses favouring internality were significant as non-significant. Noteworthy differences in effect sizes of internal and external analyses were not observed. Thirteen analyses did not specify relationship direction: four were ill-defined results (Query, 1983; Soravia, Schläfli, Stutz, Rösner, and Moggi, 2015), and the remainder were non-significant reports with no further information. Two AUD studies performed 12 analyses using Levenson’s IPC scales. One produced six non-significant results and did not report sufficient data for effect size calculation (Leigh Ogborne & Cleland, 1984). The other revealed one significant result with large effect size favouring internal participants and five non-significant analyses of small to medium effect size with no reported direction (Caster & Parsons, 1977). Thus, the IPC scales do not appear to reliably predict post-treatment alcohol use. However, the small number of studies coupled with small sample sizes within limits confidence. Two papers performed interaction analyses with AUD service users, described under ‘Complete Data Set’ (Abbott, 1984; Kivlahan, Donovan & Walker, 1983).

3.3.7.4.2 Other Substances. Three studies conducted seven continuum analyses of service users attending SUD treatment for substances other than alcohol. Two assessed participants using primarily heroin (Kludt & Perlmuter, 1999; Snowden, 1978), while the third included alcohol and other substance users, though the majority used heroin (Sarkar, Nebhinani, Kaur, Kaur, Ghai & Basu, 2013). No analyses found better outcomes for individuals with external LoC, four analyses, three of which were significant, favoured internality and a final three did not specify relationship direction. Thus, internal LoC during SUD treatment appears to promote heroin use recovery.

Seventeen analyses using multidimensional scales were conducted across two papers. Twelve analyses supported internality and four externality. Dekel, Benbenishty and Amram's (2004) paper of heroin use 15 months post therapeutic community discharge offers four significant results in favour of internal participants. Elsesser and Sartory's (1998) paper using Krampen's (1986) scales for benzodiazepine withdrawal completion produced eight non-significant results favouring internality (no effect size) and four, half of which significant with large effect sizes and half of which non-significant with no effect size data, favouring externality. A final study did not report relationship direction.

3.3.7.5 Treatment Approach.

3.3.7.5.1 Psychological. Seven studies conducted 18 continuum measure analyses of LoC as a predictor of substance use outcomes for individuals attending psychological SUD treatments. Five analyses favour internality (Jones, 1985; Schofield, 1978, Vielva & Iraurgi, 2001) and three externality (Abbott, 1984; O'Leary, Rohsenow, & Donovan, 1976; Schofield, 1978). Considering significant analyses only, four support internal and one external LoC. Nine analyses did not report relationship direction; this resulted from non-significance for four (O'Leary, Rohsenow, & Donovan, 1976), poor scale description for four (Rao, Ray, Vithayathil & Nagalakshmi, 1984; Soravia, Schläfli, Stutz, Rösner, & Moggi, 2015), and differential chi square trends by cognitive function for one (Abbott, 1984). Interaction analyses conducted by Kivlahan, Donovan, and Walker (1983) and Abbott (1984) described above also pertain to psychological SUD treatment attendees.

Three studies conducted 23 analyses using multidimensional LoC scales with individuals attending psychological SUD treatment. Two (Caster & Parsons, 1977; Dekel, Benbenishty, & Amram, 2004) used Levenson's (1973) original IPC scale, while the third (Elsesser & Sartory, 1998) used Krampen's (1986) adapted version. Thirteen analyses

favoured internal, and four external, LoC. Six results did not specify relationship direction due to non-significance.

3.3.7.5.2 Pharmacological and Counselling. This summary comprises results from studies investigating individuals in receipt of methadone maintenance, detoxification, and pharmacologically-assisted withdrawal treatments accompanied by talk-therapy sessions. Six such studies used continuum LoC measurements to conduct nine analyses. None of these analyses found better outcomes for external participants. Four favoured internals; one significant with medium effect size (McGovern & Caputo, 1983), one a chi square with one third of analyses significant (Canton, Giannini, Magni, Bertinaria, Cibin, & Gallimberti, 1988), and two non-significant with no effect size (Sarkar, Nebhinani, Kaur, Kaur, Ghai & Basu, 2013; Turkcapar, Kose, Ince, & Myrick, 2005). Five did not describe relationship direction, due to non-significance for three (Canton, Giannini, Magni, Bertinaria, Cibin, & Gallimberti, 1988; Snowden, 1987; Turkcapar, Kose, Ince, & Myrick, 2005) and poor interpretability of results for two (Kludt & Perlmuter, 1999). Snowden (1978) found reduced morphine-positive urinalyses for internal participants and those receiving LoC-matched covert sensitisation. Combined, these results indicate the favour of internal LoC during pharmacologically-assisted SUD treatments to reduce substance use.

3.3.7.5.3 Other. Two papers investigated treatment approaches that do not fit the above categories. One found no correlation of LoC with length of stay in treatment comprising biofeedback and other holistic therapies (Bowen & Twenlow, 1978). However, homogenisation of scores the longer participants remained in treatment was observed, suggesting this trait could indicate social cohesion, which may in turn benefit treatment success. The other found post-treatment abstinence more likely in internal alcohol users receiving electroconditioning therapy (Query, 1978). However, report writing style impedes interpretation of relationship strength.

Three papers did not specify treatment approach. One favoured internality with four analyses of medium to large effect size (Koski-Jännes, 1994), one externality with an analysis of small effect size (Hartmann, 2000), and one did not describe relationship direction due to non-significance (Leigh, Ogborne & Cleland, 1984). The presence in this category of just one analysis with small effect size supporting external, while five larger effect size results from two papers support internal LoC, further implicates the benefit of personal agency beliefs for SUD recovery regardless of treatment approach.

3.3.7.6 Outcome.

3.3.7.6.1 Within Treatment. Twenty continuum analyses of within-treatment substance use outcomes were conducted across 10 papers. Five analyses, four of which significant, found better outcomes for internal participants (Canton, Giannini, Magni, Bertinaria, Cibin, & Gallimberti, 1988; Jones, 1985; McGovern & Caputo, 1983; Schofield, 1978). Two significant analyses (Hartmann, 2000; O'Leary, Rohsenow, & Donovan, 1976) and one non-significant analysis (Schofield, 1978) found better outcomes for external participants. Twelve analyses from six papers did not specify relationship direction. Three were significant but could not be inferred due to poor LoC measurement description (Soravia, Schläfli, Stutz, Rösner & Moggi, 2015). Nine were non-significant (Bowen & Twemlow, 1978; Canton, Giannini, Magni, Bertinaria, Cibin, & Gallimberti, 1988; Kludt & Perlmuter, 1999; O'Leary, Rohsenow, & Donovan, 1976; Rao, Ray, Vithayathil & Nagalakshmi, 1984). Thus, twice as many results in this category favour internal than external LoC. However, the high prevalence of non-significant findings indicate this relationship may not be robust.

Three studies performed 24 analyses with multidimensional measures (Caster & Parsons, 1977; Elsesser & Sartory, 1998; Leigh, Ogborne, & Cleland, 1984). While nine favoured internality, four favoured externality. Considering significant analyses only, two favoured externality and one internality. Due to non-significance, 11 analyses did not report

relationship direction. With the exception of one from Caster and Parson's (1977) study, all analyses favouring either direction resulted from Elsesser and Sartory's (1998) investigation using Krampen's (1986) scale. Interestingly, while twice as many analyses from this study favoured internality, all were non-significant and, with the exception of one, refer to Powerful Others or Chance scales. Moreover, three of the four analyses favouring externality, and both significant analyses, refer to Internality scale results. Caster's significant result in favour of internality also stems from the Chance scale. These results compound the suggestion that LoC may be a weak predictor of within-treatment substance use. However, deeper analysis indicates this may be due to the positive valence of LoC scales, designed to reveal control belief presence and not lack thereof. Association of low scores on any multidimensional scale with reduced substance use during treatment suggests a more balanced worldview recognising the influence of various factors on life-course may promote SUD recovery.

3.3.7.6.2 Post-Treatment. Seven studies conducted 15 continuum analyses of LoC as a predictor of substance use post-treatment, indicative of sustained sobriety in more high-risk environments. Ten analyses, half of which significant, favoured internality (Koski-Jännes, 1994; Query, 1983; Sarkar, Nebhinani, Kaur, Kaur, Ghai & Basu, 2013; Turkcapar, Kose, Ince, & Myrick, 2005; Vielva & Iraurgi, 2001). One non-significant analysis favoured externality (Abbott, 1984). Four did not particularly favour LoC in either direction; two papers found u-shaped patterns (Query, 1983; Abbott, 1984), one found LoC-tailored treatment more predictive than LoC valence (Snowden, 1978), and one did not report direction of a non-significant finding (Turkcapar, Kose, Ince & Myrick, 2005). These results suggest internal LoC may greatly assist post-treatment abstinence. One study assessed association of heroin users' IPC scores (Levenson, 1973) with abstinence 15 months post therapeutic community discharge (Dekel, Benbenishty & Amram, 2004). T-tests between those using and not using heroin on each scale revealed significant associations of low

Powerful Others and Chance beliefs with abstinence. When entered into a model with 'Length of Stay', these variables proved highly significant ($p<.001$). Thus, not believing other individuals, chance or fate influence your life decisions and outcomes during treatment may also protect sobriety post-discharge. One study found LoC may differentially affect post-discharge alcohol use according to participants' 'Reason for Drinking' as previously described (Kivlahan, Donovan, & Walker, 1983). However, supplementary research is required to make conclusive judgments about this result.

3.3.7.7 Biological Sex. Seven studies included in this review exclusively assessed male participants. None assessed female participants only. One paper (Schofield, 1978) performed segregate biological sex analyses. Fourteen did not distinguish biological sex in analyses. Thus, the following summary will comprise data from papers conducting segregate biological sex analyses or exclusively assessing male participants.

3.3.7.7.1 Male. Fourteen analyses of only male participants using continuum LoC measures were conducted across seven papers. Six papers exclusively recruited male participants while the seventh separately analysed males and females. Six analyses, four of which significant, found greater recovery in males who were more internal (Jones, 1985; McGovern & Caputo, 1983; Query, 1983; Schofield, 1978; Turkcapar, Kose, Ince, & Myrick, 2005). One significant analysis found evidence to support external males (O'Leary, Rohsenow, & Donovan, 1976). Kivlahan, Donovan, & Walker's (1983) above detailed significant interaction of LoC with 'Reasons for Drinking' was also conducted with an all-male sample. Relationship direction of was not specified due to non-significance for five analyses (O'Leary, Rohsenow, & Donovan, 1976; Turkcapar, Kose, Ince, & Myrick, 2005), poor scale description for one (Rao, Ray, Vithayathil & Nagalakshmi, 1984), and a u-shaped trend for one (Query, 1983). These findings suggest favour of internal LoC in males attending SUD treatment.

3.3.7.7.2 Female. One continuum analysis separately analysed biological females. It found externals more likely to complete inpatient alcohol detox. However, with just five participants in the dropout group, this t-test did not reach significance and produced a small effect size. As such, inferences about the relationship between LoC and SUD recovery for females will not be made.

3.4 Discussion

3.4.1 Summary of the evidence

All 22 studies included in this review were rated moderate to high quality. Conducted across 11 countries and five decades, they are reasonably representative of the SUD treatment service user population. Distributions of treatment approach and biological sex reflect practice, but inpatient facilities are overrepresented (European Monitoring Centre for Drugs and Drug Addiction, 2014; Substance Abuse and Mental Health Services Administration, 2021).

Overall, almost four times as many continuum results and thrice as many multidimensional scale results favoured internal than external LoC. Also, a larger proportion of analyses favouring internals were significant with larger effect sizes. Multidimensional scale favour tended to stem from low rather than high subscale scores. Thus, it may be that believing life outcomes are mostly self-generated, while appreciating that most are influenced by various factors, benefits SUD recovery.

Although Internality was favoured by each LoC scale, this relationship was most prevalent among DRIE analyses. These results suggest belief in one's autonomy over general life decisions, but particularly those surrounding substance use, facilitates ability to refrain from substances. However, as no studies used drug-related LoC scales (Hall, 2001; Ersche, Turton, Croudace, & Štochl, 2012), this may only apply to alcohol use. The vast majority of AUD analyses found recovery facilitated by internal LoC, and a substantially higher

proportion of these were significant than of those supporting externality. Indications in favour of internal LoC for recovery from problematic heroin use is provided, but benzodiazepine rehabilitation results are less conclusive. However, the small number of studies investigating users of substances other than alcohol reduces confidence in this thematic summary. Internal LoC was favoured by twice to four times as many analyses of individuals attending psychological SUD treatments, all of those receiving pharmacological treatments, and by the only study investigating electroconditioning treatment service users, indicating the advantage of internal LoC may transect treatment modality. The emergence of increased benefit for external LoC in psychological treatments suggests it may mediate openness to external influence. The benefit of this trait may thus depend on the environment (Jonson, Rosen, Chang & Lin, 2015).

The role of LoC in SUD treatment recovery appears most differentiated during and after treatment. While twice as many continuum analyses conducted during treatment favoured internal than external LoC, many more were uninterpretable. Considering the appreciable influence of one's social environment on substance use behaviours, it is possible that these mixed results stem from the simultaneous within treatment exposure to particularly beneficial persons, such as treatment staff and service users overcoming similar issues, and corrosive individuals including service users struggling to overcome their disorder, substance using friends and dealers, or a cultural normalisation of substance use (Harvey & Jason, 2011; Paquette, Winn, Wilkey, Ferreira, & Donegan, 2019). The somewhat counterbalanced IPC results, favoured mostly by low subscale scores, substantiate this and indicate within-treatment substance use is best supported by diminished LoC beliefs which may engender a more balanced view of one's agency in the world. Conversely, ten times as many continuum analyses found better post-treatment outcomes for internal than external participants and relationships between low Powerful Others and Chance scores with reduced substance use

were highly significant. This indicates believing external factors do not determine life outcomes best facilitates post-discharge abstinence, potentially due to increased exposure to sobriety-challenging cues (de Sousa Fernandes Perna et al., 2017; Kabisa, Biracyaza, Habagusenga, & Umubyeyi, 2021).

Analysis of supported LoC direction found thrice as many studies supporting internal as external LoC. External LoC was not favoured by any pharmacologically-focused treatment investigations and appears more valuable during treatment, suggesting belief in influence of others on life decisions may moderate this influence and that external LoC is thus most beneficial when exposed to helpful parties. Those supporting external LoC tended to be older with more female participants, substantiating Bowen and Twemlow's (1978) finding that social cohesion may facilitate treatment outcomes and indicating LoC benefit may depend on cultural values. No studies using multidimensional scales supported externality, potentially due to their composition of twice as many external as internal scales and tendency to correlate reduced use with low subscale scores.

Three studies discovered interesting interactions. Individuals who drank due to negative emotional states were more likely to achieve abstinence if they had an internal LoC, but those who drank due to negative physical states had better outcomes with external LoC. It may be that the positive self-image of an internal LoC benefits those who drink due to, often self-directed, negative emotional states (Judge, Erez, Bono, & Thoresen, 2002), and that recognition of increased need to rely on others, rather than unrealistic autonomy representations, benefits those with compromised physical states (Burish et al., 1984). Layered onto the finding that internality predicts better prognosis in most investigations of this review, the results of this study indicate a large proportion of individuals with SUDs use substances to cope with negative emotions (McHugh & Kneeland, 2019). Results in one study were significant only for those with good cognitive function, indicating the reduced

independence of those with cognitive dysfunction may confound LoC (Wang, Wu, Chang, Chuang, 2013). Finally, individuals receiving LoC-matched covert sensitisation treatment showed more favourable outcomes, supporting the benefit of LoC integration to therapy. Biological males and females experience phenomena differently due to physiological and cultural factors (Schwandt et al., 2010). More specifically, biological sex has been found to play a role in the mediation of substance use disorders (Kendler, Prescott, Myers, & Neale, 2003). Thus, the role of LoC in SUD treatment recovery may vary according to biological sex. While strong support for internal LoC in male SUD recovery was revealed, just one non-significant analysis with small effect size favoured externality in females. Consequently, the role of LoC in SUD recovery for females cannot conclusively be inferred.

3.4.2 Generalizability

Diminished LoC appears to be the most reliable predictor of improved SUD treatment outcomes. This may translate to ruminating less on who or what mediates specific events or understanding that often events are mediated by numerous factors. As this finding is not yet extensively reported in the literature, consideration of its consequence for existing and future research is warranted. Internal LoC appears to fortify SUD treatment outcomes. This could reflect the conceptual link between internality and self-efficacy, also found to promote abstinence (Kadden & Litt, 2011; Saadat, Ghasemzadeh, Karami, & Soleimani, 2012). However, it may also indicate reduced externality, highlighting a limitation of current scale design. While multidimensional scales are composed of one internal and two external measures, continuum scales force respondents to choose between internal and external responses. As increased abstinence tends to correlate with low multidimensional scale scores, the increased prevalence of internal benefit may instead reflect the advantage of diminished causal attributions. Similarly, the forced-choice nature of continuum measures may overestimate the benefit of internal LoC. Thus, the role of internal LoC with favourable

outcomes across the literature (Nafradi, Nakamoto, & Schulz, 2017) may be exaggerated. This appears to be a novel interpretation which, if correct, could radically alter our understanding of LoC. To more precisely elicit the role of LoC for SUD treatment service user prognosis, and other psychological phenomena, development of a scale measuring the degree to which individuals believe situations are simultaneously influenced by internal and external factors is necessary.

Internal LoC seems most beneficial when faced with sobriety-challenging stimuli and external with sobriety-facilitating environments. LoC seems further influenced by personal factors such as physical or intellectual capabilities, as well as societal expectations. Thus, it appears most beneficial when facilitating the influence of the most advantageous agent for a situation. As the most advantageous agent is likely to vary across situations, flexible LoC seems most beneficial. This is supported by the advantage observed in individuals with low multidimensional scale scores who do not hold strong LoC beliefs and may thus be better equipped to accept influence from various sources to assist goal achievement. The fact that most personal actions lie ultimately with the individual may also underscore the predominance of internality with improved substance use outcomes.

The findings of this review suggest training flexible LoC beliefs during SUD treatment may enhance recovery outcomes. However, this ability must be accompanied by a desire to be sober, good communication skills, and capacity to accurately appraise oneself, environment, and others - which might be scaffolded with concurrent training. The advantage of internal over external LoC indicates encouragement of this may also be valuable. A paucity of female and illicit drug using participants in this review's studies prevents transferability of these findings to these cohorts.

3.4.3 Implications

This review contributes substantially to current understanding of LoC and its potential role in SUD treatment outcomes. My interpretation of the potential benefit of diminished LoC beliefs appears novel in the literature. Similarly, my critical analysis of the possibly overstated benefit of internal LoC is not previously observed. As these observations radically question existing research they demand earnest consideration. Development of a scale which does not overextend the importance of internal LoC is recommended. Furthermore, I suggest more diverse, inclusive, representative research, including particularly females and illicit substance users. I purport that executing these points would greatly enhance SUD treatment by detailing the circumstances under which belief in one's own, others' or environmental factors' influence on life outcomes promotes recovery.

Chapter Four. Interpersonal Control and Affective Forecasting According to History of Homelessness

4.1 Introduction

As discussed in Chapter One, this project investigates how homelessness combined with PSU may affect cognitive psychological traits and how these cognitive psychological traits may impact on treatment of PSU. As described in Chapter Two, these questions are mainly addressed via a longitudinal study comprising two major data collection points six months apart towards the start and end of residential PSU treatment. This chapter will discuss timepoint one of this study, from inception to result interpretation. It will firstly provide a background literature and rationale for selecting the cognitive traits of interest. It will then delineate the specific aims and hypotheses of this study. Methods and results will lastly be outlined followed by a discussion of potential interpretations.

4.1.1 Rationale

As described in Chapter One, both PSU and homelessness are increasing issues globally (Department of Housing, Local Government, and Heritage, 2020; Department of Housing, Local Government, and Heritage, 2025; EUDA, 2025). They are also highly correlated, with many individuals struggling concomitantly with both (Stablein et al., 2021). Despite the relative extremity of homelessness for modern humans, the potential psychological impact of this circumstance on PSU recovery appears considerably underexplored in the scientific literature. This project aims to explore this potential interaction via apropos traits of cognition. However, as also mentioned in Chapter One, sparse examination of cognitive function during homelessness beyond general IQ or executive function appears to exist. Thus, to examine whether homelessness may bias cognitive responding relevant to PSU recovery, exclusive delineation of this bias is firstly required. This is the aim of the current Chapter. In this manner, the current rationale shall

introduce the cognitive traits selected by my academic research team for investigation as well as their apposition to the present project.

4.1.1.1 Cognitive Traits of Investigation. As outlined in Chapter One, although PEH exhibit reduced cognitive control (Incekara-Hafalir, & Linardi, 2017) across numerous indices and truncated temporal perspective (Pluck et al., 2008), research into factors that could potentially mediate these phenomena appears scant. Environmental factors are consistently shown to influence cognition across the psychological literature (Hartley, 2022; Heft, 2013; Mettke-Hofmann, 2014; Proulx et al., 2016; Shapero, 2017). Consequently, it is highly possible that the compromised autonomy imposed on PEH as outlined in Chapter Two could hinder the exercise of and consequent efficacy of related cognitive control (Burn, 1992; LaGory et al., 2001). Considering this imposition is obviously exerted by external bodies or individuals, it is further possible that some of these affected traits relate to interpersonal cognitive control (Francis, 2000; Johnsen et al., 2018; Peters et al., 2022; van den Berk-Clark, 2016). Similarly, the urgency of current needs and verifiable inability to plan far into the future for PEH could enhance propensity for present- over future-oriented cognition over time (Epel et al., 1999; Fieulaine, & Apostolidis, 2014). Consequently, this project focuses on two major domains of cognition: interpersonal control and temporal perspective. *Interpersonal Control Cognition* refers to patterns of thought related to influencers of life course, namely the self versus others (Liu et al., 2023; Rodrigo, 2022). *Temporal Perspective* encapsulates how we view the past, present, and future (Gergen & Gergen, 2014; Sircova et al., 2007; Stolarski et al., 2015).

4.1.1.1.1 Locus of Control. LoC is a prominent trait within the cognitive literature with strong relevance to various forms of psychological function. It is generally propounded that an internal LoC is favourable for performance across various domains. Chapter Three describes a systematic review conducted by my academic team of existing literature into the

potential role of Locus of Control (LoC) for PSU treatment service user's recovery. This review compiles all relevant SUD treatment service user substance use data to provide several profound and novel insights to the field. Previous speculation that LoC may be as beneficial as it is socially appropriate is buttressed, its potential link to actual major life influencers is proffered, and consequent possible advantage of LoC flexibility to permit adaptation to various situations is also postulated. It is possible that the extreme influence that more powerful others tangibly exert over the daily lives of PEH as mentioned in the previous section and Chapter Two could distort PEH LoC. Likewise, the extremity of homelessness, typically rendered by several compounding factors as detailed in Chapter One, could alter perception of fate or luck (Hocking & Lawrence, 2000; Snow & Anderson, 1993). Thus, due to the importance of LoC with regard to cognitive functioning and goal setting, the investigation described in this chapter explores the potential relationship between homelessness and LoC.

4.1.1.1.2 Desire for Control. The extent to which individuals are motivated to have personal control over their life outcomes is described as their 'Desire for Control' (DC). DC has been found to predict performance across various health- and productivity-related domains, sometimes to a greater extent than actual 'Self-Control' (Burger, 1985, 2013; Schoepfer et al., 2014; Stevens et al., 2019). While DC and LoC are correlated (Breslow, 1987; Gebhardt, & Brosschot, 2002), they are distinct traits, as the cognitive motivation for, and allocation of, personal life influence, respectively (Anderson et al., 1994; Burger, 1984; Dembroski et al., 1984). As described under Section 4.1.1.1.1, PEH experience reduced control over their personal lives, often enforced by other individuals such as social care staff. As this is generally an altered state from their lives hitherto, it is possible that they recognise this change and experience a desire on some level to restore original levels of self-governance (Brent, 1978; Fletcher, 1942; Marks, 2022; Tavassoli, 2013). Despite the apparent importance

of DC for goal achievement (Burger, 1985), the relevance of this trait to PEH in PSU treatment who have many tasks to achieve appears underexplored. Thus, to comprehensively investigate the potential impact of homelessness on interpersonal cognition, investigation of this trait appears imperative.

4.1.1.1.3 Affective Forecasting. Time Perspective (TP) is another cognitive domain that has evidenced particular importance across various indices of human performance such as achievement, well-being, health behaviour, risk behaviour, and retirement planning (Janeiro et al., 2017; Kooij et al., 2018; Simons et al., 2004). It comprises various elements, namely temporal focus, temporal attitude, and temporal distance which are all found to independently correlate with well-being (Rush, & Grouzet, 2012). Nonetheless, the vast majority of TP research investigates temporal focus, the extent to which individuals think about their past, present and future selves, using the Zimbardo Time Perspective Inventory (ZTPI; Maglio & Trope, 2019; Park et al., 2017; Zimbardo & Boyd, 1999). Within this literature, findings generally propound future-oriented cognition, as a primary driver of motivation, for achievement and success (Andre et al., 2018; Barreto et al., 2022; Choi et al., 2023; Husman, & Shell, 2008; Lens et al., 2012; Nuttin, 2014). However, while this scale distinguishes past and present orientations according to positive and negative affect, future oriented thought is undivided. This is counterintuitive, considering after decades of international research into the topic (Chen et al., 2024; Fekih-Romdhane et al., 2023; Liniauskaitė, & Kairys, 2009; Martoni et al., 2023; Reuschenbach et al., 2013), the scale designers recommend a '*Balanced Time Perspective*' comprising moderate to high '*Past Positive'*, *'Present Hedonism'*, & *'Future'* scores alongside relatively low '*Past Negative'* and '*Present Fatalistic'* scores for '*optimal functioning*'; essentially *Positive Intertemporal Affect* (Zhang et al., 2013; Zimbardo & Boniwell, 2004). Further, positive affect appears to hold greater importance for people with limited future time perspective, such as those

experiencing homelessness (Hicks et al., 2012; Lang, & Carstensen, 2002) and several lifestyle characteristics including homelessness are found to truncate TP (Henry et al., 2017; McInerney, 2004; Rudolph et al., 2018; Van Doorn, 2010). Thus, the current investigation aims to reveal whether emotions held about the future vary according to homelessness experience.

4.1.1.1.4 Recent Life Events. Trauma such as physical or sexual abuse, gang violence, threats, attacks, and military combat is noted as a leading antecedent of homelessness (Hamilton et al., 2011; Miller et al., 2020). Thereafter, the experience of homelessness in-and-of itself is appreciated to impose trauma (Deck & Platt, 2015; Gilmoor et al., 2020; Goodman et al., 1991; Martin, 1991; Robinson 2005; Tsai et al., 2020). Combined, these traumas lead to approximately 90% of PEH having experienced at least one trauma in their lives with the average being six (Buhrich et al., 2000; Taylor & Sharpe, 2008). Such is the level of experienced trauma within homeless populations that trauma-informed-care has become one of the most highly prioritised approaches within related services (Barry et al., 2024; Bransford, & Cole, 2019; Burge et al., 2021; Crawford, 2022; Dinnen et al., 2014; Guarino, 2013; Hopper et al., 2010; Kohler et al., 2021; Milaney et al., 2020; Wiewel & Hernandez, 2022). Considering trauma has been shown to affect such stark psychological changes (Bolton et al., 2004; Sherin, & Nemeroff, 2011; Spytska, 2023), to investigate cognitive functioning within homeless populations without acknowledging its potential influence would almost be indefensible. However, considering trauma is not the main focus of the current project and to avoid delving into participants' potentially sensitive histories this project considers the potential impacts of general major life events which could have occurred in the year prior to their participation only.

4.1.2 Aims and Objectives

Study aims and specific objectives were designed in collaboration with DSC Enterprise Mentor One. As per the above rationale, in the pursuit of determining any potential cognitive alterations in important traits for the maintenance of substance misuse in PEH, the overarching aim of the first timepoint of Study Two is to reveal whether LoC, DC, Future Affect, and Recent Life Events may be differentially expressed according to homelessness experience. Specific objectives were as follows:

1. Statistically compare LoC differences in 'Current Housed', 'Current Homelessness', and 'Prior Homelessness' groups of residential PSU service users
2. Statistically compare DC differences in 'Current Housed', 'Current Homelessness', and 'Prior Homelessness' groups of residential PSU service users
3. Statistically compare Future Affectivity differences in 'Current Housed', 'Current Homelessness', and 'Prior Homelessness' groups of residential PSU service users
4. Statistically compare Recent Life Events differences in 'Current Housed', 'Current Homelessness', and 'Prior Homelessness' groups of residential PSU service users

4.1.3 Hypotheses

Based on the existing literature outlined in Chapter One and the rationale detailed in Section 4.1.1, the following hypotheses were deduced with DSC Enterprise Mentor One:

1. a) Internal LoC would be lowest in the 'Current Homelessness' group

   b) Powerful Others LoC would be highest in the 'Current Homelessness' group

   c) Chance LoC would be highest in the 'Current Homelessness' group
2. DC would be highest in the 'Current Homelessness' group
3. a) Positive Affective Forecasting would be lowest in the 'Current Homelessness' group

    b) Negative Affective Forecasting would be lowest in the ‘Current Homelessness’ group

4. a) Negative Recent Life Events would be more prolific in the ‘Current Homelessness’ group

    b) Negative Recent Life Events Still Affecting individuals would be more prolific in the ‘Current Homelessness’ group

4.2 Methods

4.2.1 Participants

4.2.1.1. Participant Eligibility. This section describes the inclusion and exclusion criteria for participants in both timepoints of this longitudinal research study.

4.2.1.1.1 Psychoactive Substances. This study timepoint investigates potential differences in cognition between individuals according to their experience of homelessness. However, as described in Chapter One, PSU is vastly over-represented in homeless populations of the Global North. As per their name, psychoactive substances alter psychological, including cognitive, function (Abrahao et al., 2017; Creeley, & Olney, 2013; Cruz et al., 2008; Squeglia, & Gray, 2016; Vogel-Sprott et al., 2001). Thus, to enhance the likelihood of examining unadulterated cognition in PEH, and also that relevant to PSU recovery, only individuals in post-detox PSU recovery treatment were included. Participants from DSC could be recruited from approximately months two to nine of their recovery journeys, while CTC participants were generally in the second to seventh months of their journeys. Responses from these individuals were much less likely to be affected by active or residual psychoactive substances in the brain and body. To ensure this, DSC participants provided breath and urine samples to me for toxicology screen prior to their cognitive assessment.

4.2.1.1.2 Dual diagnoses. Mental and physical health issues are considerably more prevalent in PEH than in the general population (Bertram et al., 2022; Fazel et al., 2014; Lippert & Lee, 2015; Martens, 2001; Nikoo et al., 2014). These can precede or succeed homelessness onset (Johnson, & Chamberlain, 2011) and are more prolific among those affected by intersectional disadvantage (Duke, & Searby, 2019; Flentje et al., 2016). Mental ill health and cognition are inextricably linked (Lönnqvist, 2010; Matthews & McLeod, 2005; McTeague et al., 2016; Parletta et al., 2013; Santamaría-García et al, 2020; Toledo-Fernández, et al., 2018) and for this reason individuals with comorbid mental health issues are generally excluded from mental health cognitive research (Conrod & Stewart, 2005; Sweileh, 2024; Vitali et al., 2018). However, at 50-70%, the co-occurence of PSU among people affected by other mental health issues is so common it has garnered its own name; 'dual diagnosis' (Drake, 2007; Holzhauer et al., 2019; Kessler, 2004; Murthy & Chand, 2012; Padgett et al., 2006). Prevalence of dual diagnosis is even higher among PEH (Prinsloo et al., 2012; Schütz et al., 2019). For this reason, to exclude such individuals would create an unrealistic representation of this sample; individuals with co-occurring PSU and other mental health issues were thus not excluded in this investigation.

4.2.1.1.3 Prescribed Medicines. As per their higher rates of physical and mental illness outlined in the previous section, PEH are prescribed considerably more psychoactive medicines, from antidepressants to pain relief, than the general population (Balasuriya et al., 2021; Hwang et al., 2011; Khan et al., 2022; Salhi et al., 2018). In fact, more than 75% of PEH suffer with mental ill-health that requires treatment (Kaduszkiewicz et al., 2017). Also, as described in Chapter One, Ireland has one of the world's highest rates of heroin use, at approximately 7 per 1,000 of the population; a usage which correlates with socioeconomic disadvantage, morbidity, and mortality (Bates, 2017; Millar, 2023). This has resulted in a Methadone Treatment Protocol (MTP) being rolled out which now treats over 10,000 people

of our current 5.262 million population, a rising proportion (Delargy et al., 2019). Unfortunately, despite the purpose of this protocol being to initially stabilise chaotic lifestyles and eventually assist sobriety (Kavanagh, 2012), numerous recipients report continued heroin use throughout and remaining on this programme for years; thus, a substantial proportion of this population still battles problematic heroin use (Darker et al., 2016; Guobyte, 2015; Healy et al., 2022; Mayock & Butler, 2021; Moran et al., 2018; Mullen et al., 2012; Van Hout, & Bingham, 2011).

By their nature, psychoactive medicines alter neurotransmission and brain function (Dinis-Oliveira, & Magalhães, 2020; Oña, & Bouso,2021; Tracy et al., 2017); however, their purpose is to stabilise clinical levels of mental ill-health (Everard, 2005; Healy, 2008; Julien, 2013; Oppong et al., 2016). Also, on a practical level, to exclude individuals who are taking psychoactive medicines as required would create an unrealistic representation of the Irish homeless sample. For these reasons, I felt that it was important not to exclude individuals from Study Two who were taking prescribed psychoactive medicines including methadone.

4.2.1.1.4 Age. Adolescent brains have been shown to vary considerably from adult brains across numerous indices relevant to PSU recovery and particularly the present investigation, such as risk taking, impulsivity, inhibition, emotion regulation, and interpersonal control (Ahmed et al., 2015; Arain et al., 2013; Blakemore, & Robbins, 2012; Dahl, 2004; Dumontheil, 2016; Eiland, & Romeo, 2013; Riediger, & Klipker, 2014). Thus, in order to avoid the interaction of rapid but unsystematic neurodevelopment of the adolescent brain with the results of this exploratory investigation, participants were required to be over 18 years of age.

4.2.1.1.5 Gender. As described in Chapter One, substance use among women is considerably less than with men, and the relevant prevalences of PSU treatment entry is even starker. According to the latest estimates from the UNODC (2024), for every woman in PSU

treatment, there are approximately 16 men. However, as also outlined in Chapter One, the consequences of substance use for women are far starker than those for men. Regardless of this, as detailed in Chapter Three, women are strikingly underrepresented in research in general, and particularly research that pertains to PSU. Thus, best efforts were made to acquire a gender-balanced sample for the present investigation, with the view to interrogate potential gender-specific interactions.

4.2.1.1.6 Literacy. Literacy levels among PEH tend to be lower than those of the general population with inadequate levels experienced by approximately 50% (Goodacre, & Sumner, 2021; Grajo et al., 2020; Hanckel et al., 2024; Noll, & Watkins, 2003; Olisa, 2024; Yoho, 2016). Further, as discussed in Chapter One, only 65% of the current Irish homeless population hold Irish citizenship; the next largest proportions appear to be Romanian (15%), African (6%), and European (10%; CSO, 2022). It is highly likely that many of these foreign nationals, while able to understand and speak English, are not adept in its reading or writing. Therefore, to request this sample to respond to my selected cognitive measures as designed would likely cause embarrassment, misinterpretation that could invalidate results, or impede participation altogether. As deficient language ability does not appear to be related to non-verbal cognition in PEH (Pluck et al., 2020), I felt that to exclude individuals on the basis of literacy would exclude a significant and important section of my overall sample, and potentially bias or skew my results to create an inaccurate representation of the current homeless population in Ireland. Thus, to avoid such unnecessary literacy-based exclusion, all measures used in this investigation were adapted for use with a low-literacy group, as per the recommendations of the EbE group. These adaptations are described in Section 4.2.2.

4.2.1.1.7 Intellectual Capacity. As many as 75% of PEH have sustained a Traumatic Brain Injury (TBI) in their lifetime, and approximately 60% of these have sustained such injuries on multiple occasions; both prevalences are much higher for homeless than housed

populations (Hwang et al., 2012; Oddy et al., 2012; Stubbs et al., 2020; Topolovec-Vranic et al, 2012; Topolovec-Vranic et al., 2017; Young & Hughes, 2020). TBIs are shown to exert significant impact on cognitive function in PEH (Cusimano et al., 2021). Moreover, while 90% of these injuries occur prior to homelessness onset (Oddy et al., 2012), homelessness has also been shown to exacerbate the effects of existing TBIs (Monsour et al., 2023). Similarly, as many as 39% of PEH evidence clinical levels of Intellectual Disability (ID; Brown & McCann, 2021; Durbin et al., 2018; Mercier & Picard, 2011; Nishio et al., 2015; Nishio et al., 2017; Oakes & Davies, 2008; O'Donovan et al., 2024; Van Straaten et al., 2014). Significantly reduced intellectual capacity infringes upon ability to provide fully informed consent (Dye et al., 2007; Iacono, & Murray, 2003). However, the ethical implications of conducting research with individuals who may not be able to provide fully informed consent must be considered alongside the ethical implications of entirely excluding them from research (Calveley, 2012). For the present study, it was deemed that significant intellectual impairment that would impede ability to comprehend study materials would not be beneficial to the individuals or the research; for this reason, likely comprehension capacity was the cut-off for the present investigation. Measures taken to establish comprehension capacity prior to participation are outlined in Section 4.2.3.

4.2.1.2 Reimbursement. According to the European Textbook on Ethics in Research (Hughes et al., 2015), monetary rewards for participants that are excessively steep or for 'desperate' populations may invalidate consent by making participation too attractive to resist. This overrides their rational decision-making processes and therefore may manipulate them into unnecessarily participating in a project that may be risky for them. As impoverishment is a frequent outcome of PSU (Copello et al., 2010; Daley, 2013; Mardani et al., 2023; Orford et al., 2013), and PEH are generally significantly poorer than their domiciled counterparts (De Marco et al., 2016; Dwyer et al., 2023; Elbogen et al., 2021;

Gaetz, & O'Grady, 2002; Maguire, 2022; Minion, & Banerjee, 2024), a monetary reimbursement was deemed unethical for this population. This was further supported by the understanding that community service tends to benefit PSU recovery and is regularly utilised as a recovery tool (Frone et al., 2022; Harrison et al., 2020; Lusk, & Veale, 2018; Magura & Marshall, 2020; Sahker et al., 2019; Sherba et al., 2018). Thus, participants were not reimbursed for taking part in this study.

4.2.2 Study Materials

This section introduces the psychometric measures used to assess my selected cognitive traits of investigation, in order of administration.

4.2.2.1 Addiction Severity Index. Originally designed for use with alcohol or opioid dependent men in the 1970's, the Addiction Severity Index (ASI; McLellan et al., 1979) became one of the most widely used assessment instruments for individuals with all types of PSU in various clinical and research settings worldwide. However, this use with various populations on whom it was not initially tested, alongside changing profiles of substance users, and rapidly updating knowledge surrounding PSU correlates inspired several updates from scale designers (Cacciola et al., 2011; McLellan et al., 2006; McLellan et al., 1992). Version 6 of the ASI is the most up-to-date edition, showing enhanced internal consistency, test-retest reliability, and external validity when compared with previous versions for contemporary substance users of various substances around the globe; it is now considered the 'gold standard' measure for PSU assessments (Denis et al., 2013; Denis et al., 2016; Kessler et al., 2012; Ljungvall et al., 2020; Martins-da-Silva et al., 2023). It has also shown suitability in terms of reliability and validity with PEH (Zanis et al., 1994) and PEH with PSU (Joyner et al., 1996).

4.2.2.2 Levenson Multidimensional Locus of Control Scales. As described in Chapter Three, Locus of Control (LoC) describes the extent to which people believe their life

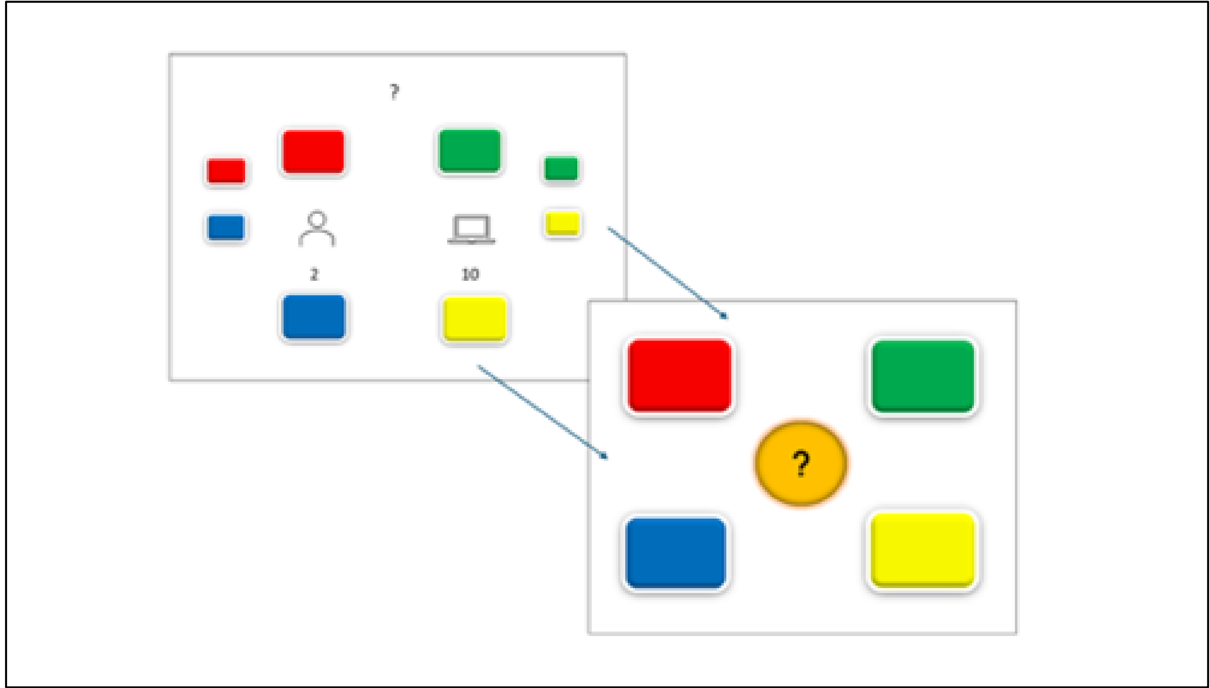
outcomes are governed by various influencing factors. Versions of this scale have been adapted to assess Health, Work, Children's, Weight, Headaches, Entrepreneurship, and Wellbeing among several others (Farnier et al., 2021; Furnham, & Steele, 1993; Jones, & Wuebker, 1985; Martin et al., 1990; Saltzer, 1982; Schjoedt, & Shaver, 2012; Wallston, & Wallston, 1981). While some scales, including the original (Rotter, 1966), dissect this trait onto a continuum from Internal to External LoC, others argue the External element of this conceptualisation is too broad, comprising 'Powerful Others', 'Chance', and 'Fate' in comparison with the Internal aspect consisting of just self-mediation beliefs (Hyman et al., 1991; Lefcourt et al., 1979; Wallston, 2005; Wong et al., 1978). My systematic review into the relationship of LoC to PSU treatment service users' substance use outcomes recommends a more sophisticated scale should be developed to more accurately assess LoC and its relationship to behavioural phenomena. This scale should allow simultaneous influence from various factors while balancing internal and external measurement. However, as such a scale is yet to be developed, my academic team decided that the Levenson Multidimensional Locus of Control Scales (Levenson, 1973) was the best currently available match to these criteria. This scale was thus used for the present investigation to separately investigate the roles of Internality, Powerful Others, and Chance, with results interpreted critically to avoid exaggerating the roles of Internal or External Factors.

4.2.2.3 Desire for Control Task. Initially assessed using a self-report scale (Burger, 1985), Desire for Control (DC) showed good predictive power for achievement, depression, academic performance, obsessive-compulsive symptoms, and corporate offending, among other psychologically-driven behaviours (Ashford, & Black, 1996; Burger, 1984, 1985, 1992; Leeper Piquero et al., 2010; Moulding, & Kyrios, 2007). This original scale showed good internal consistency, test-retest reliability, as well as discriminant validity from LoC (Burger & Cooper, 1979). However, to reduce the likelihood of socially desirable responding, an

implicit quantitative measure was recently designed (Wang & Delgado, 2019). This DC task asks participants to choose between themselves or a computer-partner to play for different numbers of points on multiple rounds of a game of chance. In the original study, playing themselves seemed to be worth approximately 30% of the points on offer, i.e., participants generally still selected to play when they could win 10 points, but their computer-partner could win 13. This task showed good correlation with the original DC scale and underlying neural correlates, as tracked by the ventromedial prefrontal cortex (vmPFC; Burger & Cooper, 1979, Wang & Delgado, 2019). Due to their extreme vulnerability, PEH are acknowledged to evidence heightened socially desirable responding, particularly surrounding individuals they perceive to be in power, such as relevant social care staff or researchers (Currie et al., 2021; Haeffner et al., 2023; Johnson, & Van de Vijver, 2003; Lalwani et al., 2006; Mick, 1996; Orne, 2017; Paulhus, 1984; Paulhus & Reid, 1991; Paulhus, 2017; Tracey, 2016; Van de Mortel, 2008). Consequently, the implicit task measure of DC was utilised for the current investigation. I re-designed this task for use with PEH in PSU treatment via SuperLab 6.0 with approval from the task designer (Appendix D). This involved lay English and replacing the original 'higher or lower' card game of chance with a game that is not connotative of gambling, as described in Section 2.3.2.1.2. The format of this task is presented in Figure 4.1.

Figure 4.1

Adapted DC Task for Use With PEH in PSU Treatment



Note. In the original task, participants were asked to choose whether the back of a playing card was 'higher or lower' than five. As this game was connotative of gambling, I redesigned this task in Superlab to instead present four coloured squares. In this version of the task, participants were told that an orange circle was behind two of these squares and a purple circle was behind the other two. They were asked to pick a square they felt hid an orange circle.

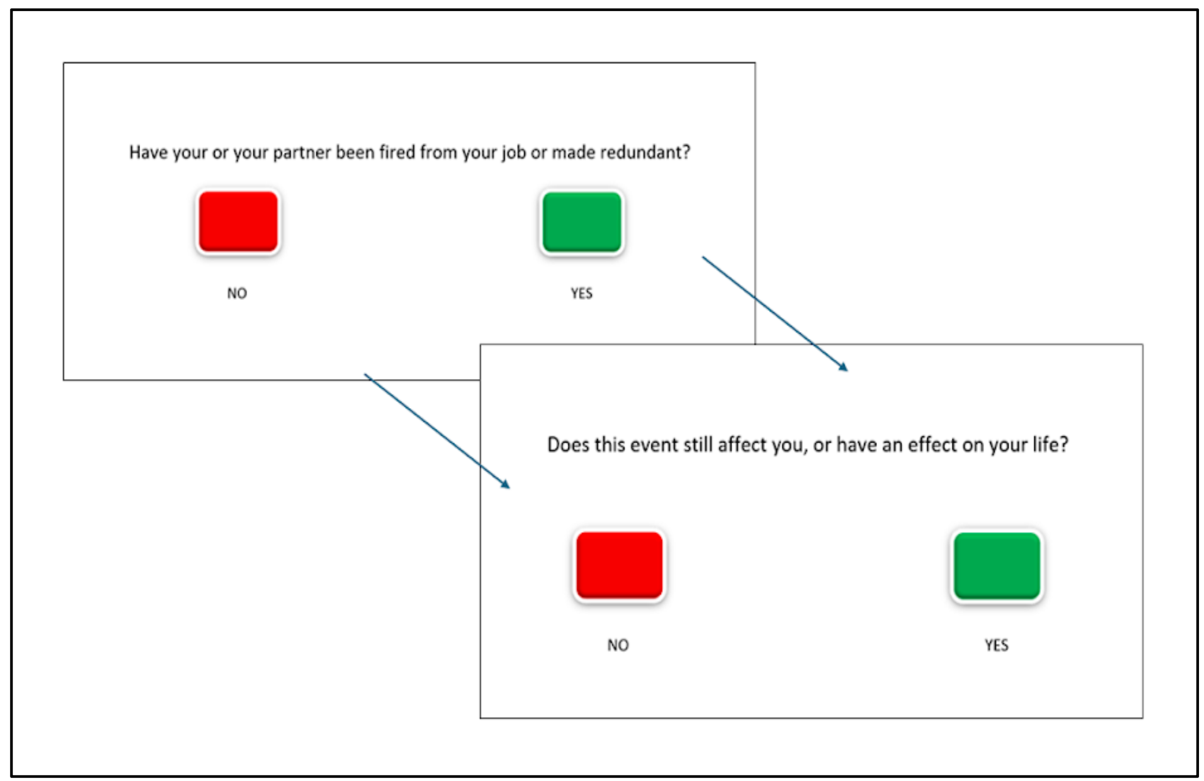
4.2.2.4 Future Events Questionnaire. Designed to measure correlations between general anxiety disorder and depression with predictions individuals made about the future, the Future Events Questionnaire (FEQ) assesses certainty in potential positive and negative future outcomes, with good internal consistency (Miranda & Mennin, 2007). I used this instrument to concisely examine the relationship between homelessness and future affectivity.

4.2.2.5 Recent Life Events Questionnaire. As per Section 4.1.1.1.4, to investigate cognitive function in PEH without acknowledgement of the known traumas pervasive in this community would likely yield inaccurate results. Thus, to simultaneously avoid unnecessarily soliciting traumatic memories for an indirectly related investigation, this project utilises the

Recent Life Events Questionnaire (RLE; Brugha et al., 1985). This questionnaire pursues major life events such as ending a relationship, the passing of a loved one, or giving birth, without trespassing into violent or criminal histories and potentially activating sensitive or even painful memories for participants. In this way, it provides a brief indication of participants' life stabilities with reduced potential upset. The questionnaire is formatted such that participants are first asked whether or not 20 events occurred in the last year. If an event occurred, they are then asked if it still holds an effect over them. All questions are responded to in a yes/ no format. The questionnaire is thus scored across two indices; event occurrence and affect. Participants can score up to 21 on each. Mean scores in the original study with caregivers were 17 events, with 10 still holding effect over the individual. My adaptation of this questionnaire for use with PEH in PSU treatment via SuperLab 6.0 is presented in Figure 4.2.

Figure 4.2

Adapted RLE Questionnaire for Use With PEH in PSU Treatment



4.2.2.6 Adaptations. All measures were adapted for use with PEH in PSU treatment prior to implementation, as per the recommendations of an Experts by Experience (EbE) group held with DSC Detox Unit service users. In line with the principle of Data Minimisation under Article 5 of the General Data Protection Regulations and with respect for participants' time, the ASI was adapted to exclude questions pertaining to: time assessment begun and ended, round of assessment, phone/ in-person assessment, number of times in treatment, interviewer number, reason for not taking part, religious preference, medical status, employment/ support status, familial psychiatric history, family/ social relationships, and psychiatric status (Cacciola et al., 2007; European Union, 2016). 'Legal status' was surmised to number of lifetime months in prison and number of months since prison. Further, instead of explicitly asking whether participants were in treatment on court order, participants were asked "What caused you to enter PSU treatment?", which was projected to also encapsulate individuals who may have entered following the discovery of pregnancy. Residential questions were adapted to first ask what type of accommodation the participant was in prior to admission, how long they had been there, and how many months of their life they had spent homeless. Race enquiry was adapted from this American scale to reflect the current Irish landscape as indicated by our latest census form. Gender was adapted to reflect contemporary knowledge and understanding surrounding fluidity and identity (Coney, 2015; Diamond, 2020; Flores, 2021; Fontanella et al., 2014; Gosling, 2018; Nichols, 2016; Sumerau et al., 2020). Original content and language of all other measures was retained but presented by paragraph or item as relevant using SuperLab 6.0 psychology experiment software, read to participants by myself, and responded to using a coloured button box. Although no colour-blind individuals participated, had this occurred, they would have responded spatially as buttons were risen from the box. Form, questionnaire, and task slides did not proceed until the participant in question indicated to the software to do so. This procedure enhanced

likelihood words were correctly received by participants in the first instance and also increased likelihood of question asking by instigating a conversation-like environment.

4.2.3 Procedure

4.2.3.1 Pre-Recruitment. Participants were recruited from five PSU treatment centres in the Dublin region; one early recovery house and two medium support houses from DSC, alongside one men's and one Women and children's recovery house from CTC. Of note, DSC's early recovery treatment accommodated PEH who were fully detoxified but only sober for approximately one month for a three month stay. The medium support houses from the same organisation housed individuals who had completed this early recovery stage for another five months. Alternatively, both CTC's men's and women and children's residential recovery programmes approximate a six month duration for their service users. Prior to recruitment procedures, my academic supervisors and I held meetings with all participating recovery service managers. These meetings outlined study aims and procedures, with particular focus on the roles of various participating individuals including research team members, enterprise mentors, service users, recovery service staff, and recovery service managers at various stages of the research process. The importance and means through which the mild deceit would be utilised by all participating individuals from staff to service users throughout the research process, to more accurately elicit participants' cognitive traits, was also emphasised. During one of these meetings, my DSC Enterprise Mentor suggested a 'Staff Information Poster' be created, to summarise staff-relevant information. This was accepted, generated, and multiple copies provided to each manager for their various staff offices immediately prior to recruitment addresses (Appendix G).

4.2.3.2 Recruitment. I made recruitment addresses to the service users of each of these centres. Recruitment posters synopsising participant-relevant information were also displayed throughout each recovery house (Appendix H). To overcome participation and

potential embarrassment of service users who may not be able to understand study materials due to compromised intellectual capacity via TBI or ID as discussed in Section 4.2.1.1.7, service users initially '*volunteered*' to participate. Importantly, it was communicated to service users at this stage that not all volunteers may get the chance to participate as I had to check with service staff first that it was safe for them to do so. For DSC service users, this was done using their Pathway Accommodation and Support System identification number (PASS ID; Daly, Craig, & O'Sullivan, 2018). PASS IDs are provided to each individual registering as homeless in Ireland to integrate communication among relevant service professionals from separate organisations via an online platform. PASS IDs are only identifiable to homeless services staff; in this way, DSC volunteers were never identifiable to my academic supervisors nor myself. Following recruitment address, service users interested in study participation either:

1. Provided their PASS ID and personal phone number to myself
2. Asked a DSC staff member to provide me with their PASS ID number and phone number via email or her research phone number as provided on 'Staff Info' or
3. Text me using the research-phone number provided on study recruitment posters at a later time

I then entered each PASS ID number to separate '*Volunteer Screen Forms'*, which were shared with relevant recovery service managers via an encrypted folder in my academic research team's shared DCU GDrive (VSF; Appendix I). Respective managers indicated whether they believed volunteers, as indicated by PASS IDs, had the intellectual capacity to understand study materials via these forms. VSFs also collected data about respective volunteers' prescribed psychoactive medicines and quantities. Managers informed me via email when all forms were complete. My academic supervisors and I then assessed these forms to ensure volunteer capacity prior to participation.

For CTC volunteers, this process was the same with the exception of the PASS ID number element. This was to protect potentially sensitive information of their service users, all of whom were not registered as homeless, and may be embarrassed to provide such a detail to me in front of other service users or via staff. Removing the PASS ID procedure for CTC service users further standardised this study's protocol for their staff and service users.

4.2.3.3 Assessments. Post screening, eligible volunteers were assigned a random five-digit research ID number from an online generator. Research ID and PASS ID or name links were stored in a separate password-protected excel file from other study data within my academic team's shared DCU GDrive. Eligible volunteers were contacted directly by me to arrange their assessments. This ensured recovery service staff would not find out which volunteers eventually elected to participate. Staff were informed that all volunteers may not get to take part due to study time constraints. In this way, care received by this vulnerable cohort could not be influenced by their decision to participate. Thus, the likelihood that their decision would be biassed by a desire to receive more favourable care from an under-resourced staff was reduced. Assessments were held on a one-to-one basis in a room set aside in each recovery service for this project. Before arriving at the service, I checked with respective recovery service managers that their room and staff were available at the proposed time. Immediately prior to cognitive assessment, participants provided me with breath and urine samples for a toxicology screen. Importantly, if a screen produced a positive result I did not tell service staff, to ensure this study's segregation from vital care provision. This protocol was also clearly communicated to all participants prior to participation in recruitment addresses and consent procedures. In the case of a positive toxicology result, the participant was simply offered to reschedule to a later time. As service staff were never informed which service users were doing cognitive assessments in the first instance, rescheduling would not flag potential substance use to staff. CTC participants underwent

toxicology screens daily, overriding the need for this toxicology screen procedure. Written study materials were presented to participants using SuperLab 6.0 psychology experiment software on my DCU-encrypted Dell Latitude 5320 laptop. Each SuperLab slide presented either a small number of bullet points or a singular item for forms or scales, respectively. When I had read aloud all information from a slide had been read, and clarified as required, the participant could progress using the SuperLab response pad. Before beginning, participants were told they could ask as many questions and take as many breaks as required throughout their assessment. Informed consent was obtained via a form containing yes/ no item responses accompanied by a voice recording of the participant stating that their research ID number consents to take part in this study. Alongside standard debrief explaining the purposes of the mild deceit employed during the study and asking participants not to share actual study aims with fellow service users, participants were presented with a 'contact card' containing contact information for my academic supervisors and I, the DCU Ethics Committee, and DSC's 'Sure Steps' counselling service for DSC participants. Materials were presented in the following order:

1. Participant Information
2. Informed Consent
3. ASI
4. DC
5. LoC
6. FEQ
7. RLE
8. Debrief

4.2.4 Data Analysis

4.2.4.1 Independent Samples T-Test. T-tests assess the statistical difference in means between two independent groups (Gerald, 2018; Kim, 2015; Ross & Wilson, 2010; Sedgwick, 2010). They were used in the current study to assess whether differences existed between my Current Homeless and Prior Homelessness groups in terms of Years in Homelessness and Days Since Homelessness.

4.2.4.1.1 Bayesian Independent Samples T-Test. Bayesian statistics is an alternative approach to data analysis based on Bayes theorem (Bolstad & Curran, 2016; Van de Schoot et al., 2021). Bayesian Independent samples t-tests were run to complement frequentist results regarding the distinction of my Current Homelessness and Prior Homelessness groups for Years in Homelessness and Days Since Homelessness (Gronau & Wagenmakers, 2020; Meredith & Kruschke, 2021; Rouder et al., 2009).

4.2.4.3 Chi Square Contingency Test. Chi square tests explore whether the presence of a trait among groups is as statistically expected (Howell, 2011; Franke et al., 2012; Pandis, 2016). These distributions were used to examine whether significant differences may exist between Current Housed, Current Homeless and Prior Homelessness participants in this study for Gender, Organisation Attended and problematic use of each of the following listed substances at treatment entry: Alcohol, Cannabis, Tablets, Cocaine, and Heroin.

4.2.4.4 Fisher-Freeman-Halton Exact Test. The Fisher-Freeman-Halton Exact Test is an extension of the Chi Square test that can be used when more than 20% of the expected cell counts are <5 and the contingency table has greater than two rows or columns (Freeman & Halton, 1951; Lydersen et al., 2007). It was used in this study to assess potential group differences in prevalence of individuals from different ethnic backgrounds, prescribed methadone, or with problematic use of Ketamine, Cathinones, or Methamphetamine at treatment entry in Current Housed, Current Homeless, and Prior Homelessness groups.

4.2.4.5 ANOVA. Analysis of Variance tests examine potential mean differences between three or more groups (Cardinal, & Aitken, 2013; Henson, 2015; Kim, 2014). These analyses were employed to assist interpretation of potential differences between Current Housed, Current Homelessness, and Prior Homelessness groups for Age, Age Substance Use Started, Years of Substance Use, Treatment Days Until Assessment, the Powerful Others LoC subscale, and the RLE Number.

4.2.4.5.1 Bayesian ANOVA. Bayesian ANOVAs can be run alongside frequentist ANOVAs to test the same potential difference between group means using an alternative statistical approach (van den Bergh et al., 2020). These analyses were used in the current study to test potential differences between Current Housed, Current Homelessness, and Prior Homelessness groups for potential confounding variables Age, Age Substance Use Started, Years of Substance Use, Treatment Days Until Assessment, and cognitive variables of interest Powerful Others LoC and RLE Number.

4.2.4.6 Tukey HSD Post Hoc Test. As ANOVAs are omnibus tests, they reveal the existence of significant differences between three or more groups, but not where these differences exist. The Tukey HSD post hoc test is thus employed to identify the location of such difference when ANOVA analyses reveal significance. This test was employed for the current investigation to identify the root of significant Current Housed, Current Homelessness, and Prior Homelessness group differences revealed through ANOVA analyses for Age and Years of Substance Use variables.

4.2.4.7 Correlation. Correlations examine whether interval changes in one variable reliably correspond with interval changes in another (Asuero et al., 2006). The present study employed this analysis to investigate whether Age and Years of Substance Use variables were correlated.

4.2.4.8 Kruskal-Wallis H Test. The Kruskal-Wallis nonparametric test is used to compare differences between more than two groups when outcome data do not satisfy the assumption of normality (Kruskal & Wallis, 1952; MacFarland & Yates, 2016; McKnight, & Najab, 2010; Ostertagova et al., 2014). The current study employed this test to assess potential between group differences among currently housed, currently in homelessness, and previously in homelessness participants on Years in Prison, Number of Problem Substance Entering Treatment, Number of Substances Started in First Year of Substance Use, Lifetime Relapses, Days Since Last Psychoactive Substance Use, Internality and Chance LoC subscales, DC, Certainty of Negative Future Events Occurring, Certainty of Positive Future Events not Occurring, and RLE Affect variables.

4.2.4.9 Dunn Post Hoc Test. The Kruskal-Wallis H Test is an omnibus test which identifies the presence of a significant difference in ranks between three or more groups but not the location of this difference; this may be accomplished using a Dunn post-hoc test (Dinno & Dinno, 2017; Okoye, & Hosseini, 2024; Pohlert, 2014). The Dunn test was used in the current study to extrapolate potential between Current Housed, Current Homelessness, and Prior Homelessness differences for Years in Prison and Lifetime Relapses.

4.2.4.10 Poisson Regression. Poisson regressions predict 'count' outcome data given one or more independent variables (Coxe et al., 2009; Hayat & Higgins, 2014; Hutchinson & Holtman, 2005). These regressions compared potential Current Housed, Current Homelessness, and Prior Homelessness group differences in Suicide Attempts in the Previous 18 Months[2].

[2] *Note.* Recent Suicide Attempts were not systematically asked as part of this investigation. However, in response to the question "What caused you to enter PSU treatment?" (Section 4.2.2.6; Appendix M), designed to interrogate potential treatment entry due to court order or pregnancy which may confound intrinsic motivation (Fischbach & Woolley, 2022; Hennessey, Moran, Altringer, & Amabile, 2015), a notable number of participants were forthcoming with the reality that they entered treatment following one or several attempts on their own lives. Appreciated to be quite an extreme form of mental ill-health by my team, it seemed irresponsible to overlook such data entirely. It was thus included for analysis, but interpreted cautiously due to this described unplanned inquest.

4.2.5 Ethics

This study received final ethical approval following amendments from DCU's Research Ethics Committee on 26/07/23. The relevant approval number is DCUREC/2021/051. Final approval was obtained from DSC's Research Ethics Committee on 27/04/23.

4.3 Results

4.3.1. Descriptive Statistics

Sixty adult PSU treatment service users took part in timepoint one of this study: 41 men (68.33%) and 19 women (31.67%). No gender fluid individuals participated. Fifteen participants were recruited from DSC recovery facilities (25%) while 45 were recruited from CTC (75%). Participant ages ranged from 21 to 56 years (M=35.81, SD=8.69). Fifty-six White Irish (93.33%), two White Irish Traveller (3.33%), and two Irish-Caribbean (3.33%) individuals took part.

4.3.2. Preliminary Analyses

Preliminary tests were run prior to all analyses to ensure data met the assumptions of their relevant statistical tests.

4.3.2.1 Frequentist and Bayesian Independent Samples T-Tests. For Years In Homelessness and Days Since Homelessness independent samples t tests between Current Homelessness and Prior Homelessness groups, independent factors were categorical while dependent variables were continuous.

For Years in Homelessness, observations were independent except for one and two upper outliers presented in the Current Homelessness and Prior Homelessness groups, respectively. To overcome this, a natural log (Ln) transformation was applied to the Years in Homelessness variable which removed outlier violation. Data were then normal according to

the Kolmogorov–Smirnov test which is more appropriate for samples $n \geq 50$ (Mishra et al., 2019; $p > 0.05$). Variances were also homogenous according to Levene's test, $p > 0.05$.

For Days Since Homelessness, Current and Prior Homelessness groups had no outliers and were normal according to the Kolmogorov–Smirnov test, $p > 0.05$. Levene's homogeneity of variances tests indicated assumption violation, $p > 0.05$. This is intelligible, as the scores for the Current Homeless group would all be the same as the number of days in treatment while the Prior Homelessness group could be any length of time beyond that.

4.3.2.2 Chi Square Contingency Tables. All variables entered to chi square tests were categorical with two or more independent groups. Gender, Service, Alcohol, Cannabis, Tablets, Cocaine, and Heroin Chi Squares all had expected cell counts greater than 5 in more than 80% of their cells. Ketamine, Cathinones, and Methamphetamine chi squares had three cells (50%) with expected cell counts of <5.

4.3.2.3 Fisher-Freeman-Halton Tests. Fisher-Freeman-Halton contingency tables employed in this investigation were Current Housed, Current Homelessness, Prior Homelessness groups by Ethnic Background, Prescribed Methadone, or Problematic Use of Ketamine, Cathinones, or Methamphetamine at Treatment Entry.

4.3.2.4 Frequentist and Bayesian ANOVAs. All dependent variables entered into ANOVA analyses were continuous with three categorical Current Housed, Current Homelessness, and Prior Homelessness groups as independent variables. All observations were independent. Two upper outliers presented in both Current Housed and Current Homelessness groups for Treatment Days Until Assessment. A Natural Log (Ln) transformation was applied to these data, removing all outliers and maintaining homogeneity of variances as per Levene's test thus appropriating data for ANOVA test. Each group's data for all other variables produced no outliers, were approximately normal, and had equal variance.

4.3.2.5 Correlations. Both variables entered for correlation, Age and Years of Substance Use, consisted of continuous data points. These data presented no outliers and were normal according to the Kolmogorov–Smirnov test, $p > 0.05$. Data were from a random and representative sample and a linear relationship was expected between both.

4.3.2.6 Kruskal Wallis H Tests. All dependent variables entered to Kruskal Wallis H Tests were continuous while the independent variable was categorical with two or more groups: in this case Current Housed, Current Homelessness, and Prior Homelessness. All observations between and within groups were independent.

4.3.2.7 Poisson Regressions. The Suicide Attempts in the Past 18 Months data entered for Poisson Regression analyses were count; positive integer values with a mean of less than 10. The independent variable Current Housed, Current Homelessness, and Prior Homelessness was categorical. All observations were independent. The variance 0.97 and mean 0.03 were not identical and thus did not follow a Poisson distribution as per Kolmogorov–Smirnov test, $p < 0.001$.

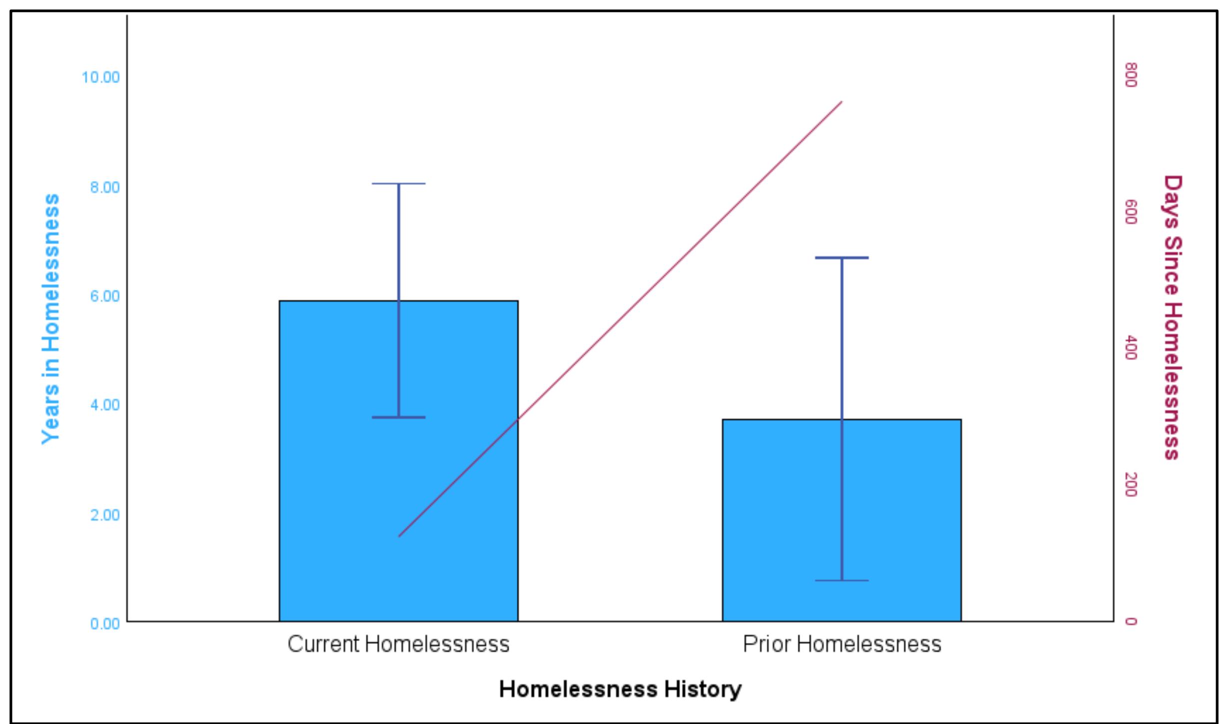
4.3.3 Main Analyses

4.3.3.1 Current Homelessness and Prior Homelessness Distinction. To ensure Current Homelessness and Prior Homelessness groups were in fact distinct populations, frequentist and Bayesian independent samples t-tests were run between these groups for Years in Homelessness and Days Since Homelessness. For Years in Homelessness, frequentist analysis revealed no significant difference with a medium effect size between Current Homelessness (M=5.88, SD=5.08) and Prior Homelessness (M=3.7, SD=4.66) groups, $p > 0.05$, Cohen's d = 0.64, and Bayesian t-test with noninformative Cauchy prior ($r = .707$) revealed approximately equal evidence for the null and alternative hypotheses and a stable underlying algorithm ($BF_{10} = 1.16$, error % = .004). However, for Days Since Homelessness, frequentist analysis indicated a significant difference with a large effect size

between Current Homelessness (M=124.21, SD=92.66) and Prior Homelessness (M=762.08, SD=801.32) groups, $p < 0.001$, Cohen's d = -1.38, while Bayesian analysis with Cauchy prior (r = .707) returned very strong evidence in favour of the alternative hypothesis with stable underlying algorithm (BF_{10} = 61.56, error % = 1.896×10^{-7}). The frequentist relationship between these two groups for these two variables is presented graphically via Figure 4.3.

Figure 4.3

Dual Axis Graph Displaying Years in Homelessness and Days Since Homelessness Differences for Current Homelessness and Prior Homelessness Groups



Note. The blue bar graph displays the non-significant Years in Homelessness difference for Current Homelessness and Prior Homelessness groups, annotated by the blue numbers on the flush left Y axis. The red line graph displays the significant difference between Current Homelessness and Prior Homelessness groups on Days Since Homelessness ($p < 0.001$), indicated by the red numbers on the flush right Y axis. Error bars display 95% confidence intervals.

4.3.3.2 Confounding Variables. To enhance the likelihood that any cognitive differences observed between homelessness history groups were the result of housing precarity and not other potentially confounding variables, analyses were run between the groups for these variables. Table 4.1 outlines the results of these analyses.

Table 4.1

Results of Current Housed, Current Homelessness, and Prior Homelessness Between Group Potential Confounding Variable Analyses

Variable	Current Housed (N = 24)	Current Homelessness (N = 24)	Prior Homelessness (N = 12)	Result
Chi Square				
Gender	16 M (67%) : 8 F (33%)	15 M (62.5%) : 9 F (38.5%)	10 M (83%) : 2 F (17%)	$X^2(2, N = 60) = 1.656$, $p = 0.437$, $V = 0.17$
Organisation	3 DSC (12.5%) : 21 CTC (87.5%)	10 DSC (42%) : 14 CTC (58%)	2 DSC (17%) : 10 CTC (83%)	$X^2(2, N = 60) = 6.000$, $p = 0.05$, $V = 0.32$
Problematic Use of…				
Alcohol	17 (70.83%)	14 (58.33%)	6 (50%)	X^2 $(2, N = 60) = 0.49$, $p = 0.44$, $V = 0.17$
Cannabis	8 (33.33%)	8 (33.33%)	3 (25%)	X^2 $(2, N = 60) = 0.31$, $p = 0.86$, $V = 0.07$
Tablets	7 (29.17%)	9 (37.5%)	8 (66.67%)	X^2 $(2, N = 60) = 4.79$, $p = 0.09$, $V = 0.28$
Cocaine	**20 (83.33%)**	**19 (79.17%)**	**5 (41.67%)**	**X^2 $(2, N = 60) = 7.8$, $p = 0.02$*, $V = 0.36$**
Heroin	5 (20.83%)	10 (41.67%)	4 (33.33%)	X^2 $(2, N = 60) = 2.43$, $p = 0.3$, $V = 0.2$

Fisher-Freeman-Halton				
Ethnicity	**23WI (98%) :1WIT (1%)**	**24 WI (100%)**	**9 WI (75%) : 1 WIT (8%) : 2 CI (17%)**	***p* = 0.02***
Ketamine	1 (4.17%)	1 (4.17%)	0 (0%)	*p* = 1.0
Cathinones	1 (4.17%)	0 (0%)	0 (0%)	*p* = 1.0
Methamphetamine	0 (0%)	1 (4.17%)	0 (0%)	*p* = 1.0
Methadone	0 (0%)	4 (16.67%)	0 (0%)	*p* = 0.07
ANOVA				
Age	**M = 32.85 SD = 7.71**	**M = 39.17 SD = 9.63**	**M = 35 SD = 6.47**	**$F(2,57) = 3.51$, $p = 0.04$*, $\eta2 = 0.11$ $BF_{10} = 1.99$**
Age Substance Use Started	M = 14.13 SD = 3.42	M = 12.54 SD = 3.19	M = 12.17 SD = 1.9	$F(2,57) = 2.27$, $p = 0.11$, $\eta2 = 0.07$ $BF_{10} = 0.75$
Years of Substance Use	**M = 18.58 SD = 7.96**	**M = 25 SD = 9.34**	**M = 20.5 SD = 5.71**	**$F(2,57) = 3.80$, $p = 0.03$*, $\eta2 = 0.12$ $BF_{10} = 2.45$**
Treatment Days Until Assessment (Ln)	M = 4.22 SD = 1.02	M = 4.27 SD = 1.04	M = 4.46 SD = .84	$F(2,57) = 0.24$, $p = 0.79$, $\eta2 = 0.01$ $BF_{10} = 0.16$
Kruskal Wallis				
Years in Prison	**M = 1.63**	**M = 3.7**	**M = 3.2**	**$\chi^2(2) = 8.06$, $p = 0.02$***

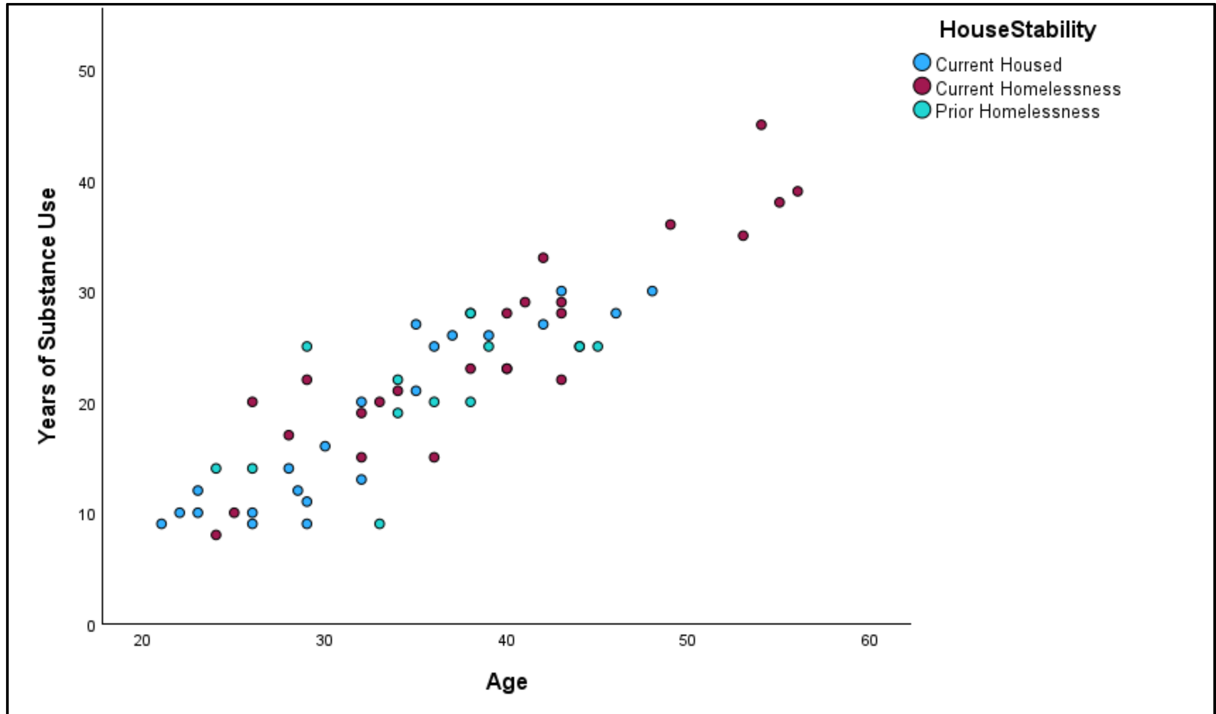
	SD = 4.4	**SD = 7.9**	**SD = 3.5**	
Number of Problem Substances Entering Treatment	M = 2.46 SD = 1.18	M = 2.58 SD = 1.1	M = 2.17 SD = 1.19	$\chi^2(2) = 1.54$, $p = 0.46$
Number of Substances Started in First Year of Substance Use	M = 1.42 SD = .78	M = 1.25 SD = .44	M = 1.17 SD = .39	$\chi^2(2) = .85$, $p = 0.65$
Lifetime Relapses	**M = 1.21** **SD = 1.5**	**M = 2.96** **SD = 3.99**	**M = 3.42** **SD = 2.64**	**$\chi^2(2) = 7.41$, $p = 0.03$***
Days Since Last Psychoactive Substance Use	M = 136.96 SD = 138.35	M = 138.46 SD = 87.10	M = 108.08 SD = 64.69	$\chi^2(2) = 1.16$, $p = 0.56$

No significant differences were observed between groups for Gender, Organisation, Problematic Use of Alcohol, Cannabis, Tablets, Heroin, Ketamine, Cathinones, Prescribed Methadone, Age Substance Use Started, Treatment Days Until Assessment, Number of Problem Substances Entering Treatment, Number of Substances Started in First Year of Substance Use, Lifetime Relapses, and Days Since Last Psychoactive Substance Use.

Chi square analysis revealed significant difference between groups in Problematic Cocaine Use at Treatment Entry, $p = 0.02$. Fisher-Freeman-Halton test identified significant ethnic difference in housing stability groups, $p = 0.02$. Frequentist ANOVA tests revealed significant difference between housing stability groups for Age ($p = .04$) and Years of Substance Use ($p = 0.03$). Bayesian ANOVAs corroborated these findings at 95% credible interval showing almost twice as much evidence that these groups were different for Age ($BF_{10} = 1.99$) and almost two-and-a-half times more evidence that they were different in terms of the number of years they spent using substances heavily ($BF_{10} = 2.45$). Tukey HSD Post Hoc specified that the Current Housed group were both significantly younger ($p = 0.03$) and had used substances for significantly less years ($p = 0.02$) than the Current Homeless group. As Age Substance Use Started had revealed no significant difference, I assessed whether Current Age and Years of Substance Use were correlated for all groups; this was revealed to be true ($r = 0.896$, $n = 60$, $p < 0.001$). This correlation is presented in Figure 4.4.

Figure 4.4

Scatter Plot Evidencing the Significant Correlation Between Age and Years of Substance Use



Note. Current Housed participants are indicated using blue dots, Current Homelessness using red, and Prior Homelessness with green dots. Age and Years of substance use were significantly correlated, both highest in the Current Homelessness group and lowest in the Current Housed group. No significant difference for age of substance use initiation was found between these groups.

Significant between group differences for Lifetime Relapses (p = 0.03) and Years in Prison (p = .018) were indicated by Kruskal Wallis H Tests. Dunn post hoc tests revealed that the Current Housed group had significantly less Lifetime Relapses (p = 0.02) and spent significantly less Years in Prison (p =0 .02) than the Prior Homelessness group.

$p < 0.05$.

4.3.3.3 Cognitive Comparison. Between group analyses of cognitive test scores revealed no significant differences for Internality, Powerful Others, and Chance LoC subscales, DC, Certainty of Negative Future Events Occurring, Certainty of Positive Future Events Not Occurring, RLE Number, and RLE Affect. These results are outlined in Table 4.2 and presented graphically in Figures 4.5 through 4.12.

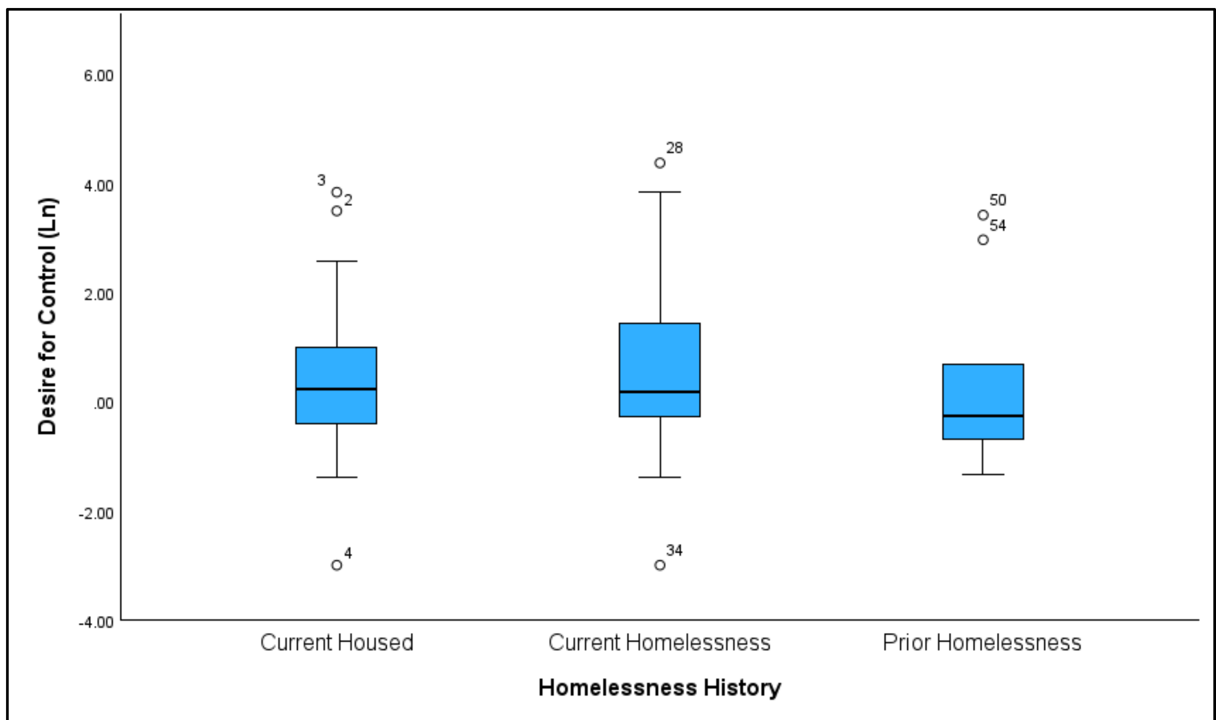
Table 4.2

Results of Cognitive Variable Analyses Between Current Housed, Current Homelessness, and Prior Homelessness Groups

Variable	Current Housed (N = 24)	Current Homelessness (N = 24)	Prior Homelessness (N = 12)	Result
ANOVA				
Powerful Others	M = 21.13 SD = 9.45	M = 21.00 SD = 11.79	M = 17.67 SD = 8.21	$F(2, 57) = 0.53$, $p = 0.59$, $\eta 2 = 0.02$ $BF_{10} = 0.2$
RLE Number	M = 9.87 SD = 2.91	M =10.71 SD = 3.86	M = 10.92 SD = 4.08	$F(2, 56) = 0.47$, $p = 0.69$, $\eta 2 = 0.02$ $BF_{10} = 0.2$
Kruskal Wallis				
Internality	M = 31.33 SD = 7.48	M = 31.63 SD = 10.05	M = 31.08 SD = 7.80	$\chi^2(2) = 0.495$, $p = 0.78$
Chance	M = 24.29 SD = 7.89	M = 21.88 SD = 9.54	M = 20.58 SD = 7.61	$\chi^2(2) = 2.09$, $p = 0.35$
DC	M = 3.89 SD = 13.57	M = 6.11 SD = 18.50	M = 2.36 SD = 13.29	$\chi^2(2) = 0.74$, $p = 0.69$
Certainty in Negative Future Events Occurring	M = 4.39 SD = 3.16	M = 3.71 SD = 3.07	M = 4.00 SD = 3.77	$\chi^2(2) =0 .69$, $p = 0.71$
Certainty in Positive Future Events Not Occurring	M = .57 SD = .95	M = .63 SD = 1.56	M = .42 SD = 1.17	$\chi^2(2) = 1.14$, $p = 0.57$
RLE Affect	M = 8.04 SD = 2.60	M = 8.25 SD = 4.12	M = 8.33 SD = 3.87	$\chi^2(2) = .01$, $p = 0.99$

Figure 4.5

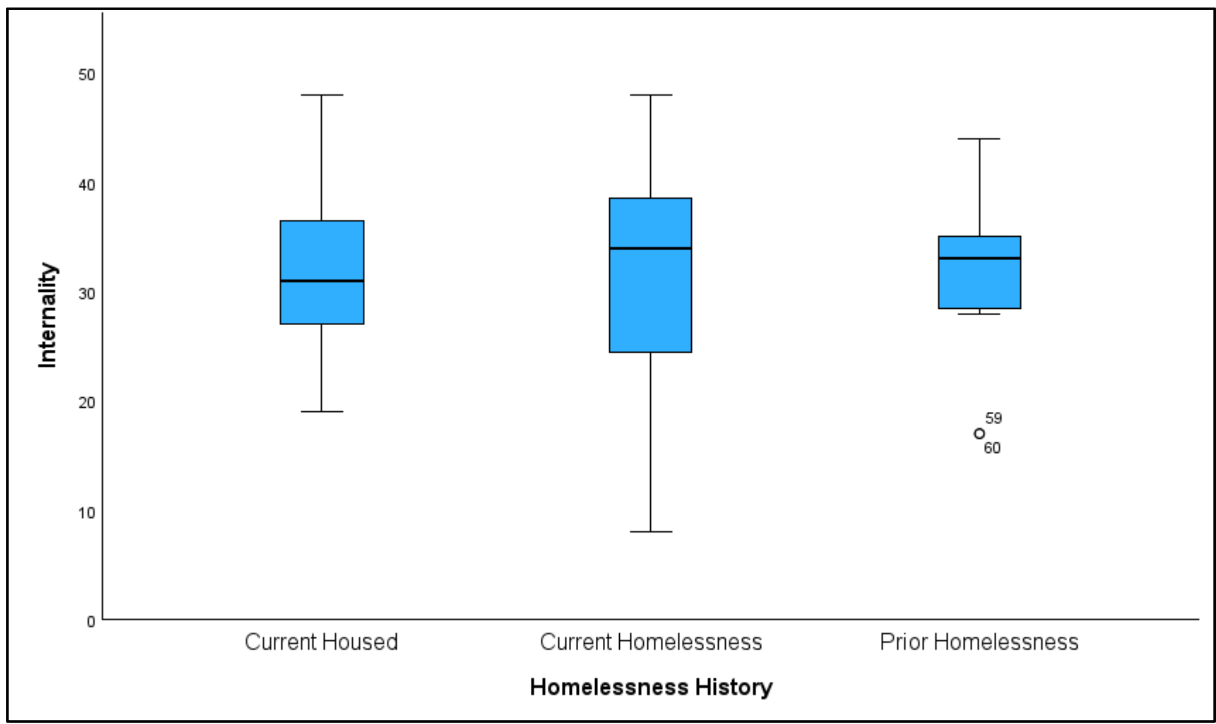
Box Plot Presenting Desire for Control (Ln) Medians and Interquartile Ranges for Homelessness History Groups



Note. Kruskal Wallis test result for DC was $\chi^2(2) = 0.74$, $p = 0.69$. Mean ranks for Current Housed were 27.30, Current Homelessness 30.63, and Prior Homelessness 26.25. One lower and two upper outliers emerged for the Current Housed group, one lower and two upper outliers arose for the Current Homelessness group, and two upper outliers present in the Prior Homelessness group. While similar medians, we see the spread of scores for the Current Homelessness group is higher than the other two, indicating stronger Desire for Control as predicted.

Figure 4.6

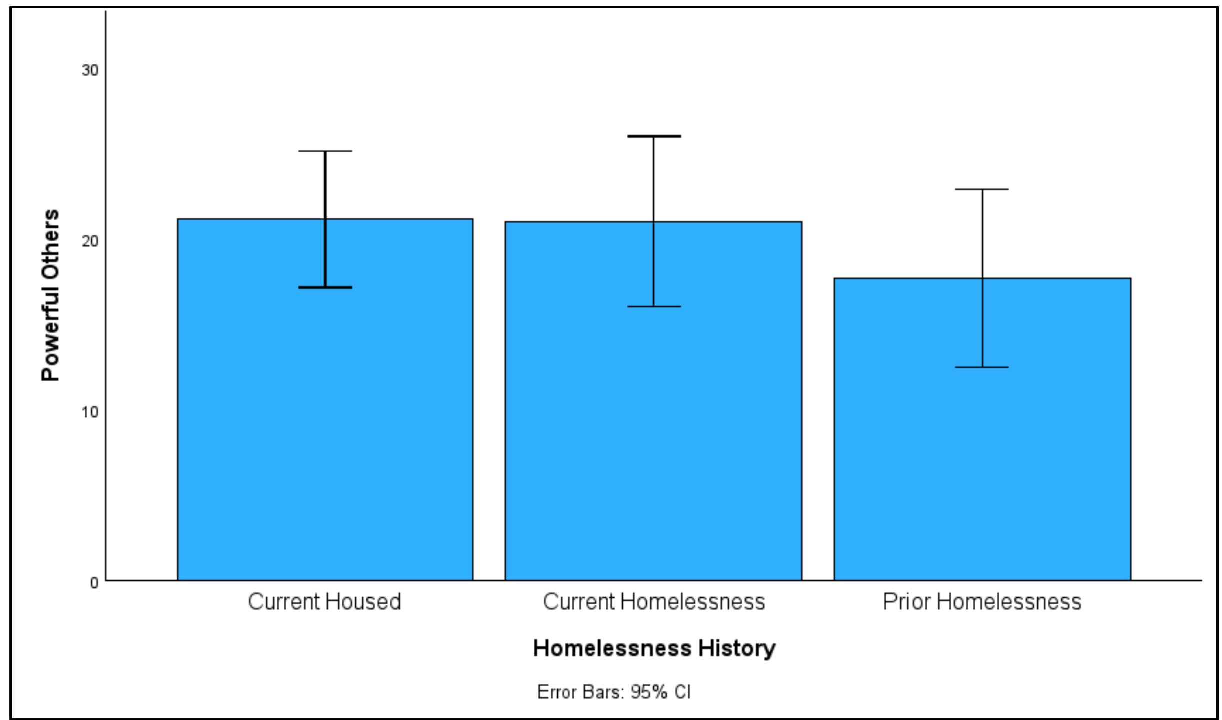
Boxplot Graph Depicting Internality Scores According to Homelessness History Group



Note. Mean ranks were Current Housed 29.13, Current Homelessness 32.44, and Prior Homelessness 29.38. Kruksal-Wallis test results was $\chi^2(2) = 0.495$, $p = 0.78$. Two lower outliers emerged in the Prior Homelessness group. While similar means, we see noticeable greater variance in the Current Homelessness group.

Figure 4.7

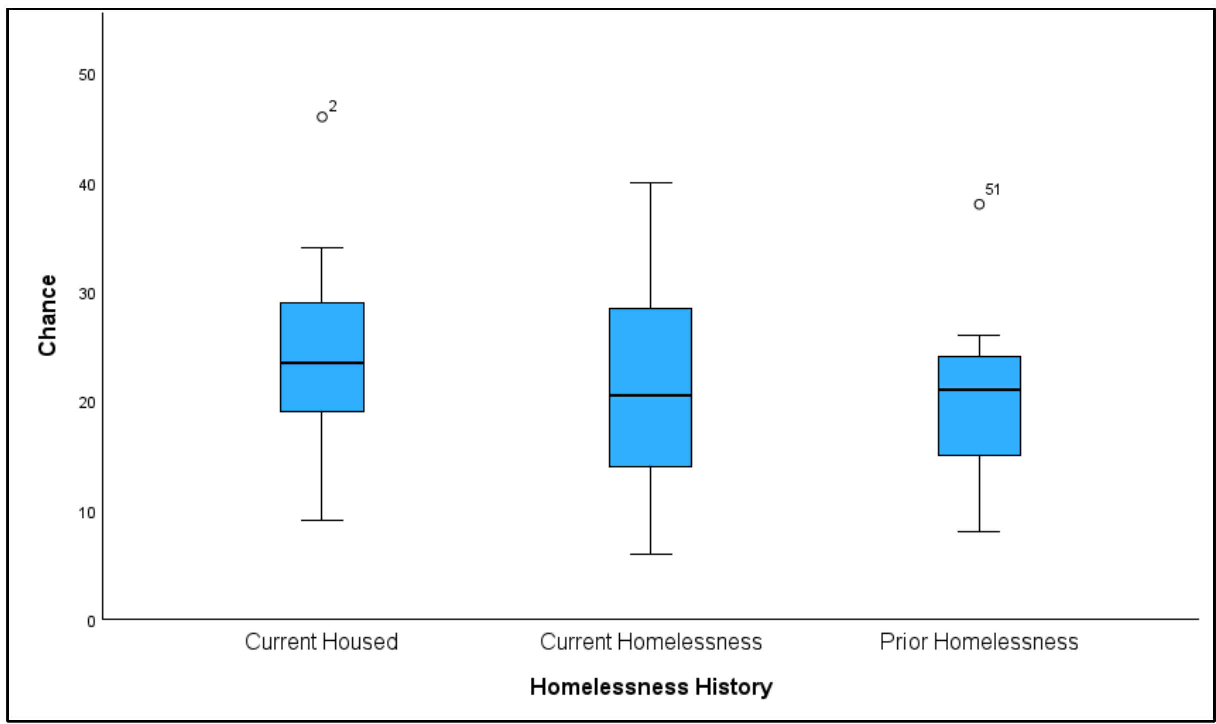
Bar Graph Illustrating Mean Powerful Others Scores for Homelessness History Groups



Note. Homelessness history group means and standard deviations are as follows; Current Housed $M = 21.13$, $SD = 9.45$, Current Homelessness $M = 21.00$, $SD = 11.79$, Prior Homelessness $M = 17.67$, $SD = 8.21$. ANOVA result was $F(2, 57) = 0.53$, $p = 0.59$, $\eta 2 = 0.02$. Error bars indicate 95% Confidence Interval.

Figure 4.8

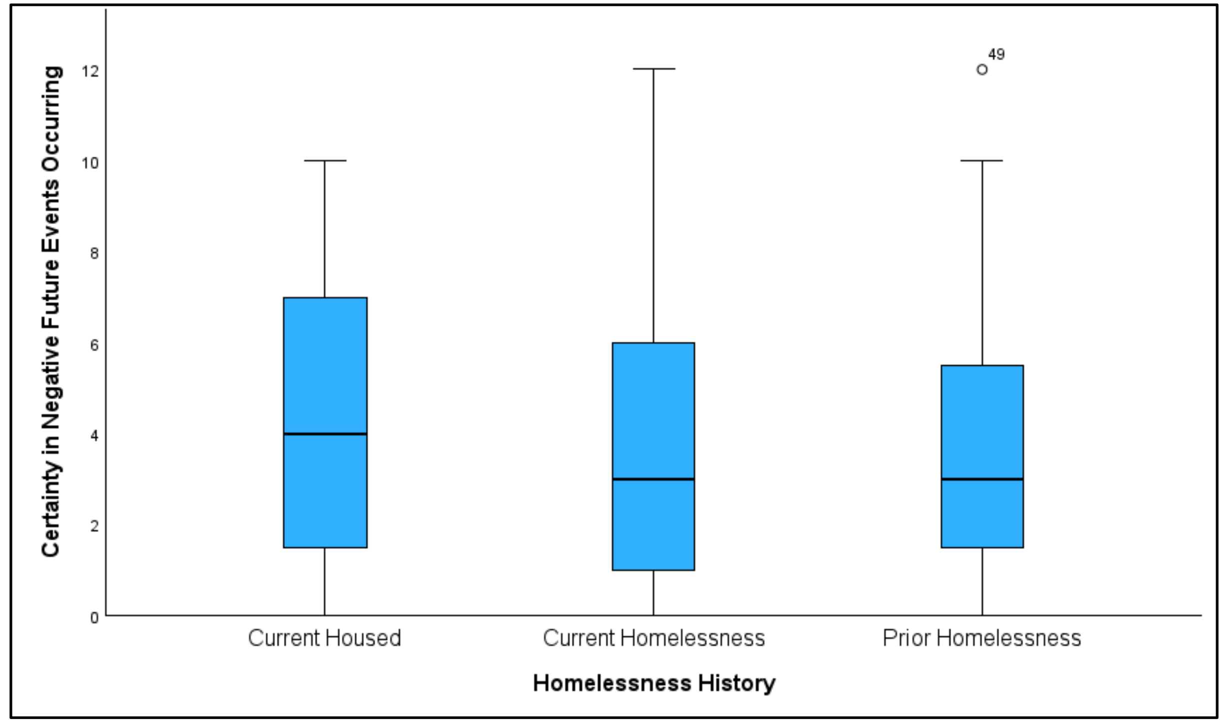
Boxplot Illustrating Chance Scores for Homelessness History Groups



Note. Current Housed, Current Homelessness, and Prior Homelessness group mean ranks were 29.13, 32.44, and 29.38, respectively. Kruskal-Wallis test result was $\chi^2(2) = 2.09$, $p = 0.35$. One outlier presented in both the Current Housed and Prior Homelessness groups. Although not significant, the Current Homelessness group displays lower Chance beliefs and a broader range of scores.

Figure 4.9

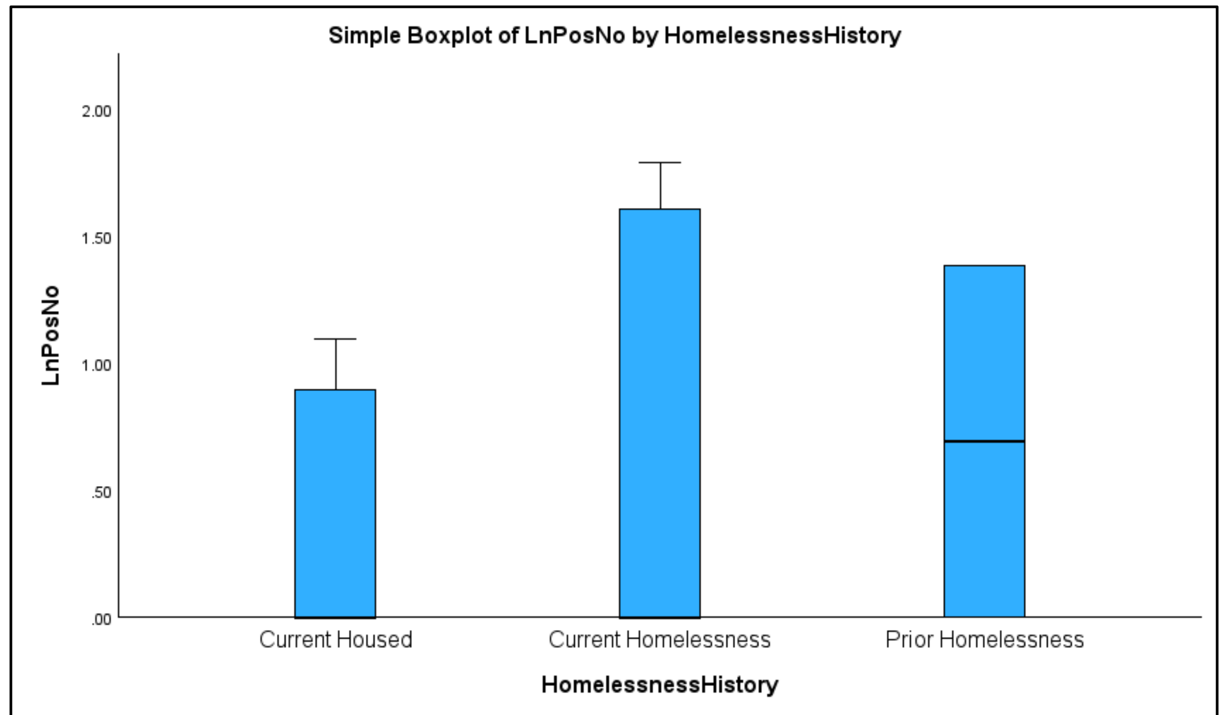
Boxplot Depicting Certainty in Negative Future Events Occurring for Homelessness History Groups



Note. Kruskal-Wallis test result was $\chi^2(2)$ =0 .69, p = 0.71. Mean ranks for each group were; Current Housed = 31.78, Current Homelessness = 27.98, and Prior Homelessness = 28.05. One upper outlier presented in the Prior Homelessness group. Interquartile ranges for the three groups reach zero, showing overall low certainty. The Current Homelessness group showed the largest variance in scores.

Figure 4.10

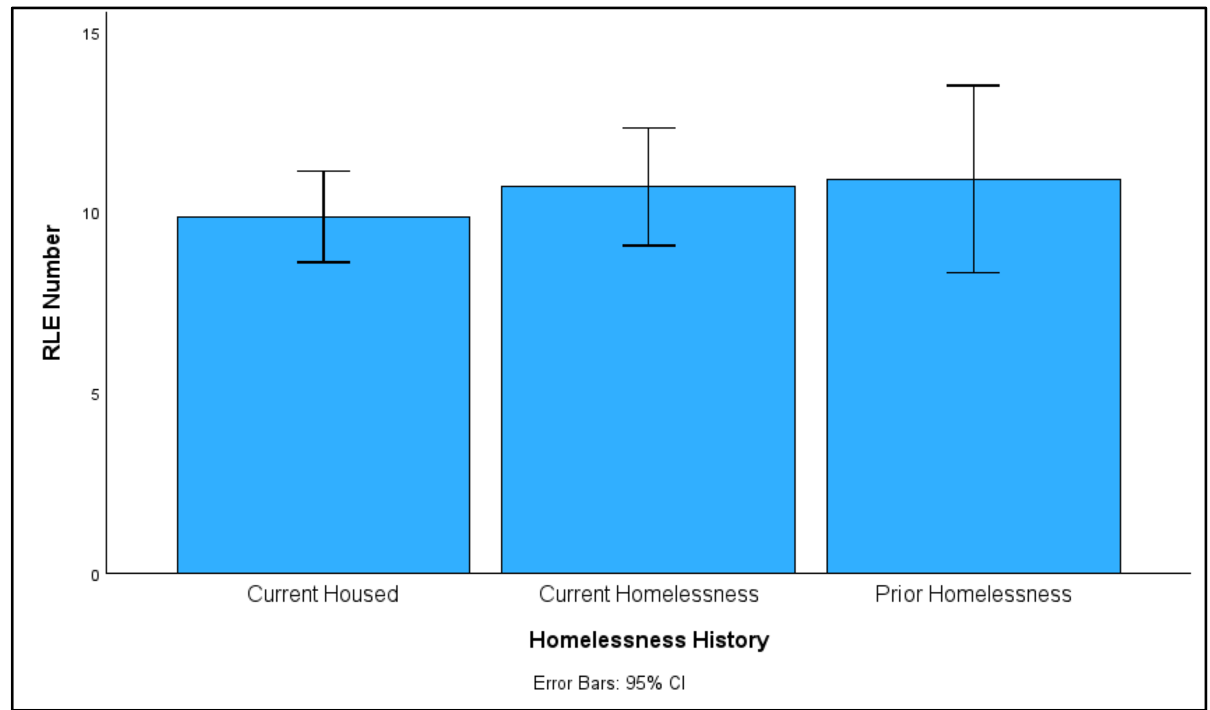
Box Plot Depicting Natural Log of Certainty in Positive Future Events Not Occurring for Homelessness History Groups



Note. This box plot depicts the natural log of certainty in positive future events not occurring, to enhance visual demonstration. A large number of participants in all groups scored zero on this scale, which speaks to the mindset of people in contemporary PSU treatment regardless of housing status.

Figure 4.11

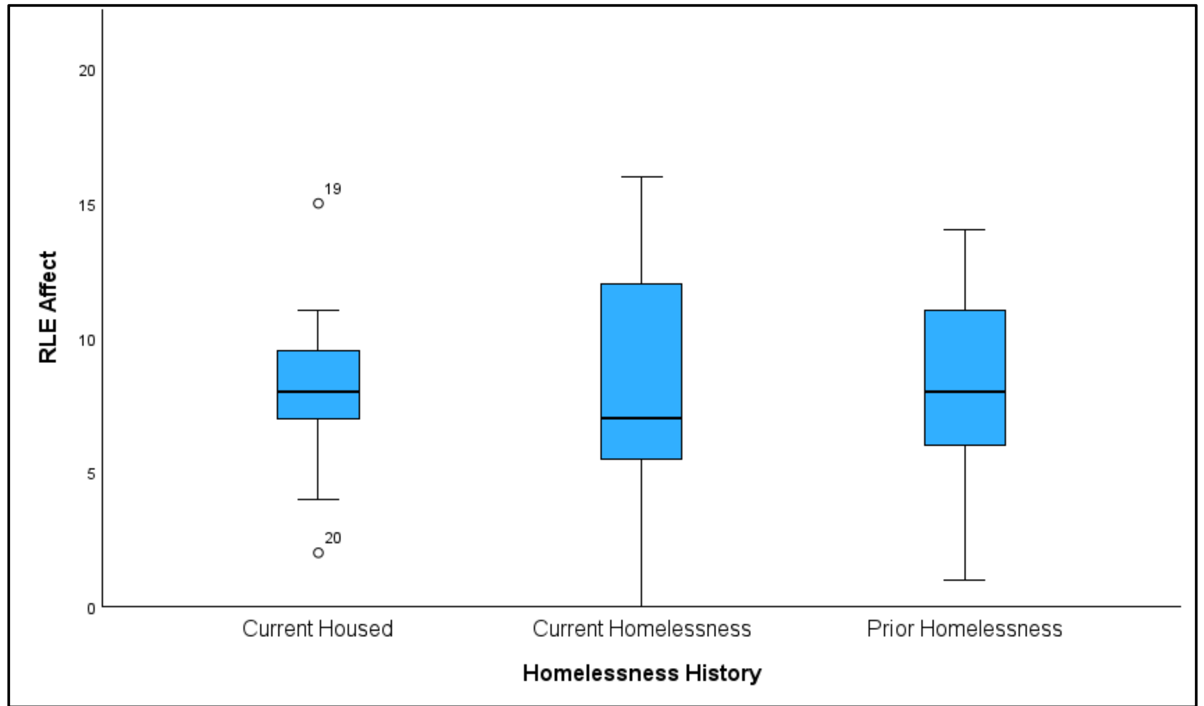
Bar Graph Showing Mean RLE Numbers for Homelessness History Groups



Note. Error bars indicate standard deviation. While not significant, the Current Housed group reported on average less RLE's than the groups with homelessness experience.

Figure 4.12

Boxplot Graph Indicating RLE Affect for Homelessness History Groups



Note. Kruskal-Wallis test result was $\chi^2(2) = .01$, $p = 0.99$. Mean ranks were 30.17 for Current Housed, 29.71 for Current Homelessness, and 30.25 for Prior Homelessness. One upper and One lower outlier emerged for the Current Housed group. While the median Affect is lowest for the Current Homelessness group, we see the spread of scores is simultaneously widest for this group.

4.4 Discussion

This Chapter presented a considerable piece of work in terms of understanding the potential psychological impacts of homelessness combined with PSU. This appears to be one of very few pieces that consider possible cognitive differences between housed and homeless individuals experiencing PSU. The selection of traits pertinent to PSU recovery in this study appears further nuanced. Considering the significant overlap between PSU and homelessness described in Chapter One, this is highly significant to both the psychological research fields of homelessness and PSU.

As detailed in Section 4.2.1.1., notable consideration was given to this study's inclusion and exclusion criteria. Throughout this process, I was keen to keep my project's

overarching aim of ultimate applicability in mind. Consequently, several potential participant features, namely dual diagnoses, prescribed psychoactive medicines, traumatic brain injury, intellectual disability, and reduced language or literacy capability were permitted in the study sample. These features are frequently omitted from neurocognitive PSU research, due to their potentially confounding qualities. However, for research pertaining to a complex topic such as homelessness, attempting to create such a distilled sample would be artificial and unrepresentative to a point that it would render any findings obsolete. Thus, considering the notable paucity of research in this field, detailed in Chapter One, I contend that it is of the utmost importance to include such participants for neurocognitive studies of PEH to engender research with any ecological validity.

This study's recruitment process was another aspect that required marked consideration. Requesting participants to volunteer using an alias that would be recognisable to their social care staff but unrecognisable to my academic supervisors and I for the purposes of eligibility check achieved its aim in considerably protecting the anonymity of these vulnerable adults. The sensitive features inherent to these individuals vis-à-vis their combined PSU and homelessness remained elusive to my academic supervisors and I throughout this study's procedures. It also prevented embarrassment for participants who may not have realised that participation in this project was beyond their capacity until their assessment when it would have likely become clear to both the participant and myself. Therefore, should such a pre-existing identification code for a vulnerable adult research group exist in future, I highly recommend incorporating this protocol.

All measures selected for investigation as part of this study were adapted for use with PEH in PSU treatment, as per the recommendations of an Experts by Experience (EbE) group of PEH in residential detoxification treatment. This included the simple and clear language used in the recruitment poster PIS, ICF, debrief sheets, and instructions for each cognitive

scale and task. It further included the presentation of all assessment materials via psychology experiment software, SuperLab 6.0, which allowed their aural presentation and tactile response. It also incorporated the vocal recording consents attending the response pad consents provided by each participant. These adaptations were made to broaden the inclusivity of this study to individuals with TBI, ID, or compromised English language literacy. Participants were, by-and-large, very understanding of the extreme misfortune many people encounter on their road to homelessness that may concurrently impact their English language literacy. Of note, one participant described the procedures as 'childish'; however, this participant had also been flagged by his social worker prior to his assessment as possibly having an undiagnosed ID. This participant may consequently have had heightened sensitivity to my adaptations. On the other hand, several participants commented that they were very grateful for the adaptations, as they did not have the opportunity to complete their education or were not fully confident in their ability to read complicated English words; they thus would not have been able to participate without them. This variety of reactions to my adaptations highlighted the difficulty of designing research to facilitate a group as heterogeneous as PEH in PSU treatment. Nonetheless, I maintain that research paradigms should be designed to include as many of the target population as possible for ecological validity. I thus believe that these adaptations assisted me in achieving my aim of recruiting a representative PEH in PSU treatment sample and encourage future researchers working with marginalised groups to consider incorporating similar practices.

My sample reached a gender proportion of approximately 1:3 female to male, which is in line with most recent Irish drug treatment statistics (Lynch et al., 2024; O'Neill et al., 2023). The absence of gender fluidity within this sample is unusually low according to most recent statistics and may speak to the socially constrictive environments often associated with PSU (Cox et al., 2010; Gertler, 2014; Mustanski, & Liu, 2013; Legate et al., 2012; Reyes et

al., 2023; Skidmore, & Lefevor, 2024). My sample's age dispersion reflects most recent Irish estimates (O'Neill et a., 2023) and the 3.3% prevalence of Irish Travellers directly mirrors rates observed by Ireland's PSU Treatment Demand reporting body over the past seven years (Dillon et al., 2023; Lynch et al., 2024). No other ethnic data is currently available for Ireland's PSU treatment users, so inferences about my representation beyond Irish travellers is prevented. Interestingly, although thrice as many participants were recruited from CTC as DSC, an equal number were currently housed and currently homeless. Further, neither organisation was over-represented in any of my three Current Housed, Current Homelessness, and Prior Homelessness groups because numerous participants from all three groups came from each service. This highlights the complexity of homelessness as an individual-level trait and also overrides the potential influence from organisation-level variables, such as methodologies or staff members, on results.

Prior to main analyses, it was important to ascertain that my groups reflected their labels; the absence of significant difference between Current Homelessness and Prior Homelessness groups on Years in Homelessness combined with the significant difference for Days Since Homelessness ascertained this. All data fit preliminary checks with the exception for Suicide Attempts in the Past 18 Months; this is not surprising considering the spontaneous emergence of this data. As a consequence, these data were not suitable for Poisson Regression analyses. However, considering the noticeably high levels of active suicidality within PSU treatment service users detected during this study's assessments, future formal inquiry into the potential prevention of this and the potential psychological impact of this on PSU recovery is urged.

Between group differences were not revealed for 15 out of 21 potentially confounding variables assessed. However, problematic cocaine use at treatment entry was distinguished as being significantly related to homelessness history group; further inspection of chi square

cells revealed that individuals who had previously been homeless in this sample appeared much less likely (41.67%) than currently homeless (79.17%) or currently housed (83.33%) individuals to have problematic cocaine use at treatment entry. Participants' ethnicities were also revealed to be significantly different between my three homelessness history groups; this further appears to result from the presence of two Caribbean-Irish individuals in the Prior Homelessness group compared with zero in the other two groups. Individuals who had recovered from homelessness in this sample had also relapsed significantly more times in the past and had spent significantly more years in prison. Of these observed relationships, only the link between PSU relapse following prison release appears to be reported in the literature (Macdonald et al., 2024; Rousselet et al., 2019). In this way, findings from this study buttress the need for PSU treatment programmes aimed at recovered prisoners re-integrating to the community. Of note, conversations with participants during assessments conveyed an understanding within this community of problematic cocaine use, and particularly that of its base form ‘crack’, as particularly difficult to recover from. Considering the apparent overlap with homelessness, incarceration, and relapse in this study, it may be that individuals who have recovered from homelessness are more wary of the tumultuous effects of cocaine use in Ireland. However, as these possible relationships appear under-explored in the literature, they should be interpreted cautiously until further report. As being mixed race does not appear to affect well-being and psychological functioning across several indices (Nazroo et al., 2018; Shih, & Sanchez, 2005; Wong & Chau, 2022), it appears unlikely that this interacted with the other listed outcomes.

The other two potentially confounding variables that revealed significant between-group differences were Age and Years of Substance Use; both of which were found to be significantly higher in currently homeless than currently housed participants. As no significant between-group difference was revealed for Age Substance Use Started, correlation

was run between Age and Years of Substance Use. This was found to be significant, indicating that although PEH and housed people with PSU begin using substances at approximately the same age (12 to 14 years), PEH take longer to recover. However, the reason for this remains unknown.

Significant differences were not revealed between my sample of Current Housed, Current Homelessness, and Prior Homelessness Irish PSU treatment service users for my selected cognitive traits. This could indicate that no such hypothesised differences exist between these groups. However, these results could also have been impeded by a relatively small sample of 60 participants that was divided into three experimental groups *post-hoc*. This unforeseen and unavoidable step inevitably reduced statistical power, as observed in the $\eta2 = 0.02$ for both ANOVA analyses. Significant variability, particularly in the Current Homelessness group, was also observable via box plots indicating the necessity of a larger sample for effect detection. It could also be that my particular methods were not sensitive to these cognitive traits in this population; as mentioned, many participants expressed boredom shortly after beginning the DC task which only appears to have previously been used by scale designers. Thus, a shortened version of this task might be advisable, at least for this or similar populations with noted short attention spans (Field et al., 2014; van Emmerik-van Oortmerssen et al., 2012). LoC scale limitations have been extensively discussed in Chapter Three; interestingly, these were also regularly corroborated by participants throughout my assessments, with many noting that 'it wouldn't be *just* my fault', 'yeah, but not *always* the other person', 'you can't *just* rely on chance though'. These comments suggest that the participants of this study were as conflicted by the blunt nature of these questions as I was upon analysis of my systematic review results. A further alternative explanation might be that one of my potentially confounding variables revealing between-group significance counteracted a significant between-group cognitive difference. However, none of these

possible interpretations can be substantiated until further empirical inquiry. Thus, it is the recommendation of my academic supervisors and I to future researchers in the field to earnestly consider the hypotheses put forth in this Chapter and repeat these methodologies with an additional matched sample to more robustly accept or refute the findings of the current investigation.

Chapter Five. Interaction of Interpersonal Control and Temporal Affectivity with PSU Recovery According to Homelessness History

5.1 Introduction

Following from timepoint one of this longitudinal study, which provided indication of baseline differences between currently housed, currently homeless, and previously homeless individuals on my selected cognitive measures of interpersonal control and temporal affectivity, I sought to decipher whether these traits may differentially predict PSU treatment outcomes for these groups. Thus, the current Chapter describes timepoint two of the same study in which the predictive relationship of Locus of Control, Desire for Control, Affective Forecasting, and Recent Life Events to PSU the same cohort of treatment service users' substance use may alter according to Current Housed, Current Homelessness, or Prior Homelessness group placement. A rationale for this second timepoint is provided prior to presentation of methods, results, and a discussion.

5.1.1 Rationale

As described in Chapter One, a great deal of research into potential predictors of PSU treatment outcomes has been conducted; within this, studies pertaining to cognitive psychological function show good promise of enhancing recovery outcomes. Meanwhile, another body of work has identified altered psychological and cognitive function in PEH. Despite ostensible PSU and homelessness overlap, these literatures do not appear to have interacted. This forms the major focus of Chapter Five: to examine whether altered cognition in PEH may impact PSU treatment outcomes, namely recurrences of substance use during treatment.

5.1.1.1 Recap on Psychological Research of PSU Treatment Outcomes. As described in Chapter One, considerable advancements have been made to knowledge and understanding of how to most effectively train neurocognitive function towards PSU

recovery. This includes pharmacological and psychological modalities (Ballester et al., 2017; Bell, 2014; Bisaga, & Popik, 2000; Blanco-Gandía, & Rodríguez-Arias, 2018; Lobmaier et al., 2010; Moore, 2018; O'Brien, 2008; Potenza et al., 2011; Quednow, & Herdener, 2016; Silverman et al., 2016; Spagnolo et al., 2015; Watson, & Lingford-Hughes, 2007; Zafar et al., 2023). One such prominent psychological domain boasting high efficacy is cognitive neuroscience (Gladwin et al., 2016; McConnell, & Froeliger, 2015; Morgenstern et al., 2013; Sokhadze et al., 2007). This field has identified several cognitive or behavioural traits which predict PSU treatment outcomes, the most prominent of which relate to those selected for the current project. Time Perspective (TP) defines how we perceive the past, present, and future (Sircova et al., 2014). It has shown strong relationships to effective psychological function across numerous domains, including PSU recovery (Drake et al., 2008; Kruge et al., 2008). Emotion Regulation regards how we moderate our emotional responses to stimuli; it has also shown robust relationships to various mental health conditions including PSU (Estévez et al., 2017; Nikmanesh, et al., 2014; Stellern et al., 2023; Tang et al., 2016). How we relate to other people and the quality of our social network is encompassed by the term Interpersonal Relations; these are extremely important for psychological well-being across several indices (Atadokht, et al., 2015; Daley, 2013; Eddie et al., 2019; Fivecoat et al., 2023; Nikmanesh et al., 2017; Reif et al., 2014; Shahid, & Asmat, 2023; Veseth et al., 2019). Self-control is a psychological ability that has also proven important for effective life functioning, and particularly PSU recovery (Baler & Volkow, 2006; Levy, 2012; Potenza, 2007; Tang et al., 2015; Weinberg, 2013). These broad domains inform the traits selected for investigation in the current project and study. Locus of Control (LoC) is a cognitive trait concerned with the extent to which individuals believe they, more powerful others, chance, or fate, govern their life outcomes (Galvin et al., 2018). Desire for Control (DC) is a related trait that pertains to how much individuals wish to direct their personal life outcomes (Amoura et al., 2014).

Affective Forecasting encompasses the positive or negative valences of people's feelings towards their future lives (Bem, 2011; Blackman, 2014; Hoerger et al., 2012; Marroquin et al., 2013; Nowakowska, & Jelonkiewicz, 2024; Pilin, 2021; Zaborowski, 2019), while Recent Life Events (RLE) considers the potential negative impact of prior traumas on current psychological function (Kendler et al., 1993; Paykel, 1997; Villalonga-Olives et al., 2010). Further detail about these constructs was provided in Chapter Four.

5.1.1.2 Altered Cognition in Homelessness. As outlined in Chapter One, altered cognition has been found in PEH across various indices. While most of this focuses on global cognition, general IQ, and executive function, focal impairments have also been observed in visual and verbal memory, attention, fluid reasoning, and processing speed (Burra et al., 2009; Maye et al., 2023). Some such focal impairments relate to traits identified by this project as having potential importance for PSU treatment. For example, childhood trauma among PEH has been linked to poor neurobehavioural and cognitive function (Pluck et al., 2011). This is significant, considering childhood trauma such as physical or sexual abuse, neglect, or emotional abuse have been experienced by almost 90% of PEH (Koh & Montgomery, 2021; Liu et al., 2021; Song et al., 2018; Wiewel, & Hernandez, 2022). Further, while trauma exposure has been found to augment homelessness chronicity, emotion regulation has been shown to moderate this, such that better emotion regulation is found to ameliorate the relationship between trauma and homelessness chronicity (Macia et al., 2020). However, due to the increased imminent danger in the surroundings and lack of support or security, ability to engage higher mental processes such as emotion regulation in this cohort is significantly impaired (Semborski, et al., 2021). Meanwhile, the experience of choice over life outcomes appears beneficial to PEH across numerous domains such as physical health, mental health, and community integration; moreover, this appears to work through personal mastery and is evidenced to be stronger among those with PSU (Greenwood & Manning,

2017; Manning & Greenwood, 2019). Self-belief and interpersonal skills among PEH appear to have a reciprocal relationship, producing better mental and physical health, well-being, and housing outcomes (Castleberry, 2020; Krabbenborg et al., 2017; Reis et al., 2000; Samuolis et al., 2006).

5.1.1.3 Trauma. As described in Chapter Four, various forms of extreme trauma are excessively overrepresented in PEH, as both causes and consequences of the experience. Similarly, trauma is highly prevalent among those affected by PSU; prior to and following condition onset (Misouridou, 2016; Van den Brink, 2015; Wiechelt, & Straussner, 2015). Indeed, further parallel to homelessness theory, some authors have also conceptualised PSU as a traumatic experience in-and-of itself (Ogilvie & Carson, 2022). Such is the link between PSU and trauma that numerous researchers postulate PSU as inherently and fundamentally a trauma response (Dayton, 2000; Maté, 2012; Padykula, & Conklin, 2010). To this end, interventions to treat trauma specifically within PSU populations are beginning to emerge (Gidzgier et al., 2023; Perez-Dandieu, & Tapia, 2014; Roberts et al., 2015; Simpson et al., 2021; Torchalla et al., 2012). However, different types of trauma have been found to differentially predict different types and aspects of PSU (Driessen et al., 2008; Hingray et al., 2018; Levin et al., 2021; Mergler et al., 2018; Norman et al., 2007). Thus, it is possible that the specific trauma of homelessness as outlined in Chapter Four (Gilmoor et al., 2020; Tsai et al., 2020) may affect particular elements of PSU recovery. Considering the extended difficulties in attaining prolonged abstinence, as well as the pronounced benefits of abstinence, for this population, this relationship warrants incisive investigation.

5.1.1.4 Psychology of PSU Recovery in Homelessness. As mentioned in Chapter One, psychiatric conditions in general and specifically PSU is strongly correlated with homelessness (Bassuk, 2017; Sullivan et al., 2000). While overall this is potentially due to shared underlying mechanisms of both, homelessness is extensively found to prolong mental

ill-health and negatively affect PSU recovery (Castellow et al., 2015; Doré-Gauthier et al., 2019; Roth et al., 2023; Twamley et al., 2019). However, the majority of the literature concerning the holistic recovery of PEH with PSU evaluates the Treatment First (TF) versus Housing First (HF) debate (Kertesz et al., 2009; Peng et al., 2020; Stergiopoulos et al., 2015; Woodhall-Melnik, & Dunn, 2016). Within this, a literature guiding staff technique (Eddie et al., 2019; Jack et al., 2018; Manning, & Greenwood, 2018; Sestito et al., 2017; Sun, 2012), treatment paradigms (Boisvert et al., 2008; Chan et al., 2022; Kemter et al., 2024; McLaughlin et al., 2021; Mericle et al., 2022), and inter organisational strategy exists (Miler et al., 2021; Post et al., 2022; Sheldon, 2024; Spear, 2014). Nonetheless, the theory underlying these recommendations, particularly regarding psychological factors, appears largely overlooked. A scant literature provides embryonic evidence that impulsivity may impede mental illness recovery, hope, and confidence (Leclair et al., 2020), as well as mediate the relationship between childhood trauma and maladaptive coping in PEH (Dowling, 2014). Of further relevance to the current project, processing speed and interpersonal skills have also evidenced potential influence on housing outcomes for PEH with PSU and serious mental illness (SMI; Gabrielan et al., 2015).

5.1.2 The Present Study

5.1.2.1 Aims and Objectives. The academic landscape evidences substantial overlap in PSU-relevant cognition exhibited by PEH. In response to this, in continuation from Chapter Four, and in collaboration with Enterprise Mentor One, I decided to investigate whether relevant traits may differentially predict PSU treatment outcomes according to homelessness history. Specifically, my objectives were to:

1. Investigate whether Locus of Control (LoC) differentially predicts within treatment recurrence of use/relapse for Current Housed, Current Homelessness, and Prior Homelessness PSU treatment service users

2. Investigate whether Desire for Control (DC) differentially predicts within treatment recurrence of use/relapse for Current Housed, Current Homelessness, and Prior Homelessness PSU treatment service users
3. Investigate whether Affective Forecasting differentially predicts within treatment recurrence of use/relapse for Current Housed, Current Homelessness, and Prior Homelessness PSU treatment service users
4. Investigate whether Recent Life Events (RLE) differentially predict within treatment recurrence of use/relapse for Current Housed, Current Homelessness, and Prior Homelessness PSU treatment service users

5.1.2.2 Hypotheses. Hypotheses were outlined in collaboration with Enterprise Mentor One as follows:

1. a) Lower Internal LoC in Current Homelessness than Prior Homelessness and Current Housed PSU treatment service users will predict increased relapses during treatment
   b) Higher Powerful Others LoC in Current Homelessness than Prior Homelessness and Current Housed PSU treatment service users will predict increased relapses during treatment
   c) Higher Chance LoC in Current Homelessness than Prior Homelessness and Current Housed PSU treatment service users will predict increased relapses during treatment
2. Higher DC in Current Homelessness than Prior Homelessness and Current Housed PSU treatment service users will predict increased relapses during treatment
3. a) More negative affective forecasting in Current Homelessness than Prior Homelessness and Current Housed PSU treatment service users will predict increased relapses during treatment

b) Less positive affective forecasting in Current Homelessness than Prior Homelessness and Current Housed PSU treatment service users will predict increased relapses during treatment

4. a) More RLE in Current Homelessness than Prior Homelessness and Current Housed PSU treatment service users will predict increased relapses during treatment

   b) More RLE Affect in Current Homelessness than Prior Homelessness and Current Housed PSU treatment service users will predict increased relapses during treatment

5.2 Methods

5.2.1 Participants

5.2.1.1. Participant Eligibility. With respect for the considerable time volunteered by research participants to investigations and in recognition of the overlap between the investigative aims of this study and that of Chapter Four, data for the present study were collected from the same participants described in the previous chapter. Similarly, all inclusion and exclusion criteria are identical to those outlined in Section 4.2.1.1. All DSC participants provided negative breath and urine toxicology screens prior to cognitive assessment. Likewise, participants were not reimbursed.

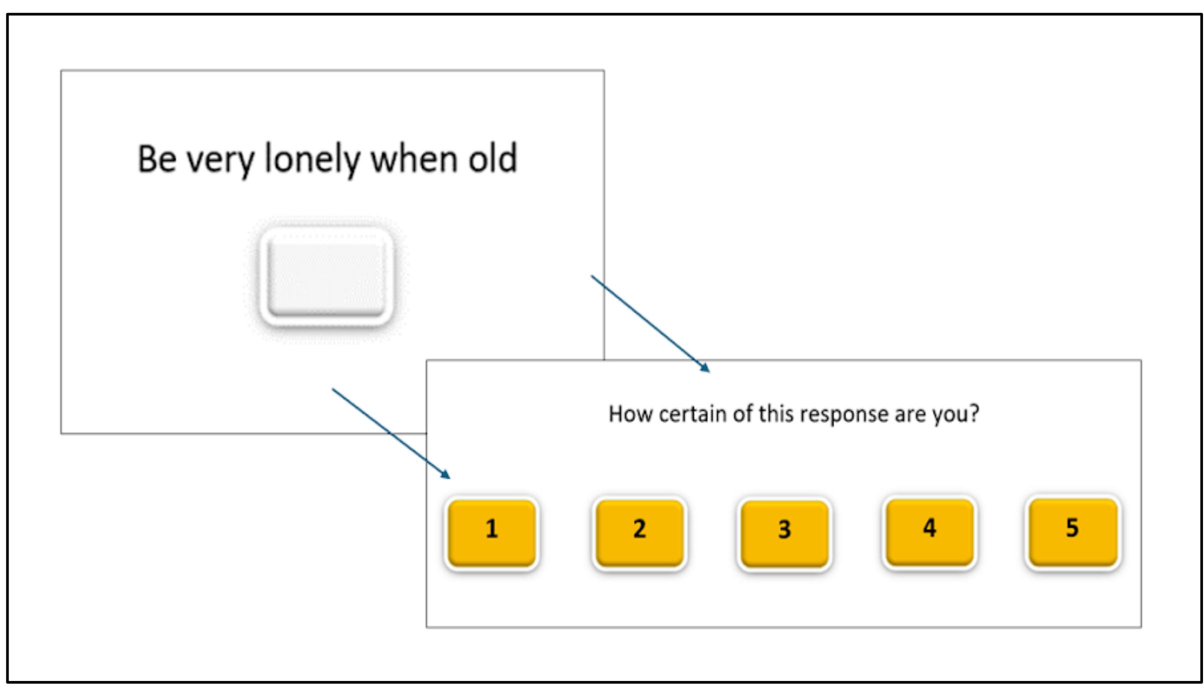
5.2.2 Study Materials

5.2.2.1 Cognitive Measures. The cognitive traits selected for investigation in the current project are Locus of Control (LoC), Desire for Control (DC), Affective Forecasting, and Recent Life Events (RLE). LoC describes the extent to which individuals believe they, more powerful others, chance, or fate determine their life outcomes. DC encapsulates how much individuals wish to personally influence their life outcomes. Affective forecasting refers to the emotional valence individuals feel towards their prospective futures. RLE covers the number of major events that have occurred in the past year as well as the number of

events which still affect the individual. As these are the same cognitive traits that were investigated to meet Chapter Four's aims, the assessments that formed the previous study also contributed to the current study in adherence to the General Data Protection Regulations' principle of data minimisation (GDPR; European Union, 2016). In this way, all study materials are as detailed in Section 4.2.2. All materials were adapted for use with PEH in PSU treatment, as also described in Section 4.2.2. An example of my presentation of Affective Forecasting is presented in Figure 5.1.

Figure 5.1

Presentation of Affective Forecasting Scale Adapted for Use With PEH in PSU Treatment



Note. Participants were first presented with a statement which was read to them by me. When this was understood, they pressed a centre white button on their response pad. Following each item, the question 'How certain of this response are you?' was displayed above a five-point Lykert response where 1 indicated 'Not at All Certain' and 5 indicated 'Completely Certain' that was similarly represented on participants' response pad.

5.2.2.2 Treatment Outcomes. Treatment outcomes were collected using a tool designed by my academic supervisors, Enterprise Mentor Two, and myself (Appendix X). This tool takes the form of a Google Doc table with column headings "*Name/ PASS ID*",

"*Admission Date*", "*Discharge Date*", "*Further Treatment*", and "*Number of Slips During Treatment*".

5.2.3 Procedure

5.2.3.1 Cognitive Measures. The cognitive assessments that formed Chapter Four's study further contributed the cognitive data utilised in the present study. Therefore, all pre-recruitment, recruitment, and assessment procedures described in Section 4.2.3 also describe this phase of the current study.

5.2.3.2 Treatment Outcomes.

5.2.3.2.1 Design. All treatment outcomes data collection procedures were designed in collaboration with DSC and CTC staff managers prior to cognitive data assessments. This included individuals highly trained in the practice of PSU treatment with and without first-hand PSU recovery experience. At this stage in the research process, DSC's Therapeutic Services Quality Team proffered that their service users would not be able to consent to prospective data. To remedy this, in collaboration with the DSC team, my academic supervisors and I decided that each recovery service manager would inform us when each service user resident in their service was imminently discharging or had discharged unplanned using service users' PASS IDs. As only current Irish homeless service staff can access the PASS system, only such staff can identify these numbers. This process would therefore not disclose sensitive personal information about service users who did not elect to collaborate with third parties. PASS ID numbers recognised by myself as participants would be contacted by me to arrange to collect their consent for the DSC Therapeutic Services Quality Team to share their treatment outcomes data with my academic supervisors and I via a password-protected Google doc in our shared DCU GDrive. These meetings would take place in-person using the same SuperLab and response pad strategy described in Section 4.2.2.6.

Treatment outcomes data variables were defined with a number of potentially compromising factors in mind, including: the somewhat limited PEH in PSU treatment population and the heterogeneity of this population, the compromised reliability of self-reported substance use due to intoxication and substance impurities, and the exploratory nature of this study. This considered, the variables did not make reference to relapse duration, substance types, or substance quantities, but concisely consisted of:

1. PSU Treatment Duration
2. Number of Relapse Episodes During PSU Treatment

5.2.3.2.2 Collection. Approximately six months following final cognitive assessment, four DSC participants remained in this organisation's recovery services due to difficulties obtaining suitable post-discharge accommodations. This raised potential issue with the use of "PSU Treatment Duration" as a proxy for abstinence quality among PEH residential PSU service users. Consequently, my academic supervisors and I decided to remove this PSU treatment outcomes data variable from my study, and alter my second variable to:

1. Number of Relapses During the First Six Months of PSU Treatment

At this time, all CTC participants had been discharged from their services. Thus, one treatment outcomes data collection sheet was shared with each of the three DSC and two CTC recovery service managers via my academic team's shared DCU GDrive at this time. Managers or delegated members of staff completed their respective forms within this drive and informed me when this was complete via email. Any queries from recovery service staff, my academic supervisors, or myself surrounding participants' treatment outcomes data were resolved via discussion and consensus. Lastly, this data was input to an encrypted Google Sheet in my academic team's shared DCU GDrive for cleaning.

5.2.4 Data Analysis

5.2.4.1 Chi Square Contingency Test. Potential differences in expected dichotomous variable proportions can be tested via chi square tests (McHugh, 2013; Rana, & Singhal, 2015; Turhan, 2020). This test was used to assess potential differences between Current Housed, Current Homelessness, and Prior Homelessness groups for Gender, Organisation Attended, the number of Relapses During Treatment and problematic use of Alcohol, Cannabis, Tablets, Cocaine, or Heroin use at treatment entry. It was also used to assess whether there were equivalent numbers of relapses between treatment sites.

5.2.4.2 Fisher-Freeman-Halton Exact Test. When > 20% of cells in a chi square contingency test generate expected cell counts of < 5, the Fisher-Freeman-Halton test can assess potential differences between two or more groups for two categorical variables (Ozturk et al., 2023; Ruxton, & Neuhäuser, 2010). This test was used to assess potential between Current Housed, Current Homelessness, and Prior Homelessness groups for Ethnicity, Prescribed Methadone, and Problematic Use of Ketamine, Cathinones, or Methamphetamine.

5.2.4.3 Analysis of Variance. ANOVA compares means between three or more groups to interrogate potential differences (Gelman, 2005; Larson, 2008; Penny & Henson, 2006; Sawyer, 2009). These analyses were used in the current investigation to explore potential differences between Current Housed, Current Homelessness, and Prior Homelessness groups for Age, Age Substance Use Started, Years of Substance Use, Powerful Others, and RLE Number.

5.2.4.3.1 Bayesian Analysis of Variance. The Bayesian approach to ANOVA calculates the probability that an alternative model from the null is true (Cleophas & Zwinderman, 2018). This approach to assessing differences between three or more groups can be used cohesively with frequentist ANOVAs and was thus also employed in the current study to investigate potential difference between Current Housed, Current Homelessness, and

Prior Homelessness groups for Age, Age Substance Use Started, Years of Substance Use, Powerful Others, and RLE Number.

5.2.4.4 Tukey HSD Post Hoc Test. Tukey HSD Post hoc tests reveal the location of statistically significant differences indicated by omnibus ANOVAs (Abdi & Williams, 2010; Kim, 2015). This analysis was used to identify precisely where Age and Years of Substance Use between Current Housed, Current Homelessness, and Prior Homelessness group differences as suggested by ANOVA lay.

5.2.4.5 Correlation. Correlation analyses examine whether two continuous variables change in a corresponding manner (Cohen & Handy, 2001; Cohen et al., 2009; Sedgwick, 2012). This test was used to examine whether Age and Years of Substance Use variables increased together.

5.2.4.6 Kruskal-Wallis H Test. The Kruskal-Wallis test is a non-parametric alternative to assess differences between three or more groups when data violate normality assumptions (Chan, & Walmsley, 1997; Hecke, 2012; Vargha, & Delaney, 1998). To investigate whether potential between Current Housed, Current Homelessness, and Prior Homelessness Treatment Duration differences may affect Relapses During Treatment, the former two variables were entered into a Kruskal-Wallis test for analysis.

5.2.4.7 Mann-Whitney U Test. Differences in non-normally distributed continuous data between two independent groups can be examined using the Mann-Whitney test (MacFarland & Yates, 2016; McKnight & Najab, 2010). This analysis was used in the current study to assess potential treatment duration differences between DSC and CTC participants.

5.2.4.8 Poisson Regression. 'Count data' consist of positive integer values that are zero or greater and usually comprise a mean of less than 10 (Cameron & Trivedi, 2001; Cameron & Trivedi, 2013; Hilbe, 2014). As opposed to linear, multiple, ordinal, or logistic regressions which require continuous, ordinal, or nominal outcome data respectively, count

data may be analysed using Poisson regressions (Berk, & MacDonald, 2008; Koletsi, & Pandis, 2017; Sedgwick, 2014). These analyses were used to analyse the main effects of participants' Current Housed, Current Homelessness, and Prior Homelessness homelessness history group as well as their scores on LoC, DC, Affective Forecasting, and RLE cognitive traits on the Number of Relapses During the First Six Months of PSU Treatment. They also assessed the potentially different effect of LoC, DC, Affective Forecasting, and RLE cognitive traits on the Number of Relapses During the First Six Months of PSU Treatment for Current Housed, Current Homelessness, and Prior Homelessness homelessness history groups.

5.2.5 Ethics

This study received ethical approval from DCU's Research Ethics Committee on 24/08/23. The approval number for this study is DCUREC/2023/118. Final approval was received from DSC's research ethics committee following amendments on 27/04/23.

5.3 Results

5.3.1. Descriptive Statistics

Descriptive statistics for this timepoint two of the current study pertain to individuals whose Number of Relapses During the First Six Months of PSU Treatment data were available. This was 59 of the same individuals described in Section 4.3.1. Relapse During Treatment data was not available for one individual as it did not appear to save to the online system of their recovery service. Forty males (67.8%), 19 females (32.2%), and zero gender fluid (0%) participants took part in the current study. Twenty-four were currently housed, 24 were currently homeless and 11 had previously been homeless. Fifteen of these participants were from DSC (25.42%) while 44 were attending CTC (74.58%) PSU recovery services. Ages ranged from 21 to 56 years (M=35.65, SD=8.67). Fifty-five White Irish (93.22%), two White Irish Traveller (3.39%), and two Irish-Caribbean (3.39%) individuals took part.

5.3.2. Preliminary Analyses

Relevant tests were run prior to all major analyses to ensure appropriateness of data. As the participants comprising the Current Homelessness and Prior Homelessness groups of the current study are identical to those comprising the Current Homelessness and Prior Homelessness groups of Chapter Four, analyses run to identify these groups are as described in Section 4.3.2.

5.3.2.1 Chi Square Contingency Test. Relapses During Treatment, homelessness history, and organisation variables are all categorical variables with two or more independent groups. Relapses During Treatment was thus entered into two separate Chi Square tests: one with Current Housed, Current Homelessness, and Prior Homelessness group, and the other with DSC and CTC groups.

5.3.2.2 Fisher-Freeman-Halton Exact Test. Prescribed Methadone and Problematic Use of Ketamine, Cathinones, or Methamphetamine of Current Housed, Current Homelessness, and Prior Homelessness groups each produced expected cell counts of < 5 in more than 20% of their Chi Square contingency tables. As each of these analyses were of two categorical variables with two or more groups, a Fisher-Freeman-Halton test was run to test for potential between group differences.

5.3.2.3 Frequentist and Bayesian Analysis of Variance. Age, Age Substance Use Started, Years of Substance Use, Powerful Others, and RLE Number are all continuous variables with independent data. Current Housed, Current Homelessness, and Prior Homelessness are three independent categorical groups. The data for each group on each variable had no outliers, were normally distributed, and had homogenous variances.

5.3.2.4 Pearson Product-Moment Correlation. Age and Years of Substance Use were normally distributed continuous variables with no outliers and a linear relationship. Their relationship was thus assessed using a Pearson Product-Moment Correlation.

5.3.2.5 Kruskal-Wallis H Test. Treatment Duration data by Current Housed, Current Homelessness, and Prior Homelessness groups produced four outliers in the Current Housed group and a non-normal distribution for the Current Homelessness group according to the Kolmogorov-Smirnov test, $p = 0.029$. As this was a test of the potential difference between two or more independent categorical groups on independent continuous outcome data, this relationship could be assessed using the Kruskal-Wallis H Test.

5.3.2.6 Mann-Whitney U Test. Treatment Duration by DSC or CTC Organisation data produced four outliers in the CTC group. Further, the CTC group was more than 1.5 times larger than the DSC group, breaching the normality assumption. As these were independent continuous outcome data in two independent categorical groups, these data were thus assessed via Mann-Whitney test.

5.3.2.7 Poisson Regression. The Relapse During Treatment count data were equidispersed in a Poisson distribution. The mean and variance of this data were extremely similar at 0.44 and 0.46, respectively. As the predictor variables of homelessness history groups and cognitive traits comprised independent categorical and independent continuous data, respectively, these variables were entered for Poisson regressions.

5.3.3 Main Analyses

5.3.3.1 Potential Confounding Between Group Demographic Differences. As per Chapter Four, prior to main study analyses all data were checked for potential confounding variables. Between Current Housed, Current Homelessness, and Prior Homelessness group differences were not observed for Gender, Organisation, Age Substance Use Started, Treatment Days Until Assessment, Number of Problem Substances Entering Treatment, Number of Substances Started in First Year of Substance Use, Days Since Last Psychoactive Substance Use, Treatment Duration, and Problematic Use of Alcohol, Cannabis, Tablets, Heroin, Ketamine, Cathinones, or Methamphetamine. Chi square analysis revealed a

significant difference between individuals according to homelessness history for Problematic Cocaine Use at Treatment Entry, $p = 0.01$. Ethnicity was also revealed to be significantly different between these groups according to a Fisher-Freeman-Halton Exact Test, $p = 0.02$. Significant between Current Housed, Current Homelessness, and Prior Homelessness group Age ($p = 0.03$) and Years of Substance Use ($p = 0.03$) differences emerged from frequentist ANOVAs. Bayesian ANOVAs corroborated these findings suggesting 2.33 and 2.54 times more evidence for the alternative Age and Years of Substance Use model to the null model, respectively. Tukey HSD Post Hoc tests located these differences between Current Housed and Current Homeless groups for both Age ($p = 0.03$) and Years of Substance Use ($p = 0.03$). Stemming from these findings, Pearson Product-Moment Correlation demonstrated significant correlation between Age and Years of Substance Use variables ($r = 0.90$, $p < 0.001$). Kruskal Wallis Test found significant between Current Housed, Current Homelessness, and Prior Homelessness group differences for Years in Prison ($p = 0.02$) and Lifetime Relapses ($p = 0.02$). Dunn post hoc test showed these differences to exist between Current Housed and Prior Homelessness groups for both Years in Prison ($p = 0.02$) and Lifetime Relapses ($p = 0.02$). Results of these analyses are outlined in Table 5.1.

Table 5.1

Results of Current Housed, Current Homelessness, and Prior Homelessness Between Group Potential Confounding Variable Analyses

Variable	Current Housed (N = 24)	Current Homelessness (N = 24)	Prior Homelessness (N = 11)	Result
Chi Square				
Gender	16 M (67%) : 8 F (33%)	15 M (62.5%) : 9 F (38.5%)	9 M (82%) : 2 F (18%)	$X^2(2, N = 59) = 1.313$, $p = 0.519$, $V = 0.15$
Organisation	3 DSC (12.5%) : 21 CTC (87.5%)	10 DSC (42%) : 14 CTC (58%)	2 DSC (18%) : 9 CTC (82%)	$X^2(2, N = 59) = 5.76$, $p = 0.06$, $V = 0.31$
Problematic Use of…				
Alcohol	17 (70.83%)	14 (58.33%)	5 (45%)	X^2 (2, N = 59) = 2.169, $p = 0.34$, $V = 0.19$
Cannabis	8 (33.33%)	8 (33.33%)	2 (18%)	X^2 (2, N = 59) = 0.97, $p = 0.62$, $V = 0.13$
Tablets	7 (29.17%)	9 (37.5%)	7 (64%)	X^2 (2, N = 59) = 3.81, $p = 0.15$, $V = 0.25$
Cocaine	**20 (83.33%)**	**19 (79.17%)**	**4 (36%)**	**X^2 (2, N = 59) = 9.23, $p = 0.01$*, $V = 0.4$**
Heroin	5 (20.83%)	10 (41.67%)	4 (33.33%)	X^2 (2, N = 59) = 2.49, $p = 0.29$, $V = 0.21$

Fisher-Freeman-Halton				
Ethnicity	**23WI (98%) :1WIT (1%)**	**24 WI (100%)**	**9 WI (75%) : 1 WIT (8%) : 2 CI (17%)**	***p* = 0.02***
Ketamine	1, 23	1, 23	0, 11	*p* = 1.00
Cathinones	1, 23	0, 24	0, 11	*p* = 1.00
Methamphetamine	0, 24	1, 23	0, 11	*p* = 1.00
Methadone	0	4	0, 11	*p* = 0.07
ANOVA				
Age	**M = 32.85 SD = 7.71**	**M = 39.17 SD = 9.63**	**M = 34.09 SD = 5.92**	**$F(2,57) = 3.72$, $p = 0.03$*, η2 = 0.12 $BF_{10} = 2.33$**
Age Substance Use Started	M = 14.13 SD = 3.42	M = 12.54 SD = 3.19	M = 12.09 SD = 1.97	$F(2,56) = 2.27$, $p = 0.11$, η2 = 0.08 $BF_{10} = .76$
Years of Substance Use	**M = 18.58 SD = 7.96**	**M = 25 SD = 9.34**	**M = 20.09 SD = 5.8**	**$F(2,56) = 3.83$, $p = 0.03$*, η2 = 0.12 $BF_{10} = 2.54$**
Kruskal Wallis				
Treatment Days Until Assessment	M = 104.71 SD = 100.57	M = 109.17 SD = 90.69	M = 117.00 SD = 64.8	$\chi^2(2) = 1.22$, p =0 .54
Years in Prison	**M = 1.63 SD = 4.4**	**M = 3.7 SD = 7.9**	**M = 3.45 SD = 3.61**	**$\chi^2(2) = 7.77$, $p = 0.02$***

Number of Problem Substances Entering Treatment	M = 2.46 SD = 1.18	M = 2.58 SD = 1.1	M = 2.00 SD = 1.10	$\chi^2(2) = 2.67$, $p = 0.26$
Number of Substances Started in First Year of Substance Use	M = 1.42 SD = .78	M = 1.25 SD = .44	M = 1.17 SD = .39	$\chi^2(2) = 0.66$, $p = 0.72$
Lifetime Relapses	**M = 1.21 SD = 1.5**	**M = 2.96 SD = 3.99**	**M = 3.42 SD = 2.64**	**$\chi^2(2) = 7.95$, $p = 0.02$***
Days Since Last Psychoactive Substance Use	M = 136.96 SD = 138.35	M = 138.46 SD = 87.10	M = 108.08 SD = 64.69	$\chi^2(2) = 0.964$, $p = 0.62$
Treatment Duration	M = 224.3 SD = 91.4	M = 193.59 SD = 72.2	M = 214.89 SD = 97.78	$\chi 2(2) = 0.349$, p = 0.84

5.3.3.2 Potential Confounding Between Group Cognitive Differences. The potential differences between homelessness history groups on selected cognitive traits were examined next. No significant differences between Current Housed, Current Homelessness, and Prior Homelessness groups for any of the selected cognitive traits were revealed. Results of these analyses are further detailed in Table 5.2.

Table 5.2

Potential Confounding Between Current Housed, Current Homelessness, and Prior Homelessness Group Differences on Cognitive Traits

Variable	Current Housed (N = 24)	Current Homelessness (N = 24)	Prior Homelessness (N = 12)	Result
ANOVA				
Powerful Others	M = 21.13 SD = 9.45	M = 21.00 SD = 11.79	M = 17.67 SD = 8.21	F(2, 56) = 0.55, p = 0.58, η2 = 0.02 BF_{10} = .21
RLE Number	M = 9.87 SD = 2.91	M =10.71 SD = 3.86	M = 10.55 SD = 4.06	F(2, 55) = 0.35, p = 0.71, η2 = 0.01 BF_{10} = .19
Kruskal Wallis				
Internality	M = 31.33 SD = 7.48	M = 31.63 SD = 10.05	M = 32.36 SD = 6.73	$\chi^2(2) = 0.5$, p = 0.78
Chance	M = 24.29 SD = 7.89	M = 21.88 SD = 9.54	M = 21.18 SD = 7.68	$\chi^2(2) = 1.60$, p = 0.45
DC	M = 3.89 SD = 13.57	M = 6.11 SD = 18.50	M = 2.4 SD = 13.94	$\chi^2(2) = 1.04$, p = 0.60
Certainty in Negative Future Events Occurring	M = 4.39 SD = 3.16	M = 3.71 SD = 3.07	M = 4.00 SD = 3.95	$\chi^2(2) = 0.71$, p = 0.70
Certainty in Positive Future Events Not Occurring	M = .57 SD = .95	M = .63 SD = 1.56	M = .45 SD = 1.21	$\chi^2(2) = 0.92$, p = 0.63
RLE Affect	M = 8.04 SD = 2.60	M = 8.25 SD = 4.12	M = 7.82 SD = 3.60	$\chi^2(2) = 0.13$, p = 0.94

5.3.3.3 Potential Confounding Main Effects of Between Group Differences on Relapses During Treatment. The potential confounding effects of variables evidencing significant between homelessness history group differences on Relapses During Treatment were then checked via Poisson Regressions. No significant effects appeared for Ethnicity, Problematic Use of Cocaine, Years of Substance Use, Age, Years in Prison, or Lifetime Relapses.

5.3.3.4 Main Effect Poisson Regressions. Main effect Poisson Regression analyses were then run for Homelessness History group, Internality, Powerful Others, Chance, DC, Certainty in Negative Future Events Occurring, Certainty in Positive Future Events Not Occurring, Number of RLE, and RLE Affect. No significant results were revealed by these tests for Homelessness History, Powerful Others, Chance, Certainty in Negative Future Events Occurring, Certainty in Positive Future Events Not Occurring, Number of RLE, and RLE Affect. Significant effect was discovered for Internality, such that Relapses During Treatment increased 6% for every point increase on the 48-point scale (95% CI, 1.01 to 1.12).

5.3.3.5 Interaction Effect Poisson Regressions. Following Main Effect Poisson Regressions, Interaction Effect Poisson Regressions were run for Homelessness History group with each selected cognitive trait Internality, Powerful Others, Chance, DC, Certainty in Negative Future Events Occurring, Certainty in Positive Future Events Not Occurring, Number of RLE, and RLE Affect on Relapses During Treatment. No significant interaction effects between Homelessness History and these cognitive traits on Relapses During Treatment were found.

5.4 Discussion

As per timepoint one of this study presented in Chapter Four, no significant baseline cognitive differences were revealed between Current Housed, Current Homeless, and Prior Homelessness groups. Further, none of the between group traits revealing significance

predicted differences in Number of Relapse Episodes During Treatment, confounding my cognitive analyses. Internality demonstrated a negative main effect on Number of Relapse Episodes During Treatment. More specifically, for every 16-point increase on the 48-point Internality scale, PSU treatment service users accrued one more relapse during treatment. As the highest Number of Relapse Episodes During Treatment made in this sample was two, this result indicates that individuals in the bottom third of potential Internality scores did not relapse, individuals demonstrating medium Internality beliefs relapsed once, and those whose internality attributions were in the top third of potential scores relapsed twice during their first six months of PSU treatment. These are striking results. Notably, this finding is further in keeping with the deductions of my systematic review, described in Chapter Three. This review into the role of LoC for PSU treatment service users' outcomes suggests that it may in fact be diminished LoC beliefs which best support PSU recovery, through their facilitation of adaptive responding across diverse situations. Combined with the strong association observed in this experimental study, it appears that this interpretation may warrant earnest consideration from other specialists in the field.

No significant differences were observed for the potential interaction of homelessness history with my selected cognitive traits on PSU recovery. Similar potential explanations for this finding exist as those outlined in Section 4.4. The relatively small sample obtained for this investigation may have reduced the power for some analyses revealing non-significant differences. Existing effects may not have been observable using my methods of data collection such as those pertaining to cognitive assessments as detailed in Section 4.4, my relapses during treatment recovery proxy, or my reliance on service staff knowledge of service users' relapses during treatment. As per my preliminary checks, it is further possible that these results were confounded by those variables revealing between-group significance.

Consequently, it is recommended that investigations similar to the one described in this Chapter are repeated, to contend or corroborate the findings discussed in this Section.

As described in Chapter One, a considerable overlap between PSU and homelessness exists. Further, PEH evidence lower rates of PSU treatment entry and higher rates of substance relapse. Interestingly, homelessness is currently understood to be a psychological, rather than a physical state. However, despite this, research to date does not yet appear to have considered the potential impact of this chronic psychological experience on PSU recovery. In this way, the current Chapter adds significantly to both our understanding of PSU recovery via the investigation of traits that were seldom previously explored and the psychological state of homelessness by examining how this may interact with psychological traits during PSU recovery.

This study utilised data already collected from a matched target population to inform one aspect of its analyses. This method respected the high demands already on my target population in terms of concurrent PSU and homelessness recovery. Collecting this information from just one sample rather than two also observes the global human rights to dignity and privacy by extracting this information from approximately half the number of individuals. This procedure strongly adhered to the FAIR data principle of Reusability (Jacobsen et al., 2020; Wilkinson et al., 2016). It thus practiced a high standard of contemporary research ideologies whilst achieving its investigative aims. As a consequence of this data optimisation procedure, this study further boasts a sample population that is highly reflective of the current Irish PSU treatment population, amplifying the ecological validity of its findings.

My treatment outcomes data collection procedure was unusual to this field, in that most prognostic PSU treatment studies rely on initial participant consent to collect post facto substance use data. In this way, the contention from the DSC Therapeutic Services Quality

Team, that their service users could not consent to their team sharing data about them which had not yet been created, was novel to my academic supervisors and I. However, it motivated us to reflect upon our existing understandings and perceptions of research practices, and why these exist. It further re-ignited our appreciation for the rapid and exciting advancements continuously being made to this field. Ultimately, I believe that this added outcomes data collection informed consent procedure improved the ethical standards of this investigation, which is of the utmost importance considering the particular vulnerability of my target population and the potential sensitivity of the data in question. I do not believe it negatively impacted the data collection for this study, as all participants who participated in the initial cognitive assessments further agreed to share their substance use, or lack thereof, data six months later. Concerns about the potential difficulty of locating PEH who may have discharged from their PSU treatment service back to homelessness did not materialise. However, I recognise that this may not always be the case for similar research, and that such client retention rates are unusual, particularly for this cohort (Crean et al., 2021). PEH in PSU regularly lose phones or do not have them charged due to intoxication or vagrancy (Scutella et al., 2021). Furthermore, those who are contactable and arrange appointments frequently miss them due to the unavoidably chaotic nature of their circumstance (Thompson, 2022). Recognising the uprise in telehealth procedures to enhance healthcare outreach to PEH, I thus acknowledge that recorded vocal consent including consent items and unaccompanied by my described SuperLab procedures may achieve these outcomes data collection informed consent procedures more reliably for future researchers (McInnes et al., 2014; Moczygemba et al., 2017; Toseef et al., 2022).

As described in Section 5.2.3.2, collection of PSU treatment service users' relapse data poses numerous obstacles. Primarily, the self-report nature of this information is subject to considerable alteration due to shame and/ or intoxication (Denis et al., 2012; Latkin et al.,

2017; Murphy et al., 2010). Secondly, for users of substances other than alcohol, the chemical content and strength is difficult to decipher, undermining knowledge of what precisely, and how much, was consumed (Miserez et al., 2014; van der Gouwe et al., 2017). For these reasons, PSU Treatment Duration and the Number of Relapse Episodes During Treatment are generally more reliable and objective treatment outcome variables. However, for this particular cohort encompassing a considerable number of PEH, PSU Treatment Duration revealed itself to be an unreliable proxy for PSU recovery. This is because many service users who were doing well in their abstinence from psychoactive substances during treatment were not discharged from their recovery service until a suitable post-discharge arrangement, from further recovery treatment to Housing Assistance Payment (HAP) accommodation could be arranged. While a reality of the PSU treatment for PEH practice, this factor worked to confound the variable as a proxy for abstinence, rendering it unsuitable for the current investigation. Consequently, the only treatment outcomes data variable deemed appropriate for the current investigation was Number of Relapse Episodes During Treatment. This is worth considering for future researchers in the field.

As mentioned briefly above, the attrition rate for this study was remarkably low; just one participant from the Prior Homelessness group's treatment outcomes data was not available due to a system error on behalf of the treatment site. Thus, this sample's descriptive statistics were quite similar to those of timepoint one described in Chapter Four and re-run of analyses to define Current and Prior Homelessness groups were not required. However, due to this missing participant, between group analyses were re-run for potential confounding variables. These revealed the same between-group differences as for Chapter Four: Problematic Cocaine Use At Treatment Entry, Ethnicity, Age, Years of Substance Use, Years in Prison, and Lifetime Relapses. Further, post hoc tests pinpointed that the Current Homeless group was both significantly older and had used substances for significantly more years than

the Current Housed group, as per Chapter Four timepoint one analyses. As these groups showed no significant difference in the age that they began using substances, it appears that the Current Homeless group in this study takes longer to recover from PSU than the Current housed group. Further similar to Chapter Four timepoint one, the Prior Homelessness group in this study was recognised through post hoc analyses to have spent significantly more years in prison and experienced significantly more previous relapses than the Current Housed group. The implications of this for prison discharge plans are discussed in Section 4.4.

Chapter Six. Interaction of Locus of Control with Episodic Future Thinking for Problematic Substance Use Detoxification in People Experiencing Homelessness

6.1 Introduction

The overarching aim of the current project was to identify cognitive traits which may be targeted by PSU treatment interventions for individuals, while accounting for their experience with homelessness. Thus, in light of my experimental findings from the preceding Chapter and my systematic review described in Chapter Three the current chapter details a Proof-of-Concept (PoC) investigation whereby the potential reductive effect of a simple, brief, and easily implementable cognitive reframing intervention on Internal Locus of Control (LoC) and ultimately substance use in a small sample of PEH in PSU treatment was trialled. This Chapter first introduces the theory behind the intervention, Internal LoC, detoxification treatment, and PoC studies. It then overviews my aims, objectives, and underlying hypotheses. Methodologies used to redesign this intervention for use with PEH in alcohol and benzodiazepine detoxification as well as to implement this intervention with the same group are outlined next. Preliminary results from this PoC investigation are then presented, followed by a Chapter discussion.

6.1.1 Rationale

The overarching aim of this project is to identify potential cognitive traits impacted by homelessness that influence PSU recovery so that these can be targeted during treatment to enhance outcomes. Chapter Three provided a systematic review into what is known so far about the role of Locus of Control (LoC) in PSU treatment service users' substance use. Chapter Four investigated potential differences between housed people, PEH, and people who have recovered from homelessness in interpersonal control and temporal affectivity traits deemed to possibly lie at this confluence. Chapter Five assessed whether the relationship of these traits to PSU recovery may change according to homelessness history.

Using my methods, no significant differences between Current Housed, Current Homelessness and Prior Homelessness groups on these cognitive traits were observed. However, differences on a selection of identified potential confounding variables were revealed. Internality was found to predict Relapses During Treatment, but not differentially according to homelessness history group. Thus, for this final experimental study, I will examine the possibility that a simple cognitive reframing intervention with evidenced efficacy may be employed with PEH and work through Internality.

6.1.1.1 The Intervention. Delay Discounting refers to a cognitive phenomenon whereby the value of a reward diminishes the further into the future it is received (Matta et al., 2012; Odum, 2011a, 2011b). Steep delay discounting is understood to result from a narrow temporal window; it is thus widely used as a proxy for impulsivity and has demonstrated a reliable relationship to dysfunctional psychological responding including eating disorders, attention-deficit hyperactivity disorder (ADHD), bi-polar disorder, borderline personality disorder, and PSU (Amlung et al., 2017; Amlung et al., 2019; Athamneh et al., 2023; Bickel et al, 2019; Businelle et al., 2010; Cabral et al., 2024; Cheng et al., 2021; Dwyer et al., 2023; Mitchcel, 2019; Moody et al., 2016; Odum et al., 2020; Pritschmann et al., 2021). Due to its reportedly crucial role to PSU behaviours, several interventions have been designed to therapeutically encourage future-oriented thought and broaden the temporal window (Ameral, 2018; Andersland, 2023; Ashe et al., 2015; Bickel et al., 2020; Bickel et al., 2023; Coughlin et al., 2021; García-Pérez et al., 2022; Kräplin et al., 2020; Scholten et al., 2019; Shen et al., 2022; Sofis et al., 2020; Wardle et al., 2024). One such Episodic Future Thinking (EFT) intervention, designed by Stein et al., (2016) asks participants to generate positive, non PSU-related, autobiographical events for specified future time points. After selecting the most vivid autobiographical event for each time point, the participants perform a delay discounting task where the selected vivid autobiographical

events for each time point are presented at the top of the computer screen above the delay discounting choice with the corresponding latency period. This simple and brief intervention yielded impressive results vis-à-vis its significantly reductive impact on both delay discounting (thus impulsive decision-making) and cigarette smoking. For this reason, several research groups attempted to replicate and extend the study's findings with notable success (Bickel et al., 2018; Rung et al., 2019). To date, this intervention has evidenced good effect with binge-drinking college students (Voss et al., 2022), cigarette smokers up to one week (Chiou & Wu, 2017; Stein et al., 2018), individuals with problematic alcohol use (Athamneh et al., 2022), problematic cocaine use (Forster et al., 2021; Snider et al., 2021), as well as problematic cannabis use (Sofis et al., 2022). Research does not yet appear to have investigated the potential usefulness of this intervention with problematic opiate users, but numerous reports suggest that episodic foresight is similarly hampered in this population (Mercuri, 2015; Mercuri et al., 2015; Mercuri et al., 2016; Moustafa et al., 2018; Terrett et al., 2017). Related investigation with primary users of other substances does not yet appear to have been conducted (Bickel et al., 2023). Of note, repeating this intervention appears to strengthen its effects (Mellis et al., 2019) and it is beginning to show implementability via alternative means such as art (Hudson et al., 2024), demonstrating its efficacy and potential accessibility for diverse or further disadvantaged groups. Further, it appears to be seamlessly implementable alongside pre-existing CBT provided to PSU treatment service users (Aonso-Diego et al., 2021a, 2021b). Events that are positive, vivid, and related to the discounted choice are frequently reported to improve effects (Athamneh et al., 2021; Bickel et al., 2023; Rösch et al., 2022; Ruhi-Williams et al., 2022). However, the potential confound of actual positive and imaginable autobiographical futures appears yet to be considered. Furthermore, the potential efficacy of this intervention with PEH in PSU treatment, detoxification treatment service users, or benzodiazepine users does not yet appear to have been trialled.

6.1.1.2 Internal Locus of Control. As described in previous chapters, Locus of Control (LoC) is a cognitive personality trait underpinning how much we believe that we ourselves, more powerful other people, chance, or fate influence our life courses (Francis, 2020; Lefcourt, 2014; Steca, 2024). It has been extensively shown to have good predictive capacity across decades and various domains of psychological function (Galvin et al., 2018; Nowicki, & Duke, 2016). As outlined in Chapter Three, the majority of this research to date has recommended a strong Internal LoC, or a belief that we determine our own life outcomes, for favourable psychological functions (Landau, 1995; Wolinsky et al., 2010); this includes the subset regarding PSU treatment service users' substance use (Dekel et al., 2004; Elsesser & Sartory, 1998; Jones & Wuebker, 1985; Koski-Jännes, 1994; McGovern & Caputo, 1983; Sarkar et al., 2013; Snowden, 1978; Vielva & Iraurgi, 2001). However, the findings of this systematic review indicates that these results may be confounded by the design of currently available LoC scales, a sentiment echoed by other academics in the field (Furnham, & Steele, 1993; Marsh, & Richards, 1986). These scales generally take either a forced-choice approach (Keyson & Janda 1972; Rotter, 1966) or are measured across one internal and two external scales (Levenson, 1973). The review detailed in Chapter Three revealed that most multidimensional analyses actually associated low subscale findings with reduced substance use in PSU treatment service users; Internality was thus propounded via the dissection of LoC in these scales into one internal but two external dimensions and may instead reflect the benefit of reduced causality beliefs for PSU treatment service users' recovery. Should this be the case, Internality as recommended by forced-choice univariate analyses may also caricature actual Internal LoC association with reduced substance use in PSU treatment service users. Of note, this review also found that External LoC showed most benefit for PSU treatment service users' substance use during treatment, potentially due to the need to accept guidance from treatment staff. Consequently, it is of particular interest that of all the

cognitive traits investigated to potentially predict PSU recovery in Chapter Five, it was low Internality that best predicted participants' abstinence during treatment. As LoC has further evidenced to be a malleable state-not-trait variable (Galvin et al., 2018; Nowicki et al., 2018; Ryon, & Gleason, 2014), it is a prime potential mechanism of action for Stein et al.'s (2016) EFT intervention.

6.1.1.3 Problematic Substance Use Detoxification. PSU detoxification (detox) is an intense period of time lasting from the moment an individual consumes their last problematic psychoactive substance for an indefinite period, depending on numerous factors including intensity and duration of PSU prior to detox as well as general physical and mental health (Anderson, 2001; Das, 2020; Franken, & Hendriks, 1999; Larson et al., 2007; McCabe, 2000; Shanahan et al., 2005; Wilson & Thompson, 2021; Woodhead et al., 2021). The process is usually very physically and mentally strenuous (Basińska-Szafrańska, 2021; Davis et al., 2023; Gordon et al., 2001; Grau-López et al., 2020; Hobelmann, & Clark, 2018; Hosseini, 2017; Liappas et al., 2002; Saber Hassan Ibrahim et al., 2022), and even fatal in some circumstances, particularly for users of alcohol or benzodiazepines (Carleton, 2022; Chouinard, 2004; Day & Daly, 2022; Edinoff, et al., 2021; Fluyau et al., 2018; Jesse et al., 2017; Kljajic, & Zaafran, 2020; Lader, 2011; Mainerova et al., 2015; Maust et al., 2023; McKeon et al., 2008; Monte et al., 2010; Raistrick, 2000). It thus often requires a strong psychological foundation to go through successfully (Cottee, 2002; Ledda et al., 2019; Levola et al., 2021; Odenwald, & Semrau, 2013; Sofin et al., 2017; Stevens et al., 2015). To salve this, several pharmacological drugs have been designed to reduce the effects of PSU detox on the mind and body (Amato et al., 2011; Bond, & Witton, 2017; Casari et al., 2022; Diaper et al., 2014; Johnson et al., 2024; Kleber, 2007; O'Connor, 2005' O'Connor & Fiellin, 2013; Rubio, & Ponce, 2013; van den Brink, & van Ree, 2003; Welsh et al., 2018). For this reason, individuals experiencing PSU and particularly those with problematic alcohol or

benzodiazepine use generally enter a residential and medically-assisted PSU detoxification service for the period immediately following psychoactive substance use cessation (Lenardson et al., 2009; McCarty et al., 2000; Tadros et al., 2018; Worley, 2021). These services are usually facilitated by PSU medical staff specifically trained to administer detoxification medicines and monitor physical and mental reactions throughout the detox (Burns, 2024; Sharp et al., 2021; Sharp et al., 2021; Wilson et al., 2016).

PEH admit to detox services more frequently than their housed counterparts (McLaughlin et al., 2021; Vipler et al., 2018), despite considerable barriers to access such as cost, wait time, and distance (Hsu et al., 2024; Nicholls & Urada, 2022; Rizzo et al., 2022; Upshur et al., 2018). This increased admission rate possibly stems from its concurrent importance for homelessness recovery (Silins et al., 2008; Zlotnick et al., 1999). However, PEH are also much more likely to self-discharge (Mutter & Ali, 2019; Svoboda, 2013), relapse (Kertesz et al., 2003), and pass away following discharge (Saitz et al., 2007) than their housed counterparts. Thus, PEH appear to have distinct detoxification needs which are not being met by current treatment paradigms (Fountain et al., 2003; McCarty et al., 2000; Sharp et al., 2021; Stein et al., 2015).

6.1.1.4 Proof-of-Concept Studies. A burgeoning trans-disciplinary research method in recent decades is the Proof-of-Concept (PoC) research stage between theoretical investigation and large-scale field trial (van der Laan, 2023). This approach encapsulates prototyping, methodological demonstration, and post facto demonstration (Elliott 2021). PoC research is conducted by experts from various academic fields to pilot novel phenomena such as organic compounds for accelerating chemical reactions (Chen et al., 2014), psychiatric medicines for children with ADHD (Spencer et al., 2002), or photographic advancements for PET imaging (Yamaya et a., 2011), prior to considerable main study time and financial investment. Such is the augmentation of PoC research within contemporary academic

institutions, that PoC centres are proliferating across universities worldwide to combat inhibitors to, and therefore catalyse the application of, their innovative solutions to real-world problems (Banerjee et al., 2017; Battaglia et al., 2021; Gulbranson, & Audretsch, 2008; Hayter & Link, 2015; Maia & Claro, 2013; Sergey et al., 2015). This type of research is appreciated to be of critical importance for myriad reasons (Schmidt, 2006). Initially piloting the feasibility of prototypical research on smaller scales resolves minor issues before they disrupt the validity of major studies (Schaefer, & Kolkhof, 2008). PoC data can often be integrated to the data set of its consequent major study (Abhishek et al., 2017; Cartwright et al., 2010; Smith et al., 2006). They can also be used to demonstrate efficacy for potential research funders (Munari et al., 2017; Munari, & Toschi, 2021; Rasmussen, & Sørheim, 2012). Thus, this type of research is a dynamic tool by which researchers may streamline their investigative inquiries (Kendig, 2016).

6.1.2 Aims and Objectives

In light of the preceding rationale, and with the practical guidance of Enterprise Mentor Three, overall aims and specific objectives were created for the current study. The overall aim of this investigation was to assess the feasibility of a potential major study examining the efficacy of Stein et al.'s (2016) EFT intervention with PEH in residential alcohol and benzodiazepine detoxification treatment. Specific objectives were to:

1. Re-design Stein et al.'s (2016) EFT intervention for use with PEH in PSU treatment
2. Assess the usability of Stein et al.'s (2016) re-designed EFT intervention with a pilot sample of PEH in residential medical alcohol and benzodiazepine detoxification treatment
3. Examine potential trends in the effect of Stein et al.'s (2016) re-designed EFT intervention on immediately following Internality scores within a pilot sample of PEH in residential medical alcohol and benzodiazepine detoxification treatment

4. Examine potential trend effects Stein et al.'s (2016) re-designed EFT intervention on one-week post-intervention relapses of a pilot sample of PEH in residential medical alcohol and benzodiazepine detoxification treatment
5. Examine potential trend correlation of Internality scores with relapses one week following Stein et al.'s (2016) re-designed EFT intervention in a pilot sample of PEH in residential medical alcohol and benzodiazepine detoxification treatment
6. Examine the potential confounding effect of knowing one's post-discharge accommodation plan on Internality in a pilot sample of PEH in residential medical alcohol and benzodiazepine detoxification treatment
7. Examine the potential confounding effect of knowing one's post-discharge accommodation plan on substance use in a pilot sample of PEH in residential medical alcohol and benzodiazepine detoxification treatment

6.1.3 Hypotheses

Underlying the overarching aim and specific objectives outlined in Section 6.1.2 are the following hypotheses:

1. Stein et al.'s (2016) EFT intervention can be adapted for use with PEH in PSU treatment
2. Stein et al.'s (2016) re-designed EFT intervention can be implemented with PEH in residential medical alcohol and benzodiazepine detoxification treatment
3. Trend data from Stein et al.'s re-designed (2016) EFT intervention with a pilot sample of PEH in residential medical alcohol and benzodiazepine detoxification treatment will indicate that this intervention may reduce Internality in similar populations
4. Trend data from Stein et al.'s (2016) re-designed EFT intervention with a pilot sample of PEH in residential medical alcohol and benzodiazepine detoxification treatment

will indicate that this intervention could reduce substance use in the post-intervention week in similar populations

5. Reduced Internality scores and substance use in the week following the implementation of Stein et al.'s (2016) re-designed EFT intervention with a pilot sample of PEH in residential medical alcohol and benzodiazepine detoxification treatment will correlate
6. Having post-discharge accommodation arranged will reduce Internality scores in a pilot sample of PEH in residential medical alcohol and benzodiazepine detoxification treatment will correlate
7. Having post-discharge accommodation arranged will reduce substance use in a pilot sample of PEH in residential medical alcohol and benzodiazepine detoxification treatment will correlate

6.2 Methods

6.2.1 Participants

6.2.1.1 Participant Eligibility. Eligibility criteria for the present investigation were similar to those described in Chapter Four and Chapter Five. Although women in PSU treatment are significantly outnumbered by men, the gravity of their outcomes are pronounced (United Nations Office on Drugs and Crime [UNODC], 2024). For this reason, best efforts were made throughout this investigation to recruit as many female participants as possible and trial their responses to the current intervention. The irregular, ongoing, and rapid maturation of the adolescent brain contributes a significant confound to this exploratory investigation (Ahmed et al., 2015); for this reason, individuals under the age of 18 were not permitted to participate. During detoxification, residual amounts of psychoactive substances at levels shown to influence cognition can remain in the body for a number of weeks (Bourque, & Potvin, 2021; Crowe & Stranks, 2018; Laniepce et al., 2020; Wendel et al.,

2021). Further, the withdrawal phase from heavy substance use is understood to exert significant hormonal and neurological alterations (Ashare et al., 2014; Kelley et al., 2005; Lyvers, & Yakimoff, 2003; Petit et al., 2017; Puustinen et al., 2014; Proebstl et al., 2019; Rapeli et al., 2006; Schulte et al., 2014). Although these effects vary from person to person, they are inevitable within the detoxification process. Thus, to conduct any research that aims to enhance the efficacy of detoxification treatment, they must be aptly encompassed. For this reason, only service users who had been admitted to DSC's medical alcohol and benzodiazepine detoxification centre for more than three days were permitted to take part in this study. In a similar fashion, as this study aimed to examine substance use in the week following participants' assessments, only service users who were expected to remain in this service for at least one week past their planned assessment date were eligible for participation. Due to the exceptionally high levels of dual-diagnoses among people with PSU, and PEH in particular, such individuals were included to accurately reflect the transecting cognitive processes at play within this population (Bertram et al., 2022; Holzhauer, et al., 2019; Schütz et al., 2019). In succession to this, individuals on prescribed psychiatric medicines, including those for the purposes of medically-assisted detox, were also permitted to participate due to their exceeding prevalence among PEH with PSU (Khan et al., 2022). Recognising the promontory rates of heroin use in Ireland, the extensive Methadone Treatment Protocol (MTP) delivery over the last number of decades, and the substantial proportion of individuals maintained on this programme for several years, excluding individuals on prescribed methadone would carve away a substantial and representative proportion of the Irish PSU treatment service user population. Further, as this treatment, similar to the other psychiatric medicines just described, is prescribed to neutralise dysfunctional cognition, I contend that including such individuals is less confounding than unmedicated similar people (Oppong et al., 2016). Literacy levels of the current Irish

homeless population are lower than those of the general population, due to lack of education or immigration from non-English speaking countries (Central Statistics Office [CSO], 2022; Hanckel et al., 2024). As this is not found to impact non-verbal cognition in this population (Pluck et al., 2020), this cohort were allowed to participate to enhance this investigation's ecological validity. Traumatic brain injuries (TBIs) and intellectual disabilities (IDs) are overrepresented in homeless populations (Brown & McCann, 2021; O'Donovan et al., 2024; Stubbs et al., 2020; Young & Hughes, 2020); as both TBIs and IDs are extremely heterogeneous, only individuals who would not have capacity to comprehend study materials were excluded from participation. This measure was employed in a similar fashion to those previously listed; to enhance this study's representation of Ireland's current homeless population. As individuals in alcohol and benzodiazepine medical detoxification still have residual psychoactive substances and detoxification medicines in their bodies, toxicology screens were not conducted prior to these cognitive interventions and assessments. Thus, inclusion criteria are as follows; 18 years of age or older, English-speaking PEH with PSU, who have been admitted for three days or more, and have one week or more, remaining in residential medical detoxification treatment, and who are likely to comprehend study content as determined by their social care staff.

6.2.1.2 Reimbursement. Extreme financial issues are associated with both PSU and homelessness (Mardani et al., 2023; Minion, & Banerjee, 2024) which may work to compromise the rational decision making of my target population by outweighing the potential benefits over harms of participation. This justification follows from guidelines set forth by the European Textbook on Ethics in Research (Hughes et al., 2015). Corroborating this, productivity and societal contribution are powerful catalysts for PSU recovery (Frone et al., 2022). As service users were explicitly informed of any potential risks associated with

participation prior to volunteering, it was deduced that uncompensated participation was the most ethical option available for the current study.

6.2.2. Study Materials.

Study materials used in this investigation reflect those of Stein et al.'s (2016) study but are adapted to investigate the potential operation of EFT through Internality with PEH in residential alcohol and benzodiazepine medical detoxification.

6.2.2.1 Demographic Information. General demographic information pertaining to Age, Gender, Ethnicity, Average Daily Substance Use Pre-Entry, and Post-Discharge Accommodation Plan was collected using a form created by the research team (Appendix AC).

6.2.2.2 Episodic Future Thinking Questionnaire. In the original investigation, half of participants were asked to generate three positive autobiographical events unrelated to substance use that could occur at each of five future time-points: one day, one week, one month, three months, and one year from their assessment day. Following this, they were asked to rate each event for vividness, enjoyment, importance, and excitement using a five-point Lykert scale. Events rated most vivid for each time-point were incorporated into the intervention. This procedure was maintained for the current investigation, but with respect for participants' time they were asked only to rate events for vividness prior to selection, as this was the informing index (Appendix AD). As three-sentence audio recordings about their selected cues were only used in the original investigation during a subsequent hour of cigarette self-administration they were deemed unnecessary for the current investigation; thus, participants were also excluded from creating such recordings.

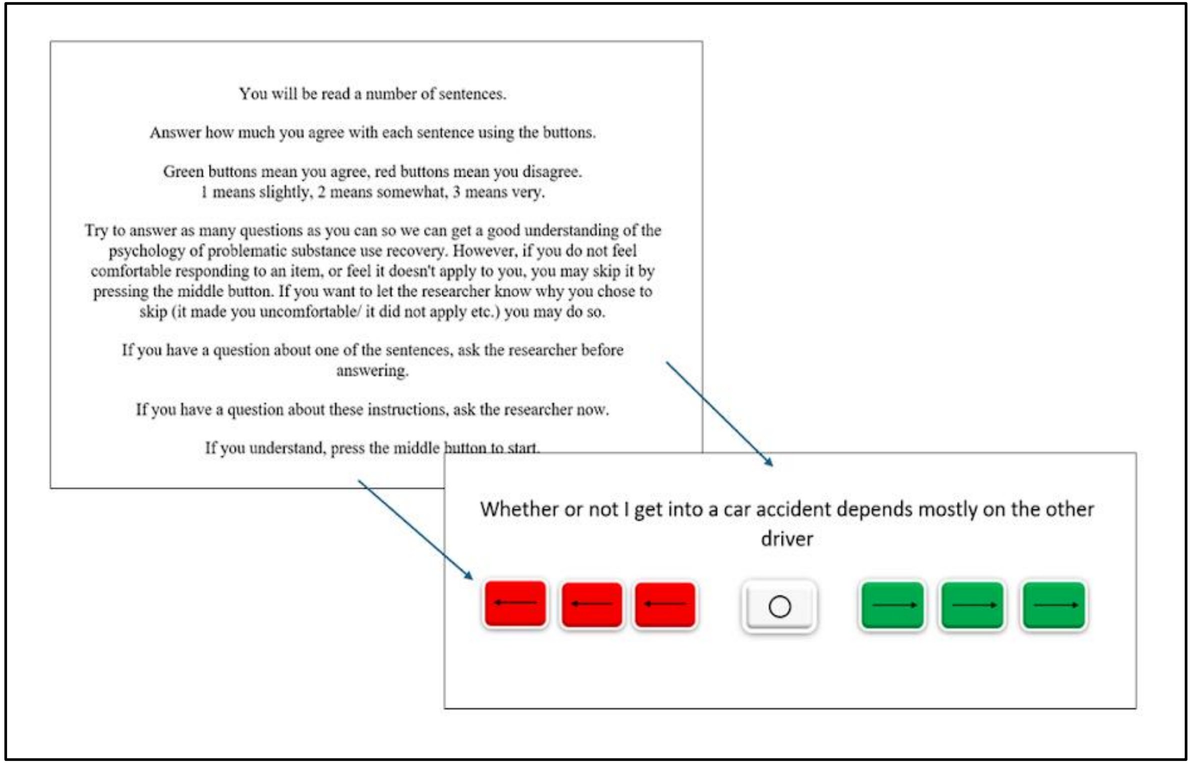
6.2.2.3 Episodic Recent Thinking Questionnaire. As a control condition, participants not assigned to the EFT intervention generated three positive autobiographical events unrelated to substance use that could occur at each of five recent time-points;

yesterday between 7:00-9:59, 10:00-12:59, 13:00-15:59, 16:00-18:59, and 19:00- 21:59. After this, they were asked to rate each event for vividness, enjoyment, importance, and excitement using a five-point Lykert scale. Events rated most vivid for each time-point were incorporated to the intervention. Similar to the EFT generation protocol, Stein et al.'s (2016) protocol was also largely maintained for the current investigation, but participants were not asked to elaborate their generated cues for audio recording, nor rate them for enjoyment, importance, and excitement (Appendix AE).

6.2.2.4 Levenson's Multidimensional Locus of Control Scales. Positive Episodic Future Thinking (EFT) or Episodic Recent Thinking (ERT) events were presented alongside items from Levenson's (1973) Multidimensional Locus of Control Scales. These scales were the same as those employed by the field investigations detailed in the prior two Chapters of this thesis and were mainly utilised to examine the potential operation of this intervention through the Internality sub-trait that was found to correlate with PSU recovery in Chapter Five. Presentation of this scale to participants is depicted in Figure 6.1.

Figure 6.1

Multidimensional LoC Scale Adapted for Use With PEH in PSU Treatment



Note. In this investigation, participants were read one of their generated autobiographical events prior to the next LoC item for response.

6.2.2.5 Contact Cards. Contact cards containing information for my academic research team, the DCU Research Ethics Committee, and the free 'SureSteps' counselling service DSC provides to its service users were given to each participant following their intervention and assessment (Appendix AG).

6.2.2.6 Adaptations. All study measures were adapted for use with PEH in PSU treatment as per Section 4.2.2.6. This study's Participant Information Sheet (PIS; Appendix AA), Informed Consent Form (ICF; Appendix AB), Demographic Form (Appendix AC), and Debrief Sheet (Appendix AF) were all read aloud to participants by me. They were further presented in a digestible paragraph- or item-per-slide format which could only progress following indication from the participant using a Superab 6.0 response-pad. Contact cards

were also read aloud to each participant and participants were also informed that they could ask any DSC staff member should they require assistance such as access to email or phone to contact any of the individuals listed on the card. Therefore, assessment procedures were standardised across participants' potential literacy and language abilities. The Levenson (1973) Multidimensional Locus of Control Scales were adapted for use with PEH in PSU treatment as per Section 4.2.2.6. Each item was presented as a separate SuperLab 6.0 slide that moved forward only when responded to. Each item was read aloud to participants by me prior to response, to enhance reliability of comprehension irrespective of literacy or English language abilities (Section 4.2.2.6). Distinct from Chapter Four however, was my dictation of participants' positive autobiographical events prior to each LoC item. This was to remind participants of these events throughout their assessment, as per the original investigation.

6.2.3 Procedure

6.2.3.1 Pre-Recruitment. The target sample for this study were DSC's residential medical alcohol and benzodiazepine detoxification service users. This programme provides 24-hour medical supervision to PEH detoxing from heavy alcohol or benzodiazepine use for up to three weeks. Prior to recruitment procedures, my academic team corresponded with this service's manager and Enterprise Mentor Three via email. A study protocol was drafted and forwarded to the service's staff. Following resolution of any queries, a suitable time for recruitment address was arranged.

6.2.3.2 Recruitment. One recruitment address was held with six of DSC's residential medical alcohol and benzodiazepine detoxification service users. Complete segregation of this study from care provided by all DSC staff was emphasised. Service users were informed that although they could *volunteer* to participate, and that staff would be consulted to ensure the likely safety of participation for each volunteer prior to participation, that staff would never be informed who ultimately decided to engage with this study or not. Consequently,

their decision to participate could not influence the care they received from DSC staff. The aim of this procedure was to reduce participation against desire for this population in 'desperate' need of limited resources including shelter, self-governance, and recovery support. Service users were mildly deceived to research aims during this recruitment address and informed of such. They were informed that the study was broadly investigating whether positive thinking could improve PSU recovery, and that they would be informed of specific study aims following participation but requested not to share this information with other service users still admitted. Recruitment posters conveying all participant-relevant information in plain English were also displayed throughout the service (Appendix Z). Participants were highly engaged, and interventions and assessments began that day. Participants volunteered using their PASS-ID and mobile phone numbers, as described in Section 4.2.3.2. Volunteer Screen Forms (VSFs) labelled using these PASS-ID numbers were then shared with the Detox Project Worker via my academic research team's shared DCU GDrive. The Project Worker indicated using these forms whether the corresponding volunteer had capacity to understand study materials, whether they were prescribed any psychoactive medicines, and the quantities of these if so. Volunteers deemed suitable to participate were then contacted by me, either directly in the service or using their research-specific phone.

6.2.3.3 Interventions and Assessments. Participants were assessed on a one-to-one basis. Interventions and assessments were held in the counselling room of the Detox service and lasted approximately two hours each. Prior to study procedures, participants were alternately assigned to the EFT or ERT intervention group according to their order of attendance. They were then assigned a randomly generated Research-ID number from a free online generator. Research-ID and PASS-ID combinations were stored in a distinct encrypted document from all other study data in my academic team's shared DCU GDrive to facilitate collection of post-assessment substance use data from detox staff. The Detox Project Worker

was contacted prior to assessments held beyond the recruitment day to ensure room and staff availability. Staff availability was important for this investigation in case an assessment became distressed or agitated. To facilitate staff assistance in this instance, I was provided with a walkie-talkie for all assessments. Each participant was also informed prior to commencement that they could take as many breaks and ask as many questions as required to ensure comprehension. The importance of full comprehension and truthful responding to ensure accuracy of results and potential recommendations for future individuals in their situation was emphasised.

All study materials with the exception of the demographic forms and intervention questionnaires were presented via my Dell Latitude 5320 laptop and SuperLab 6.0. Discrete items or paragraphs were presented via segregate slides. I read aloud all information on each slide for every participant, leaving time to consolidate their understanding. Each slide could only be progressed by the participant using a SuperLab RB-730 response pad. Informed consent was collected via such procedures, accompanied by a vocal recording of the participant stating their research-ID number and consent to participation in this specific study. This uniquely identified each individual in tandem with their yes/ no responses to singular consent items using the SuperLab 6.0 software and response pad. Demographic forms were read aloud to each participant by me. Participants' answers were then transcribed by me into the demographic forms using her bluetooth connected keyboard with the laptop screen facing the participant for confirmation. EFT and ERT questionnaires were presented and responded to in a similar fashion. Following EFT or ERT event generation, vividness rating, and selection the five relevant events were assigned numbers one to five in temporal order of occurrence. Prior to reading each LoC scale item, a random number generator on my research-specific phone selected a number between one and five. The participant's corresponding EFT or ERT item was then read aloud by me to maintain these events in

working memory. During debrief, participants were informed that they should not behave differently than they would otherwise. They were reminded that I would share an encrypted document from my academic research team's shared DCU GDrive with the Detox Service Manager one month following final assessment, to ensure that all service users present in the service at the time recruitment were discharged. They were also reminded that they could withdraw their data and consent to participate up until this time, but that after this time Research-PASS ID links would be deleted rendering their information unidentifiable. Following debrief, participants were given a contact card which they were encouraged to use if they had any queries or issues following their participation. Study materials were presented in the following order:

1. Participant Information Sheet (PIS)
2. Informed Consent Form (ICF)
3. Demographic Form
4. Episodic Future Thinking (EFT)/ Episodic Recent Thinking (ERT) Intervention
5. Locus of Control (LoC) Scale
6. Debrief
7. Contact Card

6.2.4 Data Analysis

6.2.4.1 Independent Samples T-Tests. To assess potential differences between two independent group means on a continuous variable, a t-test analysis may be employed (Manfei et al., 2017). This test was intended for use in the current investigation to determine potential differences between EFT and ERT intervention groups for Age, Internality, Powerful Others, and Chance LoC subscale scores.

6.2.4.2 Mann-Whitney U Test. Data which violate independent samples t-test normality assumptions may be assessed using the Mann-Whitney U test (Nachar, 2008; Sundjaja et al., 2020; Wall Emerson, 2023). This test was planned for use with any of the independent samples t-test variables listed that violated normality assumptions.

6.2.4.3 Chi Square Contingency Test. Potential differences in expected proportions of a dichotomous variable in two independent groups can be assessed using the Chi Square Contingency Test (Rana, & Singhal, 2015). This test was planned for use in the assessment of potential differences between EFT and ERT intervention groups in Gender, Arranged Post-Discharge Accommodation, and number of individuals with Problematic Use of each substance for which this became relevant.

6.2.4.4 Fisher-Freeman-Halton Exact Test. When the expected cell counts are less than five in more than 20% of the cells from a chi square test, a Fisher-Freeman-Halton Test is employed (Van Auken, & Kebschull, 2021). It was likely that this test was going to be employed to assess potential significant Ethnicity differences between EFT and ERT intervention groups. It was also the intended alternative test for any Chi Square tests listed in 6.2.4.2 violating relevant criteria.

6.2.4.5 Poisson Regression. Count variables may be predicted by continuous or categorical variables using Poisson Regression (Hutchinson, & Holtman, 2005; Tsou, 2006). It was intended that these regressions would assess potential main effect differences for EFT or ERT intervention on Internality and substance use in the week following intervention for PEH in residential medical alcohol and benzodiazepine detoxification. They were also planned to be used to assess the potential interaction effect of intervention group by Internality score on substance use in the week following intervention.

6.2.5 Ethics

This study received ethical approval from DCU's Research Ethics Committee on the 1st of July, 2024. The grant number for this application is DCUREC2024/126 (Appendix Y). Ethical approval was obtained from DSC's Research Ethics Committee on the 18th of September, 2024.

6.3 Results.

6.3.1 Descriptive Statistics

During my planned data collection period DSC completed their construction of a purpose-built 100 bed facility to house their therapeutic services. For this reason, my intended second and third rounds of participant recruitment and data collection were not possible as the Detox service users and staff required a number of weeks to move and settle into their new facility without hosting supplementary activities or projects. Thus, my final sample for the current investigation was four male (80%), one female (20%), and no gender-fluid PEH in residential medical alcohol and benzodiazepine detoxification treatment. Participants' ages ranged from 34 to 48 (M=41.4, SD=5.46). Four White Irish (80%) and one Polish-Irish (20%) individual took part. Two participants were on 27 mls and 45 mls of prescribed methadone, respectively. Two alcohol users, four benzodiazepine users, and one cannabis user took part. One alcohol user had completed an alcohol detox seven months prior to this admission and the other had significantly detoxed their own benzodiazepine use prior to entry. Two participants planned to go back to their supported bedsit apartments, one hoped to move to DSC's further recovery, one intended to move back to substance-free family or friends, and one did not know. Three received the EFT intervention and two received the ERT intervention.

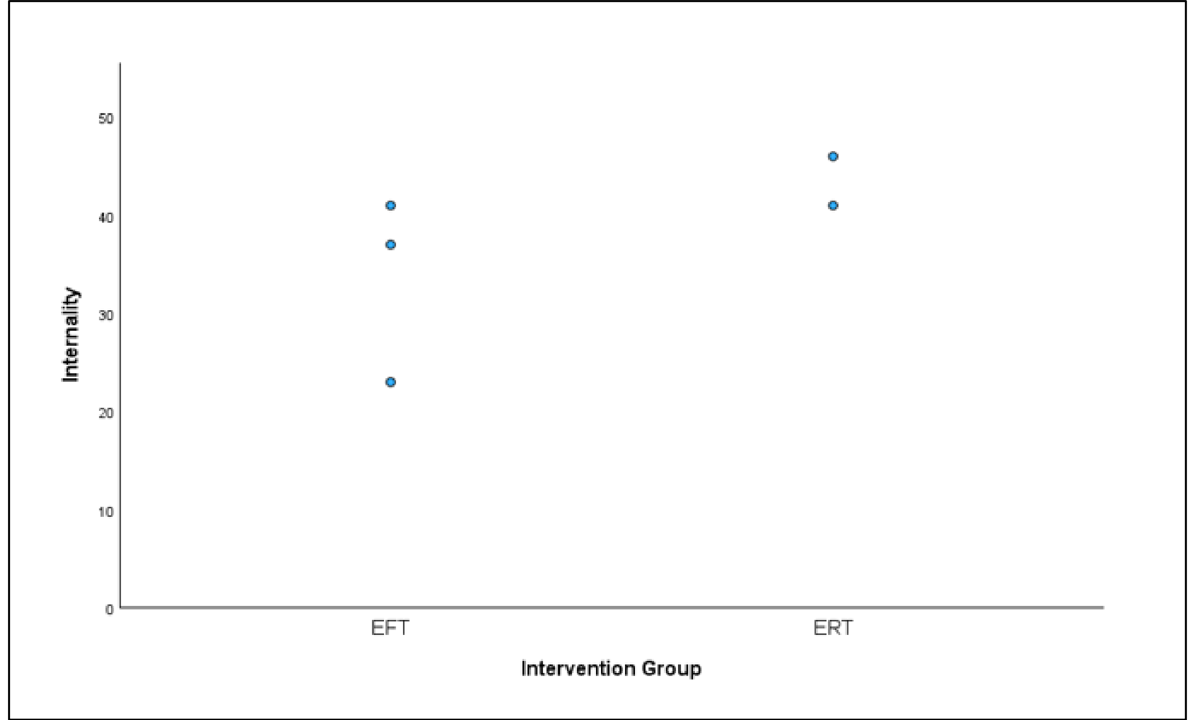
6.3.2 Main Analyses

Stein et al.'s (2016) re-designed EFT intervention was implemented without any issues. However, participants provided similar feedback regarding specific items of

Levenson's (1973) LoC scale as those who took part in my earlier studies. Mean Internality scores were lower in the EFT group (M=33.67, SD=9.45) than ERT (M=43.50, SD=3.54) group as predicted. This is presented in Figure 6.2.

Figure 6.2

Scatterplot Displaying Internality Scores of EFT and ERT PoC Study Participants



Note. The highest scoring participant in the EFT group and lowest scoring participant in the ERT group scored identically. The lower overall scores in the EFT group, however, are as desired.

While an independent samples t-test revealed no significant difference ($p = 0.19$), the ultimately small sample reducing power impedes conclusive interpretation. No participants relapsed in the week following their assessment. For this reason, no analysis was conducted for the potential predictive relationship of intervention group, Internality, and/or post-discharge accommodation plan on Relapses Following Intervention. Further, as just one person did not know where they would live following their discharge from the detox service at the time of their assessment, no analysis was conducted to investigate the potential influence of this variable on Internality scores or Relapses Following Intervention.

6.4 Discussion

This study was designed to test the potential utility of Stein et al.'s intervention via Internal LoC with PEH in medical alcohol and benzodiazepine detoxification. Of specific interest, participants in the EFT group displayed lower Internal LoC scores than those receiving the ERT intervention. However, as these results were obtained from a particularly small sample of just five participants, including just one female, their generalisation is premature. Further, LoC was exclusively measured post-intervention, meaning that we cannot eliminate the possibility that these trends may have resulted from participants' pre-existing dispositions. Nonetheless, considering the exceptionally small sample size, the p value of .19 demands attention, showing clear potential for a positive impact of this intervention on Internality beliefs for PEH in alcohol and benzodiazepine detoxification. In continuation from my systematic review findings as discussed in Chapter Three, this intervention may thus help this cohort to accept help from people beneficial to their recovery, such as PSU Treatment staff. It may also work to prevent rumination on event causation and appreciate the contribution of various factors to life events. Nevertheless, these results entice further investigation into this potential implication of EFT.

This study achieved many of its other aims as described in Section 6.1.2. Fundamentally, it demonstrated that this effective PSU intervention may be adapted for use with PEH and incorporated to cognitive assessments beyond delay discounting using a PoC research approach. This PoC design permitted the initial trialling of my adaptations to Stein et al.'s (2016) intervention in terms of cognitive assessment, presentation method, substances of choice, and stage of PSU recovery prior to large scale investment. Although no issues arose in this trial, I maintain it was a sensible yet dynamic approach that would have allowed us to circumvent many potential issues which could have arisen considering the several advancements in this study's methods. Furthermore, as it appears that no alterations are

required to this design prior to major study execution, data from these participants may be parsimoniously incorporated to those collected by a future major study, increasing its power. Thus, resources in terms of time and money were not squandered by this initial trial but astutely spent in increments to avoid such waste. My academic team consequently recommend this PoC study design for any future researchers attempting to execute ambitious research designs such as the one described in this Chapter.

My selected methods corresponded to the most important aspects of the original study; participants were alternately assigned to an intervention or control group, self-generated events were presented in tandem with their cognitive scale items, and substance use was collected for a period of time thereafter. Further, as only participants' vividness ratings informed events selection for Stein et al.'s intervention, only these were requested in the current study. This measure is further in keeping with the emerging understanding that vividness appears to be one of the most important aspects of to bolster the positive effects of EFT (Athamneh et al., 2021; Bickel et al., 2023; Rösch et al., 2022; Ruhi-Williams et al., 2022). These exclusions recognised the General Data Protection Regulation principle of Data Minimisation as discussed in Chapters Four and Five (GDPR; European Union, 2016), and further bypassed potential issues with under-stimulation and sustained attention often experienced by people with PSU (Bardo et al., 2007; Carmen Arenas et al., 2016; Dubey & Arora, 2008; Ersche et al., 2010; Foulds et al., 2017; Goldstein et al., 2007; Haj-Seyyed-Javadi et al., 2007; Mitchell et al., 2016; Lang et al., 2005; Norbury, & Husain,2015; Shalchi, 2016; Wingo et al., 2016). Moreover, this study was adjusted from Stein et al.'s on several indices such as problematic substance, stage of PSU recovery, and homelessness to advance its findings. One important index adjusted by my team to extend the findings of Stein et al. was the substitution of their delay discounting task with Levenson's (1973) multidimensional LoC scales. This substitution proved effective for examining the potential operation of this

EFT intervention through Internal LoC, as intended. Thus, using my incisive research design as described, my results remained highly comparable to Stein et al.'s while also contributing substantially to current knowledge in this field

Similar to my previous studies, this project maintained a strong focus on ecological validity and applicability. In this vein, I collected information about a potentially confounding variable that is highly pertinent to the current sample: their post-discharge accommodation plan. This information was collected upon the hypothesis that it could significantly affect participants' actual abilities to envision their future selves and thus potentially interfere with the effect examined of Stein et al.'s intervention on LoC Internality and substance use. Regrettably, due to my small sample of just five participants and the presence of just one who did not yet have a post-discharge accommodation plan, statistical exploration of such interference was not possible. However, I believe this to be a robust hypothesis that warrants consideration in future research.

The inclusion and exclusion criteria for the current study, similar to those of my prior studies, transected several PEH in PSU services traits which may have otherwise prevented neurological research with this group to create research output that is realistic and practicable. Further similar to previous studies reported in this thesis, PSU service users in attendance at recruitment addresses demonstrated palpable enthusiasm regarding their opportunity to contribute to this project, which was generally sustained throughout their engagement. Almost all volunteered to participate, with many doing so that same day. It is possible that these elements are related. Overall, I received the impression that this cohort was excited about the project and in particular its consideration of intersectionality. I thus attest that PEH in PSU treatment are not 'hard to reach', as is often proclaimed (Brackertz, 2007), when appropriate research methods are designed (Boag-Munroe & Evangelou, 2012; Day, 2013).

The ultimate aim of this investigation was to trial the potential effect of my redesigned version of Stein et al.'s (2016) EFT intervention through Internal LoC on the number of times PEH in a three-week medical PSU detoxification programme relapsed in the week following their intervention and cognitive assessment. Fortunately for the participants, yet unfortunately for this research aim, no participants relapsed in the week following their intervention and assessment. For this reason, the ability of this intervention to reduce the number of relapses PEH in detoxification treatment made after a week via its reduction of Internal LoC was not possible to assess. However, considering the promising results regarding the relationship between this intervention and Internal LoC, major investigation of this hypothesis' extension seems advisable.

Taken together, this PoC study supports future large-scale investigation into the potential impact of Stein et al.'s EFT intervention on Internal LoC and substance use among PEH in medical alcohol and benzodiazepine detoxification. Found to produce significant effect, this intervention could be integrated to treatment approaches without the need for major investment in equipment or staff training; notable considering the scant funding usually available to organisations working with PEH. Such investigation is thus strongly advocated by my academic team, considering its simplicity, brevity, and easy implementability.

Chapter Seven. Integrative Project Discussion

7.1 Introduction

The final Chapter of this thesis will comprehensively integrate the findings obtained throughout my investigative inquiries. It will begin by outlining the original contributions made by the whole project, as well as its constituent parts. It will then discuss the implications of this project for future research, theory, policy, and practice. Furthermore, strengths and limitations will be highlighted before concluding remarks.

7.2 Overarching Original Contributions of the Current Project

This study made considerable strides in the fields of both PSU and Homelessness research. With respect to PSU, a large body of work exploring psychological predictors of onset and recovery exists (Belfiore et al., 2024; Daigre et al., 2019; del Palazio-Gonzalez et al., 2024; Erga et al., 2021; Fodstad et al., 2024; Hetland et al., 2024; Hjemsæter et al., 2019; Moe, 2023; Najt et al., 2011; O'Brien & Hill, 2017; Poudel, & Gautam, 2017; Thatcher, & Clark, 2008; Yamashita et al., 2021). Further, several papers discuss the strong relationship between various elements of trauma and differing facets of PSU including initiation, chronicity, and termination (Adams et al., 2021; Degenhardt et al., 2022; Dell'Aquila & Berle, 2023; Fitzpatrick et al., 2020; Ford et al., 2007; Harerimana et al., 2021; Kramer et al., 2014; Najavits, et al., 2017). Although considerable overlap between PSU and homelessness exists (Burke et al., 2024; Gabrielian et al., 2018; McLaughlin et al., 2021), and homelessness is understood to manifest substantial trauma responses (Davies, & Allen, 2017; Hamilton et al, 2011; Martin, 1991; Guarino, & Bassuk, 2010; Tsai et al., 2020; Whitbeck et al., 2015), the potential impact of individuals' psychological response to the experience of homelessness on PSU recovery is scarcely observed in the literature prior to the current project.

With regard to homelessness, most recent understanding posits this experience as primarily psychological rather than physical (Barreto, 2024; Kántor et al., 2019). Large

bodies of work explore personal factors that predict homelessness onset and recovery (Caton et al., 2005; Giano et al., 2020; McQuistion et al., 2014; To et al., 2016; Tulloch et al., 2012). Several others consider the societal determinants of this homelessness (Cebula, & Saunoris, 2021; Evangelist, & Shaefer, 2020; Gaetz & Dej, 2017). Among these, PSU is regularly cited as a key driver of several aspects of this condition's chronicity (Calvo et al., 2020; Cox et al., 2017; Subedi, & Ghimire, 2022; Urbanoski et al., 2018). Therapeutic approaches to assist PEH to acquire and maintain independent residence also receive noteworthy academic acknowledgement (Dada et al., 2022; Levy, 2021; Patterson & Tweed, 2009; Phipps, 2022; Song et al., 2021; Thompson et al., 2004), and specific treatment approaches for PEH with PSU are often considered (Arnos, & Acevedo, 2023; Cox, Malte, & Saxon, 2017; Green et al., 2020; Molander et al., 2023; Rizzo et al., 2022; Shearer et al., 2022; Winn et al., 2013). Many experts consider elimination of PSU symptoms central to homelessness recovery (Betancourt et al., 2023; Dickson-Gomez et al., 2020; Tinland et al., 2019; Wyant et al., 2019). Despite this combined theory, research into potential neurological modus operandi through which the extreme psychological state of homelessness may impact PSU recovery is, at best, limited.

7.2.1 Identification of Cognitive Traits Pertinent to Both PSU and Homelessness

In this way, the current project worked to amalgamate extensive psychological literature on two distinct but strongly related topics, and advanced knowledge of both. In observing possible overlap in the cognitive mechanisms at play in both PSU and homelessness this project sought to unveil potential means through which we could understand both critical issues, and in particular, their intersection better. I approached this by first identifying pertinent domains of cognition likely to be positioned at the PSU/ homelessness intersection. Following extensive literature review, I focused on interpersonal control and temporal orientation, due to their importance for PSU recovery and likely

adjustment following a period of homelessness (Barrós-Loscertales et al., 2020; Fieulaine, & Martinez, 2010; Incekara-Hafalir, & Linardi, 2017; Powell & Maguire, 2018). Within these domains, specific traits selected were Locus of Control (the extent to which individuals believe that they themselves, more powerful other people, chance or fate determine their life outcomes), the distinct but related trait Desire for Control (the extent to which individuals want to determine their life outcomes), Affective Forecasting (the extent to which individuals feel negative or positive about their personal futures), and Recent Life Events (the number of major life events which occurred in the past year and still affect the individual). The potential implication of these traits to both the recovery from PSU and homelessness was then investigated in a cumulative manner, as detailed in the forthcoming pages.

7.2.2 Original Contributions of Systematic Review into Locus of Control as a Predictor of Substance Use in PSU Treatment Service Users

My first task in exploring the impact of homelessness on PSU recovery was to delineate the role of one of my selected major traits for investigation, Locus of Control (LoC), to substance use outcomes for PSU service users. This was conducted via systematic review methodologies, as outlined in Chapter Three. This review made several strong advancements to both our current understandings of LoC and PSU recovery. It first identified significant limitations to current LoC theory, as evidenced in present measurement designs. I initially intended to examine the role of LoC in PSU recovery via meta-analytic strategies. This, however, was not possible due to excessive heterogeneity across the design of various LoC measurements which fundamentally stem from how this trait is conceptualised. Thus, I make the strong recommendation that researchers with interest in the cognitive trait LoC should work to further define how this trait exists and operates before advancing existing research; such research would otherwise bear limited use as it may not accurately map to the function of an existing psychological trait. While this review thus quantifiably exemplified

the need for such an advancement, similar claims have been made previously (Suárez-Álvarez et al., 2016).

Secondly, a relatively novel insight regarding the operation of LoC was generated through my review. The vast majority of LoC research to date advocates for a strong Internality for favourable outcomes across a variety of psychological domains, including PSU recovery (Das et al., 2024; Francis, 2020; Hrbáčková et al., 2012; Malhotra, & Suri, 2017; Uba, 2019). However, my review noted that the benefits associated with Internal, External, or Chance LoC (where applicable) appeared situationally-dependent. Internal LoC was revealed to be most beneficial for abstinence immediately following PSU treatment discharge, when service alumni were more likely to be faced with substance use cues such as old friends, drug dealers, media, or locations associated with their use. However, External LoC showed enhanced benefit *during* treatment when collaborating with and accepting guidance from service staff would be more beneficial to their substance use outcomes than attempting to 'go it alone'. This was further substantiated by the finding that, on scales conceptualising and thus measuring LoC along three separate indices, it was *reduced* scores which predicted sobriety. These elements essentially indicate that LoC might underpin the actual influence people allow various factors to exert over their lives. Further, they nurture a deduction that it may in fact be lower LoC beliefs which optimise PSU recovery; while somewhat speculative, it seems that this outlook might allow individuals to respond more adaptively to their environments, by accepting help when needed and refusing influence when harmful to their goals. This discerning interpretation is supported sparsely across the literature (April et al., 2012; Joy & Jacob, 2019), but warrants serious consideration given its harmony with the understanding accepted that cognitive flexibility more broadly is especially beneficial to psychological function (Braem, & Egner, 2018; Dajani, & Uddin, 2015; Ionescu, 2012; Ritter et al., 2012). Overall, my review contributed substantially not only to the scientific

understanding of PSU recovery, but to the psychometric conceptualisation of LoC as a cognitive apparatus for positive psychological function.

7.2.3 Original Contributions of Stakeholder Engagement Work

Having identified the important operation of LoC for PSU recovery in my systematic review, I wished to further probe this trait in an experimental setting. Recognising the extreme marginalisation of PEH with PSU, my academic supervisors and I consulted the practice-based knowledge and understanding of a sequence of Enterprise Mentors from Dublin Simon Community (DSC) regularly throughout my investigative process, from research design to report write-up. Further, in designing research investigations for PEH with PSU, I noted a considerable middle-class bias in currently available psychometric measures. I was not confident that all elements of my selected assessment measures were suitable for use with PEH in PSU treatment. Due to their extreme marginalisation and vulnerability, they were at increased risk of measures not relating to them or becoming stressed while taking part. In response to this, and in keeping with current recommendations for community research practice, I arranged an *Experts by Experience* (EbE) group of PEH in PSU. This *Stakeholder Engagement* research activity allowed me to design all materials used throughout this project in conjunction with the extremely marginalised and vulnerable population. This group was very supportive of my research aims. However, while no adjustments were made to my selected measures, several participants of my consequent experimental studies commented upon the same elements I had identified. During my EbE group, my attending academic supervisor and I felt a resistance to the adaptation of study measures for use with PEH in PSU treatment. The group argued that PEH in PSU treatment did not require adapted cognitive scales from the general population. As this group was in a residential medical alcohol and benzodiazepine detoxification service for PEH, I felt that this could have been due to the tumultuous and mood-altering chemical and hormonal changes occurring in this

group's bodies at this time. It was also a likely manifestation of the regularly cited institutional distrust within this population. Nevertheless, I recommend future professionals in the field to consider the incorporation of a trust building exercise at the beginning of an EbE or similar group with this cohort to enhance the accuracy group outcomes (Fernandez et al., 2022).

7.2.4 Original Contributions of Cognitive Comparison Between Current Housed, Current Homelessness, and Prior Homelessness Individuals

Following my collaborative research design process with the assistance of PSU treatment service users and staff, I commenced my experimental work. To investigate whether cognitive traits may differentially predict substance use outcomes for PSU treatment service users according to their experience of homelessness, I felt that it was first important to understand whether baseline differences may exist between Current Housed, Current Homelessness, and Prior Homelessness groups on my selected cognitive measures. To ascertain this without the influence of varying levels of substances of abuse common among PEH I opted to conduct this investigation in PSU treatment service users. This investigation contributed significantly to the scientific literature on cognition in homelessness by extending this research beyond general IQ and general executive function, as is usually investigated (Depp et al., 2015; Pluck et al., 2012; Stone et al., 2019). Although the strong relationship between lifetime adversity and homelessness is well-established (Brown et al., 2016; Curtis et al., 2013; Shinn et al., 2007; Vázquez, & Muñoz, 2001), the relationship of more general recent lifetime events and the lasting effect they may inflict does not yet appear to exist. Similarly, while the relationship between current mood and substance use within PEH has been investigated multiple times (Gajos et al., 2023; Maremmani et al., 2015; Nyamathi et al., 2012; Semborski et al., 2022), to the best of my knowledge, none to date appears to have investigated potential differences in affective forecasting with or without substance use,

despite considerable evidence that this enhances several psychological indices, such as decision-making, anxiety, and depression (Blumenthal, 2005; Halpern, & Arnold, 2008; Pilin, 2021; Rizeq, 2024). Furthermore, the potential alteration of LoC and DC in homeless populations does not yet appear to have been considered. In this way, the current project broached various new and scientific grounds which may eventually pave the way to a more complete understanding of the human psychological landscape during modern homelessness.

Importantly, however, as my data were prepared, the evolution of homelessness as a state and not a trait variable became apparent. This project thus opted to divide my participants into Current Housed, Current Homelessness, and Prior Homelessness groups, providing the opportunity to explore potential current and lasting cognitive alterations associated with homelessness. I felt this method best suited the current project's overarching aims and methods; vis-à-vis I recommend this approach to further investigators with similar methods. I do not rule out the use of other approaches, such as the utilisation of formerly designed scales to measure homelessness should they suit study aims and designs (Argeriou et al., 1995; Farero et al., 2024). However, considering the emerging nature of this topic, I believe that a group comparison approach may be most appropriate for the imminent future.

7.2.5 Original Contributions of Differential Prediction of Temporal Perspective and Interpersonal Control Cognition to Substance Use for Current Housed, Current Homelessness, and Prior Homelessness Individuals PSU Treatment Service Users

As far as my academic team is aware, this is the first investigation to consider whether the cognitive processes of PSU recovery may vary according to residential independence and stability. Considering the importance of cognition for the onset and recovery of both PSU and homelessness (Backer & Howard, 2007; Bruijnen et al., 2019; Hetland, 2024), and the ability for cognitive training interventions to improve PSU recovery in people with and without homes (Bodley-Scott et al., 2024; Hyun et al., 2020; Nardo et al., 2022; Sampedro-Piquero et

al., 2019), this is an important contribution to both the fields of PSU and homelessness. Further, although several papers recommend that homeless services should consider the pervasive cognitive deficits observed in PEH to enhance their treatment approach (Burra et al., 2009; Spence et al., 2004), homelessness-specific cognitive interventions are almost non-existent (Molander et al., 2023). Although none of my selected variables differentially predicted PSU recovery according to homelessness history, it is highly likely that my analyses lacked power due to my eventual segregation of this study's participants into three groups, rather than two as planned. Beyond this, it may have been that the specific measures used, researcher, Irish cultural, or presentation effects may have impacted a potentially significant result. Regardless, my team earnestly believe that the broach made by this investigation is substantial, especially considering the positive ramifications for not just the individuals with PSU, but also their families, communities, and societies; I thus entreat future researchers to pursue this investigative line of inquiry.

In terms of the main effects of my selected cognitive traits on PSU recovery for the combined sample, while the relationship between negative mood and stress to recovery is well-established (Reynolds et al., 2020; Sinha, 2024), that of life events and recovery appears inconclusive (Krenek, & Maisto, 2013). Positive future thought is repeatedly shown to reduce substance use (Collado, & Stokes, 2024). However, certainty in pessimistic predictions about the future, shown to be a key contributor to depressive symptoms and difficult to subside (Andersen et al., 1992; Ariso, 2017; Miranda et al., 2023; Rosario-Williams et al., 2021), does not yet appear to have been investigated as a potential predictor of substance use or PSU recovery, despite significant overlap between this condition with depression and suicidality (Calarco, & Lobo, 2021; Colbert et al, 2021; Leventhal et al., 2008; Mackie et al., 2012; Marmorstein, 2011; Rappeneau, & Bérod, 2017; Stewart et al., 2016; Vekaria et al., 2021). As described in the systematic review conducted by my team and reported in Chapter Three

of the current thesis, considerable work has investigated the role of LoC to substance use outcomes in PSU treatment clients. Considered together, this work indicates that diminished LoC beliefs which potentially steer away from blame or rumination best support PSU recovery. However, its related but distinct trait Desire for Control has received sparse attention from PSU researchers, despite its oftentimes stronger prediction of positive psychological outcomes (Schoepfer et al., 2014). Thus, this investigation fundamentally contributed to existing psychological research of PSU recovery by investigating further nuanced traits of those already showing promise for recovery enhancement. Of these, Internal LoC was the only trait to evidence significant predictive ability of relapses during treatment; the more Internal the participants of this study responded, the more they relapsed.

7.2.6 Original Contributions of a PoC Investigation into the Effect of an EFT Intervention on Substance Use via Internal LoC with PEH in PSU Treatment

The final study of this PhD project was a Proof-of-Concept (PoC) investigation into the potential efficacy of a simple, brief, and easily-implementable cognitive reframing intervention with PEH in PSU detoxification treatment. This intervention was designed by Stein et al. in 2016 and has since shown promising results with individuals engaging in problematic use of a variety of substances who wish to cease substance use (Chiou, & Wu, 2017; Snider et al., 2016; Sofis et al., 2022). However, with consideration for the notable marginalisation and vulnerability of PEH, I opted to initially run a PoC study to trial the potential feasibility of conducting a large-scale investigation into the possible utility of this intervention for the substance use of PEH in PSU treatment. This acknowledges community research guidelines and prevents time and resource waste considering the substantial advancements being made by such an investigation. Consequently, the first contribution of this project was my re-design of Stein et al.'s (2016) intervention in a similar manner to that of my prior experimental work, making it suitable for use with PEH in PSU treatment or

other such populations who may have limited English-language literacy. My second major contribution was to trial this intervention with a small but representative sample of PEH in a residential medical alcohol and benzodiazepine detoxification treatment service. As detoxification from these substances is a particularly tumultuous time for people struggling with PSU, this aspect in itself was a considerable advancement. Considering the demonstrated effect of EFT on several cognitive functions including, but not limited to, decision making, emotion regulation, prospective memory, and spatial navigation (Schachter et al., 2017), I opted to test whether this intervention may positively impact my selected cognitive trait shown to negatively correlate with sustained recovery, as predicted in my systematic review, in my previous investigation: Internal LoC. Results from this PoC with my small sample are compelling and indicate that this extremely simple, cost-effective intervention may in fact reduce Internal LoC beliefs, as desired, in PSU treatment clients currently experiencing homelessness.

7.3 Implications for Future Research, Theory, Policy and Practice

This section discusses the implications this body of work could have for future research, theory, and practice.

7.3.1 Implications for Research and Theory

The findings of this project proffer numerous implications for future research and theory. In terms of PSU research, the potential psychological impact of homelessness on recovery has been vastly overlooked. This is despite a wealth of knowledge that homelessness exerts substantial psychological changes (Scutella, & Johnson, 2018), and that recovery is significantly prolonged in this population (Stablein et al., 2021). While the psychological impacts were not revealed using the methods employed in the current project, support for the distended recovery is provided. In Chapter Four I saw that the Current Homelessness group was significantly older and had been using substances for significantly

more years than the Current Housed group. Further, a consequent correlation conducted between my Age and Years of Substance Use variables was significant. As individuals from all three homelessness history groups began using substances at approximately the same age (12-14), these results indicate that PEH may take longer to recover their PSU. As it is unlikely that the physical structure of a roof plays a role in this process, and considering many PEH in Ireland have roofs, this finding further indicates that it is the *psychological* changes that homelessness exerts which impede PSU recovery. While not revealed in the current project, this possibility appears unavoidable. Considering the substantial proportion of PEH in PSU populations (Kemp et al., 2006), my academic team thus urge future researchers working in the field of PSU recovery to consider the potential psychological impacts associated with homelessness that could confound their results by conducting segregated analyses for PEH and housed people.

This project made an interesting contribution to my existing knowledge of beneficial cognitive function for PSU recovery; it suggests that it may in fact be *reduced*, rather than Internal, LoC that is optimal for recovery. This interpretation is in keeping with cognitive moderation overall, that appears central to overcoming PSU (Bizzarri et al., 2007; Regan et al., 2020; Tomko et al., 2016) and is thus worth considering. It is notable that this suggestion appears to be more nuanced than those made by previous authors. This was potentially engendered by my systematic review methodologies. Although systematic reviews are already hailed as the epitome of evidence base, I encourage the continuation of this research synthesis method, to unveil deeper levels of understanding about topics that may otherwise be unobservable.

In terms of homelessness research, the current project highlights that many of the neural responses to the extreme circumstance of homelessness may extend beyond IQ and executive function, as is typically reported (Burra et al., 2009; Spence et al., 2004). While the

traits selected for investigation by my team were not revealed to be significant using my methods, as this is one of the maiden such investigations to pursue this hypothesis, the possibility of existing cognitive differences still warrants further investigation. My sample was revealed to be marginally small due to the unplanned requirement to be split into three rather than two groups. Thus, it is possible that these traits may reveal significance with a larger sample and more power. Beyond this, it is highly likely that other traits of cognition may adjust to navigate and survive the experience of homelessness. Regardless, this project has highlighted a significant oversight in the existing literature of cognition during homelessness, which to date has taken a largely narrative approach (Kirkpatrick, & Byrne, 2009; Williams & Stickley, 2007). Future research should undoubtedly consider developing our current understanding of cognitive function during homelessness, to understand how we could better rehabituate PEH to independent living.

My Experts by Experience (EbE) group proved highly beneficial in terms of obtaining insights from the population of research regarding my methodologies. However, as noted, while some members were enthusiastic about the process, others were not and maintained that PEH did not require adapted measures. This exemplified the extreme heterogeneity inherent to this cohort and cautions future researchers to be particularly careful in how they approach certain topics, especially considering they are, as of yet, unknown and therefore suspicious to the group (Hoffman & Coffey, 2008). This population is reputedly conscious of being seen as ‘less-than’, objectified, and infantilised in society (Belcher, & DeForge, 2012). However, given the success of my adaptations with participants, in terms of including those with poor literacy and echoed remarks to my own regarding the original versions of my cognitive scales, EbE sessions are still recommended by my academic team prior to major investigations with PEH to ensure suitability.

Finally, my project saw that an investigation into the potential utility of a cognitive reframing intervention for PSU recovery may be executed successfully with PEH in medical alcohol and benzodiazepine detoxification. This is notable, considering the particular marginalisation and vulnerability of this population, as well as the substantial changes that are underway in their bodies and minds at this time. Moreover, this PoC investigation indicates potential efficacy of this intervention for use with this group. While none of my five participants relapsed in the week following their assessment, the three that received the Episodic Future Thinking (EFT) intervention showed lower mean Internal LoC scores following the intervention than the two that did not, as desired. In this light, my team strongly suggests that this PoC study be undertaken as a large-scale investigation, to unveil whether a significant such effect may be revealed.

7.3.2 Implications for Policy and Practice

As per my research implications, the policy and practice implications of this project are myriad. Regarding PSU, this project suggests that separate treatment approaches for service users according to their history of homelessness may be required to optimise outcomes. Although the results of the current project were not significant, the underlying theory and hypothesis is strong. Thus, while the practice of homelessness-specific PSU treatment may not materialise for a number of years, as evidenced via the system delays described in Section 6.3.1, it is a worthwhile consideration for PSU treatment professionals. As described in this thesis, Ireland currently provides homeless-specific PSU treatment via the NGO Dublin Simon Community (Crean et al., 2021; Galligan et al., 2020). However, as homeless-specific PSU treatments are not standardised across EU states, this is not the norm and these individuals are usually treated as part of mainstream services (Ingram et al., 2023; Ingram et al., 2025; Miller et al., 2021). Consequently, this cohort tends to access low threshold services and comprise particularly large proportions of those accessing drug

consumption rooms, mobile harm reduction clinics, and needle and syringe programmes. Where homeless-specific PSU services exist, they tend to be organised at a sub-national level by NGOs and consequently national data are not collected and analysed. Where such national data is collected, cultural differences regarding the definition of homelessness further hinders a comprehensive image of homeless-specific PSU service provision across this continent (EUDA, 2023). Looking to the U.S.A., no homeless-specific treatment options appear to be available; instead citizens experiencing homelessness may attend programmes which receive state funding to treat people without health insurance or other resources, or apply for the government-sponsored health programme for low-income people, Medicaid, and attend facilities that accept this cover. Thus, as highlighted in the 2021 World Drug Report focussing on the global response to drug use during the Covid-19 pandemic, Ireland appears to be at the forefront of service provision for PEH with PSU (O'Carroll et al., 2021; UNODC, 2021). Based on the evidence base presented in Chapter One of this thesis, and that of the current Section, homeless-specific PSU treatment services or approaches are recommended to continue within Ireland and to be implemented internationally. In terms of policy, continued governmental funding of homeless-specific PSU treatment centres in Ireland, and the commencement of such funding for the establishment of similar facilities abroad, is recommended. Regular centralised national data collection regarding PSU treatments specifically tailored for PEH (as per the working definition provided by FEANTSA [2017] and employed by the current thesis) is also urged to inform such service provision into the future.

In terms of homelessness, the current project substantiates claims from service providers that this issue requires more attention. The dearth of literature into cognitive functioning in this cohort, despite countless reports of poor daily functioning and high rates of mental ill-health, is striking (Gaboardi et al., 2022; Maye et al., 2023). This project

highlights the strong potential that cognitive variables beyond IQ and executive functions are impacted by homelessness. Should these be found to materialise following homelessness onset, solid ground would be set for the development, and eventual practice, of homeless-specific cognitive-behavioural therapy (CBT). This would be a considerable advancement for homeless service provision and therapeutic outcomes. This project has also evidenced the potential beneficial outcomes of a brief intervention for PEH in PSU treatment. If an augmented study produces similar results, this intervention could be rolled out with PEH in PSU treatment worldwide. This is a considerable potential contribution to the practice of often under-resourced homeless services, particularly when the incredible affordability is considered.

7.4 Strengths and Limitations

The current project boasts several strengths. Quantitative examination of cognitive functioning within homeless populations is glaringly absent in this field of work. Given the centrality of cognition to psychological function and well-being more generally (Davern et al., 2007; Mandolesi et al., 2018; Wadley et al., 2008), this is a vast oversight. Considering the traits selected for examination in this project have evidenced malleability (Huntsinger et al., 2014; Legerski et al., 2006), and the preliminary indication from my PoC study that Internal LoC may be positively impacted by a brief intervention, the project also shows promise for potential cognitive rehabilitation of PEH during or following their experience of homelessness. This may prove critical to their reintegration to mainstream society.

The potential impact of homelessness on PSU recovery also does not appear to have been considered from a psychological lens. Several reports state that recovery is prolonged in this population, due to reduced rates of treatment entry, treatment completion, or post-discharge relapse. Many more discuss potential treatment paradigms to enhance recovery for these individuals. However, despite its current conceptualization as a predominantly

psychological circumstance, and the recognised importance of cognition for PSU recovery, few experts have considered that the delayed recovery for PEH may have cognitive psychological underpinnings. Thus, while my results were not significant, the underlying hypothesis provided by this project is considerable and holds great potential to drastically improve PSU recovery for future PEH and domiciled people.

The unusually high retention rate achieved by this study, with just one participant's six-month outcomes data being lost due to administrative error, is also a noteworthy strength of the current project. It is highly likely that this retention was promoted by my patient-centred approach. This project was executed with its target population at the centre of its design and execution throughout. Several measures were adapted for use with PEH in PSU treatment, or other similar populations with poor English language literacy, as a result of this project. Overall, the project was patient-centred and trauma-informed which is of particular importance for a population as marginalised and vulnerable as PEH in PSU treatment. This shows that with the relevant skill-set, as evidenced by my work, so called 'hard-to-reach' populations become enthusiastic and engaged.

This project is not without limitations. As discussed in Section 3.2.2.1, my team did not foresee the need to separate my longitudinal research sample into three experimental groups. Consequently, my sample appears to be smaller than required for strong statistical power, which may have undermined the ability of my analyses to detect significant results if present. Significant differences were also observed between these groups on variables which may impact cognition: Problematic Cocaine Use at Treatment Entry, Ethnicity, Age, Years of Substance Use, Lifetime Relapses, Years in Prison. Thus, findings reported from the longitudinal study described across Chapters Four and Five should be interpreted as indicative of a potential relationship until further examination of these hypotheses with more participants is conducted. Although not the same, as the aim of my final study was to

examine the feasibility of a possible large-scale investigation, my team would like to caution the interpretation of my results from this study. While unlikely that these participants may have scored the way they did by chance, there is a possibility that this occurred, as only five participants took part. Furthermore, we did not acquire a baseline measure of LoC, meaning that there is a possibility that participants in the treatment group could have started out with higher levels of LoC prior to engaging in the intervention. Thus, the results from this study are not generalisable to all PEH in alcohol and benzodiazepine medical treatment.

As also mentioned, my EbE group did not suggest any adaptations for my cognitive scales, despite several consequent participants identifying the same issues regarding use of these scales for PEH in PSU treatment. As described, my academic team felt a resistance to these procedures from this particular group on the day of my EbE group, an encounter which was not experienced for the remainder of the project. Nonetheless, it is possible that the selected scales used were not entirely suitable for PEH in PSU treatment, due to their housed, middle-class bias.

7.5 Conclusion

This project has advanced theoretical understanding of two critical psychological fields substantially; those of PSU and homelessness. These are two conditions with devastating consequences, including startlingly high mortality rates, for those involved. This project worked to amalgamate the known complementary theories pertaining to both fields, creating an incisive hypothesis that, if pursued, is likely to engender considerable benefits to the lives of those affected. Further, it achieved its aims while holding the people affected by both issues at the centre of its design process throughout; an impressive feat considering the extensive marginalisation and vulnerability of this population. Several cognitive assessments were successfully redesigned for use with PEH in PSU treatment throughout this project, which my team aims to share with any future researchers wishing to extend my work with

this or similar populations. These assessments were well-received by my participants, a number of whom would not have been able to participate otherwise. My project remained highly realistic to the issues at hand by including participants with variables considered to potentially confound the results of other similar studies, such as TBI or ID. Thus, my results are extremely ecologically valid in terms of their reflection of the cognitive processes at play in adult PEH in PSU treatment. In conclusion, this project has contributed a significant progression to current theory and understanding of how best to rehabilitate individuals concurrently experiencing PSU and homelessness.

References

Aase, D. M., Jason, L. A., Ferrari, J. R., Li, Y., & Scott, G. (2014). Comorbid mental health and substance abuse issues among individuals in recovery homes: Prospective environmental mediators. *Mental Health and Substance Use,* 7(2), 170-183.

Abbas, S., Iqbal, S., Washdev, W., & Hashmi, S. (2021). The Loneliness due to Stigmatization among Male Patients with Substance Use Disorder. *Annals of Punjab Medical College*, *15*(4), 255-258.

Abdalla, S., Kelleher, C., Quirke, B., Daly, L., Cronin, F., ... & Whelan, J. (2013). Social inequalities in health expectancy and the contribution of mortality and morbidity: the case of Irish Travellers. *Journal of Public Health*, *35*(4), 533-540.

Abdel-Baki, A., Ouellet-Plamondon, C., Salvat, É., Grar, K., & Potvin, S. (2017). Symptomatic and functional outcomes of substance use disorder persistence 2 years after admission to a first-episode psychosis program. *Psychiatry Research*, *247*, 113-119.

Abdi, H., & Williams, L. J. (2010). Tukey's honestly significant difference (HSD) test. *Encyclopedia of research design*, 3(1), 1-5.

Abrahao, K. P., Salinas, A. G., & Lovinger, D. M. (2017). Alcohol and the brain: neuronal molecular targets, synapses, and circuits. *Neuron*, 96(6), 1223-1238.

Achilli, F., Leo, S., Benatti, B., Frediani, A., Cocchi, M., Molteni, L., ... & Dell'Osso, B. M. (2024). Criminal behaviors and substance use disorder in psychiatric patients. *CNS spectrums*, 1-25.

Adams, Z. W., Hahn, A. M., McCart, M. R., Chapman, J. E., Sheidow, A. J., Walker, J., ... & Danielson, C. K. (2021). Predictors of substance use in a clinical sample of youth seeking treatment for Trauma-related mental health problems. *Addictive behaviors,* 114, 106742.

Adams-Guppy, J. R., & Guppy, A. (2016). A systematic review of interventions for homeless alcohol-abusing adults. *Drugs: Education, Prevention and Policy*, *23*(1), 15-30.

Agans, R. P., Jefferson, M. T., Bowling, J. M., Zeng, D., Yang, J., & Silverbush, M. (2014). Enumerating the hidden homeless: Strategies to estimate the homeless gone missing from a point-in-time count. *Journal of Official Statistics*, *30*(2), 215-229.

Agyei-Manu, E., Atkins, N., Lee, B., Rostron, J., Dozier, M., Smith, M., & McQuillan, R. (2023). The benefits, challenges, and best practice for patient and public involvement in evidence synthesis: A systematic review and thematic synthesis. *Health Expectations,* 26(4), 1436-1452.

Ahmed, S. P., Bittencourt-Hewitt, A., & Sebastian, C. L. (2015). Neurocognitive bases of emotion regulation development in adolescence. *Developmental cognitive neuroscience,* 15, 11-25.

Akhanemhe, R., Petrokofsky, C., & Ismail, S. A. (2025). Health impacts of cold exposure among people experiencing homelessness: A narrative systematic review on risks and risk-reduction approaches. *Public Health*, 240, 80-87.

Albery, I. P., McSweeney, T., & Hough, M. (2013). Drug use and criminal behaviour: indirect, direct or causal relationship?. *In Forensic Psychology* (pp. 158-174). Willan.

Aldridge, R. W., Story, A., Hwang, S. W., Nordentoft, M., Luchenski, S. A., Hartwell, G., ... & Hayward, A. C. (2018). Morbidity and mortality in homeless individuals, prisoners, sex workers, and individuals with substance use disorders in high-income countries: a systematic review and meta-analysis. *The Lancet*, *391*(10117), 241-250.

Alexander, A. C., Waring, J. J., Olurotimi, O., Kurien, J., Noble, B., Businelle, M. S., ... & Kendzor, D. E. (2022). The relations between discrimination, stressful life events, and

substance use among adults experiencing homelessness. *Stress and Health*, *38*(1), 79-89.

Al-Gommer, O., George, S., Haque, S., Moselhy, H., & Saravanappa, T. (2007). Sexual dysfunctions in male opiate users: A comparative study of heroin, methadone, and buprenorphine. *Addictive Disorders & Their Treatment*, 6(3), 137-143.

Allen, M., Benjaminsen, L., O'Sullivan, E., & Pleace, N. (2020). Ending homelessness? Policy and progress in Denmark, Finland and Ireland. In *Ending Homelessness?* (pp. 1-28). Policy Press.

Altay, T., Yurdakul, G., & Korteweg, A. C. (2021). Crossing borders: the intersectional marginalisation of Bulgarian Muslim trans* immigrant sex workers in Berlin. *Journal of Ethnic and Migration Studies,* 47(9), 1922-1939.

Amaro, H., Sanchez, M., Bautista, T., & Cox, R. (2021). Social vulnerabilities for substance use: Stressors, socially toxic environments, and discrimination and racism. *Neuropharmacology*, *188*, 108518.

Amato, L., Minozzi, S., & Davoli, M. (2011). Efficacy and safety of pharmacological interventions for the treatment of the Alcohol Withdrawal Syndrome. *Cochrane database of systematic reviews,* (6).

American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed., text rev.). https://psychiatryonline.org/doi/book/10.1176/appi.books.9780890425787

Amore, K., Baker, M., & Howden-Chapman, P. (2011). The ETHOS definition and classification of homelessness: an analysis. *European Journal of Homelessness*, *5*(2).

Amoura, C., Berjot, S., Gillet, N., & Altintas, E. (2014). Desire for control, perception of control: Their impact on autonomous motivation and psychological adjustment. *Motivation and Emotion*, 38, 323-335.

Andersen, S. M., Spielman, L. A., & Bargh, J. A. (1992). Future-event schemas and certainty about the future: automaticity in depressives' future-event predictions. *Journal of personality and social psychology,* 63(5), 711.

Anderson, I., & Christian, J. (2003). Causes of homelessness in the UK: A dynamic analysis. *Journal of Community & Applied Social Psychology*, *13*(2), 105-118.

Anderson, L. A., DeVellis, R. F., Sharpe, P. A., & Marcoux, B. (1994). Multidimensional Health Locus of Control scales: do they measure expectancies about control or desires for control?. *Health Education Research*, 9(1), 145-151.

Anderson, R. A. (2001). Alcoholism, Drug Addiction, Detoxification Programs. *Townsend Letter for Doctors and Patients,* (217), 68-68.

Andre, L., Van Vianen, A. E., Peetsma, T. T., & Oort, F. J. (2018). Motivational power of future time perspective: Meta-analyses in education, work, and health. *PloS one,* 13(1), e0190492.

Antonini, M. (2021). An overview of co-design: advantages, challenges and perspectives of users' involvement in the design process. *Journal of Design Thinking*, 2(1), 45-60.

Aoun, S., Pennebaker, D., & Wood, C. (2004). Assessing population need for mental health care: a review of approaches and predictors. *Mental health services research*, *6*, 33-46.

April, K. A., Dharani, B., & Peters, K. (2012). Impact of locus of control expectancy on level of well-being. *Rev. Eur. Stud*., 4, 124.

Arain, M., Haque, M., Johal, L., Mathur, P., Nel, W., Rais, A., ... & Sharma, S. (2013). Maturation of the adolescent brain. *Neuropsychiatric disease and treatment,* 449-461.

Argeriou, M., McCarty, D., & Mulvey, K. (1995). Dimensions of homelessness. *Public Health Reports,* 110(6), 734.

Ariso, J. M. (2017). Negative certainty. *Educational Philosophy and Theory*, 49(1), 7-16.

Armoon, B., Mohammadi, R., & Griffiths, M. D. (2024). The global prevalence of non-suicidal self-injury, suicide behaviors, and associated risk factors among runaway and homeless youth: a meta-analysis. *Community mental health journal*, 60(5), 919-944.

Arnos, D., & Acevedo, A. (2023). Homelessness and gender: Differences in characteristics and comorbidity of substance use disorders at admission to services. *Substance Use & Misuse,* 58(1), 27-35.

Ashford, R. D., Brown, A., Brown, T., Callis, J., Cleveland, H. H., Eisenhart, E., ... & Whitney, J. (2019). Defining and operationalizing the phenomena of recovery: a working definition from the recovery science research collaborative. Addiction Research & Theory, 27(3), 179-188.

Ashford, S. J., & Black, J. S. (1996). Proactivity during organizational entry: The role of desire for control. *Journal of Applied psychology,* 81(2), 199.

Aspinall, P. (2014). *Hidden needs. Identifying key vulnerable groups in data collections: vulnerable migrants, gypsies and travellers, homeless people, and sex workers. Brighton: Centre for Health Services Studies, University of Kent*.

Asuero, A. G., Sayago, A., & González, A. G. (2006). The correlation coefficient: An overview. *Critical reviews in analytical chemistry*, 36(1), 41-59.

Atadokht, A., Hajloo, N., Karimi, M., & Narimani, M. (2015). The role of family expressed emotion and perceived social support in predicting addiction relapse. *International journal of high risk behaviors & addiction,* 4(1).

Atayde, A. M., Hauc, S. C., Bessette, L. G., Danckers, H., & Saitz, R. (2021). Changing the narrative: a call to end stigmatizing terminology related to substance use disorders. *Addiction Research & Theory,* 29(5), 359-362.

Athamneh, L. N., King, M. J., Craft, W. H., Freitas-Lemos, R., Tomlinson, D. C., Yeh, Y. H., & Bickel, W. K. (2023). The associations between remission status, discounting rates, and recovery from substance use disorders. *Substance Use & Misuse*, 58(2), 275-282.

Atherton, I., & Nicholls, C. M. (2008). 'Housing First' as a means of addressing multiple needs and homelessness. *European Journal of Homelessness*, *2*, 289-303.

Aubry, T., Duhoux, A., Klodawsky, F., Ecker, J., & Hay, E. (2016). A longitudinal study of predictors of housing stability, housing quality, and mental health functioning among single homeless individuals staying in emergency shelters. *American journal of community psychology*, 58(1-2), 123-135.

Aubry, T., Roebuck, M., Loubiere, S., Tinland, A., Nelson, G., & Latimer, E. (2021). A tale of two countries: a comparison of multi-site randomised controlled trials of Pathways housing first conducted in Canada and France. *European Journal of Homelessness _ Volume*, *15*(3_).

Auquier, P., Tinland, A., Fortanier, C., Loundou, A., Baumstarck, K., Lancon, C., & Boyer, L. (2013). Toward meeting the needs of homeless people with schizophrenia: the validity of quality of life measurement. *PLoS One*, 8(10), e79677.

Austin, A. E., Shiue, K. Y., Naumann, R. B., Figgatt, M. C., Gest, C., & Shanahan, M. E. (2021). Associations of housing stress with later substance use outcomes: a systematic review. *Addictive Behaviors*, *123*, 107076.

Austin, J., Van Dijk, J., & Drossaert, C. (2020). When theory meets users in co-design: four strategies towards synergy between bottom-up and top-down input.

Ayano, G., Tsegay, L., Abraha, M., & Yohannes, K. (2019). Suicidal ideation and attempt among homeless people: a systematic review and meta-analysis. *Psychiatric Quarterly*, 90(4), 829-842.

Ayed, N., Athker, S., Bird, V., Priebe, S., & Jones, J. (2020). How is Social Capital Conceptualised in the Context of Homelessness?-a conceptual review using a systematic search 1. *European Journal of Homelessness _ Volume*, *14*(2_).

Babakhanian, M., Mehrgerdi, Z. A., & Shenaiy, Y. (2012). Sexual dysfunction in male crystalline heroin dependents before and after MMT: A pilot study. *Archives of Iranian medicine,* 15(12), 0-0.

Backer, T. E., & Howard, E. A. (2007). Cognitive impairments and the prevention of homelessness: Research and practice review. *The journal of primary prevention,* 28, 375-388.

Bagley, H. J., Short, H., Harman, N. L., Hickey, H. R., Gamble, C. L., Woolfall, K., ... & Williamson, P. R. (2016). A patient and public involvement (PPI) toolkit for meaningful and flexible involvement in clinical trials–a work in progress. *Research involvement and engagement,* 2, 1-14.

Baker, T. B., Piper, M. E., McCarthy, D. E., Majeskie, M. R., & Fiore, M. C. (2004). Addiction motivation reformulated: an affective processing model of negative reinforcement. *Psychological review*, *111*(1), 33.

Balasuriya, L., Buelt, E., Bruneau, W., & Lo, E. (2021). Addressing challenges in prescribing for vulnerable unsheltered homeless populations with mental illness. *Journal of Social Distress and Homelessness*, 30(2), 135-140.

Baler, R. D., & Volkow, N. D. (2006). Drug addiction: the neurobiology of disrupted self-control. *Trends in molecular medicine*, 12(12), 559-566.

Ballester, J., Valentine, G., & Sofuoglu, M. (2017). Pharmacological treatments for methamphetamine addiction: current status and future directions. *Expert review of clinical pharmacology*, 10(3), 305-314.

Bamm, E. L., Rosenbaum, P., & Stratford, P. (2010). Validation of the measure of processes of care for adults: a measure of client-centred care. *International Journal for Quality in Health Care,* 22(4), 302-309.

Banner, D., Bains, M., Carroll, S., Kandola, D. K., Rolfe, D. E., Wong, C., & Graham, I. D. (2019). Patient and public engagement in integrated knowledge translation research: are we there yet?.*Research involvement and engagement,* 5, 1-14.

Baptista, I., & Marlier, E. (2019). *Fighting homelessness and housing exclusion in Europe: A study of national policies. European Social Policy Network (ESPN)*. European Commission.

Baron, J. B. (2004). Homelessness as a property problem. *Urb. Law.*, *36*, 273.

Barreto, E. (2024). Psychology of homelessness, home, and environment. In *Environmental Health Behavior* (pp. 209-224). Academic Press.

Barreto, T. S., Lanivich, S. E., & Cox, K. C. (2022). Temporal orientation as a robust predictor of innovation. *Journal of Business Research*, 138, 287-300.

Barrett, E. L., Teesson, M., & Mills, K. L. (2014). Associations between substance use, post-traumatic stress disorder and the perpetration of violence: A longitudinal investigation. *Addictive behaviors*, *39*(6), 1075-1080.

Barrós-Loscertales, A., Costumero, V., Rosell-Negre, P., Fuentes-Claramonte, P., Llopis-Llacer, J. J., & Bustamante, J. C. (2020). Motivational factors modulate left frontoparietal network during cognitive control in cocaine addiction. *Addiction Biology*, *25*(4), e12820.

Barry, A. R., Hoffman, E., Martinez-Charleston, E., DeMario, M., Stewart, J., Mohiuddin, M., ... & Brown, M. (2024). Trauma-informed interactions within a trauma-informed homeless service provider: Staff and client perspectives. *Journal of Community Psychology,* 52(2), 415-434.

Barry, R., Anderson, J., Tran, L., Bahji, A., Dimitropoulos, G., Ghosh, S. M., ... & Seitz, D. (2024). Prevalence of mental health disorders among individuals experiencing homelessness: a systematic review and meta-analysis. JAMA psychiatry, 81(7), 691-699.

Bashir, A. Y., Moloney, N., Elzain, M. E., Delaunois, I., Sheikhi, A., O'Donnell, P., ... & Gulati, G. (2021). From nowhere to nowhere. Homelessness and incarceration: a systematic review and meta-analysis. International Journal of Prisoner Health, 17(4), 452-461.

Basińska-Szafrańska, A. (2021). Metabolic diversity as a reason for unsuccessful detoxification from benzodiazepines: the rationale for serum BZD concentration monitoring. *European Journal of Clinical Pharmacology,* 77, 795-808.

Bassuk, E. L. (2017). The homelessness problem. In Housing the homeless (pp. 253-261). Routledge.

Bates, G. (2017). The drugs situation in Ireland: an overview of trends from 2005 to 2015. Liverpool: *Centre for Public Health at Liverpool John Moores University.*

Batterham, D. (2020). Public perceptions of homelessness–a literature review. *Posjećeno,* 13(8), 2022.

Batterham, D. (2012). The Structural Drivers of Homelessness. In *6th Australasian Housing Researchers' Conference, February* (pp. 8-10).

Baum, A. S. (2019). *A nation in denial: The truth about homelessness*. Routledge.

Beck, A., & Heinz, A. (2013). Alcohol-related aggression—social and neurobiological factors. *Deutsches Ärzteblatt International*, *110*(42), 711.

Beck, J. G., Grant, D. M., Clapp, J. D., & Palyo, S. A. (2009). Understanding the interpersonal impact of trauma: Contributions of PTSD and depression. *Journal of anxiety disorders,* 23(4), 443-450.

Belcher, J. R., & DeForge, B. R. (2012). Social stigma and homelessness: The limits of social change. *Journal of Human Behavior in the Social Environment,* 22(8), 929-946.

Belfiore, C. I., Galofaro, V., Cotroneo, D., Lopis, A., Tringali, I., Denaro, V., & Casu, M. (2024). A Multi-Level Analysis of Biological, Social, and Psychological Determinants of Substance Use Disorder and Co-Occurring Mental Health Outcomes. *Psychoactives,* 3(2), 194-214.

Bell, J. (2014). Pharmacological maintenance treatments of opiate addiction. *British journal of clinical pharmacology,* 77(2), 253-263.

Bem, D. J. (2011). Feeling the future: experimental evidence for anomalous retroactive influences on cognition and affect. *Journal of personality and social psychology,* 100(3), 407.

Best, D., Vanderplasschen, W., Van de Mheen, D., De Maeyer, J., Colman, C., Vander Laenen, F., ... & Nagelhout, G. E. (2018). REC-PATH (recovery pathways): Overview of a four-country study of pathways to recovery from problematic drug use. *Alcoholism Treatment Quarterly*, *36*(4), 517-529.

Berk, R., & MacDonald, J. M. (2008). Overdispersion and Poisson regression. *Journal of Quantitative Criminology*, 24, 269-284.

Bertram, F., Hajek, A., Dost, K., Graf, W., Brennecke, A., Kowalski, V., ... & Heinrich, F. (2022). The Mental and Physical Health of the Homeless: Evidence From the National Survey on Psychiatric and Somatic Health of Homeless Individuals (the NAPSHI Study). *Deutsches Ärzteblatt International,* 119(50), 861.

Berzins, J. I., & Ross, W. F. (1973). Locus of control among opiate addicts. *Journal of Consulting and Clinical Psychology,* 40(1), 84.

Betancourt, C. A., Goldberg, D. G., Hawks, B. A., & Kitsantas, P. (2023). Perspectives of homeless veterans living with substance use disorders (SUD) and mental illness. *Heliyon*, *9*(10).

Bezgrebelna, M., McKenzie, K., Wells, S., Ravindran, A., Kral, M., Christensen, J., ... & Kidd, S. A. (2021). Climate change, weather, housing precarity, and homelessness: A systematic review of reviews. *International Journal of Environmental Research and Public Health,* 18(11), 5812.

Bhunu, C. P. (2015). Assessing the impact of homelessness on HIV/AIDS transmission dynamics. *Cogent Mathematics,* 2(1), 1021602.

Bickel, W. K., Freitas-Lemos, R., Myslowski, J., Quddos, F., Fontes, R. M., Barbosa-França, B., ... & LaConte, S. M. (2023). Episodic future thinking as a promising intervention for substance use disorders: a reinforcer pathology perspective. *Current Addiction Reports*, *10*(3), 494-507.

Biddle, M. S., Gibson, A., & Evans, D. (2021). Attitudes and approaches to patient and public involvement across Europe: a systematic review. *Health & social care in the community,* 29(1), 18-27.

Bisaga, A., & Popik, P. (2000). In search of a new pharmacological treatment for drug and alcohol addiction: N-methyl-D-aspartate (NMDA) antagonists. *Drug and alcohol dependence,* 59(1), 1-15.

Blackman, L. (2014). Immateriality, affectivity, experimentation: Queer science and future-psychology. *Transformations: Journal of Media and Culture*, (25), 1-12.

Blakemore, S. J., & Robbins, T. W. (2012). Decision-making in the adolescent brain. *Nature neuroscience,* 15(9), 1184-1191.

Blanco-Gandía, M. C., & Rodríguez-Arias, M. (2018). Pharmacological treatments for opiate and alcohol addiction: A historical perspective of the last 50 years. *European journal of pharmacology,* 836, 89-101.

Blomkamp, E. (2018). The promise of co-design for public policy 1. In *Routledge handbook of policy design* (pp. 59-73). Routledge.

Bloom, A. (2005). Review essay: Toward a history of homelessness. *Journal of Urban History,* 31(6), 907-917.

Blumenthal, J. A. (2005). Law and the emotions: The problems of affective forecasting. *Ind. LJ,* 80, 155.

Bobashev, G., Mars, S., Murphy, N., Dreisbach, C., Zule, W., & Ciccarone, D. (2019). Heroin type, injecting behavior, and HIV transmission. A simulation model of HIV incidence and prevalence. *PLoS One,* 14(12), e0215042.

Boden, J. M., Fergusson, D. M., & Horwood, L. J. (2013). Alcohol misuse and relationship breakdown: Findings from a longitudinal birth cohort. *Drug and alcohol dependence*, *133*(1), 115-120.

Bodley-Scott, E., Ward, R. J., Tarabay, J., Fagbamigbe, A. F., Barker, S., & Maguire, N. (2024). The effectiveness of psychological interventions for people experiencing homelessness: A systematic review and meta-analysis. *Journal of Community & Applied Social Psychology,* 34(5), e2863.

Boisvert, R. A., Martin, L. M., Grosek, M., & Clarie, A. J. (2008). Effectiveness of a peer-support community in addiction recovery: participation as intervention. *Occupational therapy international*, 15(4), 205-220.

Boivin, A. (2021). GIN PUBLIC toolkit introduction How to choose an effective involvement strategy.

Boland, L., Slade, A., Yarwood, R., & Bannigan, K. (2018). Determinants of tenancy sustainment following homelessness: A systematic review. *American journal of public health*, 108(11), e1-e8.

Bolla, K. I., Funderburk, F. R., & Cadet, J. L. (2000). Differential effects of cocaine and cocaine alcohol on neurocognitive performance. *Neurology*, 54(12), 2285-2292.

Bolstad, W. M., & Curran, J. M. (2016). Introduction to Bayesian statistics. John Wiley & Sons.

Bolton, D., Hill, J., O'Ryan, D., Udwin, O., Boyle, S., & Yule, W. (2004). Long-term effects of psychological trauma on psychosocial functioning. *Journal of Child Psychology and Psychiatry*, 45(5), 1007-1014.

Bond, A. J., & Witton, J. (2017). Perspectives on the pharmacological treatment of heroin addiction. *Clinical Medicine Insights: Psychiatry,* 8, 1179557317737322.

Borkman, T. J., Stunz, A., & Kaskutas, L. A. (2016). Developing an experiential definition of recovery: Participatory research with recovering substance abusers from multiple pathways. *Substance use & misuse*, 51(9), 1116-1129.

Bourin, M. (2021). Mechanisms of action of anxiolytics. In Psychiatry and Neuroscience Update: From Epistemology to Clinical Psychiatry–Vol. IV (pp. 195-211). Cham: *Springer International Publishing.*

Bowen, E., Savino, R., & Irish, A. (2019). Homelessness and health disparities: a health equity lens. Homelessness prevention and intervention in social work: Policies, programs, and practices, 57-83.

Bower, M., Conroy, E., & Perz, J. (2018). Australian homeless persons' experiences of social connectedness, isolation and loneliness. *Health & social care in the community*, *26*(2), e241-e248.

Bower, M., Gournay, K., Perz, J., & Conroy, E. (2022). Do we all experience loneliness the same way? Lessons from a pilot study measuring loneliness among people with lived experience of homelessness. *Health & Social Care in the Community*, 30(5), e1671-e1677.

Bowpitt, G., & Jepson, M. (2007). Stability versus progress: finding an effective model of supported housing for formerly homeless people with mental health needs. *Social and Public Policy Review,* 1(2).

Braem, S., & Egner, T. (2018). Getting a grip on cognitive flexibility. *Current directions in psychological science,* 27(6), 470-476.

Brakenhoff, B., Jang, B., Slesnick, N., & Snyder, A. (2015). Longitudinal predictors of homelessness: Findings from the National Longitudinal Survey of Youth-97. *Journal of youth studies*, *18*(8), 1015-1034.

Bramley, G., & Fitzpatrick, S. (2018). Homelessness in the UK: who is most at risk?. *Housing studies*, *33*(1), 96-116.

Bransford, C., & Cole, M. (2019). Trauma-informed care in homelessness service settings: Challenges and opportunities. Homelessness prevention and intervention in social work: *Policies, programs, and practices*, 255-277.

Bremner, A. J., Duke, P. J., Nelson, H. E., Pantelis, C., & Barnes, T. R. (1996). Cognitive function and duration of rooflessness in entrants to a hostel for homeless men. *The British Journal of Psychiatry,* 169(4), 434-439.

Brent, S. B. (1978). Motivation, steady-state, and structural development: A general model of psychological homeostasis. *Motivation and Emotion*, 2, 299-332.

Breslow, N. (1987). Locus of control, desirability of control, and sadomasochists. *Psychological Reports,* 61(3), 995-1001.

Bretherton, J. (2017). Reconsidering gender in homelessness. *European Journal of Homelessness*, *11*(1).

Bretherton, J., & Mayock, P. (2021). Women's homelessness: European evidence review.

Brett, J. O., Staniszewska, S., Mockford, C., Herron-Marx, S., Hughes, J., Tysall, C., & Suleman, R. (2014). A systematic review of the impact of patient and public involvement on service users, researchers and communities. *The Patient-Patient-Centered Outcomes Research*, 7, 387-395.

Brooks, H., Syarif, A. K., Pedley, R., Irmansyah, I., Prawira, B., Lovell, K., ... & Bee, P. (2021). Improving mental health literacy among young people aged 11–15 years in Java, Indonesia: the co-development of a culturally-appropriate, user-centred resource (The IMPeTUs Intervention). *Child and Adolescent Psychiatry and Mental Health,* 15, 1-18.

Brooks, S. J., Wiemerslage, L., Burch, K. H., Maiorana, S. A., Cocolas, E., Schiöth, H. B., ... & Stein, D. J. (2017). The impact of cognitive training in substance use disorder: the effect of working memory training on impulse control in methamphetamine users. *Psychopharmacology*, *234*, 1911-1921.

Brophy, H., Dyson, M., & Rittenbach, K. (2023). Concept analysis of recovery from substance use. International Journal of Mental Health Nursing, 32(1), 117-127.

Brown, R. (2004). Heroin dependence. *WMJ-MADISON-,* 103(4), 20-26.

Brown, R. T., Goodman, L., Guzman, D., Tieu, L., Ponath, C., & Kushel, M. B. (2016). Pathways to homelessness among older homeless adults: Results from the HOPE HOME Study. *PloS one,* 11(5), e0155065.

Brown, M., & McCann, E. (2021). Homelessness and people with intellectual disabilities: A systematic review of the international research evidence. *Journal of Applied Research in Intellectual Disabilities,* 34(2), 390-401.

Brown, M., Vaclavik, D., Watson, D. P., & Wilka, E. (2017). Predictors of homeless services re-entry within a sample of adults receiving Homelessness Prevention and Rapid Re-Housing Program (HPRP) assistance. *Psychological services,* 14(2), 129.

Brugha, T., Bebington, P., Tenant, C., & Hurry, J. (1985). The list of threatening experiences: a subset of 12 life events categories with considerable long-term contextual threat. *Psychological Medicine.* 15: 189-194.

Bruijnen, C. J., Dijkstra, B. A., Walvoort, S. J., Markus, W., VanDerNagel, J. E., Kessels, R. P., & De Jong, C. A. (2019). Prevalence of cognitive impairment in patients with substance use disorder. *Drug and alcohol review,* 38(4), 435-442.

Buhrich, N., Hodder, T., & Teesson, M. (2000). Lifetime prevalence of trauma among homeless people in Sydney. *Australian & New Zealand Journal of Psychiatry*, 34(6), 963-966.

Burge, R., Tickle, A., & Moghaddam, N. (2021). Evaluating trauma informed care training for services supporting individuals experiencing homelessness and multiple disadvantage. *Housing, Care and Support,* 24(1), 14-25.

Burger, J. M. (1984). Desire for control, locus of control, and proneness to depression. *Journal of personality,* 52(1), 71-89.

Burger, J. M. (1985). Desire for control and achievement-related behaviors. J*ournal of Personality and Social Psychology,* 48(6), 1520.

Burger, J. M. (1992). Desire for control and academic performance. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement,* 24(2), 147.

Burger, J. M. (2013). Desire for control: Personality, social and clinical perspectives. Springer Science & Business Media.

Burger, J. M., & Cooper, H. M. (1979). The desirability of control. *Motivation and emotion,* 3, 381-393.

Burke, C. W., Lanni, S., Hoeppner, B. B., Ducharme, P., & Wilens, T. E. Substance use and psychiatric phenotypes of youth experiencing homelessness: A cluster analysis. *The American Journal on Addictions.*

Burkett, I. (2012). An introduction to co-design. Sydney: *Knode,* 12.

Burki, T. K. (2013). Homelessness and respiratory disease. The Lancet Respiratory Medicine, 1(10), 767-768.

Burn, S. M. (1992). Loss of Control, Attributions, and Helplessness in the Homeless 1. *Journal of Applied Social Psychology,* 22(15), 1161-1174.

Burns, S. E. (2024). *Being of Service: A Qualitative Study of How Support Staff in Addiction Treatment Facilities Adapt to Employer and Client Expectations* [Master's thesis, San Diego State University].

Burra, T. A., Stergiopoulos, V., & Rourke, S. B. (2009). A systematic review of cognitive deficits in homeless adults: implications for service delivery. *The Canadian Journal of Psychiatry,* 54(2), 123-133.

Busch-Geertsema, V. (2010). Defining and measuring homelessness. *Homelessness Research in Europe: Festschrift for Bill Edgar and Joe Doherty*, 19-39.

Busch-Geertsema, V., Culhane, D. and Fitzpatrick, S. (2016). Developing a Global Frame-work for Conceptualising and Measuring Homelessness. Habitat International 55, pp. 124–132.

Busch-Geertsema, V., Edgar, W., O'Sullivan, E., & Pleace, N. (2010). Homelessness and homeless policies in Europe: Lessons from research. In *Conference on homelessness* (Vol. 9, No. 1, p. 10).

Butelman, E. R., & Kreek, M. J. (2017). Medications for substance use disorders (SUD): emerging approaches. *Expert opinion on emerging drugs*, *22*(4), 301-315.

Cacciola, J. S., Alterman, A. I., Habing, B., & McLellan, A. T. (2011). Recent status scores for version 6 of the Addiction Severity Index (ASI-6). *Addiction,* 106(9), 1588-1602.

Cacciola, J. S., Alterman, A. I., McLellan, A. T., Lin, Y. T., & Lynch, K. G. (2007). Initial evidence for the reliability and validity of a "Lite" version of the Addiction Severity Index. *Drug and alcohol dependence*, 87(2-3), 297-302.

Calarco, C. A., & Lobo, M. K. (2021). Depression and substance use disorders: Clinical comorbidity and shared neurobiology. *In International review of neurobiology* (Vol. 157, pp. 245-309). Academic Press.

Calveley, J. (2012). Including adults with intellectual disabilities who lack capacity to consent in research. *Nursing Ethics*, 19(4), 558-567.

Calvo, F., Fitzpatrick, S., Fàbregas, C., Carbonell, X., Cohort Group, & Turró-Garriga, O. (2020). Individuals experiencing chronic homelessness: A 10-year follow-up of a cohort in Spain. *Health & Social Care in the Community*, 28(5), 1787-1794.

Cameron, A. C., & Trivedi, P. K. (2001). Essentials of count data regression. *A companion to theoretical econometrics*, 331.

Cameron, A. C., & Trivedi, P. K. (2013). *Regression analysis of count data* (No. 53). Cambridge university press.

Canham, S. L., Humphries, J., Moore, P., Burns, V., & Mahmood, A. (2022). Shelter/housing options, supports and interventions for older people experiencing homelessness. *Ageing & Society,* 42(11), 2615-2641.

Canham, S. L., Weldrick, R., Erisman, M., McNamara, A., Rose, J. N., Siantz, E., ... & McFarland, M. M. (2024). A scoping review of the experiences and outcomes of stigma and discrimination towards persons experiencing homelessness. *Health & Social Care in the Community,* 2024(1), 2060619.

Cano, T., & Gracia, P. (2022). The gendered effects of divorce on mothers' and fathers' time with children and children's developmental activities: a longitudinal study. *European Journal of Population*, *38*(5), 1277-1313.

Castaldelli-Maia, J. M., & Bhugra, D. (2022). Analysis of global prevalence of mental and substance use disorders within countries: focus on sociodemographic characteristics and income levels. *International review of psychiatry*, 34(1), 6-15.

Cardinal, R. N., & Aitken, M. R. (2013). ANOVA for the behavioral sciences researcher. *Psychology Press.*

Carleton, D. R. (2022). Death by Detox: Substance Withdrawal, a Possible Death Row for Individuals in Custody. *JL & Health,* 36, 159.

Carrillo Beck, R., Szlapinski, J., Pacheco, N., Sabri Laghaei, S., Isard, R., Oudshoorn, A., & Marshall, C. A. (2022). Violence and victimisation in the lives of persons experiencing homelessness who use methamphetamine: A scoping review. *Health & Social Care in the Community,* 30(5), 1619-1636.

Carter II, L. W., Mollen, D., & Smith, N. G. (2014). Locus of control, minority stress, and psychological distress among lesbian, gay, and bisexual individuals. *Journal of counselling psychology,* 61(1), 169.

Cartwright, J., & Crowe, S. (2011). Patient and Public Involvement Toolkit.

Carver, H., Ring, N., Miler, J., & Parkes, T. (2020). What constitutes effective problematic substance use treatment from the perspective of people who are homeless? A systematic review and meta-ethnography. *Harm Reduction Journal*, 17, 1-22.

Casari, R., Metastasio, A., Zamboni, L., Biasioli, M., Campagnari, S., & Lugoboni, F. (2022). Addiction of high dose of benzodiazepine: verona detox approach with flumazenil. *Frontiers in Psychiatry,* 13, 857376.

Castaldelli-Maia, J. M., & Bhugra, D. (2022). Analysis of global prevalence of mental and

substance use disorders within countries: focus on sociodemographic characteristics and income levels. International review of psychiatry, 34(1), 6-15.

Castellow, J., Kloos, B., & Townley, G. (2015). Previous homelessness as a risk factor for recovery from serious mental illnesses. *Community Mental Health Journal,* 51, 674-684.

Castleberry, J. J. (2020). Recovery from homelessness: choice, mastery, and relatedness.

Caton, C. L., Dominguez, B., Schanzer, B., Hasin, D. S., Shrout, P. E., Felix, A., ... & Hsu, E. (2005). Risk factors for long-term homelessness: Findings from a longitudinal study of first-time homeless single adults. *American journal of public health*, 95(10), 1753-1759.

Caudy, M. S., Folk, J. B., Stuewig, J. B., Wooditch, A., Martinez, A., Maass, S., ... & Taxman, F. S. (2015). Does substance misuse moderate the relationship between criminal thinking and recidivism? *Journal of Criminal Justice*, *43*(1), 12-19.

Cebula, R. J., & Saunoris, J. W. (2021). Determinants of homelessness in the US: new hypotheses and evidence. *Applied Economics*, 53(49), 5695-5709.

Central Statistics Office. (2016). *Census of Population 2016 – Profile 5 Homeless Persons in Ireland.* https://www.cso.ie/en/releasesandpublications/ep/pcp5hpi/cp5hpi/nat/#:~:text=As%20can%20be%20seen%20in,per%20cent%20were%20non%2DIrish.

Central Statistics Office. (2022). *Census 2022 Profile 5 - Diversity, Migration, Ethnicity, Irish Travellers & Religion.* https://www.cso.ie/en/releasesandpublications/ep/p-cpp5/census2022profile5-diversitymigrationethnicityirishtravellersreligion/irishtravellers/

Central Statistics Office. (2022). Census of Population 2022 Profile 6 - Homelessness. https://www.cso.ie/en/releasesandpublications/ep/p-cpp6/censusofpopulation2022profile6-homelessness/homelesspeopleinireland/

Central Statistics Office. (2022). *Census of Population 2022 Profile 6 - Homelessness.* https://www.cso.ie/en/releasesandpublications/ep/p-cpp6/censusofpopulation2022profile6-homelessness/diversityandhealth/

Chaloupka, F. J., Tauras, J. A., & Grossman, M. (2000). The economics of addiction. *Tobacco control in developing countrie*s, 107-129.

Chan, V., Estrella, M. J., Baddeliyanage, R., Shah, R., Babineau, J., & Colantonio, A. (2022). Rehabilitation among individuals experiencing homelessness and traumatic brain injury: A scoping review. *Frontiers in Medicine,* 9, 916602.

Chan, Y., & Walmsley, R. P. (1997). Learning and understanding the Kruskal-Wallis one-way analysis-of-variance-by-ranks test for differences among three or more independent groups. *Physical therapy,* 77(12), 1755-1761.

Chawla, N., Verma, S., Ganesh, R., Sarkar, S., & Ambekar, A. (2021). Sexual relationship, self-esteem, dysfunction, and sexual satisfaction in treatment naïve men with heroin dependence. *Journal of Psychoactive Drugs,* 53(4), 364-372.

Chen, Y., Liu, T. H., Xia, Y., & Ma, Z. (2024). Psychometric properties of the Chinese version of 20-Item Zimbardo Time Perspective Inventory (C-ZTPI-20) in Chinese adolescent population. *Psychology Research and Behavior Management,* 1271-1282.

Cherner, R. A., Aubry, T., Sylvestre, J., Boyd, R., & Pettey, D. (2017). Housing first for adults with problematic substance use. *Journal of dual diagnosis*, *13*(3), 219-229.

Chiou, W. B., & Wu, W. H. (2017). Episodic future thinking involving the nonsmoking self can induce lower discounting and cigarette consumption. *Journal of Studies on Alcohol and Drugs,* 78(1), 106-112.

Choi, J. J., Kim, J., & Shenkar, O. (2023). Temporal orientation and corporate social responsibility: global evidence. *Journal of Management Studies*, 60(1), 82-119.

Chouinard, G. (2004). Issues in the clinical use of benzodiazepines: potency, withdrawal, and rebound. *Journal of Clinical Psychiatry,* 65, 7-12.

Christensen, R. C., Hodgkins, C. C., Garces, L., Estlund, K. L., Miller, M. D., & Touchton, R. (2005). Homeless, mentally ill and addicted: The need for abuse and trauma services. *Journal of health care for the poor and underserved*, *16*(4), 615-622.

Christie, M. N. (2022). Optimising antenatal care for marginalised and at-risk women at the Kirketon Road Centre (KRC), Kings Cross, NSW. *Women and Birth*, *35*, 37-38.

Chum, A., Skosireva, A., Tobon, J., & Hwang, S. (2016). Construct validity of the SF-12v2 for the homeless population with mental illness: An instrument to measure self-reported mental and physical health. *PLoS One,* 11(3), e0148856.

Cihan Koca-Helvaci, Z. (2016). Social misfits or victims of exclusion? Contradictory representations of Irish Travellers in the Irish press. *Irish Journal of Applied Social Studies*, *16*(1), 3.

Clarke, P. B., Lewis, T. F., Myers, J. E., Henson, R. A., & Hill, B. (2020). Wellness, emotion regulation, and relapse during substance use disorder treatment. *Journal of counseling & development,* 98(1), 17-28.

Clarke, R. E., Briggs, J., Armstrong, A., MacDonald, A., Vines, J., Flynn, E., & Salt, K. (2021). Socio-materiality of trust: co-design with a resource limited community organisation. *CoDesign*, 17(3), 258-277.

Cleophas, T. J., & Zwinderman, A. H. (2018). Bayesian analysis of variance (Anova). In Modern Bayesian Statistics in Clinical Research (pp. 83-89). Cham: Springer International Publishing.

Cloke, P., Milbourne, P., & Widdowfield, R. (2001). Making the homeless count? Enumerating rough sleepers and the distortion of homelessness. *Policy & Politics*, *29*(3), 259-279.

Cluley, V., Ziemann, A., Feeley, C., Olander, E. K., Shamah, S., & Stavropoulou, C. (2022). Mapping the role of patient and public involvement during the different stages of healthcare innovation: a scoping review. *Health Expectations,* 25(3), 840-855.

Cohen, A. J., & Handy, N. C. (2001). *Dynamic correlation.* Molecular Physics, 99(7), 607-615.

Cohen, I., Huang, Y., Chen, J., Benesty, J., Benesty, J., Chen, J., ... & Cohen, I. (2009). *Pearson correlation coefficient.* Noise reduction in speech processing, 1-4.

Colbert, S. M., Hatoum, A. S., Shabalin, A., Li, Q. S., Coon, H., Nelson, E. C., ... & Johnson, E. C. (2021). Exploring the genetic overlap of suicide-related behaviors and substance use disorders. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics,* 186(8), 445-455.

Colburn, G., & Aldern, C. P. (2022). *Homelessness is a housing problem: How structural factors explain US patterns*. Univ of California Press.

Collado, A., & Stokes, A. (2024). Imagining the future can shape the present: A systematic review of the impact of episodic future thinking on substance use outcomes. *Psychology of Addictive Behaviors*, 38(1), 134.

Collins, D., & Stout, M. (2021). Does Housing First policy seek to fulfil the right to housing? fThe case of Alberta, Canada. *Housing Studies*, *36*(3), 336-358.

Collins, S., & Long, A. (2003). Working with the psychological effects of trauma: consequences for mental health-care workers–a literature review. *Journal of psychiatric and mental health nursing,* 10(4), 417-424.

Coney, N. J. (2015). Performing Genders: *A Study of Gender Fluidity.*

Conrod, P. J., & Stewart, S. H. (2005). A Critical Look at Dual-Focused Cognitive-Behavioral Treatments for Comorbid Substance Use and Psychiatric

Disorders: Strengths, Limitations, and Future Directions. *Journal of Cognitive Psychotherapy,* 19(3).

Cook, B. L., Hou, S. S. Y., Lee-Tauler, S. Y., Progovac, A. M., Samson, F., & Sanchez, M. J. (2019). A review of mental health and mental health care disparities research: 2011-2014. *Medical Care Research and Review*, *76*(6), 683-710.

Coolmine Therapeutic Community. (2024a). *Our Vision, Mission, & Values.* https://www.coolmine.ie/vision-mission-and-values/

Coolmine Therapeutic Community. (2024b). *Types of Treatment*. https://www.coolmine.ie/types-of-treatment/

Cooms, S., Muurlink, O., & Leroy-Dyer, S. (2024). Intersectional theory and disadvantage: a tool for decolonisation. *Disability & Society,* 39(2), 453-468.

Cooper, A. (2015). Time seizures and the self: Institutional temporalities and self-preservation among homeless women. *Culture, Medicine, and Psychiatry*, 39, 162-185.

Copello, A., Templeton, L., & Powell, J. (2010). The impact of addiction on the family: Estimates of prevalence and costs. *Drugs: education, prevention and policy*, *17*(sup1), 63-74.

Copersino, M. L. (2017). Cognitive mechanisms and therapeutic targets of addiction. *Current opinion in behavioral sciences*, *13*, 91-98.

Corring, D., & Cook, J. (1999). Client-centred care means that I am a valued human being. *Canadian Journal of Occupational Therapy*, 66(2), 71-82.

Cottee, H. (2002). *Predicting Outcome of In-Patient Opiate Detoxification Successes and Failures at Completion of Detoxification and Longer-Term Abstinence.* [Doctoral Dissertation, University of Surrey].

Coumans, M., & Spreen, M. (2003). Drug use and the role of homelessness in the process of marginalization. *Substance Use & Misuse*, *38*(3-6), 311-338.

Cox, K. B., Malte, C. A., & Saxon, A. J. (2017). Characteristics and service utilization of homeless veterans entering VA substance use treatment. *Psychological services,* 14(2), 208.

Cox, N., Dewaele, A., Van Houtte, M., & Vincke, J. (2010). Stress-related growth, coming out, and internalized homonegativity in lesbian, gay, and bisexual youth. An examination of stress-related growth within the minority stress model. *Journal of Homosexuality,* 58(1), 117-137.

Coxe, S., West, S. G., & Aiken, L. S. (2009). The analysis of count data: A gentle introduction to Poisson regression and its alternatives. *Journal of personality assessment,* 91(2), 121-136.

Crane, M., Byrne, K., Fu, R., Lipmann, B., Mirabelli, F., Rota-Bartelink, A., ... & Warnes, A. M. (2005). The causes of homelessness in later life: Findings from a 3-nation study. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences,* 60(3), S152-S159.

Crane, M. A., Joly, L. M. A., & Manthorpe, J. (2016). Rebuilding Lives: Formerly homeless people's experiences of independent living and their longer-term outcomes. *The Policy Institute at King's.*

Crane, M., & Warnes, A. M. (2007). The outcomes of rehousing older homeless people: a longitudinal study. *Ageing & Society,* 27(6), 891-918.

Crapanzano, K. A., Hammarlund, R., Ahmad, B., Hunsinger, N., & Kullar, R. (2018). The association between perceived stigma and substance use disorder treatment outcomes: a review. *Substance abuse and rehabilitation*, 1-12.

Crawford, K. (2022). Evaluating trauma-informed care practices in an interdisciplinary homeless service collaboration. *Journal of Evidence-Based Social Work*, 19(2), 212-227.

Crean, L., Adams, P., Maloney, E., Vlachou, S., (2021). *Blood Borne Virus and Drug Stabilisation Treatment: Long Term Impacts for Individuals Experiencing Homelessness.* Dublin Simon Community. https://www.dubsimon.ie/wp-content/uploads/2021/09/Blood-Borne-Virus-and-Drug-Stabilisation-Treatment-Study-.pdf

Creeley, C. E., & Olney, J. W. (2013). Drug-induced apoptosis: mechanism by which alcohol and many other drugs can disrupt brain development. *Brain sciences,* 3(3), 1153-1181.

Cronin, T., Healy, D., McCarthy, N., Smith, S. M., & Travers, J. (2025). Prevalence and risk factors of frailty in people experiencing homelessness: A systematic review and meta-analysis. The Journal of Frailty & Aging, 14(2), 100029.

Cross, C., Seager, J., Erasmus, J., Ward, C., & O'Donovan, M. (2010). Skeletons at the feast: A review of street homelessness in South Africa and other world regions. *Development Southern Africa,* 27(1), 5-20.

Crowe, S. F., & Stranks, E. K. (2018). The residual medium and long-term cognitive effects of benzodiazepine use: an updated meta-analysis. *Archives of Clinical Neuropsychology*, 33(7), 901-911.

Cruz, M. T., Bajo, M., Schweitzer, P., & Roberto, M. (2008). Shared mechanisms of alcohol and other drugs. *Alcohol Research & Health*, 31(2), 137.

Culbong, T., Crisp, N., Biedermann, B., Lin, A., Pearson, G., Eades, A. M., & Wright, M. (2022). Building a Nyoongar work practice model for Aboriginal youth mental health:

Prioritising trust, culture and spirit, and new ways of working. *Health Sociology Review*, 31(2), 173-192.

Culhane, D. P. (2008). The cost of homelessness: A perspective from the United States. European Journal of Homelessness, (148), 97-114.

Cullinane, H. (2021). How do travellers experience the housing assessment of needs process: culturally appropriate?.

Currie, J., Grech, E., Longbottom, E., Yee, J., Hastings, R., Aitkenhead, A., ... & Obrecht, K. (2021). Scoping review of the characteristics assessed by vulnerability indices applied to people experiencing homelessness. *PLoS One,* 16(7), e0254100.

Curtis, M. A., Corman, H., Noonan, K., & Reichman, N. E. (2013). Life shocks and homelessness. *Demography,* 50, 2227-2253.

Cusimano, M. D., Saha, A., Zhang, D., Zhang, S., Casey, J., Rabski, J., ... & Hwang, S. W. (2021). Cognitive dysfunction, brain volumes, and traumatic brain injury in homeless persons. *Neurotrauma reports*, 2(1), 136-148.

Czaderny, K. (2020). Risk factors for homelessness: A structural equation approach. *Journal of Community Psychology,* 48(5), 1381-1394.

Dada, O., de Pass, T., John, J. R., Lund, J., & Kidd, S. (2022). Identification of Housing Stabilization Models for youth exiting homelessness: A grey literature review. *International Journal on Homelessness,* 2(2), 251-274.

Dagher, R. K., & Green, K. M. (2015). Does depression and substance abuse co-morbidity affect socioeconomic status? Evidence from a prospective study of urban African Americans. *Psychiatry Research*, *225*(1-2), 115-121.

Dahl, R. E. (2004). Adolescent brain development: a period of vulnerabilities and opportunities. Keynote address. *Annals of the new York Academy of Sciences,* 1021(1), 1-22.

Daigre, C., Perea-Ortueta, M., Berenguer, M., Esculies, O., Sorribes-Puertas, M., Palma-Alvarez, R., ... & Grau-López, L. (2019). Psychiatric factors affecting recovery after a long term treatment program for substance use disorder. *Psychiatry Research,* 276, 283-289.

Dajani, D. R., & Uddin, L. Q. (2015). Demystifying cognitive flexibility: Implications for clinical and developmental neuroscience. *Trends in neurosciences,* 38(9), 571-578.

Daley, D. C. (2013). Family and social aspects of substance use disorders and treatment. *Journal of food and drug analysis*, 21(4), S73-S76.

Dalley, J. W., Everitt, B. J., & Robbins, T. W. (2011). Impulsivity, compulsivity, and top-down cognitive control. *Neuron*, *69*(4), 680-694.

Daly, A., Craig, S., & O'Sullivan, E. (2018). The institutional circuit: Single homelessness in Ireland. *European Journal of Homelessness,* 12(2), 79-94.

Daniels, K., & Guppy, A. (1997). Stressors, locus of control, and social support as consequences of affective psychological well-being. *Journal of Occupational Health Psychology,* 2(2), 156.

Darke, S. (2011). *The life of the heroin user: typical beginnings, trajectories and outcomes.* Cambridge University Press.

Darker, C. D., Ho, J., Kelly, G., Whiston, L., & Barry, J. (2016). Demographic and clinical factors predicting retention in methadone maintenance: results from an Irish cohort. *Irish Journal of Medical Science* (1971-), 185, 433-441.

Das, P. R., Talukdar, R. R., & Kumar, C. J. (2024). Exploring the interplay of abstinence self-efficacy, locus of control, and perceived social support in substance use disorder recovery. *Current Medical Research and Opinion,* 40(9), 1625-1635.

Das, S. K. (2020). *Detoxification of drug and substance abuse.* Medical Toxicology.

Davies, B. R., & Allen, N. B. (2017). Trauma and homelessness in youth: Psychopathology and intervention. *Clinical Psychology Review,* 54, 17-28.

Davies, G., Elison, S., Ward, J., & Laudet, A. (2015). The role of lifestyle in perpetuating substance use disorder: the Lifestyle Balance Model. *Substance abuse treatment, prevention, and policy*, *10*, 1-8.

Davies, S., & Filippopoulos, P. (2015). Changes in psychological time perspective during residential addiction treatment: a mixed-methods study. *Journal of Groups in Addiction & Recovery*, *10*(3), 249-270.

Davis, A., McMaster, P., Christie, D. C., Yang, A., Kruk, J. S., & Fisher, K. A. (2023). Psychiatric comorbidities of substance use disorders: does dual diagnosis predict inpatient detoxification treatment outcomes?. *International Journal of Mental Health and Addiction,* 21(6), 3785-3799.

Davison, J., Maguire, S., McLaughlin, M., & Simms, V. (2022). Involving adolescents with intellectual disability in the adaptation of self-reported subjective well-being measures: participatory research and methodological considerations. *Journal of Intellectual Disability Research,* 66(7), 628-641.

Dawes, J., Rogans-Watson, R., & Broderick, J. (2022). Physical activity interventions to improve the health and wellbeing of people experiencing homelessness: a mixed-methods systematic review. *The Lancet,* 400, S36.

Day, E., & Daly, C. (2022). Clinical management of the alcohol withdrawal syndrome. *Addiction,* 117(3), 804-814.

Dayton, T. (2000). Trauma and Addiction: Ending the Cycle of Pain through Emotional Literacy. *Health Communications, Inc.*

De Abreu Lourenço, R., Devlin, N., Howard, K., Ong, J. J., Ratcliffe, J., Watson, J., ... & Huynh, E. (2021). Giving a voice to marginalised groups for health care decision making. *The Patient-Patient-Centered Outcomes Research,* 14, 5-10.

de Campos, D. A., Alberti, A., Seganfredo Camargo, C. E., Mayer, A. B., de Oliveira Junior, J. B., Almeida Schonmeier, N. L., ... & da Cunha, N. V. (2025). Suicide, Psychoactive Substances, and Homelessness: A Scoping Review. *Brain Sciences,* 15(6), 602.

De Marco, A., De Marco, M., Biggers, A., West, M., Young, J., & Levy, R. (2015). Can people experiencing homelessness acquire financial assets. *J. Soc. & Soc. Welfare,* 42, 55.

de Oliveira, C., Cheng, J., Rehm, J., & Kurdyak, P. (2018). The role of mental health and addiction among high-cost patients: a population-based study. *Journal of medical economics*, *21*(4), 348-355.

De Witte, L., Schoot, T., & Proot, I. (2006). Development of the client-centred care questionnaire. *Journal of advanced nursing,* 56(1), 62-68.

Dean, S. F., Fede, S. J., Diazgranados, N., & Momenan, R. (2020). Addiction neurocircuitry and negative affect: A role for neuroticism in understanding amygdala connectivity and alcohol use disorder. *Neuroscience Letters*, *722*, 134773.

Deck, S. M., & Platt, P. A. (2015). Homelessness is traumatic: Abuse, victimization, and trauma histories of homeless men. J*ournal of Aggression, Maltreatment & Trauma,* 24(9), 1022-1043.

Decker, S. E., Morie, K. P., Malin-Mayo, B., Nich, C., & Carroll, K. M. (2018). Positive and negative affect in cocaine use disorder treatment: Change across time and relevance to treatment outcome. *The American journal on addictions,* 27(5), 375-382.

Deegan, P. E. (1988). Recovery: The lived experience of rehabilitation. *Psychosocial rehabilitation journal*, *11*(4), 11.

Degenhardt, L., Bharat, C., Glantz, M. D., Bromet, E. J., Alonso, J., Bruffaerts, R., ... & Wojtyniak, B. (2022). The associations between traumatic experiences and subsequent onset of a substance use disorder: Findings from the World Health Organization World Mental Health surveys. *Drug and alcohol dependence,* 240, 109574.

Degenhardt, L., Charlson, F., Ferrari, A., Santomauro, D., Erskine, H., Mantilla-Herrara, A., ... & Vos, T. (2018). The global burden of disease attributable to alcohol and drug use in 195 countries and territories, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *The Lancet Psychiatry*, *5*(12), 987-1012.

Del Gaudio, C., Franzato, C., & de Oliveira, A. J. (2020). Co-design for democratising and its risks for democracy. *CoDesign.*

del Palazio-Gonzalez, A., Thylstrup, B., & Thomsen, K. R. (2024). Psychological factors predicting patients' risk of relapse after enrollment in drug use treatment: A systematic review. *Journal of substance use and addiction treatment*, 209354.

Delaney, L. J. (2018). Patient-centred care as an approach to improving health care in Australia. *Collegian,* 25(1), 119-123.

Delargy, I., Crowley, D., & Van Hout, M. C. (2019). Twenty years of the methadone treatment protocol in Ireland: reflections on the role of general practice. *Harm reduction journal*, 16, 1-10.

Deleu, H., Schrooten, M., & Hermans, K. (2023). Hidden homelessness: A scoping review and avenues for further inquiry. *Social Policy and Society*, *22*(2), 282-298.

Delker, B. C., & Freyd, J. J. (2014). From betrayal to the bottle: Investigating possible pathways from trauma to problematic substance use. *Journal of traumatic stress*, *27*(5), 576-584.

Dell'Aquila, A., & Berle, D. (2023). Predictors of alcohol and substance use among people with post-traumatic stress disorder (PTSD): findings from the NESARC-III study. *Social psychiatry and psychiatric epidemiology,* 58(10), 1509-1522.

Dembroski, T. M., MacDougall, J. M., & Musante, L. (1984). Desirability of control versus locus of control: Relationship to paralinguistics in the Type A interview. *Health Psychology,* 3(1), 15.

Denis, C. M., Cacciola, J. S., & Alterman, A. I. (2013). Addiction Severity Index (ASI) summary scores: comparison of the Recent Status Scores of the ASI-6 and the Composite Scores of the ASI-5. *Journal of substance abuse treatment,* 45(5), 444-450.

Denis, C., Fatséas, M., Beltran, V., Serre, F., Alexandre, J. M., Debrabant, R., ... & Auriacombe, M. (2016). Usefulness and validity of the modified addiction severity index: a focus on alcohol, drugs, tobacco, and gambling. *Substance Abuse,* 37(1), 168-175.

Denis, C., Fatséas, M., Beltran, V., Bonnet, C., Picard, S., Combourieu, I., ... & Auriacombe, M. (2012). Validity of the self-reported drug use section of the Addiction Severity Index and associated factors used under naturalistic conditions. *Substance use & misuse,* 47(4), 356-363.

Department of Housing, Local Government, and Heritage. (2020). Monthly Homelessness Report, May 2020.

Department of Housing, Local Government, and Heritage. (2025). Monthly Homelessness Report, May 2025.

Depp, C. A., Vella, L., Orff, H. J., & Twamley, E. W. (2015). A quantitative review of cognitive functioning in homeless adults. *The Journal of nervous and mental disease*, *203*(2), 126-131.

Desjarlais-deKlerk, K. (2018). Identity in transition: How formerly homeless individuals negotiate identity as they move into housing. *Journal of Social Distress and the Homeless,* 27(1), 9-18.

Devine, Gerry, and Michael Bergin. "Experiences of frontline workers' engagement with mental health services for homeless adults in Ireland." *European Journal of Homelessness* 14, no. 2 (2020): 193-211.

Dhamoon, R. K., & Hankivsky, O. (2011). Why the theory and practice of intersectionality matter to health research and policy. *Health inequities in Canada: Intersectional frameworks and practices*, *1*, 16-50.

Dhingra, D., Kaur, S., & Ram, J. (2019). Illicit drugs: effects on eye. *Indian Journal of Medical Research,* 150(3), 228-238.

Di Sarno, M., De Candia, V., Rancati, F., Madeddu, F., Calati, R., & Di Pierro, R. (2021). Mental and physical health in family members of substance users: A scoping review. *Drug and alcohol dependence*, *219*, 108439.

Diamond, L. M. (2020). Gender fluidity and nonbinary gender identities among children and adolescents. *Child Development Perspectives,* 14(2), 110-115.

Diaper, A. M., Law, F. D., & Melichar, J. K. (2014). Pharmacological strategies for detoxification. *British Journal of Clinical Pharmacology,* 77(2), 302-314.

Dickson-Gomez, J., Quinn, K., McAuliffe, T., Bendixen, A., & Ohlrich, J. (2020). Placement of chronically homeless into different types of permanent supportive housing before and after a coordinated entry system: The influence of severe mental illness, substance use disorder, and dual diagnosis on housing configuration and intensity of services. *Journal of Community Psychology*, 48(7), 2410-2427.

Dierst-Davies, R., Reback, C. J., Peck, J. A., Nuño, M., Kamien, J. B., & Amass, L. (2011). Delay-discounting among homeless, out-of-treatment, substance-dependent men who have sex with men. *The American Journal of Drug and Alcohol Abuse,* 37(2), 93-97.

Dillon, L., Galvin, B., Guiney, C., Lyons, S., & Millar. S. (2023). *Irish National Focal Point to the European Monitoring Centre for Drugs and Drug Addiction.* Health Research Board. https://www.drugsandalcohol.ie/25261/1/National_report_for_2023_Treatment.pdf

Dinis-Oliveira, R. J., & Magalhães, T. (2020). Abuse of licit and illicit psychoactive substances in the workplace: medical, toxicological, and forensic aspects. *Journal of clinical medicine,* 9(3), 770.

Dinnen, S., Kane, V., & Cook, J. M. (2014). Trauma-informed care: A paradigm shift needed for services with homeless veterans. *Professional case management,* 19(4), 161-170.

Dinno, A., & Dinno, M. A. (2017). Package 'dunn. test'. *CRAN Repos,* 10, 1-7.

DiStefano, J. J., & Maznevski, M. L. (2000). Creating value with diverse teams in global management. *Organizational dynamics*, 29(1), 45-63.

Dombrowski, J. C., Corcorran, M. A., Carney, T., Parczewski, M., & Gandhi, M. (2025). The impact of homelessness and housing insecurity on HIV. The Lancet HIV, 12(6), e449-e458.

Donald, E. E., Whitlock, K., Dansereau, T., Sands, D. J., Small, D., & Stajduhar, K. I. (2022). A codevelopment process to advance methods for the use of patient-reported outcome measures and patient-reported experience measures with people who are homeless and experience chronic illness. *Health expectations*, 25(5), 2264-2274.

Dordick, G. A. (2002). Recovering from homelessness: Determining the "quality of sobriety" in a transitional housing program. *Qualitative Sociology*, *25*, 7-32.

Doré-Gauthier, V., Côté, H., Jutras-Aswad, D., Ouellet-Plamondon, C., & Abdel-Baki, A. (2019). How to help homeless youth suffering from first episode psychosis and substance use disorders? The creation of a new intensive outreach intervention team. *Psychiatry Research,* 273, 603-612.

Dowling, N. (2014). *The role of cognitive functioning within the homeless population* [Doctoral dissertation, University of Southampton].

Drake, L., Duncan, E., Sutherland, F., Abernethy, C., & Henry, C. (2008). Time perspective and correlates of wellbeing. *Time & Society,* 17(1), 47-61.

Drake, R. E. (2007). Dual diagnosis. *Psychiatry,* 6(9), 381-384.

Driessen, M., Schulte, S., Luedecke, C., Schaefer, I., Sutmann, F., Ohlmeier, M., ... & TRAUMAB-Study Group. (2008). Trauma and PTSD in patients with alcohol, drug, or dual dependence: A multi-center study. *Alcoholism: Clinical and Experimental Research,* 32(3), 481-488.

Drilling, M., Dittmann, J., Ondrušová, D., Teller, N., & Mondelaers, N. (2020). Measuring homelessness by city counts–Experiences from European cities. *European Journal of Homelessness _ Volume*, *14*(3_).

Drinkwater, J. M. (2021). *Participatory research to strengthen the role of patient and public involvement in general practice service improvement* [Doctoral dissertation, University of Leeds].

Dublin Simon Community. (2024a). *Dublin Simon Community's Vision, Mission, and Values.* https://www.dubsimon.ie/who-we-are/about-us

Dublin Simon Community. (2024b). *Treatment.* https://www.dubsimon.ie/what-we-do/treatment

Duke, A., & Searby, A. (2019). Mental ill health in homeless women: a review. *Issues in mental health nursing,* 40(7), 605-612.

Dumontheil, I. (2016). Adolescent brain development. *Current opinion in behavioral sciences,* 10, 39-44.

Durbin, A., Isaacs, B., Mauer-Vakil, D., Connelly, J., Steer, L., Roy, S., & Stergiopoulos, V. (2018). Intellectual disability and homelessness: A synthesis of the literature and discussion of how supportive housing can support wellness for people with intellectual disability. *Current Developmental Disorders Reports*, 5, 125-131.

Du Rose, N. (2017). Marginalised drug-using women's pleasure and agency. *The Social History of Alcohol and Drugs*, 31(1), 42-64.

Dwyer, R., Palepu, A., Williams, C., Daly-Grafstein, D., & Zhao, J. (2023). Unconditional cash transfers reduce homelessness. *Proceedings of the National Academy of Sciences,* 120(36), e2222103120.

Dyb, E. (2016). Housing First or no housing? Housing and homelessness at the end of alcohol and drug treatment. *International Journal of Drug Policy*, *36*, 76-84.

Dye, L., Hare, D. J., & Hendy, S. (2007). Capacity of people with intellectual disabilities to consent to take part in a research study. *Journal of Applied Research in Intellectual Disabilities,* 20(2), 168-174.

Early, D. W. (2005). An empirical investigation of the determinants of street homelessness. *Journal of Housing Economics*, *14*(1), 27-47.

Earnshaw, V. A. (2020). Stigma and substance use disorders: A clinical, research, and advocacy agenda. *American Psychologist*, *75*(9), 1300.

Eddie, D., Hoffman, L., Vilsaint, C., Abry, A., Bergman, B., Hoeppner, B., ... & Kelly, J. F. (2019). Lived experience in new models of care for substance use disorder: a systematic review of peer recovery support services and recovery coaching. *Frontiers in psychology,* 10, 1052.

Edelman, E. J., Cheng, D. M., Krupitsky, E. M., Bridden, C., Quinn, E., Walley, A. Y., ... & Samet, J. H. (2015). Heroin use and HIV disease progression: results from a pilot study of a Russian cohort. *AIDS and Behavior*, 19, 1089-1097.

Edens, E. L., Mares, A. S., Tsai, J., & Rosenheck, R. A. (2011). Does active substance use at housing entry impair outcomes in supported housing for chronically homeless persons?. *Psychiatric Services*, *62*(2), 171-178.

Edinoff, A. N., Nix, C. A., Hollier, J., Sagrera, C. E., Delacroix, B. M., Abubakar, T., ... & Kaye, A. D. (2021). Benzodiazepines: uses, dangers, and clinical considerations. *Neurology international*, 13(4), 594-607.

Eiland, L., & Romeo, R. D. (2013). Stress and the developing adolescent brain. *Neuroscience,* 249, 162-171.

Elbogen, E. B., Lanier, M., Wagner, H. R., & Tsai, J. (2021). Financial strain, mental illness, and homelessness: results from a national longitudinal study. *Medical Care,* 59, S132-S138.

El-Guebaly, N. (2012). The meanings of recovery from addiction: Evolution and promises. Journal of addiction medicine, 6(1), 1-9.

Ellsworth, J. T. (2019). Street crime victimization among homeless adults: A review of the literature. *Victims & Offenders,* 14(1), 96-118.

Emery, N. N., Walters, K. J., Njeim, L., Barr, M., Gelman, D., & Eddie, D. (2022). Emotion differentiation in early recovery from alcohol use disorder: Associations with in-the-moment affect and 3-month drinking outcomes. *Alcoholism: Clinical and Experimental Research*, 46(7), 1294-1305.

Epel, E. S., Bandura, A., & Zimbardo, P. G. (1999). Escaping homelessness: the influences of self-efficacy and time perspective on coping with homelessness 1. *Journal of applied social psychology*, 29(3), 575-596.

Erga, A. H., Hønsi, A., Anda-Ågotnes, L. G., Nesvåg, S., Hesse, M., & Hagen, E. (2021). Trajectories of psychological distress during recovery from polysubstance use disorder. *Addiction Research & Theory*, 29(1), 64-71.

Ersche, K. D., Turton, A. J., Croudace, T., & Štochl, J. (2012). Who do you think is in control in addiction? A pilot study on drug-related locus of control beliefs. *Addictive disorders & their treatment,* 11(4), 195-205.

Estévez, A. N. A., Jáuregui, P., Sánchez-Marcos, I., López-González, H., & Griffiths, M. D. (2017). Attachment and emotion regulation in substance addictions and behavioral addictions. *Journal of behavioral addictions,* 6(4), 534-544.

European Monitoring Centre for Drugs and Drug Addiction. (2024). *European Drug Emergencies Network (Euro-DEN Plus): data and analysis.* https://www.euda.europa.eu/publications/data-factsheet/european-drug-emergencies-network-euro-den-plus-data-and-analysis_en

European Monitoring Centre for Drugs and Drug Addiction (2023, March 8). Women and drugs: health and social responses. *European Union Drugs Agency.* https://www.euda.europa.eu/publications/mini-guides/women-and-drugs-health-and-social-responses_en

European Union. (2016). General Data Protection Regulation. Official Journal, L 119, 1-88. ELI: http://data.europa.eu/eli/reg/2016/679/oj

Evangelist, M., & Shaefer, H. L. (2020). No place called home: Student homelessness and structural correlates. *Social Service Review,* 94(1), 4-35.

European Union Drugs Agency. (2025). *European Drug Report 2025: Trends and Developments.* https://www.euda.europa.eu/publications/european-drug-report/2025_en

Everard, M. (Ed.). (2005). Improving access and use of psychotropic medicines. *World Health Organization.*

Eysenck, M. W. (2013). *Anxiety: The cognitive perspective*. Psychology Press.

Fanning, B. (2018). Multiculturalism in Ireland. In *Racism and social change in the Republic of Ireland* (pp. 178-198). Manchester University Press.

Fareed, A., Kim, J., Ketchen, B., Kwak, W. J., Wang, D., Shongo-Hiango, H., & Drexler, K. (2017). Effect of heroin use on changes of brain functions as measured by functional magnetic resonance imaging, a systematic review. *Journal of addictive diseases,* 36(2), 105-116.

Farero, A., Sullivan, C. M., López-Zerón, G., Bowles, R. P., Sprecher, M., Chiaramonte, D., & Engleton, J. (2024). Development and validation of the Housing Instability Scale. *Journal of Social Distress and Homelessness,* 33(1), 142-151.

Farnier, J., Shankland, R., Kotsou, I., Inigo, M., Rosset, E., & Leys, C. (2021). Empowering well-being: Validation of a locus of control scale specific to well-being. *Journal of Happiness Studies,* 1-30.

Farrugia, D., & Gerrard, J. (2016). Academic knowledge and contemporary poverty: The politics of homelessness research. *Sociology*, *50*(2), 267-284.

Fay, R. (2019). Traveller health inequalities as legacies of exclusion. In *Immigrants as outsiders in the two Irelands* (pp. 22-32). Manchester University Press.

Fazel, S., Geddes, J. R., & Kushel, M. (2014). The health of homeless people in high-income countries: descriptive epidemiology, health consequences, and clinical and policy recommendations. *The Lancet*, *384*(9953), 1529-1540.

Fazel, S., Khosla, V., Doll, H., & Geddes, J. (2008). The prevalence of mental disorders among the homeless in western countries: systematic review and meta-regression analysis. *PLoS medicine*, *5*(12), e225.

FEANTSA (2005). European Typology of Homelessness and Housing Exclusion. Brussels: FEANTSA.

Fédération Européenne d'Associations Nationales Travaillant avec les Sans-Abri. (2017). ETHOS European Typology of Homelessness and Housing Exclusion.

Fekih-Romdhane, F., Chahine, A., Mhanna, M., El Zouki, C. J., Obeid, S., & Hallit, S. (2023). Psychometric properties of an Arabic translation of the briefest version of the Zimbardo time perspective inventory (ZTPI-15). *BMC psychiatry*, 23(1), 338.

Feldman, L. C. (2004). *Citizens without shelter: Homelessness, democracy, and political exclusion*. Cornell University Press.

Feodor Nilsson, S., Hjorthøj, C. R., Erlangsen, A., & Nordentoft, M. (2014). Suicide and unintentional injury mortality among homeless people: a Danish nationwide register-based cohort study. The European Journal of Public Health, 24(1), 50-56.

Ferguson, L. M., Ward, H., Card, S., Sheppard, S., & McMurtry, J. (2013). Putting the 'patient'back into patient-centred care: An education perspective. *Nurse Education in Practice,* 13(4), 283-287.

Ferraro, K. J. (2012). Gender matters in intimate partner violence. In *Perceptions of female offenders: How stereotypes and social norms affect criminal justice responses* (pp. 133-149). New York, NY: Springer New York.

Field, M., Marhe, R., & Franken, I. H. (2014). The clinical relevance of attentional bias in substance use disorders. *CNS spectrums,* 19(3), 225-230.

Fieulaine, N., & Apostolidis, T. (2014). Precariousness as a time horizon: How poverty and social insecurity shape individuals' time perspectives. *Time perspective theory; Review, research and application: Essays in honor of Philip G. Zimbardo*, 213-228.

Fieulaine, N., & Martinez, F. (2010). Time under control: Time perspective and desire for control in substance use. *Addictive behaviors*, *35*(8), 799-802.

Finney, A. (2004). *Alcohol and intimate partner violence: key findings from the research*. London: Home Office.

Firth, A. Y. (2004). Ocular sequelae from the illicit use of class A drugs. *British and Irish Orthoptic Journal*, 1, 10-18.

Fishbach, A., & Woolley, K. (2022). The structure of intrinsic motivation. *Annual Review of Organizational Psychology and Organizational Behavior,* 9(1), 339-363.

Fitzpatrick, S., Saraiya, T., Lopez-Castro, T., Ruglass, L. M., & Hien, D. (2020). The impact of trauma characteristics on post-traumatic stress disorder and substance use disorder outcomes across integrated and substance use treatments. *Journal of Substance Abuse Treatment,* 113, 107976.

Fitzpatrick, S., & Stephens, M. (2014). Welfare regimes, social values and homelessness: Comparing responses to marginalised groups in six European countries. H*ousing Studies,* 29(2), 215-234.

Fitzpatrick-Lewis, D., Ganann, R., Krishnaratne, S., Ciliska, D., Kouyoumdjian, F., & Hwang, S. W. (2011). Effectiveness of interventions to improve the health and housing status of homeless people: a rapid systematic review. *BMC public health*, *11*, 1-14.

Fivecoat, H. C., Lookatch, S. J., Mavandadi, S., McKay, J. R., & Sayers, S. L. (2023). Social Factors Predict Treatment Engagement in Veterans with PTSD or SUD. *The Journal of Behavioral Health Services & Research,* 50(3), 286-300.

Flentje, A., Leon, A., Carrico, A., Zheng, D., & Dilley, J. (2016). Mental and physical health among homeless sexual and gender minorities in a major urban US city. *Journal of Urban Health*, 93, 997-1009.

Fletcher, J. M. (1942). Homeostasis as an explanatory principle in psychology. *Psychological Review,* 49(1), 80.

Fleury, M. J., Djouini, A., Huỳnh, C., Tremblay, J., Ferland, F., Ménard, J. M., & Belleville, G. (2016). Remission from substance use disorders: A systematic review and meta-analysis. *Drug and alcohol dependence*, *168*, 293-306.

Flores, Y. (2021). Science, context, and gender fluidity in public policy. *Public Integrity,* 23(6), 595-609.

Fluyau, D., Revadigar, N., & Manobianco, B. E. (2018). *Challenges of the pharmacological management of benzodiazepine withdrawal, dependence, and discontinuation.* Therapeutic advances in psychopharmacology, 8(5), 147-168.

Fodstad, E. C., Erga, A. H., Pallesen, S., Ushakova, A., & Erevik, E. K. (2024). Personality traits as predictors of recovery among patients with substance use disorder. *Journal of Substance Use and Addiction Treatment,* 162, 209360.

Fontanella, L., Maretti, M., & Sarra, A. (2014). Gender fluidity across the world: A multilevel item response theory approach. *Quality & Quantity*, 48(5), 2553-2568.

Foran, H. M., & O'Leary, K. D. (2008). Alcohol and intimate partner violence: A meta-analytic review. *Clinical psychology review*, *28*(7), 1222-1234.

Forbat, L., Hubbard, G., & Kearney, N. (2009). Patient and public involvement: models and muddles. *Journal of clinical nursing*, 18(18), 2547-2554.

Ford, J. D., Hawke, J., Alessi, S., Ledgerwood, D., & Petry, N. (2007). Psychological trauma and PTSD symptoms as predictors of substance dependence treatment outcomes. *Behaviour research and therapy,* 45(10), 2417-2431.

Forman–Hoffman, V. L., Batts, K. R., Hedden, S. L., Spagnola, K., & Bose, J. (2018). Comorbid mental disorders among adults in the mental health surveillance survey. *Annals of Epidemiology,* 28(7), 468-474.

Fornaro, M., Dragioti, E., De Prisco, M., Billeci, M., Mondin, A. M., Calati, R., ... & Carvalho, A. F. (2022). Homelessness and health-related outcomes: an umbrella review of observational studies and randomized controlled trials. *BMC medicine*, 20(1), 224.

Forte, A. (2005). Locus of control and the moral reasoning of managers. *Journal of Business Ethics,* 58, 65-77.

Foster, R., Carver, H., Wallace, J., Dunedin, A., Burridge, S., Foley, P., ... & Parkes, T. (2021). “PPI? That sounds like Payment Protection Insurance”: Reflections and learning from a substance use and homelessness study Experts by Experience group. *Research Involvement and Engagement,* 7, 1-10.

Fountain, J., Howes, S., & Strang, J. (2003). Unmet drug and alcohol service needs of homeless people in London: a complex issue. *Substance use & misuse,* 38(3-6), 377-393.

Fowle, M. Z. (2022). Racialized homelessness: A review of historical and contemporary causes of racial disparities in homelessness. *Housing Policy Debate*, 32(6), 940-967.

Fraenkel, P. (2020). Time as a source of struggle and resilience in homeless families. *Time & Society*, 29(2), 581-603.

Francis, A. J. (2020). Locus of control. In Encyclopedia of psychology and religion (pp. 1369-1370). *Cham: Springer International Publishing.*

Francis, L. E. (2000). Conflicting bureaucracies, conflicted work: Dilemmas in case management for homeless people with mental illness. J. *Soc. & Soc. Welfare,* 27, 97.

Franke, T. M., Ho, T., & Christie, C. A. (2012). The chi-square test: Often used and more often misinterpreted. *American journal of evaluation*, 33(3), 448-458.

Franken, I. H., & Hendriks, V. M. (1999). Predicting outcome of inpatient detoxification of substance abusers. *Psychiatric Services*, 50(6), 813-817.

Freeman, G. H., & Halton, J. H. (1951). Note on an exact treatment of contingency, goodness of fit and other problems of significance. *Biometrika*, 38(1/2), 141-149.

Freyberger, H. J., Ulrich, I., Barnow, S., & Steinhart, I. (2008). Am Rande sozialpsychiatrischer Versorgungsstrukturen-eine Untersuchung zur „Systemsprengerproblematik" in Mecklenburg-Vorpommern. *Fortschritte der Neurologie· Psychiatrie*, 76(02), 106-113.

Friesen, E. L., & Young, S. (2021). Experiencing homelessness as a risk factor for negative treatment outcomes among individuals receiving outpatient treatment for opioid use disorder in the United States. *University of Toronto Medical Journal*, *98*(2).

Frone, M. R., Chosewood, L. C., Osborne, J. C., & Howard, J. J. (2022). Workplace supported recovery from substance use disorders: defining the construct, developing a model, and proposing an agenda for future research. *Occupational health science,* 6(4), 475-511.

Fuhrmann-Berger, J. (2018). The economic impact of opioid addiction. *Strategic HR Review,* 17(4), 198-203.

Furnham, A., & Steele, H. (1993). Measuring locus of control: A critique of general, children's, health-and work-related locus of control questionnaires. *British journal of psychology*, 84(4), 443-479.

Gabbard, W. J., Snyder, C. S., Lin, M. B., Chadha, J. H., May, J. D., & Jaggers, J. (2007). Methodological issues in enumerating homeless individuals. *Journal of Social Distress and the Homeless*, *16*(2), 90-103.

Gabrielian, S., Bromley, E., Hellemann, G. S., Kern, R. S., Goldenson, N. I., Danley, M. E., & Young, A. S. (2015). Factors affecting exits from homelessness among persons with serious mental illness and substance use disorders. *The Journal of clinical psychiatry,* 76(4), 7090.

Gabrielian, S., Burns, A. V., Nanda, N., Hellemann, G., Kane, V., & Young, A. S. (2016). Factors associated with premature exits from supported housing. Psychiatric Services, 67(1), 86-93.

Gabrielian, S., Gores, A. M., Gelberg, L., & Tsai, J. (2018). Mental illness and substance use disorders among homeless veterans. *Homelessness among US veterans: Critical perspectives*, 35-59.

Gabrielian, S., Hamilton, A. B., Alexandrino Jr, A., Hellemann, G., & Young, A. S. (2017). "They're homeless in a home": Retaining homeless-experienced consumers in supported housing. *Psychological services,* 14(2), 154.

Gabrielsen, K. B., Clausen, T., Haugland, S. H., & Vederhus, J. K. (2024). Gradual improvement in functioning and mental distress during long-term outpatient SUD treatment–A prospective pre-post study. *Addictive Behaviors Reports*, *19*, 100525.

Gaetz, S., & Dej, E. (2017). A new direction: A framework for homelessness prevention. *Canadian Observatory on Homelessness Press.*

Gaetz, S. (2012). The real cost of homelessness.

Gaetz, S., & O'Grady, B. (2002). Making money: Exploring the economy of young homeless workers. *Work, employment and Society,* 16(3), 433-456.

Gajos, J. M., Cropsey, K. L., Walters, S. T., & Businelle, M. S. (2023). Relations between affect, self-efficacy, and alcohol expectancies in adults experiencing homelessness. *Addiction Research & Theory*, 1-6.

Galligan, K., Banka, D. S. P., Earls, L., & Comiskey, C. (2020). Mapping Retrospective Outcomes And Existing Processes Of The Dublin Simon Community Detoxification Unit In Order To Inform Client Needs And Future Service Developments. Dublin Simon Community.

Galvin, B. M., Randel, A. E., Collins, B. J., & Johnson, R. E. (2018). Changing the focus of locus (of control): A targeted review of the locus of control literature and agenda for future research. *Journal of Organizational Behavior*, 39(7), 820-833.

Garland, E. L., Bryan, C. J., Finan, P. H., Thomas, E. A., Priddy, S. E., Riquino, M. R., & Howard, M. O. (2017). Pain, hedonic regulation, and opioid misuse: Modulation of momentary experience by Mindfulness-Oriented Recovery Enhancement in opioid-treated chronic pain patients. *Drug and alcohol dependence*, 173, S65-S72.

Gebhardt, W. A., & Brosschot, J. F. (2002). Desirability of control: Psychometric properties and relationships with locus of control, personality, coping, and mental and somatic complaints in three Dutch samples. *European journal of personality*, 16(6), 423-438.

Gelman, A. (2005). Analysis of variance—why it is more important than ever.

Gentil, L., Grenier, G., Bamvita, J. M., Dorvil, H., & Fleury, M. J. (2019). Profiles of quality of life in a homeless population. *Frontiers in Psychiatry,* 10, 10.

Gerald, B. (2018). A brief review of independent, dependent and one sample t-test. *International journal of applied mathematics and theoretical physics,* 9(2), 50-54.

Gergen, K. J., & Gergen, M. M. (2014). The self in temporal perspective. In Life-span perspectives and social psychology (pp. 121-137). *Psychology Press.*

Gertler, L. M. (2014). The coming out experience, internalized homophobia and self-compassion in LGBQ young adults (Doctoral dissertation, The Wright Institute).

Giano, Z., Williams, A., Hankey, C., Merrill, R., Lisnic, R., & Herring, A. (2020). Forty years of research on predictors of homelessness. *Community Mental Health Journal*, 56(4), 692-709.

Giannouchos, T., Mehmood, G., & Yue, D. (2024). Suicide and self-injury-related emergency department visits and homelessness among adults 25–64 years old from 2016 to 2021 in the USA. *Emergency Medicine Journal,* 41(12), 749-756.

Gidzgier, P. A., Bari, M., López-Atanes, M., Lotzin, A., Grundmann, J., Hiller, P., ... & Schäfer, I. (2023). Improving care for SUD patients with complex trauma–relationships between childhood trauma, dissociation, and suicidal behavior in female patients with PTSD and SUD. *Frontiers in psychiatry,* 13, 1047274.

Giese, C., Igoe, D., Gibbons, Z., Hurley, C., Stokes, S., McNamara, S., ... & outbreak control team. (2015). Injection of new psychoactive substance snow blow associated with recently acquired HIV infections among homeless people who inject drugs in Dublin, Ireland, 2015. *Eurosurveillance*, 20(40), 30036.

Gilbert, E., Carmi, S., Ennis, S., Wilson, J. F., & Cavalleri, G. L. (2017). Genomic insights into the population structure and history of the Irish Travellers. *Scientific Reports*, *7*(1), 1-12.

Gilbey, H., & Wilcockson, T. D. (2024). The effect of cognitive control on addiction relapse. *Addiction Research & Theory*, 1-8.

Gilmoor, A., Vallath, S., Regeer, B., & Bunders, J. (2020). "If somebody could just understand what I am going through, it would make all the difference": conceptualizations of trauma in homeless populations experiencing severe mental illness. *Transcultural psychiatry,* 57(3), 455-467.

Girard, V., Tinland, A., Boyer, L., Auquier, P., & French Housing First Study Group. (2015). Psychometric properties of the recovery measurement in homeless people with severe mental illness. *Schizophrenia Research*, 169(1-3), 292-297.

Gladwin, T. E., Wiers, C. E., & Wiers, R. W. (2016). Cognitive neuroscience of cognitive retraining for addiction medicine: From mediating mechanisms to questions of efficacy. *Progress in brain research,* 224, 323-344.

Gluhoski, V. L., & Wortman, C. B. (1996). The impact of trauma on world views. *Journal of Social and Clinical Psychology,* 15(4), 417-429.

Glynn, T. R., & van den Berg, J. J. (2017). A systematic review of interventions to reduce problematic substance use among transgender individuals: a call to action. *Transgender health*, *2*(1), 45-59.

Goldstein, R. Z., Leskovjan, A. C., Hoff, A. L., Hitzemann, R., Bashan, F., Khalsa, S. S., ... & Volkow, N. D. (2004). Severity of neuropsychological impairment in cocaine and alcohol addiction: association with metabolism in the prefrontal cortex. *Neuropsychologia,* 42(11), 1447-1458.

González, L., & Rodríguez-Planas, N. (2020). Gender norms and intimate partner violence. *Journal of Economic Behavior & Organization*, *178*, 223-248.

Goodacre, K., & Sumner, E. (2021). Overcoming the hurdles: Understanding motivation and supporting adult learners with poor literacy and dyslexia in the homelessness sector. *Dyslexia,* 27(1), 79-93.

Goodman, L. A., Saxe, L., & Harvey, M. (1991). Homelessness as psychological trauma: Broadening perspectives. *American psychologist*, 46(11), 1219.

Goodman, L. A., Saxe, L., & Harvey, M. (1991). Homelessness as psychological trauma: Broadening perspectives. *American psychologist,* 46(11), 1219.

Gopaldas, A., & DeRoy, G. (2015). An intersectional approach to diversity research. *Consumption Markets & Culture,* 18(4), 333-364.

Gordon, A. J., Wentz, C. M., Gibbon, J. L., Mason, A. D., Freyder, P. J., & O'Toole, T. P. (2001). Relationships between patient characteristics and unsuccessful substance abuse detoxification. *Journal of addictive diseases,* 20(2), 41-53.

Gordon, S. J., Grimmer, K., Bradley, A., Direen, T., Baker, N., Marin, T., ... & Oliffe, J. L. (2019). Health assessments and screening tools for adults experiencing homelessness: a systematic review. *BMC Public Health*, 19(1), 994.

Gosling, J. (2018). Gender fluidity reflected in contemporary society. *Jung Journal,* 12(3), 75-79.

Grajo, L. C., Gutman, S. A., Gelb, H., Langan, K., Marx, K., Paciello, D., ... & Teng, K. (2020). Effectiveness of a functional literacy program for sheltered homeless adults. *OTJR: Occupation, Participation and Health,* 40(1), 17-26.

Grau-López, L., Grau-López, L., Daigre, C., Palma-Álvarez, R. F., Martínez-Luna, N., Ros-Cucurull, E., ... & Roncero, C. (2020). Insomnia symptoms in patients with substance use disorders during detoxification and associated clinical features. *Frontiers in psychiatry*, 11, 540022.

Green, B., Kim, F. L., & Dean Jr, D. (2020). Substance use and treatment among youth experiencing homelessness: 1992–2017. *Journal of Adolescent Health*, 67(6), 786-792.

Green, T., Bonner, A., Teleni, L., Bradford, N., Purtell, L., Douglas, C., ... & Chan, R. J. (2020). Use and reporting of experience-based codesign studies in the healthcare setting: a systematic review. *BMJ quality & safety,* 29(1), 64-76.

Greenhalgh, T., Hinton, L., Finlay, T., Macfarlane, A., Fahy, N., Clyde, B., & Chant, A. (2019). Frameworks for supporting patient and public involvement in research: systematic review and co-design pilot. *Health expectations,* 22(4), 785-801.

Greenwood, R. M., & Manning, R. M. (2017). Mastery matters: Consumer choice, psychiatric symptoms and problematic substance use among adults with histories of homelessness. *Health & Social Care in the Community,* 25(3), 1050-1060.

Greenwood, R. M., Stefancic, A., Tsemberis, S., & Busch-Geertsema, V. (2013). Implementations of Housing First in Europe: Successes and challenges in maintaining model fidelity. *American Journal of Psychiatric Rehabilitation*, *16*(4), 290-312.

Griffin, K. (2012). Pilgrimage through the eyes of the Irish 'Traveller'community. *International Journal of Tourism Policy*, *4*(2), 157-173.

Grinman, M. N., Chiu, S., Redelmeier, D. A., Levinson, W., Kiss, A., Tolomiczenko, G., ... & Hwang, S. W. (2010). Drug problems among homeless individuals in Toronto, Canada: prevalence, drugs of choice, and relation to health status. *BMC public health*, *10*, 1-7.

Groman, S. M., & Jentsch, J. D. (2012). Cognitive control and the dopamine D2-like receptor: a dimensional understanding of addiction. *Depression and anxiety*, *29*(4), 295-306.

Gronau, Q. F., Ly, A., & Wagenmakers, E. J. (2020). Informed Bayesian t-tests. The American Statistician.

Grönbladh, L., & Öhlund, L. S. (2011). Self-reported differences in side-effects for 110 heroin addicts during opioid addiction and during methadone treatment. *Heroin Addiction and Related Clinical Problems,* 13(4), 5-12.

Groton, D. (2013). Are housing first programs effective: a research note. *J. Soc. & Soc. Welfare*, *40*, 51.

Grover, S., Mattoo, S. K., Pendharkar, S., & Kandappan, V. (2014). Sexual dysfunction in patients with alcohol and opioid dependence. *Indian journal of psychological medicine,* 36(4), 355-365.

Gruber, S. A., Silveri, M. M., & Yurgelun-Todd, D. A. (2007). Neuropsychological consequences of opiate use. *Neuropsychology review,* 17(3), 299-315.

Guarino, K. M. (2013). Trauma-informed care for families experiencing homelessness. In Supporting families experiencing homelessness: *Current practices and future directions* (pp. 121-143). New York, NY: Springer New York.

Guarino, K., & Bassuk, E. (2010). Working with families experiencing homelessness: Understanding trauma and its impact. *Zero to Three,* 30(3), 11.

Gulcur, L., Stefancic, A., Shinn, M., Tsemberis, S., & Fischer, S. N. (2003). Housing, hospitalization, and cost outcomes for homeless individuals with psychiatric disabilities participating in continuum of care and housing first programmes. *Journal of Community & Applied Social Psychology*, *13*(2), 171-186.

Guobyte, A. (2015). A qualitative exploration of methadone maintained patients' experiences of treatment and recovery *(Doctoral dissertation, School of Social Work and Social Policy, Trinity College Dublin).*

Gutman, S. A., Amarantos, K., Berg, J., Aponte, M., Gordillo, D., Rice, C., ... & Schluger, Z. (2018). Home safety fall and accident risk among prematurely aging, formerly homeless adults. *The American Journal of Occupational Therapy*, 72(4), 7204195030p1-7204195030p9.

Gutwinski, S., Schreiter, S., Deutscher, K., & Fazel, S. (2021). The prevalence of mental disorders among homeless people in high-income countries: an updated systematic review and meta-regression analysis. *PLoS medicine,* 18(8), e1003750.

Habánik, T. (2018). Mental health problems as one of the factors in the development and persistence of homelessness. *Kontakt,* 20(2), e171-e176.

Halpern, J., & Arnold, R. M. (2008). Affective forecasting: an unrecognized challenge in making serious health decisions. *Journal of general internal medicine,* 23, 1708-1712.

Haeffner, L. S. B., Backes, D. S., Hammel, G. D. S. C., Sousa, F. G. M. D., Rupolo, I., & Smeha, L. N. (2023). Social and health vulnerability of homeless people. *Revista da Escola de Enfermagem da USP,* 57(spe), e20220379.

Hakovirta, M., Cook, K., & Sinclair, S. (2021). Gender equality prior to and following separation: Nordic and liberal policy inconsistencies. *Social Politics: International Studies in Gender, State & Society*, *28*(4), 1115-1136.

Hamilton, A. B., Poza, I., & Washington, D. L. (2011). “Homelessness and trauma go hand-in-hand”: Pathways to homelessness among women veterans. *Women's Health Issues,* 21(4), S203-S209.

Hamilton, P. (2007). Homeless women need place of refuge (p. 14). Christchurch, New Zealand: The Press.

Han, B. H., Doran, K. M., & Krawczyk, N. (2022). National trends in substance use treatment admissions for opioid use disorder among adults experiencing homelessness. *Journal of substance abuse treatment*, *132*, 108504.

Hanckel, B., Morris, A., & Yasukawa, K. (2024). On (not) being literate enough: The literacy experiences and literacy programme needs of people experiencing homelessness or who are at risk of homelessness. *Australian Journal of Social Issues.*

Hancock A-M. 2011. Solidarity Politics for Millennials: A Guide for Ending the Oppression Olympics. New York: Palgrave Macmillan

Hannigan, A. (2018). Public and patient involvement in quantitative health research: A statistical perspective. *Health expectations*, 21(6), 939-943.

Hardin, J., & Wille, D. E. (2017). The homeless individua's viewpoint: Causes of homelessness and resources needed to leave the sheltered environment. *Social Work & Social Sciences Review*, *19*(2).

Harerimana, B., Kerr, M., Csiernik, R., Ng, L. C., Rutembesa, E., & Forchuk, C. (2021). Predicting the contribution of age at first substance use and post-traumatic stress disorder to later addiction severity in a clinical sample from Sub-Saharan Africa:

Implications for prevention and treatment. *International Journal of Mental Health and Addiction,* 1-15.

Harmer, C. J., Duman, R. S., & Cowen, P. J. (2017). How do antidepressants work? New perspectives for refining future treatment approaches. *The Lancet Psychiatry*, 4(5), 409-418.

Harrison, J., Krieger, M. J., & Johnson, H. A. (2020). Review of individual placement and support employment intervention for persons with substance use disorder. *Substance Use & Misuse,* 55(4), 636-643.

Hartley, C. A. (2022). How do natural environments shape adaptive cognition across the lifespan?. *Trends in Cognitive Sciences*, 26(12), 1029-1030.

Hartmann McNamara, R., Crawford, C., & Burns, R. (2013). Policing the homeless: Policy, practice, and perceptions. *Policing: An International Journal of Police Strategies & Management*, *36*(2), 357-374.

Hatzenbuehler, M. L., Phelan, J. C., & Link, B. G. (2013). Stigma as a fundamental cause of population health inequalities. *American Journal of Public Health*, 103(5), 813–821.

Hayat, M. J., & Higgins, M. (2014). Understanding poisson regression. *Journal of Nursing Education,* 53(4), 207-215.

Haynes, A., Joyce, S., & Schweppe, J. (2021). The significance of the declaration of ethnic minority status for Irish travellers. *Nationalities Papers*, *49*(2), 270-288.

Health Research Board. (2025b). Focal point Ireland: national report for 2024 – treatment. Dublin: Health Research Board.

https://www.drugsandalcohol.ie/25261/1/National%20report_Treatment.pdf

Healy, D. (2008). Psychiatric Drugs Explained E-Book: Psychiatric Drugs Explained E-Book. *Elsevier Health Sciences.*

Healy, R., Goodwin, J., & Kelly, P. (2022). 'As for dignity and respect…. me bollix': A human rights-based exploration of service user narratives in Irish methadone maintenance treatment. *International Journal of Drug Policy*, 110, 103901.

Hearne, R. (2020). The normalisation of homelessness. In *Housing Shock* (pp. 69-86). Policy Press.

Hecke, T. V. (2012). Power study of anova versus Kruskal-Wallis test. *Journal of Statistics and Management Systems*, 15(2-3), 241-247.

Heft, H. (2013). Environment, cognition, and culture: Reconsidering the cognitive map. *Journal of environmental psychology,* 33, 14-25.

Heiss, L., & Kokshagina, O. (2021). Tactile co-design tools for complex interdisciplinary problem exploration in healthcare settings. *Design Studies,* 75, 101030.

Hennessey, B., Moran, S., Altringer, B., & Amabile, T. M. (2015). Extrinsic and intrinsic motivation. *Wiley encyclopedia of management,* 1-4.

Hennigan, B. (2019). From Madonna to Marx: Towards a re-theorisation of homelessness. *Antipode*, *51*(1), 148-168.

Henry, H., Zacher, H., & Desmette, D. (2017). Future time perspective in the work context: A systematic review of quantitative studies. *Frontiers in psychology*, 8, 413.

Henson, R. N. (2015). Analysis of variance (ANOVA). Brain Mapping: an encyclopedic reference. *Elsevier,* 477-481.

Herre, B., & Arriagada, P. (2024). *Homelessness.* Our World In Data. Retrieved from: https://ourworldindata.org/homelessness

Hetland, J. (2024). Cognitive impairment as a predictor of outcomes in SUD rehabilitation

Hetland, J., Lundervold, A. J., & Erga, A. H. (2024). Cognitive impairment as a predictor of long-term psychological distress in patients with polysubstance use disorders: a prospective longitudinal cohort study. *BMC psychiatry,* 24(1), 143.

Hicks, J. A., Trent, J., Davis, W. E., & King, L. A. (2012). Positive affect, meaning in life, and future time perspective: an application of socioemotional selectivity theory. *Psychology and aging,* 27(1), 181.

Hilbe, J. M. (2014). *Modeling Count Data*. Cambridge University Press.

Hingray, C., Cohn, A., Martini, H., Donné, C., El-Hage, W., Schwan, R., & Paille, F. (2018). Impact of trauma on addiction and psychopathology profile in alcohol-dependent women. *European Journal of Trauma & Dissociation,* 2(2), 101-107.

Hjemsæter, A. J., Bramness, J. G., Drake, R., Skeie, I., Monsbakken, B., Thoresen, M., & Landheim, A. S. (2019). Predictors of problematic substance use 18 years after treatment: a longitudinal cohort study of persons with substance use disorders. *Cogent Psychology,* 6(1), 1634325.

Hobelmann, J. G., & Clark, M. R. (2018). Substance use disorders and detoxification. In Essentials of pain medicine (pp. 419-426). Elsevier.

Hocking, J. E., & Lawrence, S. G. (2000). Changing attitudes toward the homeless: The effects of prosocial communication with the homeless. *Journal of social distress and the homeless*, 9, 91-110.

Hodgetts, D., Stolte, O., Waimarie Nikora, L., & Groot, S. (2012). Drifting along or dropping into homelessness: A class analysis of responses to homelessness. *Antipode*, 44(4), 1209-1226.

Hoeppner, B. B., Schick, M. R., Carlon, H., & Hoeppner, S. S. (2019). Do self-administered positive psychology exercises work in persons in recovery from problematic substance use? An online randomized survey. *Journal of substance abuse treatment*, 99, 16-23.

Hoerger, M., Chapman, B. P., Epstein, R. M., & Duberstein, P. R. (2012). Emotional intelligence: a theoretical framework for individual differences in affective forecasting. *Emotion,* 12(4), 716.

Hogarth, L. (2020). Addiction is driven by excessive goal-directed drug choice under negative affect: translational critique of habit and compulsion theory. *Neuropsychopharmacology*, *45*(5), 720-735.

Holmes, L., Cresswell, K., Williams, S., Parsons, S., Keane, A., Wilson, C., ... & Starling, B. (2019). Innovating public engagement and patient involvement through strategic collaboration and practice. *Research involvement and engagement,* 5, 1-12.

Holzhauer, C. G., Byrne, T., Simmons, M. M., Smelson, D., & Epstein, E. E. (2019). Profiles of clinical need among homeless individuals with dual diagnoses. *Community Mental Health Journal,* 55, 1305-1312.

Hopper, K., Jost, J., Hay, T., Welber, S. and Haugland, G. (1997). Homelessness, Severe Mental Illness, and the Institutional Circuit. *Psychiatric Services.* 48(5) pp.659-664.

Hoolachan, J. (2024). Homelessness. In *Research Handbook on Housing, the Home and Society* (pp. 213-229). Edward Elgar Publishing.

Hopper, E. K., Bassuk, E. L., & Olivet, J. (2010). Shelter from the storm: Trauma-informed care in homelessness services settings. *The open health services and policy journal,* 3(2), 80-100.

Hopper, K., Jost, J., Hay, T., Welber, S., & Haugland, G. (1997). Homelessness, severe mental illness, and the institutional circuit. *Psychiatric Services (Washington, DC)*, *48*(5), 659-665.

Hossain, M. M., Sultana, A., Tasnim, S., Fan, Q., Ma, P., McKyer, E. L. J., & Purohit, N. (2020). Prevalence of mental disorders among people who are homeless: An umbrella review. *International Journal of Social Psychiatry*, 66(6), 528-541.

Hosseinbor, M., Ardekani, S. M. Y., Bakhshani, S., & Bakhshani, S. (2014). Emotional and social loneliness in individuals with and without substance dependence disorder. *International journal of high risk behaviors & addiction*, *3*(3).

Hosseini, M. (2017). The Effectiveness of MBSR intervention in alleviating pain during detoxification among substance abusers: An experimental study. *NeuroQuantology,* 15(4).

Howell, D. C. (2011). Chi-Square Test: Analysis of Contingency Tables.

Hrbáčková, K., Hladík, J., & Vávrová, S. (2012). The relationship between locus of control, metacognition, and academic success. *Procedia-Social and Behavioral Sciences,* 69, 1805-1811.

Hsiao, C., Lee, Y. H., & Chen, H. H. (2016). The effects of internal locus of control on entrepreneurship: the mediating mechanisms of social capital and human capital. *The International Journal of Human Resource Management,* 27(11), 1158-1172.

Hsu, M., Jung, O. S., Kwan, L. T., Jegede, O., Martin, B., Malhotra, A., & Suzuki, J. (2024). Access challenges to opioid use disorder treatment among individuals experiencing homelessness: Voices from the streets. *Journal of substance use and addiction treatment*, *157*, 209216.

https://www.unodc.org/unodc/en/data-and-analysis/world-drug-report-2024.html

Hubley, A. M., Russell, L. B., Palepu, A., & Hwang, S. W. (2014). Subjective quality of life among individuals who are homeless: A review of current knowledge. *Social indicators research*, 115, 509-524.

Hughes, J., Hunter, D., Sheehan, M., Wilkinson, S., & Wrigley, A. (2010). *European textbook on ethics in research.*

Hughes, C., Madoc-Jones, I., Parry, O., & Dubberley, S. (2017). A place to call our own: perspectives on the geographical and social marginalisation of homeless people. *The Journal of Adult Protection*, 19(3), 105-116.

Hunt, D. A., Keefe, J., Whitehead, T., & Littlefield, A. (2020). Understanding cannabis. The *Journal for Nurse Practitioners,* 16(9), 645-649.

Hunt, V., Layton, D., & Prince, S. (2015). Diversity matters. *McKinsey & Company*, 1(1), 15-29.

Husman, J., & Shell, D. F. (2008). Beliefs and perceptions about the future: A measurement of future time perspective. *Learning and individual differences*, 18(2), 166-175.

Hutchinson, M. K., & Holtman, M. C. (2005). Analysis of count data using poisson regression. *Research in nursing & health,* 28(5), 408-418.

Hwang, S. W., Colantonio, A., Chiu, S., Tolomiczenko, G., Kiss, A., Cowan, L., ... & Levinson, W. (2008). The effect of traumatic brain injury on the health of homeless people. *Cmaj,* 179(8), 779-784.

Hwang, S. W., Wilkins, E., Chambers, C., Estrabillo, E., Berends, J., & MacDonald, A. (2011). Chronic pain among homeless persons: characteristics, treatment, and barriers to management. *BMC Family Practice,* 12, 1-9.

Hyman, G. J., Stanley, R., & Burrows, G. D. (1991). The relationship between three multidimensional locus of control scales. *Educational and Psychological Measurement,* 51(2), 403-412.

Hyun, M., Bae, S. H., & Noh, D. (2020). Systematic review and meta-analyses of randomized control trials of the effectiveness of psychosocial interventions for homeless adults. *Journal of Advanced Nursing,* 76(3), 773-786.

Iacono, T., & Murray, V. (2003). Issues of informed consent in conducting medical research involving people with intellectual disability. *Journal of Applied Research in Intellectual Disabilities,* 16(1), 41-51.

Iaquinta, M. S. (2016). A systematic review of the transition from homelessness to finding a home. *Journal of Community Health Nursing*, 33(1), 20-41.

Inanlou, M., Bahmani, B., Farhoudian, A., & Rafiee, F. (2020). Addiction recovery: A systematized review. *Iranian journal of psychiatry*, 15(2), 172.

Incekara-Hafalir, E., & Linardi, S. (2017). Awareness of low self-control: Theory and evidence from a homeless shelter. *Journal of Economic Psychology,* 61, 39-54. Individual-difference Metric'. *Journal of Personality and Social Psychology*. 77:

Ingram, C., Buggy, C., Elabbasy, D., & Perrotta, C. (2024). Homelessness and health-related outcomes in the Republic of Ireland: a systematic review, meta-analysis and evidence map. *Journal of Public Health*, *32*(10), 1855-1876.

Ingram, C., Buggy, C., & Perrotta, C. (2025). Barriers and enablers of addiction recovery amongst people experiencing homelessness in Dublin, Ireland: A proposed conceptual framework adapted from the REC-CAP. *Journal of Substance Use and Addiction Treatment,* 172, 209669.

Ingram, I., Kelly, P. J., Deane, F. P., Baker, A. L., & Dingle, G. A. (2020). Perceptions of loneliness among people accessing treatment for substance use disorders. *Drug and alcohol review*, *39*(5), 484-494.

Ingram, I., Kelly, P. J., Deane, F. P., Baker, A. L., Goh, M. C., Raftery, D. K., & Dingle, G. A. (2020). Loneliness among people with substance use problems: A narrative systematic review. *Drug and Alcohol Review*, *39*(5), 447-483.

Ingram, C., MacNamara, I., Buggy, C., & Perrotta, C. (2023). Priority healthcare needs amongst people experiencing homelessness in Dublin, Ireland: A qualitative

evaluation of community expert experiences and opinions. *Plos one,* 18(12), e0290599.

Institute for Health Metrics and Evaluation. (2024). Alcohol use disorders [Dataset]. In *Global Burden of Disease - Prevalence and Incidence*. Processed by Our World in Data. https://ourworldindata.org/

INVOLVE. What is public involvement in research? INVOLVE 2012 http://www.invo.org.uk/find-out-more/%20what-is-public-involvement-inresearch-2/ Accessed 22 Oct 2024.

Ionescu, T. (2012). Exploring the nature of cognitive flexibility. *New ideas in psychology,* 30(2), 190-200.

Ives, J., Damery, S., & Redwod, S. (2013). PPI, paradoxes and Plato: who's sailing the ship?. *Journal of medical ethics,* 39(3), 181-185.

Jack, H. E., Oller, D., Kelly, J., Magidson, J. F., & Wakeman, S. E. (2018). Addressing substance use disorder in primary care: The role, integration, and impact of recovery coaches. *Substance abuse*, 39(3), 307-314.

Jacobsen, A., de Miranda Azevedo, R., Juty, N., Batista, D., Coles, S., Cornet, R., ... & Schultes, E. (2020). FAIR principles: interpretations and implementation considerations. *Data intelligence,* 2(1-2), 10-29.

Jagtap, S. (2024). Codesign in Low Resource Settings. In *Design and Engineering for Low Resource Settings: A Practical Guide* (pp. 31-45). Cham: Springer International Publishing.

Jahan, N., Gade, N., Zhen-Duan, J., Fukuda, M., Estrada, R., & Alegría, M. (2024). Investigating the role of interpersonal relationships on low-income SUD patients' recovery: a qualitative analysis of various stakeholders in New York state. *Addiction Research & Theory*, *32*(4), 291-298.

Janeiro, I. N., Duarte, A. M., Araújo, A. M., & Gomes, A. I. (2017). Time perspective, approaches to learning, and academic achievement in secondary students. *Learning and Individual Differences*, 55, 61-68.

Jesse, S., Bråthen, G., Ferrara, M., Keindl, M., Ben-Menachem, E., Tanasescu, R., ... & Ludolph, A. C. (2017). Alcohol withdrawal syndrome: mechanisms, manifestations, and management. *Acta Neurologica Scandinavica,* 135(1), 4-16.

Johnsen, S., & Teixeira, L. (2010). Staircases, elevators and cycles of change: 'Housing First' and other housing models for homeless people with complex support needs.

Johnsen, S., Fitzpatrick, S., & Watts, B. (2018). Homelessness and social control: a typology. Housing Studies, 33(7), 1106-1126.

Johnson, G., & Chamberlain, C. (2008). Homelessness and substance abuse: Which comes first?. *Australian Social Work*, *61*(4), 342-356.

Johnson, G., & Chamberlain, C. (2011). Are the homeless mentally ill?. *Australian Journal of Social Issues,* 46(1), 29-48.

Johnson, G., Ribar, D. C., & Zhu, A. (2017). Women's homelessness: international evidence on causes, consequences, coping and policies.

Johnson, G., Scutella, R., Tseng, Y. P., & Wood, G. (2015). Entries and exits from homelessness: a dynamic analysis of the relationship between structural conditions and individual characteristics.

Johnson, M., Cosentino, D., & Fuehrlein, B. (2024). A detox dilemma beyond benzodiazepines; clonidine's quandary in alcohol withdrawal management. *The American Journal on Addictions.*

Johnson, T. P., & Fendrich, M. (2007). Homelessness and drug use: evidence from a community sample. *American Journal of Preventive Medicine*, *32*(6), S211-S218.

Johnson, T. P., & Van de Vijver, F. J. (2003). Social desirability in cross-cultural research. *Cross-cultural survey methods,* 325, 195-204.

Johnson, T. P., Freels, S. A., Parsons, J. A., & Vangeest, J. B. (1997). Substance abuse and homelessness: social selection or social adaptation?. *Addiction*, *92*(4), 437-445.

Jones, J. W., & Wuebker, L. (1985). Development and validation of the safety locus of control scale. *Perceptual and motor skills*, 61(1), 151-161.

Jones, C. M., Noonan, R. K., & Compton, W. M. (2020). Prevalence and correlates of ever having a substance use problem and substance use recovery status among adults in the United States, 2018. *Drug and alcohol dependence*, 214, 108169.

Jones, M. (2021). Patient and public involvement in healthcare: Potentials and challenges of lay expertise and experiential knowledge.

Jones, M., & Pietilä, I. (2020). Personal perspectives on patient and public involvement–stories about becoming and being an expert by experience. *Sociology of Health & Illness,* 42(4), 809-824.

Joy, M., & Jacob, J. G. (2019). Social intelligence and flexible locus of control among college students. *IOSR Journal of Computer Engineering,* 21(2), 79-83.

Joyner, L. M., Wright, J. D., & Devine, J. A. (1996). Reliability and validity of the Addiction Severity Index among homeless substance misusers. *Substance use & misuse,* 31(6), 729-751.

Julien, R. M. (2013). A primer of drug action: A concise nontechnical guide to the actions, uses, and side effects of psychoactive drugs, revised and updated. *Holt Paperbacks.*

Kaduszkiewicz, H., Bochon, B., & Hansmann-Wiest, J. (2017). The medical treatment of homeless people. *Deutsches Ärzteblatt International,* 114(40), 673.

Kaestner, R. (1999). Does Drug Use Cause Poverty?. In *the Economic Analysis of Substance Use and Abuse: An Integration of Econometric and Behavioral Economic Research* (pp. 327-368). University of Chicago Press.

Kamens, S. R. (2019). Extreme states and extreme conditions: On homelessness and the ontico-ontological difference. *Journal of Humanistic Psychology*, 59(5), 697-705.

Kane, S. (2002). HIV, heroin and heterosexual relations. In *Culture, society and sexuality* (pp. 284-304). Routledge.

Kántor, Á., Brózik, P., & Dúll, A. (2019). Psychological research on homelessness: The relation between psychological and external homelessness. *Psychologia Hungarica Caroliensis*, 7(3), 80-112.

Kapilashrami, A., Razavi, D., & Majdzadeh, R. (2023). Enhancing priority-setting decision-making process through use of intersectionality for public participation. *International Journal of Health Policy and Management,* 12.

Karadzhov, D. (2023). "Recovery is fearful to me...": Conceptualizations, concerns and hopes about personal recovery in adults who are chronically homeless. *Social Work in Mental Health*, *21*(3), 285-305.

Karila, L., Megarbane, B., Cottencin, O., & Lejoyeux, M. (2015). Synthetic cathinones: a new public health problem. *Current neuropharmacology,* 13(1), 12-20.

Kaskutas, L. A., Borkman, T. J., Laudet, A., Ritter, L. A., Witbrodt, J., Subbaraman, M. S., ... & Bond, J. (2014). Elements that define recovery: the experiential perspective. *Journal of studies on alcohol and drugs*, 75(6), 999-1010.

Kassel, J. D., Greenstein, J. E., Evatt, D. P., Roesch, L. L., Veilleux, J. C., Wardle, M. C., & Yates, M. C. (2007). Negative affect and addiction. *Stress and addiction*, 171-189.

Kavanagh, M. (2012). The effectiveness of methadone maintenance provision.

Kemp, P. A., Neale, J., & Robertson, M. (2006). Homelessness among problem drug users: prevalence, risk factors and trigger events. *Health & social care in the community*, *14*(4), 319-328.

Kemter, A. J., Gomez, R. J., & Matijczak, A. (2024). Running toward recovery: a sport intervention for individuals experiencing homelessness and substance use disorder. *Journal of Social Work Practice in the Addictions*, 24(1), 24-36.

Kendler, K. S., Neale, M., Kessler, R., Heath, A., & Eaves, L. (1993). A twin study of recent life events and difficulties. *Archives of General Psychiatry*, 50(10), 789-796.

Kennedy, F., Ward, A., Mockler, D., Villani, J., & Broderick, J. (2023). Scoping review on Physical Health Conditions in Irish Travellers (Mincéiri). *BMJ open*, *13*(8), e068876.

Kenny, M., & Binchy, A. (2009). Irish Travellers, identity and the education system. In *Traveller, nomadic and migrant education* (pp. 143-157). Routledge.

Kerman, N., Polillo, A., Bardwell, G., Gran-Ruaz, S., Savage, C., Felteau, C., & Tsemberis, S. (2021). Harm reduction outcomes and practices in housing first: a mixed-methods systematic review. *Drug and alcohol dependence*, *228*, 109052.

Kertesz, S. G. (2021). A new approach to treating alcohol use disorder in people experiencing homelessness. *The Lancet Psychiatry*, *8*(4), 260-261.

Kertesz, S. G., Crouch, K., Milby, J. B., Cusimano, R. E., & Schumacher, J. E. (2009). Housing first for homeless persons with active addiction: are we overreaching?. *The Milbank Quarterly*, *87*(2), 495-534.

Kertesz, S. G., Horton, N. J., Friedmann, P. D., Saitz, R., & Samet, J. H. (2003). Slowing the revolving door: stabilization programs reduce homeless persons' substance use after detoxification. *Journal of Substance Abuse Treatment*, *24*(3), 197-207.

Kessler, F., Cacciola, J., Alterman, A., Faller, S., Souza-Formigoni, M. L., Cruz, M. S., ... & Pechansky, F. (2012). Psychometric properties of the sixth version of the Addiction Severity Index (ASI-6) in Brazil. *Brazilian Journal of Psychiatry,* 34, 24-33.

Kessler, R. C. (2004). The epidemiology of dual diagnosis. *Biological psychiatry*, 56(10), 730-737.

Khan, A., Kurmi, O., Lowrie, R., Khanal, S., & Paudyal, V. (2022). Medicines prescribing for homeless persons: analysis of prescription data from specialist homelessness general practices. *International journal of clinical pharmacy,* 44(3), 717-724.

Khoramdad, M., Vahedian-azimi, A., Karimi, L., Rahimi-Bashar, F., Amini, H., & Sahebkar, A. (2020). Association between passive smoking and cardiovascular disease: A systematic review and meta-analysis. *IUBMB life*, *72*(4), 677-686.

Kiernan, S., Mockler, D., Cheallaigh, C. N., & Broderick, J. (2021). Physical functioning limitations and physical activity of people experiencing homelessness: A scoping review. *HRB Open Research,* 3, 14.

Kilbourne, A. M., Beck, K., Spaeth-Rublee, B., Ramanuj, P., O'Brien, R. W., Tomoyasu, N., & Pincus, H. A. (2018). Measuring and improving the quality of mental health care: a global perspective. *World psychiatry*, *17*(1), 30-38.

Kilian, C., Manthey, J., Carr, S., Hanschmidt, F., Rehm, J., Speerforck, S., & Schomerus, G. (2021). Stigmatization of people with alcohol use disorders: an updated systematic review of population studies. *Alcoholism: Clinical and Experimental Research*, *45*(5), 899-911.

Kim, H. Y. (2014). Analysis of variance (ANOVA) comparing means of more than two groups. *Restorative dentistry & endodontics,* 39(1), 74-77.

Kim, H. Y. (2015). Statistical notes for clinical researchers: post-hoc multiple comparisons. *Restorative dentistry & endodontics,* 40(2), 172-176.

Kim, S., Lee, H., Woo, S., Lee, H., Park, J., Kim, T., ... & Yon, D. K. (2025). Global, regional, and national trends in drug use disorder mortality rates across 73 countries from 1990 to 2021, with projections up to 2040: a global time-series analysis and modelling study. *EClinicalMedicine*, 79.

Kim, T. K. (2015). T test as a parametric statistic. *Korean journal of anesthesiology*, 68(6), 540-546.

Kimbler, K. J., DeWees, M. A., & Harris, A. N. (2017). Characteristics of the old and homeless: identifying distinct service needs. *Aging & mental health*, *21*(2), 190-198.

Kleber, H. D. (2007). Pharmacologic treatments for opioid dependence: detoxification and maintenance options. *Dialogues in clinical neuroscience*, 9(4), 455-470.

Kljajic, J., & Zaafran, A. (2020). Detoxification Strategies. In S. Swidan, & M. Bennett (Eds.), Advanced Therapeutics in Pain Medicine (pp. 359-364). CRC Press.

Koh, K. A., & Montgomery, A. E. (2021). Adverse childhood experiences and homelessness: advances and aspirations. *The Lancet Public Health,* 6(11), e787-e788.

Kohler, R. E., Roncarati, J. S., Aguiar, A., Chatterjee, P., Gaeta, J., Viswanath, K., & Henry, C. (2021). Trauma and cervical cancer screening among women experiencing homelessness: a call for trauma-informed care. *Women's Health*, 17, 17455065211029238.

Koletsi, D., & Pandis, N. (2017). Poisson regression. *American journal of orthodontics and dentofacial orthopedics*, 152(2), 284-285.

Kolocek, M. (2013). The human right to housing in the 27 member states of the European Union. *European Journal of Homelessness*, *7*(1), 135-154.

Koob, G. F., & Volkow, N. D. (2010). Neurocircuitry of addiction. *Neuropsychopharmacology*, *35*(1), 217-238.

Kooij, D. T., Kanfer, R., Betts, M., & Rudolph, C. W. (2018). Future time perspective: A systematic review and meta-analysis. *Journal of Applied Psychology*, 103(8), 867.

Kramer, M. D., Polusny, M. A., Arbisi, P. A., & Krueger, R. F. (2014). Comorbidity of PTSD and SUDs: Toward an etiologic understanding.

Krabbenborg, M. A., Boersma, S. N., van der Veld, W. M., Vollebergh, W. A., & Wolf, J. R. (2017). Self-determination in relation to quality of life in homeless young adults: Direct and indirect effects through psychological distress and social support. *The Journal of Positive Psychology,* 12(2), 130-140.

Kräplin, A., Höfler, M., Pooseh, S., Wolff, M., Krönke, K. M., Goschke, T., ... & Smolka, M. N. (2020). Impulsive decision-making predicts the course of substance-related and addictive disorders. *Psychopharmacology*, *237*, 2709-2724.

Krendl, A. C., & Perry, B. L. (2023). Stigma toward substance dependence: Causes, consequences, and potential interventions. *Psychological Science in the Public Interest*, *24*(2), 90-126.

Krenek, M., & Maisto, S. A. (2013). Life events and treatment outcomes among individuals with substance use disorders: A narrative review. *Clinical psychology review,* 33(3), 470-483.

Kronenberg, L. M., Slager-Visscher, K., Goossens, P. J., van den Brink, W., & van Achterberg, T. (2014). Everyday life consequences of substance use in adult patients with a substance use disorder (SUD) and co-occurring attention deficit/hyperactivity disorder (ADHD) or autism spectrum disorder (ASD): a patient's perspective. *BMC psychiatry*, *14*, 1-9.

Kruger, D. J., Reischl, T., & Zimmerman, M. A. (2008). Time perspective as a mechanism for functional developmental adaptation. *Journal of Social, Evolutionary, and Cultural* Psychology, 2(1), 1.

Kruskal, W. H., & Wallis, W. A. (1952). Use of ranks in one-criterion variance analysis. *Journal of the American statistical Association,* 47(260), 583-621.

Kuruvila, A. (2015). Non-governmental Organisations (NGOs): Issues of terminology and definitions. *Rajagiri Journal of Social Development,* 7(1), 20-29.

Kwako, L. E., & Koob, G. F. (2017). Neuroclinical framework for the role of stress in addiction. *Chronic Stress*, *1*, 2470547017698140.

Lader, M. (2011). Benzodiazepines revisited—will we ever learn? *Addiction*, 106(12), 2086-2109.

LaGory, M., Fitzpatrick, K., & Ritchey, F. (2001). Life chances and choices: Assessing quality of life among the homeless. *Sociological Quarterly*, 42(4), 633-651.

Lake, J., & Turner, M. S. (2017). Urgent need for improved mental health care and a more collaborative model of care. *The Permanente Journal*, *21*.

Lalwani, A. K., Shavitt, S., & Johnson, T. (2006). What is the relation between cultural orientation and socially desirable responding? *Journal of personality and social psychology*, 90(1), 165.

Lam, D., & Mizerski, D. (2005). The effects of locus of control on word-of-mouth communication. *Journal of Marketing Communications,* 11(3), 215-228.

Lancione, M. (2013). How is homelessness. *European Journal of Homelessness*, *8*(2).

Lancione, M., Stefanizzi, A., & Gaboardi, M. (2018). Passive adaptation or active engagement? The challenges of Housing First internationally and in the Italian case. *Housing Studies*, *33*(1), 40-57.

Landau, R. (1995). Locus of control and socioeconomic status: Does internal locus of control reflect real resources and opportunities or personal coping abilities? *Social Science & Medicine,* 41(11), 1499-1505.

Lander, L., Howsare, J., & Byrne, M. (2013). The impact of substance use disorders on families and children: from theory to practice. *Social work in public health*, *28*(3-4), 194-205.

Lang, F. R., & Carstensen, L. L. (2002). Time counts: future time perspective, goals, and social relationships. *Psychology and aging*, 17(1), 125.

Lang, I., King, A., Jenkins, G., Boddy, K., Khan, Z., & Liabo, K. (2022). How common is patient and public involvement (PPI)? Cross-sectional analysis of frequency of PPI reporting in health research papers and associations with methods, funding sources and other factors. *BMJ open*, 12(5), e063356.

Laporte, A., Vandentorren, S., Détrez, M. A., Douay, C., Le Strat, Y., Le Méner, E., ... & Samenta Research Group. (2018). Prevalence of mental disorders and addictions among homeless people in the greater Paris area, France. *International journal of environmental research and public health*, *15*(2), 241.

Larson, M. G. (2008). Analysis of variance. *Circulation*, 117(1), 115-121.

Larson, M. J., Paasche-Orlow, M., Cheng, D. M., Lloyd-Travaglini, C., Saitz, R., & Samet, J. H. (2007). Persistent pain is associated with substance use after detoxification: a prospective cohort analysis. *Addiction,* 102(5), 752-760.

Latkin, C. A., Edwards, C., Davey-Rothwell, M. A., & Tobin, K. E. (2017). The relationship between social desirability bias and self-reports of health, substance use, and social network factors among urban substance users in Baltimore, Maryland. *Addictive behaviors*, 73, 133-136.

Laudet, A. B. (2007). What does recovery mean to you? Lessons from the recovery experience for research and practice. *Journal of substance abuse treatment,* 33(3), 243-256.

Leclair, M. C., Lemieux, A. J., Roy, L., Martin, M. S., Latimer, E. A., & Crocker, A. G. (2020). Pathways to recovery among homeless people with mental illness: Is impulsiveness getting in the way?. *The Canadian Journal of Psychiatry*, 65(7), 473-483.

Ledda, R., Battagliese, G., Attilia, F., Rotondo, C., Pisciotta, F., Gencarelli, S., ... & Attilia, M. L. (2019). Drop-out, relapse and abstinence in a cohort of alcoholic people under detoxification. *Physiology & behavior*, 198, 67-75.

Lee, B. A., Shinn, M., & Culhane, D. P. (2021). Homelessness as a moving target. *The Annals of the American Academy of Political and Social Science*, *693*(1), 8-26.

Leeper Piquero, N., Schoepfer, A., & Langton, L. (2010). Completely out of control or the desire to be in complete control? How low self-control and the desire for control relate to corporate offending. *Crime & Delinquency*, 56(4), 627-647.

Lefcourt, H. M. (2014). Locus of control: Current trends in theory & research. Psychology Press.

Lefcourt, H. M., von Baeyer, C. L., Ware, E. E., & Cox, D. J. (1979). The multidimensional-multiattributional causality scale: The development of a goal specific locus of control scale. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement*, 11(4), 286.

Legate, N., Ryan, R. M., & Weinstein, N. (2012). Is coming out always a “good thing”? Exploring the relations of autonomy support, outness, and wellness for lesbian, gay, and bisexual individuals. *Social Psychological and Personality Science,* 3(2), 145-152.

Leijten, I., & De Bel, K. (2020). Facing financialization in the housing sector: A human right to adequate housing for all. *Netherlands Quarterly of Human Rights*, *38*(2), 94-114.

LeMoult, J., & Gotlib, I. H. (2019). Depression: A cognitive perspective. *Clinical psychology review*, *69*, 51-66.

Lenardson MHS, J. D., Race MS, M. M., & Gale MS, J. A. (2009). Availability, characteristics, and role of detoxification services in rural areas.

Lens, W., Paixão, M. P., Herrera, D., & Grobler, A. (2012). Future time perspective as a motivational variable: Content and extension of future goals affect the quantity and quality of motivation. *Japanese psychological research*, 54(3), 321-333.

Levenson, H. (1973). Multidimensional locus of control in psychiatric patients. *Journal of consulting and clinical psychology*, 41(3), 397.

Leventhal, A. M., Witt, C. F., & Zimmerman, M. (2008). Associations between depression subtypes and substance use disorders. *Psychiatry Research*, 161(1), 43-50.

Levin, Y., Bar-Or, R. L., Forer, R., Vaserman, M., Kor, A., & Lev-Ran, S. (2021). The association between type of trauma, level of exposure and addiction. *Addictive behaviors*, 118, 106889.

Levola, J., Aranko, A., & Pitkänen, T. (2021). Psychosocial difficulties and treatment retention in inpatient detoxification programmes. *Nordic Studies on Alcohol and Drugs*, 38(5), 434-449.

Levy, J. S. (2021). Pretreatment in Action: Interactive Exploration from Homelessness to Housing Stabilization. *Loving Healing Press.*

Levy, N. (Ed.). (2012). *Addiction and self-control: Perspectives from philosophy, psychology, and neuroscience.* Oxford University Press.

Lewer, D., Aldridge, R. W., Menezes, D., Sawyer, C., Zaninotto, P., Dedicoat, M., ... & Story, A. (2019). Health-related quality of life and prevalence of six chronic diseases in homeless and housed people: a cross-sectional study in London and Birmingham, England. BMJ open, 9(4), e025192.

Li, C. R., Liu, Y. Y., Lin, C. J., & Ma, H. J. (2016). Top management team diversity, ambidextrous innovation and the mediating effect of top team decision-making processes. *Industry and Innovation*, 23(3), 260-275.

Liappas, J., Paparrigopoulos, T., Tzavellas, E., & Christodoulou, G. (2002). Impact of alcohol detoxification on anxiety and depressive symptoms. *Drug and alcohol dependence,* 68(2), 215-220.

Lima, V., Hearne, R., & Murphy, M. P. (2023). Housing financialisation and the creation of homelessness in Ireland. *Housing studies*, 38(9), 1695-1718.

Liniauskaitė, A., & Kairys, A. (2009). The Lithuanian version of the Zimbardo time perspective inventory (ZTPI). *Psichologija,* 40, 66-87.

Link, B. G., & Phelan, J. (2014). Stigma power. *Social science & medicine*, *103*, 24-32.

Lippert, A. M., & Lee, B. A. (2015). Stress, coping, and mental health differences among homeless people. *Sociological Inquiry,* 85(3), 343-374.

Lipton, F. R., Siegel, C., Hannigan, A., Samuels, J., & Baker, S. (2000). Tenure in supportive housing for homeless persons with severe mental illness. *Psychiatric Services*, *51*(4), 479-486.

Liu, M., Luong, L., Lachaud, J., Edalati, H., Reeves, A., & Hwang, S. W. (2021). Adverse childhood experiences and related outcomes among adults experiencing homelessness: a systematic review and meta-analysis. *The Lancet Public Health,* 6(11), e836-e847.

Liu, Z., Lu, K., Hao, N., & Wang, Y. (2023). Cognitive reappraisal and expressive suppression evoke distinct neural connections during interpersonal emotion regulation. *Journal of Neuroscience,* 43(49), 8456-8471.

Ljungvall, H., Persson, A., Åsenlöf, P., Heilig, M., & Ekselius, L. (2020). Reliability of the Addiction Severity Index self-report form (ASI-SR): a self-administered questionnaire

based on the Addiction Severity Index composite score domains. *Nordic Journal of Psychiatry,* 74(1), 9-15.

Lloyd, A., Lucas, L., Agunbiade, A., Saleh, R., Fearon, P., & Viding, E. (2023). No decision about me, without me: collaborating with children and young people in mental health research.

Lobmaier, P., Gossop, M., Waal, H., & Bramness, J. (2010). The pharmacological treatment of opioid addiction—a clinical perspective. *European journal of clinical pharmacology*, 66, 537-545.

Locock, L., & Boaz, A., (2019). Drawing straight lines along blurred boundaries: qualitative research, patient and public involvement in medical research, co-production and co-design. *Evidence & Policy,* 15(3), 409-421.

Lönnqvist, J. (2010). Cognition and mental ill-health. *European psychiatry*, 25(5), 297-299.

Losada Durán, R., Almeida, R., & Orihuela, T. (2024). A moral compass for co-creation challenges involving experts by experience in research and innovation projects in mental health and wellbeing in later life. In K. Niedderer, G. Ludden, T. Denning, & V. Holthoff-Detto (Eds.) *Design for Dementia, Mental Health and Wellbeing* (pp. 24-36). Routledge.

Lui, P. P., & Rollock, D. (2020). Addictive personality and substance abuse disorders (sud). *The Wiley Encyclopedia of Personality and Individual Differences: Clinical, Applied, and Cross-Cultural Research*, 81-87.

Lusk, S. L., & Veale, F. R. (2018). Increasing successful vocational rehabilitation outcomes for individuals with substance use disorders. *Journal of Applied Rehabilitation Counseling,* 49(1), 4-10.

Lydersen, S., Pradhan, V., Senchaudhuri, P., & Laake, P. (2007). Choice of test for association in small sample unordered r× c tables. *Statistics in medicine*, 26(23), 4328-4343.

Lynch, T., Condron, I., Lyons, S., & Carew, A. M. (2024). HRB Bulletin National Drug Treatment Reporting System: 2023 Drug Treatment Demand.

Lynch, T., Tierney, P., & Lyons, S., (2025). HRB Bulletin National Drug Treatment Reporting System: 2024 Drug Treatment Demand.

Lyon-Callo, V. (2000). Medicalizing homelessness: the production of self-blame and self-governing within homeless shelters. *Medical anthropology quarterly*, *14*(3), 328-345.

Maccarthy, J., Guerin, S., Wilson, A. G., & Dorris, E. R. (2019). Facilitating public and patient involvement in basic and preclinical health research. *PLoS One,* 14(5), e0216600.

Macdonald, C., Macpherson, G., Leppan, O., Tran, L. T., Cunningham, E. B., Hajarizadeh, B., ... & Degenhardt, L. (2024). Interventions to reduce harms related to drug use among people who experience incarceration: systematic review and meta-analysis. *The Lancet Public Health,* 9(9), e684-e699.

MacFarland, T. W., Yates, J. M. (2016). *Mann–whitney u test*. Introduction to nonparametric statistics for the biological sciences using R, 103-132.

MacFarland, T. W., Yates, J. M., MacFarland, T. W., & Yates, J. M. (2016). Kruskal–Wallis H-test for oneway analysis of variance (ANOVA) by ranks. *Introduction to nonparametric statistics for the biological sciences using R*, 177-211.

Macia, K. S., Moschetto, J. M., Wickham, R. E., Brown, L. M., & Waelde, L. C. (2020). Cumulative trauma exposure and chronic homelessness among veterans: The roles of

responses to intrusions and emotion regulation. *Journal of Traumatic Stress,* 33(6), 1017-1028.

Mackie, C. J., Conrod, P., & Brady, K. (2012). Depression and substance use. *Drug abuse and addiction in medical illness: Causes, consequences and treatment*, 275-283.

Macnaughton, E. L., Goering, P. N., & Nelson, G. B. (2012). Exploring the value of mixed methods within the At Home/Chez Soi Housing First project: A strategy to evaluate the implementation of a complex population health intervention for people with mental illness who have been homeless. *Canadian Journal of Public Health*, *103*, S57-S62.

Maddock, A., Hevey, D., & Eidenmueller, K. (2017). Mindfulness training as a clinical intervention with homeless adults: A pilot study. *International Journal of Mental Health and Addiction,* 15, 529-544.

Madrid, L. B., Morel, S., Ndiaye, K., Mezaache, S., Castro, D. R., Mora, M., ... & Roux, P. (2018). Factors associated with perceived loss of libido in people who inject opioids: results from a community-based survey in France. *Drug and alcohol dependence,* 190, 121-127.

Maglio, S. J., & Trope, Y. (2019). Temporal orientation. *Current opinion in psychology*, 26, 62-66.

Maguire, N. (2017). Towards an integrative theory of homelessness and rough sleeping. In *Social Determinants of Health* (pp. 227-240). Policy Press.

Maguire, N. (2022). The role of debt in the maintenance of homelessness. *Frontiers in Public* Health, 9, 810064.

Magura, S., & Marshall, T. (2020). The effectiveness of interventions intended to improve employment outcomes for persons with substance use disorder: an updated systematic review. *Substance use & misuse*, 55(13), 2230-2236.

Mahlangu, T., & Kgadima, P. (2021). Social exclusion and marginalisation of homeless people: a clarion social work call for the spirit of ubuntu to reign. *Social Work*, 57(4), 455-471.

Mainerova, B., Prasko, J., Latalova, K., Axmann, K., Cerna, M., Horacek, R., & Bradacova, R. (2015). Alcohol withdrawal delirium-diagnosis, course and treatment. *Biomedical Papers of the Medical Faculty of Palacky University in Olomouc,* 159(1).

Major, B., & O'Brien, L. T. (2005). The social psychology of stigma. *Annu. Rev. Psychol.*, *56*, 393-421.

Malhotra, R., & Suri, S. (2017). Locus of control and well-being among college students. *Indian Journal of Positive Psychology*, 8(2), 231-236.

Malik, J. (2021). *Intersectional experiences of traditionally marginalised groups* [Doctoral dissertation, University of Glasgow].

Man, M., Abrams, T., & McLeod, R. (2019). Implementing and evaluating co-design. *New Philanthropy Capital: London.*

Manning, R. M., & Greenwood, R. M. (2018). Microsystems of recovery in homeless services: The influence of service provider values on service users' recovery experiences. *American Journal of Community Psychology,* 61(1-2), 88-103.

Manning, R. M., & Greenwood, R. M. (2019). Recovery in homelessness: The influence of choice and mastery on physical health, psychiatric symptoms, alcohol and drug use, and community integration. *Psychiatric rehabilitation journal*, 42(2), 147.

Mannix, E., & Neale, M. A. (2005). What differences make a difference? The promise and reality of diverse teams in organizations. *Psychological science in the public interest,* 6(2), 31-55.

Manthey, J., Hassan, S. A., Carr, S., Kilian, C., Kuitunen-Paul, S., & Rehm, J. (2021). Estimating the economic consequences of substance use and substance use disorders. Expert Review of Pharmacoeconomics & Outcomes Research, 21(5), 869-876.

Mardani, M., Alipour, F., Rafiey, H., Fallahi-Khoshknab, M., & Arshi, M. (2023). Challenges in addiction-affected families: a systematic review of qualitative studies. *BMC psychiatry*, 23(1), 439.

Marshall, C. A., Easton, C., Phillips, B., Boland, L., Isard, R., Holmes, J., ... & Oudshoorn, A. (2024). Experiences of transitioning from homelessness: A systematic review and meta-aggregation of qualitative studies conducted in middle to high income countries. *Journal of Social Distress and Homelessness*, 33(1), 28-49.

Maremmani, A. G. I., Bacciardi, S., Gehring, N. D., Cambioli, L., Schütz, C., Akiskal, H. S., ... & Krausz, M. (2015). The impact of mood symptomatology on pattern of substance use among homeless. *Journal of affective disorders*, 176, 164-170.

Marks, D. F. (2022). Psychological homeostasis and protective behaviours in the Covid-19 pandemic. *Journal of Health Psychology,* 27(6), 1275-1287.

Marmorstein, N. R. (2011). Associations between subtypes of major depressive episodes and substance use disorders. *Psychiatry Research*, 186(2-3), 248-253.

Marroquin, B., Nolen-Hoeksema, S., & Miranda, R. (2013). Escaping the future: Affective forecasting in escapist fantasy and attempted suicide. *Journal of Social and Clinical Psychology,* 32(4), 446-463.

Marsh, H. W., & Richards, G. E. (1986). The Rotter locus of control scale: The comparison of alternative response formats and implications for reliability, validity, and dimensionality. *Journal of Research in Personality,* 20(4), 509-528.

Martens, W. H. (2001). A review of physical and mental health in homeless persons. *Public health reviews,* 29(1), 13-33.

Martin, J. (1991). The trauma of homelessness. *International Journal of Mental Health,* 20(2), 17-27.

Martin, N. J., Holroyd, K. A., & Penzien, D. B. (1990). The headache-specific locus of control scale: Adaptation to recurrent headaches. *Headache: the journal of head and face pain,* 30(11), 729-734.

Martins-da-Silva, A. S., da Silva Moura, W., Marco, C., Galvão, L., Balliari, E., Cavallo, I., ... & Castaldelli-Maia, J. M. (2023). Comparing the Addiction Severity Index (ASI) and Measurements in the Addictions for Triage and Evaluation (MATE). *International Review of Psychiatry,* 35(5-6), 506-512.

Martoni, M., Fabbri, M., & Russo, P. M. (2023). The Italian validation of the Zimbardo time perspective inventory and its comparison with three time perspective inventories. *International Journal of Environmental Research and Public Health*, 20(3), 2590.

Maté, G. (2012). Addiction: Childhood trauma, stress and the biology of addiction. *Journal of Restorative Medicine*, 1(1), 56-63.

Mateu-Gelabert, P., Harris, S., Berbesi, D., Segura Cardona, Á. M., Montoya Vélez, L. P., Mejía Motta, I. E., ... & Friedman, S. R. (2016). Heroin use and injection risk behaviors in Colombia: implications for HIV/AIDS prevention. *Substance use & misuse,* 51(2), 230-240.

Mathews, A., & MacLeod, C. (2005). Cognitive vulnerability to emotional disorders. *Annu. Rev. Clin. Psychol.,* 1(1), 167-195.

Maust, D. T., Petzold, K., Strominger, J., Kim, H. M., & Bohnert, A. S. (2023). Benzodiazepine Discontinuation and Mortality Among Patients Receiving Long-Term Benzodiazepine Therapy. *JAMA network open,* 6(12), e2348557-e2348557.

Maye, J. E., Van Patten, R., Lykins, H. C., Vella, L., Mahmood, Z., Clark, J. M., & Twamley, E. W. (2023). Memory, fluid reasoning, and functional capacity in adults experiencing homelessness. *The Clinical Neuropsychologist,* 37(7), 1441-1454.

Mayock, P., & Butler, S. (2021). Pathways to 'recovery'and social reintegration: The experiences of long-term clients of methadone maintenance treatment in an Irish drug treatment setting. *International Journal of Drug Policy*, 90, 103092.

McCabe, S. (2000). Rapid detox: understanding new treatment approaches for the addicted patient. *Perspectives in Psychiatric Care*, 36(4), 113-120.

McCabe, E., & O'Connor, J. (2016). Home remembered, relived and revised: a qualitative study exploring the experiences of home for homeless persons in supported accommodation. *European Journal of Psychotherapy & Counselling,* 18(3), 290-303.

McCarty, D., Caspi, Y., Panas, L., Krakow, M., & Mulligan, D. H. (2000). Detoxification centers: who's in the revolving door?. *The Journal of Behavioral Health Services & Research,* 27, 245-256.

McCollister, K. E., & French, M. T. (2003). The relative contribution of outcome domains in the total economic benefit of addiction interventions: a review of first findings. *Addiction*, 98(12), 1647-1659.

McConnell, P. A., & Froeliger, B. (2015). Mindfulness, mechanisms and meaning: perspectives from the cognitive neuroscience of addiction. *Psychological inquiry,* 26(4), 349-357.

McElwee, N. C., Jackson, A., & Charles, G. (2003). Towards a sociological understanding of Irish Travellers: Introducing a people. *Irish Journal of Applied Social Studies*, *4*(1), 11.

McGarry, A. (2024). Political Voice: Protest, Democracy, and Marginalised Groups. *Oxford University Press.*

McGorrian, C., Frazer, K., Daly, L., Moore, R., Turner, J., Sweeney, M. R., Staines, A., Fitzpatrick, P., Kelleher, C. C. (2012). The health care experiences of Travellers compared to the general population: the All-Ireland Traveller Health Study. *Journal of health services research & policy*, *17*(3), 173-180.

McHugh, M. L. (2013). The chi-square test of independence. *Biochemia medica*, 23(2), 143-149.

McInerney, D. M. (2004). A discussion of future time perspective. E*ducational psychology review,* 16, 141-151.

McInnes, D. K., Petrakis, B. A., Gifford, A. L., Rao, S. R., Houston, T. K., Asch, S. M., & O'Toole, T. P. (2014). Retaining homeless veterans in outpatient care: a pilot study of mobile phone text message appointment reminders. *American journal of public health,* 104(S4), S588-S594.

McKay, D., Sookman, D., Neziroglu, F., Wilhelm, S., Stein, D. J., Kyrios, M., ... & Veale, D. (2015). Efficacy of cognitive-behavioral therapy for obsessive–compulsive disorder. *Psychiatry research*, *225*(3), 236-246.

McKeon, A., Frye, M. A., & Delanty, N. (2008). The alcohol withdrawal syndrome. *Journal of Neurology, Neurosurgery & Psychiatry,* 79(8), 854-862.

McKinney, C. M., Caetano, R., Rodriguez, L. A., & Okoro, N. (2010). Does alcohol involvement increase the severity of intimate partner violence?. *Alcoholism: clinical and experimental research*, *34*(4), 655-658.

McKnight, P. E., & Najab, J. (2010). *Mann-Whitney U Test*. The Corsini encyclopedia of psychology, 1-1.

McLaughlin, H. (2009). What's in a name:'client','patient','customer','consumer','expert by experience','service user'—what's next?. *British Journal of Social Work,* 39(6), 1101-1117.

McLaughlin, M. F., Li, R., Carrero, N. D., Bain, P. A., & Chatterjee, A. (2021). Opioid use disorder treatment for people experiencing homelessness: A scoping review. *Drug and alcohol dependence,* 224, 108717.

McLellan, A. T., Kushner, H., Metzger, D., Peters, R., Smith, I., Grissom, G., ... & Argeriou, M. (1992). The fifth edition of the Addiction Severity Index. *Journal of substance abuse treatment,* 9(3), 199-213.

McLellan, A. T., Luborsky, L., O'Brien, C. P., & Woody, G. E. (1979). An improved evaluation instrument for substance abuse patients: the Addiction Severity Index. *Problems of drug dependence,* 142.

McLellan, A.T., Cacciola, J. C., Alterman, A. I., Rikoon, S. H., & Carise, D. (2006). The Addiction Severity Index at 25: origins, contributions and transitions. *American Journal on Addictions,* 15(2), 113-124.

McNaughton Nicholls, C., & Atherton, I. (2011). Housing First: Considering components for successful resettlement of homeless people with multiple needs.

McNaughton, C. C. (2008). Transitions through homelessness, substance use, and the effect of material marginalization and psychological trauma. *Drugs: education, prevention and policy*, *15*(2), 177-188.

McQuistion, H. L., Gorroochurn, P., Hsu, E., & Caton, C. L. (2014). Risk factors associated with recurrent homelessness after a first homeless episode. *Community Mental Health Journal,* 50, 505-513.

McTeague, L. M., Goodkind, M. S., & Etkin, A. (2016). Transdiagnostic impairment of cognitive control in mental illness. *Journal of psychiatric research*, 83, 37-46.

McVicar, D., Moschion, J., & Van Ours, J. C. (2015). From substance use to homelessness or vice versa? *Social Science & Medicine*, *136*, 89-98.

Meanwell, E. (2012). Experiencing homelessness: A review of recent literature. *Sociology Compass,* 6(1), 72-85.

Meers, J. (2023). ‘Home’as an essentially contested concept and why this matters. *Housing Studies*, *38*(4), 597-614.

Melugin, P. R., Nolan, S. O., & Siciliano, C. A. (2021). Bidirectional causality between addiction and cognitive deficits. *International review of neurobiology*, *157*, 371-407.

Mercier, C., & Picard, S. (2011). Intellectual disability and homelessness. *Journal of Intellectual Disability Research*, 55(4), 441-449.

Meredith, M., & Kruschke, J. (2021). Bayesian Estimation Supersedes the t-test. Bayesian Estimation Supersedes the t-test.

Mergler, M., Driessen, M., Havemann-Reinecke, U., Wedekind, D., Lüdecke, C., Ohlmeier, M., ... & Studygroup, T. R. A. U. M. A. B. (2018). Differential relationships of PTSD and childhood trauma with the course of substance use disorders. *Journal of substance abuse treatment,* 93, 57-63.

Mericle, A. A., Slaymaker, V., Gliske, K., Ngo, Q., & Subbaraman, M. S. (2022). The role of recovery housing during outpatient substance use treatment. *Journal of substance abuse treatment,* 133, 108638.

Merikangas, K. R., & McClair, V. L. (2012). Epidemiology of substance use disorders. *Human genetics*, *131*, 779-789.

Mettke-Hofmann, C. (2014). Cognitive ecology: ecological factors, life-styles, and cognition. Wiley Interdisciplinary Reviews: *Cognitive Science*, 5(3), 345-360.

Meyer, S. (2016). Examining women's agency in managing intimate partner violence and the related risk of homelessness: The role of harm minimisation. *Global public health*, *11*(1-2), 198-210.

Meyer, J. M. (2025). How antipsychotics work in schizophrenia: a primer on mechanisms. CNS spectrums, 30(1), e6.

Mick, D. G. (1996). Are studies of dark side variables confounded by socially desirable responding? The case of materialism. *Journal of consumer research*, 23(2), 106-119.

Mikkola, M. (2008). Housing as a human right in Europe. *European Journal of Social Security*, *10*(3), 249-294.

Milaney, K., Williams, N., Lockerbie, S. L., Dutton, D. J., & Hyshka, E. (2020). Recognizing and responding to women experiencing homelessness with gendered and trauma-informed care. *BMC Public Health*, 20, 1-6.

Milby, J. B., Wallace, D., Ward, C. L., Schumacher, J. E., & Michael, M. (2005). Towards a more sensitive assessment of homelessness: the Homelessness Severity Scale. *Journal of Social Distress and the Homeless,* 14(3-4), 151-169.

Miler, J., Carver, H., Masterton, W., Parkes, T., Jones, L., Maden, M., & Sumnall, H. (2021). Evidence review of drug treatment services for people who are homeless and use drugs.

Milford, J. L. (2007). *Lifetime trauma and associated mental health symptoms in homeless women: Impulsivity as a feature of posttraumatic stress disorder and addiction*. [Doctoral dissertation, TheUniversity of New Mexico].

Millar, S. (2023). New estimates of problematic opioid use in Ireland, 2015–2019. *Drugnet* Ireland, 1-3.

Miller, J. P., O'Reilly, G. M., Mackelprang, J. L., & Mitra, B. (2020). Trauma in adults experiencing homelessness. *Injury,* 51(4), 897-905.

Minion, L., & Banerjee, A. (2024). "I can feel the money going out of the window": How high energy prices evoke negative emotions in people with previous experience of homelessness. *Energy Research & Social Science,* 108, 103387.

Miranda, R., Wheeler, A., Chapman, J. E., Ortin-Peralta, A., Mañaná, J., Rosario-Williams, B., & Andersen, S. (2023). Future-oriented repetitive thought, depressive symptoms, and suicide ideation severity: Role of future-event fluency and depressive predictive certainty. *Journal of affective disorders,* 335, 401-409.

Miranda, R., & Mennin, D. S. (2007). Depression, generalized anxiety disorder, and certainty in pessimistic predictions about the future. *Cognitive therapy and research,* 31, 71-82.

Miserez, B., Ayrton, O., & Ramsey, J. (2014). Analysis of purity and cutting agents in street mephedrone samples from South Wales. *Forensic Toxicology,* 32, 305-310.

Mishra, P., Pandey, C. M., Singh, U., Gupta, A., Sahu, C., & Keshri, A. (2019). Descriptive statistics and normality tests for statistical data. *Annals of cardiac anaesthesia*, 22(1), 67-72.

Misouridou, E. (2016). Trauma and addiction: Implications for practice. *Rostrum of Asclepius/Vima Tou Asklipiou,* 15(3).

Mitchell, D. (2020). *Mean streets: Homelessness, public space, and the limits of capital* (Vol. 47). University of Georgia Press.

Moczygemba, L. R., Cox, L. S., Marks, S. A., Robinson, M. A., Goode, J. V. R., & Jafari, N. (2017). Homeless patients' perceptions about using cell phones to manage medications and attend appointments. *International Journal of Pharmacy Practice,* 25(3), 220-230.

Moe, F. D. (2023). Some psychological and social factors in relapse after long-term abstinence in substance use disorder.

Molander, O., Bjureberg, J., Sahlin, H., Beijer, U., Hellner, C., & Ljótsson, B. (2023). Integrated cognitive behavioral treatment for substance use and depressive symptoms: A homeless case series and feasibility study. *Pilot and Feasibility Studies,* 9(1), 76.

Moledina, A., Magwood, O., Agbata, E., Hung, J. H., Saad, A., Thavorn, K., ... & Pottie, K. (2021). A comprehensive review of prioritised interventions to improve the health and wellbeing of persons with lived experience of homelessness. *Campbell Systematic Reviews*, *17*(2), e1154.

Moll, S., Wyndham-West, M., Mulvale, G., Park, S., Buettgen, A., Phoenix, M., ... & Bruce, E. (2020). Are you really doing 'codesign'? Critical reflections when working with vulnerable populations. *BMJ open,* 10(11), e038339.

Moltrecht, B., Patalay, P., Bear, H. A., Deighton, J., & Edbrooke-Childs, J. (2022). A transdiagnostic, emotion regulation app (Eda) for children: design, development, and lessons learned. *JMIR Formative Research*, 6(1), e28300.

Monsour, M., Lee, J. Y., & Borlongan, C. V. (2023). An understated comorbidity: the impact of homelessness on traumatic brain injury. *Neurotherapeutics,* 20(6), 1446-1456.

Monte, R., Rabunal, R., Casariego, E., López-Agreda, H., Mateos, A., & Pértega, S. (2010). Analysis of the factors determining survival of alcoholic withdrawal syndrome patients in a general hospital. *Alcohol & Alcoholism,* 45(2), 151-158.

Moon, S. J. E., & Lee, H. (2020, July). Relapse to substance use: A concept analysis. In *Nursing forum* (Vol. 55, No. 3, pp. 523-530).

Moore, G. (2018). The pharmacology of addiction. *Parrhesia* (Parkville, Vic.), (29).

Moore, G. J. (2006). The Longitudinal Effect of Self-Monitoring and Locus of Control on Social Network Position in Friendship Networks.

Moore, K. E., Oberleitner, L. M., Zonana, H. V., Buchanan, A. W., Pittman, B. P., Verplaetse, T. L., ... & McKee, S. A. (2019). Psychiatric disorders and crime in the US population: results from the National Epidemiologic Survey on Alcohol and Related Conditions Wave III. *The Journal of clinical psychiatry*, *80*(2), 15899.

Moran, L., Keenan, E., & Elmusharaf, K. (2018). Barriers to progressing through a methadone maintenance treatment programme: perspectives of the clients in the Mid-West of Ireland's drug and alcohol services. *BMC health services research*, 18, 1-15.

Morgan, A. C., LaBerge, N., Larremore, D. B., Galesic, M., Brand, J. E., & Clauset, A. (2022). Socioeconomic roots of academic faculty. *Nature human behaviour*, 6(12), 1625-1633.

Morgenstern, J., Naqvi, N. H., Debellis, R., & Breiter, H. C. (2013). The contributions of cognitive neuroscience and neuroimaging to understanding mechanisms of behavior change in addiction. *Psychology of Addictive Behaviors,* 27(2), 336.

Morote, R., Las Hayas, C., Izco-Basurko, I., Anyan, F., Fullaondo, A., Donisi, V., ... & Hjemdal, O. (2022). Co-creation and regional adaptation of a resilience-based universal whole-school program in five European regions. *European Educational Research Journal*, 21(1), 138-164.

Morton, M. H., Dworsky, A., Matjasko, J. L., Curry, S. R., Schlueter, D., Chávez, R., & Farrell, A. F. (2018). Prevalence and correlates of youth homelessness in the United States. *Journal of Adolescent Health*, *62*(1), 14-21.

Moss, K., & Singh, P. (2015). *Women rough sleepers in Europe: Homelessness and victims of domestic abuse*. Policy Press.

Moulding, R., & Kyrios, M. (2007). Desire for control, sense of control and obsessive-compulsive symptoms. *Cognitive therapy and research*, 31, 759-772.

Moustafa, A. (2020). *Cognitive, clinical, and neural aspects of drug addiction*. Academic Press.

Moxley, V. B., Hoj, T. H., & Novilla, M. L. B. (2020). Predicting homelessness among individuals diagnosed with substance use disorders using local treatment records. *Addictive Behaviors*, *102*, 106160.

Mullen, L., Barry, J., Long, J., Keenan, E., Mulholland, D., Grogan, L., & Delargy, I. (2012). A national study of the retention of Irish opiate users in methadone substitution treatment. *The American journal of drug and alcohol abuse,* 38(6), 551-558.

Munoz, R. T., Brady, S., & Brown, V. (2017). The psychology of resilience: A model of the relationship of locus of control to hope among survivors of intimate partner violence. *Traumatology*, 23(1), 102.

Munthe-Kaas, H. M., Berg, R. C., & Blaasvær, N. (2018). Effectiveness of interventions to reduce homelessness: a systematic review and meta-analysis. *Campbell Systematic Reviews*, *14*(1), 1-281.

Mustanski, B., & Liu, R. T. (2013). A longitudinal study of predictors of suicide attempts among lesbian, gay, bisexual, and transgender youth. *Archives of sexual behavior*, 42, 437-448.

Murphy, D. A., Hser, Y. I., Huang, D., Brecht, M. L., & Herbeck, D. M. (2010). Self-report of longitudinal substance use: a comparison of the UCLA Natural History Interview and the Addiction Severity Index. *Journal of drug issues,* 40(2), 495-515.

Murthy, P., & Chand, P. (2012). Treatment of dual diagnosis disorders. *Current Opinion in Psychiatry,* 25(3), 194-200.

Murthy, V. E., Stapleton, A., & McHugh, L. (2021). Self and rules in a sample of adults experiencing homelessness: Relationships to shame, well-being, and psychological inflexibility. *Journal of Contextual Behavioral Science*, 21, 88-97.

Mutter, R., & Ali, M. M. (2019). Factors associated with completion of alcohol detoxification in residential settings. *Journal of substance abuse treatment*, 98, 53-58.

Myers, H. F., Wyatt, G. E., Ullman, J. B., Loeb, T. B., Chin, D., Prause, N., ... & Liu, H. (2015). Cumulative burden of lifetime adversities: Trauma and mental health in low-SES African Americans and Latino/as. Psychological Trauma: Theory, Research, Practice, and Policy, 7(3), 243.

Najavits, L. M., Hyman, S. M., Ruglass, L. M., Hien, D. A., & Read, J. P. (2017). *Substance use disorder and trauma.*

Najt, P., Fusar-Poli, P., & Brambilla, P. (2011). Co-occurring mental and substance abuse disorders: a review on the potential predictors and clinical outcomes. *Psychiatry research,* 186(2-3), 159-164.

Nardini, B. (2023). Investigating Homelessness And Social Cognition [Doctoral dissertation, University of East London].

Nardo, T., Batchelor, J., Berry, J., Francis, H., Jafar, D., & Borchard, T. (2022). Cognitive remediation as an adjunct treatment for substance use disorders: a systematic review. *Neuropsychology Review,* 32(1), 161-191.

National Institute for Health and Care Excellence. (2022). *Social Work with Adults Experiencing Complex Needs (NG216).*
https://www.ncbi.nlm.nih.gov/books/NBK588598/pdf/Bookshelf_NBK588598.pdf

Nazroo, J., Zilanawala, A., Chen, M., Bécares, L., Davis-Kean, P., Jackson, J. S., ... & Sacker, A. (2018). Socioemotional wellbeing of mixed race/ethnicity children in the UK and US: Patterns and mechanisms. *SSM-population health,* 5, 147-159.

Neale, J., & Stevenson, C. (2015). Social and recovery capital amongst homeless hostel residents who use drugs and alcohol. *International Journal of Drug Policy*, *26*(5), 475-483.

Neighbors, C., Tomkins, M. M., Riggs, J. L., Angosta, J., & Weinstein, A. P. (2019). Cognitive factors and addiction. *Current opinion in psychology*, *30*, 128-133.

Newbold, K. B. (2010). Linking immigrant settlement, health, housing, and homelessness in Canada. *Canadian Issues*, 28.

Ng, T. W., & Feldman, D. C. (2011). Locus of control and organizational embeddedness. *Journal of Occupational and Organizational Psychology*, 84(1), 173-190.

Ng, T. W., Sorensen, K. L., & Eby, L. T. (2006). Locus of control at work: a meta-analysis. Journal of Organizational Behavior: *The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 27(8), 1057-1087.

Nguyen, A. B., Grimes, B., Neuhaus, J., & Pomerantz, J. H. (2019). A cross-sectional study of the association between homelessness and facial fractures. Plastic and Reconstructive Surgery–Global Open, 7(6), e2254.

Nicholls, M. J., & Urada, L. A. (2022). Homelessness and polysubstance use: A qualitative study on recovery and treatment access solutions around an urban library in Southern California, USA. *Health & social care in the community,* 30(1), e175-e183.

Nichols, M. (2016). The great escape: Welcome to the world of gender fluidity. *Psychotherapy Networker,* 40(2), 20-27.

Nikmanesh, Z., Baluchi, M. H., & Motlagh, A. A. P. (2017). The role of self-efficacy beliefs and social support on prediction of addiction relapse. *International Journal of High Risk Behaviors and Addiction,* 6(1).

Nikmanesh, Z., Kazemi, Y., & Khosravy, M. (2014). Study role of different dimensions of emotional self-regulation on addiction potential. *Journal of family & reproductive* health, 8(2), 69.

Nikoo, N., Motamed, M., Nikoo, M. A., Strehlau, V., Neilson, E., Saddicha, S., & Krausz, M. (2014). Chronic physical health conditions among homeless. *Journal of Health Disparities Research and Practice,* 8(1), 5.

Nilsson, S., Nordentoft, M., & Hjorthøj, C. (2020). T126. Psychiatric predictors for becoming homeless and exiting homelessness: a systematic review and meta-analysis. *Schizophrenia Bulletin,* 46(Suppl 1), S278-S278.

Nilsson, S. F., Laursen, T. M., Erlangsen, A., Hawton, K., Nordentoft, M., & Fazel, S. (2025). Homelessness, psychiatric disorders, and risks of suicide and self-harm: a population-based cohort study. *The Lancet Public Health,* 10(7), e559-e567.

Nishio, A., Horita, R., Sado, T., Mizutani, S., Watanabe, T., Uehara, R., & Yamamoto, M. (2017). Causes of homelessness prevalence: Relationship between homelessness and disability. *Psychiatry and Clinical Neurosciences*, 71(3), 180-188.

Nishio, A., Yamamoto, M., Ueki, H., Watanabe, T., Matsuura, K., Tamura, O., ... & Shioiri, T. (2015). Prevalence of mental illness, intellectual disability, and developmental disability among homeless people in Nagoya, Japan: A case series study. *Psychiatry and Clinical Neurosciences*, 69(9), 534-542.

Noll, E., & Watkins, R. (2003). The impact of homelessness on children's literacy experiences. *The Reading Teacher,* 57(4), 362-371.

Nolte-Troha, C., Roser, P., Henkel, D., Scherbaum, N., Koller, G., & Franke, A. G. (2023, April). Unemployment and substance use: an updated review of studies from North America and Europe. In *Healthcare* (Vol. 11, No. 8, p. 1182). MDPI.

Norburn, L., & Thomas, L. (2021). Expertise, experience, and excellence. Twenty years of patient involvement in health technology assessment at NICE: an evolving story. *International Journal of Technology Assessment in Health Care,* 37(1), e15.

Norman, S. B., Tate, S. R., Anderson, K. G., & Brown, S. A. (2007). Do trauma history and PTSD symptoms influence addiction relapse context?. *Drug and alcohol dependence,* 90(1), 89-96.

North, C. S., Eyrich-Garg, K. M., Pollio, D. E., & Thirthalli, J. (2010). A prospective study of substance use and housing stability in a homeless population. *Social psychiatry and psychiatric epidemiology,* 45(11), 1055-1062.

Noor, J., Bezgrebelna, M., Kerman, N., Farooq, M., Green, S., Hajat, S., ... & Kidd, S. A. (2025). Heat-Related Health Risks for People Experiencing Homelessness: A Rapid Review. *Journal of Urban Health,* 1-27.

Nowakowska, I., & Jelonkiewicz, I. (2024). The mediational role of future and past time perspectives in the relationship between negative affectivity and sense of coherence. *Psychological Reports*, 127(4), 1864-1885.

Nowicki, S., & Duke, M. P. (2016). Foundations of locus of control. Perceived control: Theory, research, and practice in the first 50 years, 147-170.

Nowicki, S., Ellis, G., Iles-Caven, Y., Gregory, S., & Golding, J. (2018). Events associated with stability and change in adult locus of control orientation over a six-year period. *Personality and individual differences,* 126, 85-92.

Nutt, D., Hayes, A., Fonville, L., Zafar, R., Palmer, E. O., Paterson, L., & Lingford-Hughes, A. (2021). Alcohol and the brain. *Nutrients*, 13(11), 3938.

Nutt, D., King, L. A., Saulsbury, W., & Blakemore, C. (2007). Development of a rational scale to assess the harm of drugs of potential misuse. *The Lancet,* 369(9566), 1047-1053.

Nuttin, J. (2014). Future time perspective and motivation: Theory and research method. *Psychology Press.*

Nyamathi, A., Branson, C., Idemundia, F., Reback, C., Shoptaw, S., Marfisee, M., ... & Yadav, K. (2012). Correlates of depressed mood among young stimulant-using homeless gay and bisexual men. *Issues in Mental Health Nursing,* 33(10), 641-649.

Oakes, P. M., & Davies, R. C. (2008). Intellectual disability in homeless adults: A prevalence study. *Journal of Intellectual Disabilities*, *12*(4), 325-334.

O'Brien, C. P. (2008). Evidence-based treatments of addiction. *Philosophical Transactions of the Royal Society B: Biological Sciences,* 363(1507), 3277-3286.

O'Brien, J. W., & Hill, S. Y. (2017). Neural predictors of substance use disorders in Young adulthood. *Psychiatry Research: Neuroimaging*, 268, 22-26.

O'Carroll, A., Duffin, T., & Collins, J. (2021). Harm reduction in the time of COVID-19: Case study of homelessness and drug use in Dublin, Ireland. *International Journal of Drug Policy,* 87, 102966.

O'Connor, P. G. (2005). Methods of detoxification and their role in treating patients with opioid dependence. *Jama,* 294(8), 961-963.

O'Connor, P. G., & Fiellin, D. A. (2013). Pharmacologic treatment of heroin-dependent patients. *Treatment of Substance Use Disorders*, 87-114.

Oddy, M., Moir, J. F., Fortescue, D., & Chadwick, S. (2012). The prevalence of traumatic brain injury in the homeless community in a UK city. *Brain injury,* 26(9), 1058-1064.

Odenwald, M., & Semrau, P. (2013). Dropout among patients in qualified alcohol detoxification treatment: the effect of treatment motivation is moderated by Trauma Load. *Substance abuse treatment, prevention, and policy,* 8, 1-11.

O'Donovan, M. A., Lynch, E., O'Donnell, L., & Kelly, K. (2024). Homelessness—The perspectives of people with intellectual disability and/or Autistic spectrum disorder and their families. *Journal of Policy and Practice in Intellectual Disabilities,* 21(3), e12519.

Ogilvie, L., & Carson, J. (2022). Trauma, stages of change and post traumatic growth in addiction: A new synthesis. *Journal of substance use*, 27(2), 122-127.

O'Gorman, A., Driscoll, A., Moore, K., & Roantree, D. (2016). Outcomes: Drug harms, policy harms, poverty and inequality. Dublin: *Clondalkin Drug and Alcohol Task Force.*

O'Hare, T., Shen, C., & Sherrer, M. (2014). Lifetime trauma and suicide attempts in people with severe mental illness. *Community mental health journal*, 50(6), 673-680.

Okoye, K., & Hosseini, S. (2024). Mann–Whitney U Test and Kruskal–Wallis H Test Statistics in R. In R Programming: Statistical Data Analysis in Research (pp. 225-246). Singapore: Springer Nature Singapore.

Okrant, E. (2019). Developing a patient-reported outcome measure for substance use disorder recovery: a person-centered approach to monitoring changes in recovery status. *Brandeis University, The Heller School for Social Policy and Management.*

Ólafsdóttir, J. M. (2020). Addiction within families the impact of substance use disorder on the family system.

Olisa, J. (2024). Low literacy and homelessness: How can research inform learning provision?. *RaPAL Journal*, (109).

Olukoju, O. (2017). Causes of homelessness and ways to end and prevent homelessness.

Om, P., Whitehead, L., Vafeas, C., & Towell-Barnard, A. (2022). A qualitative systematic review on the experiences of homelessness among older adults. *BMC geriatrics*, 22(1), 363.

Omerov, P., Craftman, Å. G., Mattsson, E., & Klarare, A. (2020). Homeless persons' experiences of health-and social care: A systematic integrative review. *Health & social care in the community*, *28*(1), 1-11.

Oña, G., & Bouso, J. C. (2021). Therapeutic potential of natural psychoactive drugs for central nervous system disorders: A perspective from polypharmacology. *Current medicinal chemistry,* 28(1), 53-68.

Onapa, H., Sharpley, C. F., Bitsika, V., McMillan, M. E., MacLure, K., Smith, L., & Agnew, L. L. (2022). The physical and mental health effects of housing homeless people: A systematic review. *Health & social care in the community,* 30(2), 448-468.

O'Neill, D., Lyons, S., & Carew, A. M. (2023). National Drug Treatment Reporting System 2022: Drug Treatment Demand.

O'Neill, D., Ní Luasa, S., Lyons, S., & Carew, A. M. (2024). National Drug Treatment Reporting System 2023 Alcohol Treatment Demand.

Oppong, S., Kretchy, I. A., Imbeah, E. P., & Afrane, B. A. (2016). Managing mental illness in Ghana: the state of commonly prescribed psychotropic medicines. *International Journal of Mental Health Systems,* 10, 1-10.

Orford, J., Velleman, R., Natera, G., Templeton, L., & Copello, A. (2013). Addiction in the family is a major but neglected contributor to the global burden of adult ill-health. *Social science & medicine*, 78, 70-77.

Ormstad, H., Jamtvedt, G., Svege, I., & Crowe, S. (2021). The Bridge Building Model: connecting evidence-based practice, evidence-based research, public involvement and needs led research. *Research Involvement and Engagement,* 7, 1-8.

Orne, M. T. (2017). On the social psychology of the psychological experiment: With particular reference to demand characteristics and their implications. In *Sociological methods* (pp. 279-299). Routledge.

Orwin, R. G., Garrison-Mogren, R., Jacobs, M. L., & Sonnefeld, L. J. (1999). Retention of homeless clients in substance abuse treatment: Findings from the National Institute on Alcohol Abuse and Alcoholism Cooperative Agreement Program. *Journal of Substance Abuse Treatment*, *17*(1-2), 45-66.

Orwin, R. G., Scott, C. K., & Arieira, C. (2005). Transitions through homelessness and factors that predict them: three-year treatment outcomes. *Journal of substance abuse treatment*, *28*(2), S23-S39.

O'Shaughnessy, B. R. (2022). Homeless service users' experiences of empowerment and actualisation in homeless service settings [Doctoral dissertation, University of Limerick].

O'Shaughnessy, B. R., & Michelle Greenwood, R. (2020). Empowering features and outcomes of homeless interventions: A systematic review and narrative synthesis. *American journal of community psychology*, 66(1-2), 144-165.

O'Shaughnessy, B. R., Mayock, P., & Kakar, A. (2024). The recovery experiences of homeless service users with substance use disorder: A systematic review and qualitative meta-synthesis. *International Journal of Drug Policy*, *130*, 104528.

Ostertagova, E., Ostertag, O., & Kováč, J. (2014). Methodology and application of the Kruskal-Wallis test. *Applied mechanics and materials,* 611, 115-120.

O' Sullivan, E., Benjaminsen, L., Busch-Geert, V., Filipovic Hrast, M., Pleace, N., Teller, N. (2023). *Homelessness in the European Union.* European Union Policy Department for Citizens' Rights and Constitutional Affairs. https://www.europarl.europa.eu/RegData/etudes/STUD/2023/755915/IPOL_STU(2023)755915_EN.pdf

O'Sullivan, E. (2020). Recording homelessness. In *Reimagining Homelessness* (pp. 49-72). Policy Press.

O'Sullivan, E. (2022). Key Elements in Strategies to End Homelessness in the European Union by 2030: A Discussion Paper. *European Journal of Homelessness _ Volume*, *16*(2_).

O’Sullivan, E. (2023). Historical Perspectives on Homelessness. In *The Routledge Handbook of Homelessness* (pp. 13-23). Routledge.

O'Sullivan, E., Pleace, N., Busch-Geertsema, V., & Hrast, M. F. (2020). Distorting tendencies in understanding homelessness in Europe. *European Journal of Homelessness*, *14*(3), 109-135.

Oteo Pérez, A., Benschop, A., Blanken, P., & Korf, D. J. (2015). Criminal involvement and crime specialization among crack users in the Netherlands. *European addiction research*, *21*(2), 53-62.

Ozment, J. M., & Lester, D. (2001). Helplessness, locus of control, and psychological health. *The Journal of social psychology*, 141(1), 137-138.

Ozturk, E., Basol, M., Goksuluk, D., & Karahan, S. (2023). Performance comparison of independence tests in two-way contingency table. *Revstat-Statistical journal,* 21(2), 219-233.

Paasche, C., Weibel, S., Wittmann, M., & Lalanne, L. (2019). Time perception and impulsivity: A proposed relationship in addictive disorders. *Neuroscience & Biobehavioral Reviews*, *106*, 182-201.

Pable, J. (2012). The homeless shelter family experience: Examining the influence of physical living conditions on perceptions of internal control, crowding, privacy, and related issues. *Journal of Interior Design*, 37(4), 9-37.

Padgett, D. K., Gulcur, L., & Tsemberis, S. (2006). Housing first services for people who are homeless with co-occurring serious mental illness and substance abuse. *Research on social work practice*, *16*(1), 74-83.

Padgett, D. K., Smith, B. T., Henwood, B. F., & Tiderington, E. (2012). Life course adversity in the lives of formerly homeless persons with serious mental illness: context and meaning. *American Journal of Orthopsychiatry*, *82*(3), 421.

Padgett, D. K., Tiderington, E., Tran Smith, B., Derejko, K. S., & Henwood, B. F. (2016). Complex recovery: Understanding the lives of formerly homeless adults with complex needs. *Journal of Social Distress and the Homeless*, *25*(2), 60-70.

Padgett, D., Henwood, B. F., & Tsemberis, S. J. (2016). *Housing First: Ending homelessness, transforming systems, and changing lives*. Oxford University Press, USA.

Padwa, H., Bass, B., & Urada, D. (2022). Homelessness and publicly funded substance use disorder treatment in California, 2016–2019: Analysis of treatment needs, level of care placement, and outcomes. *Journal of Substance Abuse Treatment*, *137*, 108711.

Padykula, N. L., & Conklin, P. (2010). The self regulation model of attachment trauma and addiction. *Clinical Social Work Journal,* 38, 351-360.

Page, M. (2016). Forgotten youth: Homeless LGBT youth of color and the Runaway and Homeless Youth Act. *Nw. JL & Soc. Pol'y*, *12*, 17.

Palepu, A., Gadermann, A., Hubley, A. M., Farrell, S., Gogosis, E., Aubry, T., & Hwang, S. W. (2013). Substance use and access to health care and addiction treatment among homeless and vulnerably housed persons in three Canadian cities. *PloS one*, *8*(10), e75133.

Palepu, A., Marshall, B. D., Lai, C., Wood, E., & Kerr, T. (2010). Addiction treatment and stable housing among a cohort of injection drug users. *PloS one*, *5*(7), e11697.

Pandis, N. (2016). The chi-square test. *American journal of orthodontics and dentofacial orthopedics*, 150(5), 898-899.

Pangaonkar, S. V. (2020). Recovery in Severe Mental Disorder and Comorbidity. *Schizophrenia Treatment Outcomes: An Evidence-Based Approach to Recovery,* 229-241.

Park, G., Schwartz, H. A., Sap, M., Kern, M. L., Weingarten, E., Eichstaedt, J. C., ... & Seligman, M. E. (2017). Living in the past, present, and future: Measuring temporal orientation with language. *Journal of personality*, 85(2), 270-280.

Parletta, N., Milte, C. M., & Meyer, B. J. (2013). Nutritional modulation of cognitive function and mental health. *The Journal of nutritional biochemistry*, 24(5), 725-743.

Parrott, D. J., & Eckhardt, C. I. (2018). Effects of alcohol on human aggression. *Current opinion in psychology*, *19*, 1-5.

Parsell, C. (2010). *An ethnographic study of the day-to-day lives and identities of people who are homeless in Brisbane.* [Unpublished doctoral dissertation University of Queensland].

Parsons, M., Fisher, K., & Nalau, J. (2016). Alternative approaches to co-design: insights from indigenous/academic research collaborations. *Current Opinion in Environmental Sustainability,* 20, 99-105.

Patterson, A., & Tweed, R. (2009). Escaping homelessness: Anticipated and perceived facilitators. *Journal of Community Psychology,* 37(7), 846-858.

Patterson, M. L., Currie, L., Rezansoff, S., & Somers, J. M. (2015). Exiting homelessness: perceived changes, barriers, and facilitators among formerly homeless adults with mental disorders. *Psychiatric rehabilitation journal,* 38(1), 81.

Paulhus, D. L. (1984). Two-component models of socially desirable responding. *Journal of personality and social psychology,* 46(3), 598.

Paulhus, D. L. (2017). Socially desirable responding on self-reports. *Encyclopedia of personality and individual differences*, 1(5).

Paulhus, D. L., & Reid, D. B. (1991). Enhancement and denial in socially desirable responding. *Journal of personality and social psychology,* 60(2), 307.

Paykel, E. S. (1997). The interview for recent life events. *Psychological medicine,* 27(2), 301-310.

Peacock, A., Leung, J., Larney, S., Colledge, S., Hickman, M., Rehm, J., ... & Degenhardt, L. (2018). Global statistics on alcohol, tobacco and illicit drug use: 2017 status report. *Addiction*, 113(10), 1905-1926.

Pelzang, R. (2010). Time to learn: understanding patient-centred care. *British journal of nursing,* 19(14), 912-917.

Peng, Y., Hahn, R. A., Finnie, R. K., Cobb, J., Williams, S. P., Fielding, J. E., ... & Fullilove, M. T. (2020). Permanent supportive housing with housing first to reduce homelessness and promote health among homeless populations with disability: a community guide systematic review. *Journal of public health management and practice,* 26(5), 404-411.

Penny, W., & Henson, R. (2006). Analysis of variance. *Statistical parametric mapping: The analysis of functional brain images,* 166-177.

Perez-Dandieu, B., & Tapia, G. (2014). Treating trauma in addiction with EMDR: a pilot study. *Journal of Psychoactive Drugs,* 46(4), 303-309.

Perrich, L., Mema, S. C., Laing, S., Graham, J. R., Gaudet, M., & Cusack, L. (2025). Frostbite and hypothermia among individuals experiencing homelessness in the south interior region of BC: a chart review of emergency department presentations. *Journal of Social Distress and Homelessness*, 1-8.

Pescosolido, B. A., & Martin, J. K. (2015). The stigma complex. *Annual review of sociology*, *41*(1), 87-116.

Peters, L., Hobson, C. W., & Samuel, V. (2022). A systematic review and meta-synthesis of qualitative studies that investigate the emotional experiences of staff working in homeless settings. *Health & Social Care in the Community,* 30(1), 58-72.

Petit-Zeman, S., & Locock, L. (2013). Health care: bring on the evidence. *Nature*, 501(7466), 160-161.

Phelan, J. C., Link, B. G., & Dovidio, J. F. (2008). Stigma and prejudice: one animal or two?. *Social science & medicine*, *67*(3), 358-367.

Phipps, M. L. (2022). Strengths, hopes and exiting homelessness: Is housing enough? A qualitative exploration of women's experiences (Doctoral dissertation, University of Tasmania).

Piliavin, I., Entner Wright, B. R., Mare, R. D., & Westerfelt, A. H. (1996). Exits from and returns to homelessness. *Social Service Review*, 70(1), 33-57.

Pilin, M. A. (2021). The past of predicting the future: A review of the multidisciplinary history of affective forecasting. *History of the Human Sciences*, 34(3-4), 290-306.

Pilla, D., & Park-Taylor, J. (2022). "Halfway Independent": Experiences of formerly homeless adults living in permanent supportive housing. *Journal of Community Psychology,* 50(3), 1411-1429.

Pirinen, A. (2016). The barriers and enablers of co-design for services. *International Journal of Design*, 10(3), 27-42.

Plaza-Hernández, L., Hansen Rodriguez, G., Bedoya Cardona, E., Ferrer Pérez, X., & Ramos Rivera, J. (2023). Gender-Based Violence among Women who Use Drugs: A Quantitative and Qualitative Study in 6 EU Countries. *Adiktologie,* (2), 107-121. https://doi.org/10.35198/01-2023-001-0004

Pleace, N. (2010). Immigration and homelessness. *Homelessness research in Europe*, *2010*, 143-162.

Pleace, N. (2016). Housing first guide Europe.

Pleace, N., & Bretherton, J. (2013). Measuring Homelessness and Housing Exclusion in Northern Ireland: A Test of the ETHOS Typology. Belfast: Northern Ireland Housing Executive.

Pleace, N., & Bretherton, J. (2013). The case for Housing First in the European Union: A critical evaluation of concerns about effectiveness. *European Journal of homelessness*, *7*(2).

Pleace, N., & Hermans, K. (2020). Counting All Homelessness in Europe: The Case for Ending Separate Enumeration of 'Hidden Homelessness'. *European Journal of Homelessness* 14(3), pp. 35–62.

Pleace, N., & Quilgars, D. (2003). Supporting people: guide to accommodation and support options for homeless households. *Communities and Local Government.*

Pluck, G., Barajas, B. M., Hernandez-Rodriguez, J. L., & Martínez, M. A. (2020). Language ability and adult homelessness. *International Journal of Language & Communication Disorders,* 55(3), 332-344.

Pluck, G., Lee, K. H., David, R., Macleod, D. C., Spence, S. A., & Parks, R. W. (2011). Neurobehavioural and cognitive function is linked to childhood trauma in homeless adults. *British Journal of Clinical Psychology*, 50(1), 33-45.

Pluck, G., Lee, K. H., David, R., Spence, S. A., & Parks, R. W. (2012). Neuropsychological and cognitive performance of homeless adults. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement,* 44(1), 9.

Pluck, G., Lee, K. H., David, R., Spence, S. A., & Parks, R. W. (2012). Neuropsychological and cognitive performance of homeless adults. *Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement,* 44(1), 9.

Pluck, G., Lee, K. H., Lauder, H. E., Fox, J. M., Spence, S. A., & Parks, R. W. (2008). Time perspective, depression, and substance misuse among the homeless. *The Journal of psychology*, 142(2), 159-168.

Pluck, G., Nakakarumai, M., & Sato, Y. (2015). Homelessness and cognitive impairment: An exploratory study in Tokyo, Japan. *East Asian Archives of Psychiatry,* 25(3), 122-127.

Pohlert, T. (2014). The pairwise multiple comparison of mean ranks package (PMCMR). *R package,* 27(2019), 9.

Pompili, M., Serafini, G., Innamorati, M., Dominici, G., Ferracuti, S., Kotzalidis, G. D., ... & Lester, D. (2010). Suicidal behavior and alcohol abuse. *International journal of environmental research and public health*, *7*(4), 1392-1431.

Ponka, D., Agbata, E., Kendall, C., Stergiopoulos, V., Mendonca, O., Magwood, O., ... & Pottie, K. (2020). The effectiveness of case management interventions for the homeless, vulnerably housed and persons with lived experience: A systematic review. *PLoS One*, *15*(4), e0230896.

Post, R., Boss, R., & Horton, A. (2022). Resolving Homelessness: The Critical Need for a Substance Use Disorder System of Care. A report commissioned by the Homeless Strategies and Solutions.

Post, R., Boss, R., & Horton, A. (2022). *Resolving Homelessness: The Critical Need for a Substance Use Disorder System of Care.* https://homelessstrategicinitiatives.org/wp-content/uploads/2023/01/Resolving-Homelessness-SUD-System-of-Care.pdf

Potenza, M. N. (2007). To do or not to do? The complexities of addiction, motivation, self-control, and impulsivity. *American Journal of Psychiatry*, 164(1), 4-6.

Potenza, M. N., Sofuoglu, M., Carroll, K. M., & Rounsaville, B. J. (2011). Neuroscience of behavioral and pharmacological treatments for addictions. *Neuron,* 69(4), 695-712.

Poudel, A., & Gautam, S. (2017). Age of onset of substance use and psychosocial problems among individuals with substance use disorders. *BMC psychiatry*, 17, 1-7.

Povey, J., Sweet, M., Nagel, T., Lowell, A., Shand, F., Vigona, J., & Dingwall, K. M. (2022). Determining priorities in the Aboriginal and Islander mental health initiative for youth app second phase participatory design project: qualitative study and narrative literature review. *JMIR formative research*, 6(2), e28342.

Powell, K., & Maguire, N. (2018). Paranoia and maladaptive behaviours in homelessness: The mediating role of emotion regulation. *Psychology and Psychotherapy: Theory, Research and Practice,* 91(3), 363-379.

Price, A., Albarqouni, L., Kirkpatrick, J. O., Clarke, M., Liew, S. M., Roberts, N., & Burls, A. (2018). Patient and public involvement in the design of clinical trials: an overview of systematic reviews. *Journal of evaluation in clinical practice,* 24(1), 240-253.

Price, A., Schroter, S., Snow, R., Hicks, M., Harmston, R., Staniszewska, S., ... & Richards, T. (2018). Frequency of reporting on patient and public involvement (PPI) in research studies published in a general medical journal: a descriptive study. *BMJ open,* 8(3), e020452.

Priddy, S. E., Howard, M. O., Hanley, A. W., Riquino, M. R., Friberg-Felsted, K., & Garland, E. L. (2018). Mindfulness meditation in the treatment of substance use disorders and preventing future relapse: neurocognitive mechanisms and clinical implications. *Substance abuse and rehabilitation, 1*03-114.

Prince, J. D., & Wald, C. (2018). Risk of criminal justice system involvement among people with co-occurring severe mental illness and substance use disorder. *International journal of law and psychiatry*, *58*, 1-8.

Prinsloo, B., Parr, C., & Fenton, J. (2012). Mental illness among the homeless: prevalence study in a Dublin homeless hostel. *Irish Journal of Psychological Medicine,* 29(1), 22-26.

Proulx, M. J., Todorov, O. S., Taylor Aiken, A., & de Sousa, A. A. (2016). Where am I? Who am I? The relation between spatial cognition, social cognition and individual differences in the built environment. *Frontiers in psychology,* 7, 64.

Pulvirenti, M., McMillan, J., & Lawn, S. (2014). Empowerment, patient centred care and self-management. *Health expectations,* 17(3), 303-310.

Quednow, B. B., & Herdener, M. (2016). Human pharmacology for addiction medicine: From evidence to clinical recommendations. *Progress in brain research,* 224, 227-250.

Quilgars, D., & Pleace, N. (2016). Housing first and social integration: A realistic aim?. *Social Inclusion*, *4*(4), 5-15.

Quirke, B., Heinen, M., Fitzpatrick, P., McKey, S., Malone, K. M., & Kelleher, C. (2022). Experience of discrimination and engagement with mental health and other services by Travellers in Ireland: findings from the All Ireland Traveller Health Study (AITHS). *Irish Journal of Psychological Medicine*, *39*(2), 185-195.

Radcliffe, P., & Gilchrist, G. (2016). “You can never work with addictions in isolation”: Addressing intimate partner violence perpetration by men in substance misuse treatment. *International Journal of Drug Policy*, *36*, 130-140.

Radley, A., Chamberlain, K., Hodgetts, D., Stolte, O., & Groot, S. (2010). From means to occasion: Walking in the life of homeless people. *Visual Studies,* 25(1), 36-45.

Raistrick, D. (2000). Management of alcohol detoxification. *Advances in Psychiatric Treatment,* 6(5), 348-355.

Raitakari, S., & Juhila, K. (2015). Housing First literature: different orientations and political-practical arguments. *European Journal of Homelessness _ Volume*, *9*(1).

Ramey, T., & Regier, P. S. (2019). Cognitive impairment in substance use disorders. *CNS spectrums*, 24(1), 102-113.

Rana, R., & Singhal, R. (2015). Chi-square test and its application in hypothesis testing. *Journal of Primary Care Specialties*, 1(1), 69-71.

Raphael-Greenfield, E. I., & Gutman, S. A. (2015). Understanding the lived experience of formerly homeless adults as they transition to supportive housing. *Occupational Therapy in Mental Health,* 31(1), 35-49.

Rappeneau, V., & Bérod, A. (2017). Reconsidering depression as a risk factor for substance use disorder: Insights from rodent models. *Neuroscience & Biobehavioral Reviews,* 77, 303-316.

Rehm, J., Gmel Sr, G. E., Gmel, G., Hasan, O. S., Imtiaz, S., Popova, S., ... & Shuper, P. A. (2017). The relationship between different dimensions of alcohol use and the burden of disease—an update. *Addiction*, *112*(6), 968-1001.

Reif, S., Braude, L., Lyman, D. R., Dougherty, R. H., Daniels, A. S., Ghose, S. S., ... & Delphin-Rittmon, M. E. (2014). Peer recovery support for individuals with substance use disorders: Assessing the evidence. *Psychiatric Services*, 65(7), 853-861.

Reilly, J., Hassanally, K., Budd, J., & Mercer, S. (2020). Accident and emergency department attendance rates of people experiencing homelessness by GP registration: a retrospective analysis. *BJGP open*, 4(5).

Reilly, J., Ho, I., & Williamson, A. (2022). A systematic review of the effect of stigma on the health of people experiencing homelessness. Health & social care in the community, 30(6), 2128-2141.

Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, J., & Ryan, R. M. (2000). Daily well-being: The role of autonomy, competence, and relatedness. *Personality and social psychology bulletin,* 26(4), 419-435.

Reknes, I., Visockaite, G., Liefooghe, A., Lovakov, A., & Einarsen, S. V. (2019). Locus of control moderates the relationship between exposure to bullying behaviors and psychological strain. *Frontiers in psychology,* 10, 1323.

Reuschenbach, B., Funke, J., Drevensek, A. M., & Ziegler, N. (2013). Testing a German version of the Zimbardo time perspective inventory (ZTPI).

Reyes, M. E. S., Bautista, N. B., Betos, G. R. A., Martin, K. I. S., Sapio, S. T. N., Pacquing, M. C. T., & Kliatchko, J. M. R. (2023). In/out of the closet: Perceived social support and outness among LGB youth. *Sexuality & Culture,* 27(1), 290-309.

Reynolds, J., Ogden, M., & Beresford, R. (2021). Conceptualising and constructing 'diversity'through experiences of public and patient involvement in health research. *Research involvement and engagement*, 7, 1-11.

Reynolds, L., Rogers, O., Benford, A., Ingwaldson, A., Vu, B., Holstege, T., & Alvarado, K. (2020). Virtual nature as an intervention for reducing stress and improving mood in people with substance use disorder. *Journal of addiction*, 2020(1), 1892390.

Rezapour, T., Hatami, J., Farhoudian, A., Noroozi, A., Daneshmand, R., Sofuoglu, M., ... & Ekhtiari, H. (2021). Baseline executive functions and receiving cognitive rehabilitation can predict treatment response in people with opioid use disorder. *Journal of Substance Abuse Treatment*, 131, 108558.

Richard, L., Golding, H., Saskin, R., Jenkinson, J. I., Francombe Pridham, K., Gogosis, E., ... & Hwang, S. W. (2023). Cold-related injuries among patients experiencing homelessness in Toronto: a descriptive analysis of emergency department visits. *Canadian journal of emergency medicine*, 25(8), 695-703.

Richards, J., & Kuhn, R. (2023). Unsheltered homelessness and health: a literature review. *AJPM focus*, 2(1), 100043.

Riediger, M., & Klipker, K. (2014). Emotion regulation in adolescence.

Riordan, F., Gopalakrishnan, A., Kelleher, C., & Lyons, S. (2021). Deaths among people who were homeless at time of death in Ireland, 2021.

Ritter, S. M., Damian, R. I., Simonton, D. K., van Baaren, R. B., Strick, M., Derks, J., & Dijksterhuis, A. (2012). Diversifying experiences enhance cognitive flexibility. *Journal of experimental social psychology*, 48(4), 961-964.

Rizeq, J. (2024). Affective forecasting and psychopathology: A scoping review. *Clinical Psychology Review,* 102392.

Rizzo, D., Mu, T., Cotroneo, S., & Arunogiri, S. (2022). Barriers to accessing addiction treatment for women at risk of homelessness. *Frontiers in Global Women's Health,* 3, 795532.

Roberts, N. P., Roberts, P. A., Jones, N., & Bisson, J. I. (2015). Psychological interventions for post-traumatic stress disorder and comorbid substance use disorder: A systematic review and meta-analysis. *Clinical psychology review,* 38, 25-38.

Robinson, A. (2014). Patient and public involvement: in theory and in practice. *The Journal of Laryngology & Otology,* 128(4), 318-325.

Robinson, C. (2005). Persistent homelessness/persistent trauma. *Parity,* 18(7), 4-5.

Robinson, D. (2006). The hidden and neglected experiences of homelessness in rural England. In *International perspectives on rural homelessness* (pp. 97-120). Routledge.

Roche, P., Shimmin, C., Hickes, S., Khan, M., Sherzoi, O., Wicklund, E., ... & Sibley, K. M. (2020). Valuing All Voices: refining a trauma-informed, intersectional and critical

reflexive framework for patient engagement in health research using a qualitative descriptive approach. *Research involvement and engagement*, 6, 1-13.

Rodrigo, A. H. (2022). *Cognitive Control Foundations of Interpersonal Functioning*. [Doctoral dissertation, University of Toronto].

Rodrigo, A. H., Di Domenico, S. I., Wright, L., Page-Gould, E., Fournier, M. A., Ayaz, H., & Ruocco, A. C. (2022). Interpersonal traits and the neural representations of cognitive control in the prefrontal cortex. *Cognitive, Affective, & Behavioral Neuroscience,* 22(5), 1001-1020.

Roebuck, M., Agha, A., Nelson, G., Distasio, J., Ecker, J., Hwang, S. W., ... & Aubry, T. (2024). Predictors of housing instability and stability among Housing First participants: A 24-month study. *Journal of social distress and homelessness*, 33(1), 220-230.

Romaszko, J., Cymes, I., Dragańska, E., Kuchta, R., & Glińska-Lewczuk, K. (2017). Mortality among the homeless: causes and meteorological relationships. *PloS one*, 12(12), e0189938.

Room, R., Rehm, J., Trotter II, R. T., Paglia, A., & Üstün, T. B. (2001). Cross-cultural views on stigma, valuation, parity, and societal values towards disability.

Rosario-Williams, B., Rombola, C., & Miranda, R. (2021). Being certain that negative events will happen or that positive events will not happen: Depressive predictive certainty and change in suicide ideation over time. *Suicide and Life-Threatening Behavior,* 51(6), 1106-1116.

Rosenthal, L. (2016). Incorporating intersectionality into psychology: An opportunity to promote social justice and equity. *American Psychologist*, 71(6), 474.

Ross, A., Willson, V. L., (2017). *Independent samples T-test.* Basic and advanced statistical tests: Writing results sections and creating tables and figures, 13-16.

Roth, S. E., Jones, K. G., & Vartanian, K. B. (2023). Assessing the impact of recovery housing on healthcare utilization in Portland, Oregon. *Drug and Alcohol Dependence Reports,* 9, 100192.

Rotter, J. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological monographs: General and applied*, 80(1), 1.

Rouder, J. N., Speckman, P. L., Sun, D., Morey, R. D., & Iverson, G. (2009). Bayesian t tests for accepting and rejecting the null hypothesis. *Psychonomic bulletin & review*, 16(2), 225-237.

Rousselet, M., Guerlais, M., Caillet, P., Le Geay, B., Mauillon, D., Serre, P., ... & Victorri-Vigneau, C. (2019). Consumption of psychoactive substances in prison: Between initiation and improvement, what trajectories occur after incarceration? COSMOS study data. *PLoS One,* 14(12), e0225189.

Rubio, G., & Ponce, G. (2013). *Alcohol Detoxification.* Interventions for Addiction: Comprehensive Addictive Behaviors and Disorders, Volume 3, 3, 355.

Rudolph, C. W., Kooij, D. T., Rauvola, R. S., & Zacher, H. (2018). Occupational future time perspective: A meta-analysis of antecedents and outcomes. *Journal of Organizational Behavior*, 39(2), 229-248.

Rukmana, D. (2020). The causes of homelessness and the characteristics associated with high risk of homelessness: A review of intercity and intracity homelessness data. *Housing Policy Debate*, *30*(2), 291-308.

Rundle, S. M., Cunningham, J. A., & Hendershot, C. S. (2021). Implications of addiction diagnosis and addiction beliefs for public stigma: A cross-national experimental study. *Drug and alcohol review*, *40*(5), 842-846.

Rush, J., & Grouzet, F. M. (2012). It is about time: Daily relationships between temporal perspective and well-being. *The Journal of Positive Psychology*, 7(5), 427-442.

Ruxton, G. D., & Neuhäuser, M. (2010). Good practice in testing for an association in contingency tables. *Behavioral Ecology and Sociobiology,* 64, 1505-1513.

Ryba, R., Doubleday, Z. A., Dry, M. J., Semmler, C., & Connell, S. D. (2021). Better writing in scientific publications builds reader confidence and understanding. *Frontiers in psychology*, 12, 714321.

Rydzewski, P. (2012). Social Marginalisation vs. Sustainable Development–Case of Homelessness. Sustainable Development–Case of Homelessness (January 12, 2012). *Problems of Sustainable Development,* 7(1), 43-59.

Ryon, H. S., & Gleason, M. E. (2014). The role of locus of control in daily life. *Personality and Social Psychology Bulletin,* 40(1), 121-131.

Saber Hassan Ibrahim, F., Mahmoud Mohamed, S., & Mohamed Fahmy, A. (2022). *Emotional problems among substance dependent patients undergoing detoxification.* Egyptian Journal of Health Care, 13(1), 805-825.

Sahker, E., Ali, S. R., & Arndt, S. (2019). Employment recovery capital in the treatment of substance use disorders: Six-month follow-up observations. *Drug and alcohol dependence,* 205, 107624.

Sahlin, I. (2005). The staircase of transition: Survival through failure. *Innovation: The European Journal of Social Science Research*, *18*(2), 115-136.

Saitz, R., Gaeta, J., Cheng, D. M., Richardson, J. M., Larson, M. J., & Samet, J. H. (2007). Risk of mortality during four years after substance detoxification in urban adults. *Journal of Urban Health*, 84(2), 272-282.

Salhi, B. A., White, M. H., Pitts, S. R., & Wright, D. W. (2018). Homelessness and emergency medicine: a review of the literature. *Academic Emergency Medicine*, 25(5), 577-593.

Saltzer, E. B. (1982). The weight locus of control (WLOC) scale: A specific measure for obesity research. *Journal of Personality Assessment*, 46(6), 620-628.

Samuolis, J., Hogue, A., Dauber, S., & Liddle, H. A. (2006). Autonomy and relatedness in inner-city families of substance abusing adolescents. *Journal of Child & Adolescent Substance Abuse,* 15(2), 53-86.

Sampedro-Piquero, P., de Guevara-Miranda, D. L., Pavón, F. J., Serrano, A., Suárez, J., de Fonseca, F. R., ... & Castilla-Ortega, E. (2019). Neuroplastic and cognitive impairment in substance use disorders: a therapeutic potential of cognitive stimulation. *Neuroscience & Biobehavioral Reviews,* 106, 23-48.

Santamaría-García, H., Baez, S., Gómez, C., Rodríguez-Villagra, O., Huepe, D., Portela, M., ... & Ibanez, A. (2020). The role of social cognition skills and social determinants of health in predicting symptoms of mental illness. *Translational psychiatry*, 10(1), 165.

Santana, M. J., Manalili, K., Jolley, R. J., Zelinsky, S., Quan, H., & Lu, M. (2018). How to practice person-centred care: A conceptual framework. *Health Expectations,* 21(2), 429-440.

Sarnowska, M., & Gach, S. (2018). Main causes of homelessness and adaptation of homeless to environmental factors. *Journal of Education, Health and Sport*, *8*(9), 377-397.

Saunders, B., Riesel, A., Klawohn, J., & Inzlicht, M. (2018). Interpersonal touch enhances cognitive control: A neurophysiological investigation. *Journal of Experimental Psychology: General*, 147(7), 1066.

Savage, M. (2016). Gendering women's homelessness. *Irish Journal of Applied Social Studies*, *16*(2), 4.

Savonen, J., Kataja, K., & Sakki, I. (2022). Distancing from the worst or facing the inescapable? Social representations and positioning of people in marginalised groups. *Journal of Community & Applied Social Psychology,* 32(5), 896-907.

Sawyer, S. F. (2009). Analysis of variance: the fundamental concepts. *Journal of Manual & Manipulative Therapy*, 17(2), 27E-38E.

Scambler, S., & Asimakopoulou, K. (2014). A model of patient-centred care–turning good care into patient-centred care. *British dental journal,* 217(5), 225-228.

Schacter, D. L., Benoit, R. G., & Szpunar, K. K. (2017). Episodic future thinking: Mechanisms and functions. *Current opinion in behavioral sciences*, 17, 41-50.

Schiff, L. (2003). The power to define: Definitions as a site of struggle in the field of homelessness. *International Journal of Qualitative Studies in Education*, *16*(4), 491-507.

Schjoedt, L., & Shaver, K. G. (2012). Development and validation of a locus of control scale for the entrepreneurship domain. *Small Business Economics*, 39, 713-726.

Schmidt, K. A., Lamoureux, I. C., Schak, K. M., Lachner, C., Burton, M. C., Larrabee, B. R., & Rummans, T. A. (2018). Substance use disorders and their effect on the psychiatric and justice systems. *The American Journal on Addictions*, *27*(7), 574-577.

Schneider, M., Brisson, D., & Burnes, D. (2016). Do we really know how many are homeless?: An analysis of the point-in-time homelessness count. *Families in Society*, *97*(4), 321-329.

Schoenberger, S. F., Park, T. W., Dellabitta, V., Hadland, S. E., & Bagley, S. M. (2022). "My life isn't defined by substance use": Recovery perspectives among young adults with substance use disorder. *Journal of General Internal Medicine,* 37(4), 816-822.

Schoepfer, A., Piquero, N. L., & Langton, L. (2014). Low self-control versus the desire-for-control: An empirical test of white-collar crime and conventional crime. *Deviant behavior*, 35(3), 197-214.

Schomerus, G., & Corrigan, P. W. (Eds.). (2022). *The stigma of substance use disorders*. Cambridge University Press.

Schomerus, G., Lucht, M., Holzinger, A., Matschinger, H., Carta, M. G., & Angermeyer, M. C. (2011). The stigma of alcohol dependence compared with other mental disorders: A review of population studies. *Alcohol and Alcoholism*, *46*(2), 105–112.

Schreiter, S., Bermpohl, F., Krausz, M., Leucht, S., Rössler, W., Schouler-Ocak, M., & Gutwinski, S. (2017). The prevalence of mental illness in homeless people in Germany: a systematic review and meta-analysis. *Deutsches Aerzteblatt International*, 114(40), 665.

Schreiter, S., Speerforck, S., Schomerus, G., & Gutwinski, S. (2021). Homelessness: care for the most vulnerable–a narrative review of risk factors, health needs, stigma, and intervention strategies. *Current Opinion in Psychiatry*, 34(4), 400-404.

Schumacher, J. E., Mennemeyer, S. T., Milby, J. B., Wallace, D., & Nolan, K. (2002). Costs and effectiveness of substance abuse treatments for homeless persons. *Journal of Mental Health Policy and Economics*, *5*(1), 33-42.

Schutt, R. K. (2003). Shelterization in theory and practice. *Anthropology of Work Review,* 24(1-2), 4-13.

Schutt, R. K., & Garrett, G. R. (2013). *Responding to the homeless: Policy and practice*. Springer Science & Business Media.

Schütz, C., Choi, F., Jae Song, M., Wesarg, C., Li, K., & Krausz, M. (2019). Living with dual diagnosis and homelessness: Marginalized within a marginalized group. *Journal of Dual Diagnosis*, 15(2), 88-94.

Scott, L. E. (2021). Substance Use Disorder's (SUD) Impact on Criminal Decision-Making and Role in Federal Sentencing Jurisprudence: Arguing for Culpability-Based SUD Mitigation. *Ohio St. J. Crim. L.*, *19*, 471.

Scott, S. (2007). *All our sisters: Stories of homeless women in Canada*. Ontario, Canada: Broadview Press.

Scutella, R., & Johnson, G. (2018). Psychological distress and homeless duration. *Housing Studies*, 33(3), 433-454.

Scutella, R., Wood, G., & Johnson, G. (2021). Sitting in the waiting room: do people experiencing homelessness underutilize health services?. *Housing and Society,* 48(3), 261-291.

Sedgwick, P. (2010). Independent samples t test. *Bmj*, 340.

Sedgwick, P. (2012). Pearson's correlation coefficient. *Bmj,* 345.

Sedgwick, P. (2014). Poisson regression. *BMJ*, 349.

Semborski, S., Madden, D. R., Dzubur, E., Redline, B., Rhoades, H., & Henwood, B. F. (2022). The effect of momentary affect on substance use among young adults who experience homelessness. *Substance use & misuse*, 57(3), 329-336.

Semborski, S., Henwood, B., Rhoades, H., Mason, T., Wenzel, S., & Rice, E. (2021). Construct, concurrent, and real-world predictive validity of the Difficulties in Emotion Regulation (DERS-18) among young adults with history of homelessness. *Psychological assessment*, 33(5), 385.

Sestito, S. F., Rodriguez, K. L., Saba, S. K., Conley, J. W., Mitchell, M. A., & Gordon, A. J. (2017). Homeless veterans' experiences with substance use, recovery, and treatment through photo elicitation. *Substance Abuse,* 38(4), 422-431.

Shahbazi, F., Mirtorabi, D., Ghadirzadeh, M. R., & Hashemi-Nazari, S. S. (2018). Analysis of mortality rate of illicit substance abuse and its trend in five years in Iran, 2014-2018. Addiction & health, 10(4), 260.

Shahid, A., & Asmat, A. (2023). Stigmatisation and perceived social support as predictor of treatment of substance use disorder (SUD): A systematic review. JPMA. *The Journal of the Pakistan Medical Association,* 73(4), 848-852.

Shanahan, C. W., Lincoln, A., Horton, N. J., Saitz, R., Winter, M., & Samet, J. H. (2005). Relationship of depressive symptoms and mental health functioning to repeat detoxification. *Journal of Substance Abuse Treatment*, 29(2), 117-123.

Shapero, J. A. (2017). Does environmental experience shape spatial cognition? Frames of reference among Ancash Quechua speakers (Peru). *Cognitive science,* 41(5), 1274-1298.

Sharman, S., Dreyer, J., Clark, L., & Bowden-Jones, H. (2016). Down and out in London: Addictive behaviors in homelessness. *Journal of behavioral addictions*, *5*(2), 318-324.

Sharp, A., Armstrong, A., Moore, K., Carlson, M., & Braughton, D. (2021). Patient perspectives on detox: practical and personal considerations through a lens of patient-centered care. *Substance Use & Misuse,* 56(11), 1593-1606.

Sharp, A., Brown, B., Shreve, T., Moore, K., Carlson, M., & Braughton, D. (2021). Direct-care staff perceptions of patient engagement and treatment planning in detox. *The Journal of Behavioral Health Services & Research,* 48, 566-582.

Shearer, R. D., Shippee, N. D., Vickery, K. D., Stevens, M. A., & Winkelman, T. N. (2022). A longitudinal cross-sectional analysis of substance use treatment trends for individuals experiencing homelessness, criminal justice involvement, both, or neither-United States, 2006-2018. *The Lancet Regional Health–Americas*, 7.

Shen, J., Hua, G., Li, C., Liu, S., Liu, L., & Jiao, J. (2023). Prevalence, incidence, deaths, and disability-adjusted life-years of drug use disorders for 204 countries and territories during the past 30 years. *Asian journal of psychiatry,* 86, 103677.

Sheldon, T. A. (2024). *Community Collaboration to Address Opioid Use Disorder and Homelessness* [Doctoral dissertation, University of Massachusetts Lowell].

Shelton, K. H., Taylor, P. J., Bonner, A., & Van Den Bree, M. (2009). Risk factors for homelessness: Evidence from a population-based study. *Psychiatric services*, *60*(4), 465-472.

Sherba, R. T., Coxe, K. A., Gersper, B. E., & Linley, J. V. (2018). Employment services and substance abuse treatment. *Journal of substance abuse treatment,* 87, 70-78.

Sherin, J. E., & Nemeroff, C. B. (2011). Post-traumatic stress disorder: the neurobiological impact of psychological trauma. *Dialogues in clinical neuroscience*, 13(3), 263-278.

Shevlin, M., & Rose, R. (2022). Respecting the voices of individuals from marginalised communities in research—"Who is listening and who isn't?". *Education Sciences,* 12(5), 304.

Shield, K. D., Rehm, M. X., & Rehm, J. (2015). Social costs of addiction in Europe. *Impact of addictive substances and behaviours on individual and societal well-being,* 181-188.

Shier, M. L., Jones, M. E., & Graham, J. R. (2010). Perspectives of employed people experiencing homeless of self and being homeless: Challenging socially constructed perceptions and stereotypes. *J. Soc. & Soc. Welfare*, 37, 13.

Shih, M., & Sanchez, D. T. (2005). Perspectives and research on the positive and negative implications of having multiple racial identities. *Psychological bulletin,* 131(4), 569.

Shimmin, C., Wittmeier, K. D., Lavoie, J. G., Wicklund, E. D., & Sibley, K. M. (2017). Moving towards a more inclusive patient and public involvement in health research paradigm: the incorporation of a trauma-informed intersectional analysis. *BMC Health Services Research,* 17, 1-10.

Shin, N. Y., Lee, T. Y., Kim, E., & Kwon, J. S. (2014). Cognitive functioning in obsessive-compulsive disorder: a meta-analysis. *Psychological medicine*, *44*(6), 1121-1130.

Shinn, M., Gottlieb, J., Wett, J. L., Bahl, A., Cohen, A., & Baron Ellis, D. (2007). Predictors of homelessness among older adults in New York City: Disability, economic, human and social capital and stressful events. *Journal of Health Psychology,* 12(5), 696-708.

Shojaee, M., & French, C. (2014). The relationship between mental health components and locus of control in youth. *Psychology,* 2014.

Shumba, C. S., Atukunda, R., & Memiah, P. (2013). Patient-centred quality care: An assessment of patient involvement. *International Journal of Medicine & Public Health,* 3(2).

Siegfried, N. (1998). A review of comorbidity: major mental illness and problematic substance use. *Australian and New Zealand Journal of Psychiatry*, 32(5), 707-717.

Sierka, A. (2015). The Vicious Cycle: Interrelationship among trauma, substance misuse and offending from the perspective of Scottish incarcerated women–an Interpretative Phenomenological Analysis (Doctoral dissertation).

Sifris, R. (2016). The involuntary sterilisation of marginalised women: power, discrimination, and intersectionality. *Griffith Law Review,* 25(1), 45-70.

Sikich, K. W. (2008). Global female homelessness: A multi-faceted problem. *Gender Issues*, *25*, 147-156.

Silins, E., Silins, E., Sannibale, C., Silins, E., Sannibale, C., Larney, S., ... & Mattick, R. (2008). Residential detoxification: essential for marginalised, severely alcohol-and drug-dependent individuals. *Drug and alcohol review*, 27(4), 414-419.

Silverman, K., Holtyn, A. F., & Morrison, R. (2016). The therapeutic utility of employment in treating drug addiction: Science to application. *Translational issues in psychological science,* 2(2), 203.

Simons, J., Vansteenkiste, M., Lens, W., & Lacante, M. (2004). Placing motivation and future time perspective theory in a temporal perspective. *Educational psychology review*, 16, 121-139.

Simpson, E. K., Conniff, B. G., Faber, B. N., & Semmelhack, E. K. (2018). Daily occupations, routines, and social participation of homeless young people. *Occupational therapy in mental health*, 34(3), 203-227.

Simpson, T. L., Goldberg, S. B., Louden, D. K., Blakey, S. M., Hawn, S. E., Lott, A., ... & Kaysen, D. (2021). Efficacy and acceptability of interventions for co-occurring PTSD and SUD: A meta-analysis. *Journal of Anxiety Disorders,* 84, 102490.

Simpson, M. & McNulty, J. (2008). Different needs: Women's drug use and treatment in the UK. *International Journal of Drug Policy,* 19(2), 169-175. https://doi.org/10.1016/j.drugpo.2007.11.021

Sinha, R. (2024). Stress and substance use disorders: risk, relapse, and treatment outcomes. *The Journal of Clinical Investigation*, 134(16).

Sircova, A., Van De Vijver, F. J., Osin, E., Milfont, T. L., Fieulaine, N., Kislali-Erginbilgic, A., ... & Boyd, J. N. (2014). A global look at time: A 24-country study of the equivalence of the Zimbardo Time Perspective Inventory. *Sage Open,* 4(1), 2158244013515686.

Sircova, A., Mitina, O. V., Boyd, J., Davydova, I. S., Zimbardo, P. G., Nepryaho, T. L., ... & Yasnaya, V. A. (2007). The phenomenon of time perspective across different cultures: Review of researches using ZTPI scale. *Культурно историческая психология,* 30.

Skidmore, S. J., & Lefevor, G. T. (2024). Understanding How Coming Out Goes Well for Sexual and Gender Minorities. *Journal of Homosexuality*, 1-23.

Slattery, P., Saeri, A. K., & Bragge, P. (2020). Research co-design in health: a rapid overview of reviews. *Health research policy and systems*, 18, 1-13.

Slesnick, N., Zhang, J., & Brakenhoff, B. (2017). Personal control and service connection as paths to improved mental health and exiting homelessness among severely marginalized homeless youth. *Children and youth services review,* 73, 121-127.

Sliedrecht, W., Roozen, H. G., Witkiewitz, K., de Waart, R., & Dom, G. (2021). The association between impulsivity and relapse in patients with alcohol use disorder: a literature review. *Alcohol and Alcoholism,* 56(6), 637-650.

Smart, R., & Reuter, P. (2022). Does heroin-assisted treatment reduce crime? A review of randomized-controlled trials. *Addiction,* 117(3), 518-531.

Smartt, C., Prince, M., Frissa, S., Eaton, J., Fekadu, A., & Hanlon, C. (2019). Homelessness and severe mental illness in low-and middle-income countries: scoping review. *BJPsych open*, 5(4), e57.

Smits, D. W., Van Meeteren, K., Klem, M., Alsem, M., & Ketelaar, M. (2020). Designing a tool to support patient and public involvement in research projects: the Involvement Matrix. *Research involvement and engagement*, 6, 1-7.

Snider, S. E., LaConte, S. M., & Bickel, W. K. (2016). Episodic future thinking: Expansion of the temporal window in individuals with alcohol dependence. *Alcoholism: clinical and experimental research*, 40(7), 1558-1566.

Snow, D. A., & Anderson, L. (1993). Down on their luck: A study of homeless street people. *Univ of California Press.*

Soares, J., Costa, V. M., Bastos, M. D. L., Carvalho, F., & Capela, J. P. (2021). An updated review on synthetic cathinones. *Archives of toxicology*, 95(9), 2895-2940.

Sofin, Y., Danker-Hopfe, H., Gooren, T., & Neu, P. (2017). Predicting inpatient detoxification outcome of alcohol and drug dependent patients: the influence of sociodemographic environment, motivation, impulsivity, and medical comorbidities. *Journal of Addiction*, 2017(1), 6415831.

Sofis, M. J., Lemley, S. M., Jacobson, N. C., & Budney, A. J. (2022). Initial evaluation of domain-specific episodic future thinking on delay discounting and cannabis use. *Experimental and clinical psychopharmacology*, 30(6), 918.

Sokhadze, T. M., Stewart, C. M., & Hollifield, M. (2007). Integrating cognitive neuroscience research and cognitive behavioral treatment with neurofeedback therapy in drug addiction comorbid with Posttraumatic Stress Disorder: A conceptual review. *Journal of Neurotherapy*, 11(2), 13-44.

Song, M. J., Yu, L., & Enright, R. D. (2021). Trauma and healing in the underserved populations of homelessness and corrections: Forgiveness Therapy as an added component to intervention. *Clinical Psychology & Psychotherapy*, 28(3), 694-714.

Song, M. J., Nikoo, M., Choi, F., Schütz, C. G., Jang, K., & Krausz, R. M. (2018). Childhood trauma and lifetime traumatic brain injury among individuals who are homeless. *The Journal of Head Trauma Rehabilitation*, 33(3), 185-190.

Spagnolo, P. A., Colloca, L., & Heilig, M. (2015). The role of expectation in the therapeutic outcomes of alcohol and drug addiction treatments. *Alcohol and alcoholism,* 50(3), 282-285.

Speak, S. (2019, May). The state of homelessness in developing countries. In Presented at: United Nations expert group meeting on "Affordable housing and social protection systems for all to address homelessness", May (pp. 22-24).

Spear, S. E. (2014). Reducing readmissions to detoxification: an interorganizational network perspective. *Drug and Alcohol Dependence,* 137, 76-82.

Spector, P. E. (1982). Behavior in organizations as a function of employee's locus of control. *Psychological bulletin*, 91(3), 482.

Spence, S., Stevens, R., & Parks, R. (2004). Cognitive dysfunction in homeless adults: a systematic review. *Journal of the Royal Society of Medicine*, 97(8), 375-379.

Spytska, L. (2023). Psychological trauma and its impact on a person's life prospects. Scientific Bulletin of Mukachevo State University. Series *"Pedagogy and Psychology,* 9(3), 82-90.

Squeglia, L. M., & Gray, K. M. (2016). Alcohol and drug use and the developing brain. *Current psychiatry reports,* 18, 1-10.

Stablein, G. W., Hill, B. S., Keshavarz, S., & Llorente, M. D. (2021). Homelessness and substance use disorders. In *Clinical Management of the Homeless Patient: Social, Psychiatric, and Medical Issues* (pp. 179-194). Cham: Springer International Publishing.

Staley, K. (2013). There is no paradox with PPI in research. *Journal of medical ethics,* 39(3), 186-187.

Staley, K. (2015). 'Is it worth doing?' Measuring the impact of patient and public involvement in research. *Research involvement and engagement,* 1, 1-10.

Staniszewska, S., Adebajo, A., Barber, R., Beresford, P., Brady, L. M., Brett, J., ... & Williamson, T. (2011). Developing the evidence base of patient and public involvement in health and social care research: the case for measuring impact. *International Journal of Consumer Studies*, 35(6), 628-632.

Staniszewska, S., Herron-Marx, S., & Mockford, C. (2008). Measuring the impact of patient and public involvement: the need for an evidence base. *International Journal for Quality in Health Care*, 20(6), 373-374.

Steca, P. (2024). Locus of control. In Encyclopedia of quality of life and well-being research (pp. 3981-3985). Cham: Springer International Publishing.

Steen, M. (2013). Co-design as a process of joint inquiry and imagination. *Design issues*, 29(2), 16-28.

Stefanone, M., Hancock, J., Gay, G., & Ingraffea, A. (2004, November). Emergent networks, locus of control, and the pursuit of social capital. In Proceedings of the 2004 ACM conference on Computer supported cooperative work (pp. 592-595).

Stein, M. D., Anderson, B. J., & Bailey, G. L. (2015). Preferences for aftercare among persons seeking short-term opioid detoxification. *Journal of substance abuse treatment*, 59, 99-103.

Steinglass, J. E., Berner, L. A., & Attia, E. (2019). Cognitive neuroscience of eating disorders. *Psychiatric Clinics*, *42*(1), 75-91.

Stellern, J., Xiao, K. B., Grennell, E., Sanches, M., Gowin, J. L., & Sloan, M. E. (2023). Emotion regulation in substance use disorders: A systematic review and meta-analysis. *Addiction,* 118(1), 30-47.

Stergiopoulos, V., Gozdzik, A., Misir, V., Skosireva, A., Connelly, J., Sarang, A., ... & McKenzie, K. (2015). Effectiveness of housing first with intensive case management in an ethnically diverse sample of homeless adults with mental illness: A randomized controlled trial. *PLoS One,* 10(7), e0130281.

Stevens, L., Verdejo-García, A., Roeyers, H., Goudriaan, A. E., & Vanderplasschen, W. (2015). Delay discounting, treatment motivation and treatment retention among substance-dependent individuals attending an in inpatient detoxification program. *Journal of substance abuse treatmen*t, 49, 58-64.

Stevens, N. R., Adams, N., Wallston, K. A., & Hamilton, N. A. (2019). Factors associated with women's desire for control of healthcare during childbirth: Psychometric analysis and construct validation. *Research in nursing & health,* 42(4), 273-283.

Stewart, M. (2001). Towards a global definition of patient centred care: the patient should be the judge of patient centred care. *Bmj*, 322(7284), 444-445.

Stewart, S. H., Grant, V. V., Mackie, C. J., & Conrod, P. J. (2016). Comorbidity of anxiety and depression with substance use disorders. *The Oxford handbook of substance use and substance use disorders,* 2, 149-186.

Stolarski, M., Fieulaine, N., & Van Beek, W. (Eds.). (2015). *Time perspective theory: Review, research and application.* Cham, Switzerland: Springer International Publishing.

Stone, B., Dowling, S., & Cameron, A. (2019). Cognitive impairment and homelessness: A scoping review. *Health & Social Care in the Community*, *27*(4), e125-e142.

Stubbs, J. L., Thornton, A. E., Sevick, J. M., Silverberg, N. D., Barr, A. M., Honer, W. G., & Panenka, W. J. (2020). Traumatic brain injury in homeless and marginally housed individuals: a systematic review and meta-analysis. *The Lancet Public Health,* 5(1), e19-e32.

Suárez-Álvarez, J., Pedrosa, I., García-Cueto, E., & Muñiz, J. (2016). Locus of control revisited: development of a new bi-dimensional measure. *Anales de Psicología/Annals of Psychology*, 32(2), 578-586.

Subedi, K., Acharya, B., & Ghimire, S. (2022). Factors associated with hospital readmission among patients experiencing homelessness. *American journal of preventive medicine,* 63(3), 362-370.

Subedi, K., & Ghimire, S. (2022). Comorbidity profiles of patients experiencing homelessness: A latent class analysis. *PLoS One*, 17(5), e0268841.

Sullivan, A. A. (2023). What does it mean to be homeless? How definitions affect homelessness policy. *Urban Affairs Review*, *59*(3), 728-758.

Sullivan, G., Burnam, A., & Koegel, P. (2000). Pathways to homelessness among the mentally ill. *Social psychiatry and psychiatric epidemiology*, 35, 444-450.

Sullivan, G., Dumenci, L., Burnam, A., & Koegel, P. (2001). Validation of the brief instrumental functioning scale in a homeless population. *Psychiatric Services,* 52(8), 1097-1099.

Sumerau, J. E., Mathers, L. A., & Moon, D. (2020). Foreclosing fluidity at the intersection of gender and sexual normativities. *Symbolic Interaction*, 43(2), 205-234.

Sun, A. P. (2012). Helping homeless individuals with co-occurring disorders: The four components. *Social Work*, 57(1), 23-37.

Sundin, E. C., & Baguley, T. (2015). Prevalence of childhood abuse among people who are homeless in Western countries: a systematic review and meta-analysis. *Social psychiatry and psychiatric epidemiology,* 50(2), 183-194.

Susser, E., Lovell, A., & Conover, S. (2021). Unravelling the causes of homelessness–and of its association with mental illness. *Epidemiology and the prevention of mental disorders* (pp. 228-239). Routledge.

Svoboda, T. (2013). Predictors of frequent withdrawal management unit use among chronically homeless, homeless, and housed men: a retrospective cohort study. *The American journal on addictions,* 22(3), 226-232.

Sweileh, W. M. (2024). Research landscape analysis on dual diagnosis of substance use and mental health disorders: key contributors, research hotspots, and emerging research topics. *Annals of General Psychiatry,* 23(1), 32.

Sylvestre, J., & Kerman, N. (2024). The Evolution of Housing First: Perspectives of Experts from the United States, Canada, and Europe. *European Journal of Homelessness _ Volume*, *18*(1_).

Tadros, A., Tillotson, R., Hoffman, S. M., Sharon, M. J., & Burrell, C. (2018). Do ED Patients Seeking Detox For Opioid Addiction Get Treatment? *West Virginia Medical Journal,* 114(1).

Tambling, R. R., D'Aniello, C., & Russell, B. (2021). Financial anxiety among caregiving parents of adult children with a substance use disorder. *Journal of Financial Therapy*, *12*(1), 5.

Tanabe, J., Regner, M., Sakai, J., Martinez, D., & Gowin, J. (2019). Neuroimaging reward, craving, learning, and cognitive control in substance use disorders: review and implications for treatment. *The British journal of radiology*, *92*(1101), 20180942.

Tang, Y. Y., Posner, M. I., Rothbart, M. K., & Volkow, N. D. (2015). Circuitry of self-control and its role in reducing addiction. *Trends in cognitive sciences,* 19(8), 439-444.

Tang, Y. Y., Tang, R., & Posner, M. I. (2016). Mindfulness meditation improves emotion regulation and reduces drug abuse. *Drug and alcohol dependence*, *163*, S13-S18.

Tavassoli, N. T. (2013). Climate, psychological homeostasis, and individual behaviors across cultures. In *Understanding Culture* (pp. 211-221). Psychology Press.

Taylor, K. M., & Sharpe, L. (2008). Trauma and post-traumatic stress disorder among homeless adults in Sydney. *Australian & New Zealand Journal of Psychiatry,* 42(3), 206-213.

Thakarar, K., Morgan, J. R., Gaeta, J. M., Hohl, C., & Drainoni, M. L. (2016). Homelessness, HIV, and incomplete viral suppression. *Journal of health care for the poor and underserved,* 27(1), 145-156.

Thatcher, D. L., & Clark, D. B. (2008). Adolescents at risk for substance use disorders: Role of psychological dysregulation, endophenotypes, and environmental influences. *Alcohol Research & Health,* 31(2), 168.

Thelwall, M., Devonport, T. J., Makita, M., Russell, K., & Ferguson, L. (2023). Academic LGBTQ+ terminology 1900-2021: Increasing variety, increasing inclusivity? *Journal of Homosexuality,* 70(11), 2514-2538.

Thomason, M. E., & Marusak, H. A. (2017). Toward understanding the impact of trauma on the early developing human brain. *Neuroscience,* 342, 55-67.

Thompson Jr, R. G., Wall, M. M., Greenstein, E., Grant, B. F., & Hasin, D. S. (2013). Substance-use disorders and poverty as prospective predictors of first-time homelessness in the United States. *American journal of public health*, *103*(S2), S282-S288.

Thompson, S. J., Pollio, D. E., Eyrich, K., Bradbury, E., & North, C. S. (2004). Successfully exiting homelessness: Experiences of formerly homeless mentally ill individuals. *Evaluation and Program Planning*, 27(4), 423-431.

Thompson, V. A. (2022). The Veteran Administration's Appointment Scheduling Processes' Effect on the Homeless Women Veteran's Phenomenon (Doctoral dissertation, Walden University).

Thórarinsdóttir, K., & Kristjánsson, K. (2014). Patients' perspectives on person-centred participation in healthcare: a framework analysis. *Nursing ethics,* 21(2), 129-147.

Tiffany, S. T., Friedman, L., Greenfield, S. F., Hasin, D. S., & Jackson, R. (2012). Beyond drug use: a systematic consideration of other outcomes in evaluations of treatments for substance use disorders. *Addiction*, *107*(4), 709-718.

Tinland, A., Loubiere, S., Cantiello, M., Boucekine, M., Girard, V., Taylor, O., & Auquier, P. (2021). Mortality in homeless people enrolled in the French housing first randomized controlled trial: a secondary outcome analysis of predictors and causes of death. *BMC public health,* 21, 1-12.

To, M. J., Palepu, A., Aubry, T., Nisenbaum, R., Gogosis, E., Gadermann, A., ... & Hwang, S. W. (2016). Predictors of homelessness among vulnerably housed adults in 3 Canadian cities: a prospective cohort study. *BMC Public Health*, 16, 1-12.

Toledo-Fernández, A., Brzezinski-Rittner, A., Roncero, C., Benjet, C., Salvador-Cruz, J., & Marín-Navarrete, R. (2018). Assessment of neurocognitive disorder in studies of cognitive impairment due to substance use disorder: A systematic review. *Journal of Substance Use,* 23(5), 535-550.

Tolomeo, S., Steele, J. D., Ekhtiari, H., & Baldacchino, A. (2021). Chronic heroin use disorder and the brain: Current evidence and future implications. Progress in Neuro-Psychopharmacology and Biological Psychiatry, 111, 110148.

Topolovec-Vranic, J., Ennis, N., Colantonio, A., Cusimano, M. D., Hwang, S. W., Kontos, P., ... & Stergiopoulos, V. (2012). Traumatic brain injury among people who are homeless: a systematic review. *BMC public health,* 12, 1-8.

Topolovec-Vranic, J., Schuler, A., Gozdzik, A., Somers, J., Bourque, P. É., Frankish, C. J., ... & Hwang, S. W. (2017). The high burden of traumatic brain injury and comorbidities amongst homeless adults with mental illness. *Journal of psychiatric research*, 87, 53-60.

Torchalla, I., Nosen, L., Rostam, H., & Allen, P. (2012). Integrated treatment programs for individuals with concurrent substance use disorders and trauma experiences: A systematic review and meta-analysis. *Journal of substance abuse treatment*, 42(1), 65-77.

Toro, P. A. (2007). Toward an international understanding of homelessness. *Journal of social issues*, 63(3), 461-481.

Toro, P. A., & Warren, M. G. (1999). Homelessness in the United States: policy considerations. *Journal of community psychology*, 27(2), 119-136.

Toseef, M. U., Armistead, I., Bacon, E., Hawkins, E., Bender, B., Podewils, L. J., & Hurley, H. (2022). Missed appointments during COVID-19: The impact of telehealth for

persons experiencing homelessness with substance use disorders. *Asian Journal of Psychiatry*, 69, 102987.

Tracey, T. J. (2016). A note on socially desirable responding. *Journal of counseling psychology,* 63(2), 224.

Tracy, D. K., Wood, D. M., & Baumeister, D. (2017). Novel psychoactive substances: types, mechanisms of action, and effects. *Bmj*, 356.

Trifilieff, P., & Martinez, D. (2014). Cocaine: mechanism and effects in the human brain. In *The effects of drug abuse on the human nervous system* (pp. 103-133). Academic Press.

Trischler, J., Kristensson, P., & Scott, D. (2018). Team diversity and its management in a co-design team. *Journal of Service Management*, 29(1), 120-145.

Tsai, J., & Alarcón, J. (2022). The annual homeless point-in-time count: limitations and two different solutions. *American Journal of Public Health*, *112*(4), 633-637.

Tsai, J., Mares, A. S., & Rosenheck, R. A. (2010). A multisite comparison of supported housing for chronically homeless adults:“housing first” versus “residential treatment first”. *Psychological services*, *7*(4), 219.

Tsai, J., Schick, V., Hernandez, B., & Pietrzak, R. H. (2020). Is homelessness a traumatic event? Results from the 2019–2020 National Health and Resilience in Veterans Study. *Depression and Anxiety*, 37(11), 1137-1145.

Tsemberis, S. (1999). From streets to homes: An innovative approach to supported housing for homeless adults with psychiatric disabilities. *Journal of community psychology*, *27*(2), 225-241.

Tsemberis, S. (2010). Housing First: ending homelessness, promoting recovery and reducing costs. *How to house the homeless*, 37-56.

Tsemberis, S., & Asmussen, S. (2016). From streets to homes: The pathways to housing consumer preference supported housing model. In *Homelessness Prevention in Treatment of Substance Abuse and Mental Illness* (pp. 113-131). Routledge.

Tsemberis, S., & Eisenberg, R. F. (2000). Pathways to housing: Supported housing for street-dwelling homeless individuals with psychiatric disabilities. *Psychiatric services*, *51*(4), 487-493.

Tulloch, A. D., Fearon, P., & David, A. S. (2012). Timing, prevalence, determinants and outcomes of homelessness among patients admitted to acute psychiatric wards. *Social psychiatry and psychiatric epidemiology,* 47, 1181-1191.

Turan, J. M., Elafros, M. A., Logie, C. H., Banik, S., Turan, B., Crockett, K. B., ... & Murray, S. M. (2019). Challenges and opportunities in examining and addressing intersectional stigma and health. *BMC medicine*, *17*, 1-15.

Turhan, N. S. (2020). Karl Pearson's Chi-Square Tests. *Educational Research and Reviews,* 16(9), 575-580.

Twamley, E. W., Hays, C. C., Van Patten, R., Seewald, P. M., Orff, H. J., Depp, C. A., ... & Jak, A. J. (2019). Neurocognition, psychiatric symptoms, and lifetime homelessness among veterans with a history of traumatic brain injury. *Psychiatry Research,* 271, 167-170.

Tyler, K. A., & Wright, J. D. (2019). Homelessness and sexual assault. *Handbook of sexual assault and sexual assault prevention*, 693-707.

Uba, L. (2019). The Relationship between Meaning in Life, Self–Forgiveness, Locus of Control, and Relapse to Substance Use Disorders among Recovering Patients in an Opioid Treatment Program in Appalachia. *Lindsey Wilson College.*

Udayakumara, A. R. P. C. (2024). A Criminological Study of the Impact of Heroin Use on Problems Associated with Urban Poverty in Sri Lanka. *International Journal of Research and Innovation in Social Sciences,* 13(7), 2454-6186.

United Nations Human Settlements Programme. (2020, February 13). *Working Together to End Homelessness.* https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/02/Together-EndHomelessness-Event-CN-13Feb-1.pdf

United Nations Human Settlements Programme. (2021, December 20). *SDG indicator metadata.* https://unstats.un.org/sdgs/metadata/files/Metadata-11-01-01.pdf

United Nations Office on Drugs and Crime. (2021). Covid-19 and Drugs: Impact Outlook. In *World Drug Report 2021.*

United Nations Office on Drugs and Crime. (2021). *World Drug Report 2024.* https://www.unodc.org/unodc/en/data-and-analysis/world-drug-report-2024.html

Unterrainer, H. F., Hiebler-Ragger, M., Koschutnig, K., Fuchshuber, J., Tscheschner, S., Url, M., ... & Fink, A. (2017). Addiction as an attachment disorder: white matter impairment is linked to increased negative affective states in poly-drug use. *Frontiers in human neuroscience*, *11*, 208.

Upshur, C. C., Jenkins, D., Weinreb, L., Gelberg, L., & Orvek, E. A. (2018). Homeless women's service use, barriers, and motivation for participating in substance use treatment. *The American journal of drug and alcohol abuse,* 44(2), 252-262.

Urbanoski, K., Cheng, J., Rehm, J., & Kurdyak, P. (2018). Frequent use of emergency departments for mental and substance use disorders. *Emergency Medicine Journal*, *35*(4), 220-225.

Urbanoski, K., Veldhuizen, S., Krausz, M., Schutz, C., Somers, J. M., Kirst, M., ... & Goering, P. (2018). Effects of comorbid substance use disorders on outcomes in a

Housing First intervention for homeless people with mental illness. *Addiction,* 113(1), 137-145.

Üzümçeker, E. (2016). The limits of the use of locus of control in industrial psychology: A critical evaluation. *Psychological Thought*, 9(2).

Vaajakallio, K., Lee, J. J., Kronqvist, J., & Mattelmäki, T. (2013). Service co-design with the public sector: Challenges and opportunities in a healthcare context. In *7th Conference of Include Asia.* Retrieved October (Vol. 30, p. 2015).

Vaditya, V. (2018). Social domination and epistemic marginalisation: towards methodology of the oppressed. *Social Epistemology,* 32(4), 272-285.

van Emmerik-van Oortmerssen, K., van de Glind, G., van den Brink, W., Smit, F., Crunelle, C. L., Swets, M., & Schoevers, R. A. (2012). Prevalence of attention-deficit hyperactivity disorder in substance use disorder patients: a meta-analysis and meta-regression analysis. *Drug and alcohol dependence*, 122(1-2), 11-19.

Van de Mortel, T. F. (2008). Faking it: social desirability response bias in self-report research. *The Australian Journal of Advanced Nursing*, 25(4), 40-48.

van den Bergh, D., Van Doorn, J., Marsman, M., Draws, T., Van Kesteren, E. J., Derks, K., ... & Wagenmakers, E. J. (2020). A tutorial on conducting and interpreting a Bayesian ANOVA in JASP. *L'Année psychologique,* 120(1), 73-96.

van den Berk-Clark, C. (2016). The dilemmas of frontline staff working with the homeless: Housing first, discretion, and the task environment. *Housing policy debate*, 26(1), 105-122.

Van den Besselaar, P., & Mom, C. (2022). The effect of writing style on success in grant applications. *Journal of Informetrics,* 16(1), 101257.

Van den Bree, M. B., Shelton, K., Bonner, A., Moss, S., Thomas, H., & Taylor, P. J. (2009). A longitudinal population-based study of factors in adolescence predicting homelessness in young adulthood. *Journal of Adolescent Health,* 45(6), 571-578.

Van den Brink, W. (2015). Substance use disorders, trauma, and PTSD. *European Journal of Psychotraumatology,* 6(1), 27632.

van den Brink, W., & van Ree, J. M. (2003). Pharmacological treatments for heroin and cocaine addiction. European *Neuropsychopharmacology*, 13(6), 476-487.

van der Gouwe, D., Brunt, T. M., van Laar, M., & van der Pol, P. (2017). Purity, adulteration and price of drugs bought on-line versus off-line in the Netherlands. *Addiction,* 112(4), 640-648.

Van der Kolk, B. A. (2003). Psychological trauma. *American Psychiatric Pub.*

Van de Schoot, R., Depaoli, S., King, R., Kramer, B., Märtens, K., Tadesse, M. G., ... & Yau, C. (2021). Bayesian statistics and modelling. *Nature Reviews Methods Primers*, *1*(1), 1.

Van Doorn, L. (2010). Perceptions of time and space of (formerly) homeless people. *Journal of Human Behavior in the Social Environment,* 20(2), 218-238.

Van Hout, M. C., & Bingham, T. (2011). Holding pattern: An exploratory study of the lived experiences of those on methadone maintenance in Dublin North East. Dublin: *Dublin North East Drugs Task Force.*

van Leeuwen, D., Mittelman, M., Fabian, L., & Lomotan, E. A. (2022). Nothing for me or about me, without me: codesign of clinical decision support. *Applied Clinical Informatics,* 13(03), 641-646.

Van Oort, B. (2020). INvolvement of young experts by experience in research. *University Medical Centre Utrecht and Rehabilitation Centre De Hoogstraat.*

Van Straaten, B., Schrijvers, C. T., Van der Laan, J., Boersma, S. N., Rodenburg, G., Wolf, J. R., & Van de Mheen, D. (2014). Intellectual disability among Dutch homeless people: prevalence and related psychosocial problems. *PLoS One,* 9(1), e86112.

Van Straaten, B., Van der Laan, J., Rodenburg, G., Boersma, S. N., Wolf, J. R., & Van de Mheen, D. (2017). Dutch homeless people 2.5 years after shelter admission: what are predictors of housing stability and housing satisfaction?. *Health & Social Care in the Community*, 25(2), 710-722.

VanderZee, K. I., Buunk, B. P., & Sanderman, R. (1997). Social support, locus of control, and psychological well-being. *Journal of Applied Social Psychology*, 27(20), 1842-1859.

Vangeest, J. B., & Johnson, T. P. (2002). Substance abuse and homelessness: direct or indirect effects?. *Annals of epidemiology*, *12*(7), 455-461.

Vargha, A., & Delaney, H. D. (1998). The Kruskal-Wallis test and stochastic homogeneity. *Journal of Educational and behavioral Statistics,* 23(2), 170-192.

Vázquez, C., & Muñoz, M. (2001). Homelessness, mental health, and stressful life events: The Madrid experience. *International Journal of Mental Health,* 30(3), 6-25.

Vekaria, V., Bose, B., Murphy, S. M., Avery, J., Alexopoulos, G., & Pathak, J. (2021). Association of co-occurring opioid or other substance use disorders with increased healthcare utilization in patients with depression. *Translational psychiatry*, 11(1), 265.

Verdejo-Garcia, A., Garcia-Fernandez, G., & Dom, G. (2019). Cognition and addiction. *Dialogues in clinical neuroscience*, *21*(3), 281-290.

Verdejo-García, A. J., Perales, J. C., & Pérez-García, M. (2007). Cognitive impulsivity in cocaine and heroin polysubstance abusers. *Addictive behaviors,* 32(5), 950-966.

Veseth, M., Moltu, C., Svendsen, T. S., Nesvåg, S., Slyngstad, T. E., Skaalevik, A. W., & Bjornestad, J. (2019). A stabilizing and destabilizing social world: close relationships and recovery processes in SUD. *Journal of Psychosocial Rehabilitation and Mental Health,* 6, 93-106.

Villalonga-Olives, E., Rojas-Farreras, S., Vilagut, G., Palacio-Vieira, J. A., Valderas, J. M., Herdman, M., ... & Alonso, J. (2010). Impact of recent life events on the health related quality of life of adolescents and youths: the role of gender and life events typologies in a follow-up study. *Health and quality of life outcomes*, 8, 1-9.

Villegas, P. E. (2014). 'I can't even buy a bed because I don't know if I'll have to leave tomorrow': temporal orientations among Mexican precarious status migrants in Toronto. *Citizenship Studies*, *18*(3-4), 277-291.

Vipler, S., Hayashi, K., Milloy, M. J., Wood, E., Nosova, E., Kerr, T., & Ti, L. (2018). Use of withdrawal management services among people who use illicit drugs in Vancouver, Canada. *Substance abuse treatment, prevention, and policy*, 13, 1-8.

Vogel-Sprott, M., Easdon, C., Fillmore, M., Finn, P., & Justus, A. (2001). Alcohol and behavioral control: cognitive and neural mechanisms. *Alcoholism: Clinical and Experimental Research*, 25(1), 117-121.

Volkow, N. D., & Blanco, C. (2023). Substance use disorders: a comprehensive update of classification, epidemiology, neurobiology, clinical aspects, treatment and prevention. *World Psychiatry*, 22(2), 203-229.

Vonmoos, M., Hulka, L. M., Preller, K. H., Minder, F., Baumgartner, M. R., & Quednow, B. B. (2014). Cognitive impairment in cocaine users is drug-induced but partially reversible: evidence from a longitudinal study. *Neuropsychopharmacology,* 39(9), 2200-2210.

Voorheis, P., Petch, J., Pham, Q., & Kuluski, K. (2023). Maximizing the value of patient and public involvement in the digital health co-design process: A qualitative descriptive study with design leaders and patient-public partners. *PLOS Digital Health,* 2(10), e0000213.

Waegemakers Schiff, J., & Rook, J. (2012). *Housing First-Where is the evidence?* Canadian Homelessness Research Network.

Walker, J. (2001). Control and the psychology of health. City: *Open University Press Buckingham.*

Walker, E. R., Pratt, L. A., Schoenborn, C. A., & Druss, B. G. (2017). Excess mortality among people who report lifetime use of illegal drugs in the United States: a 20-year follow-up of a nationally representative survey. *Drug and alcohol dependence,* 171, 31-38.

Wallace, C. J. (1986). Functional assessment in rehabilitation. *Schizophrenia Bulletin,* 12(4), 604-630.

Wallston, K. A. (2005). The validity of the multidimensional health locus of control scales. *Journal of health psychology,* 10(5), 623-631.

Wallston, K. A., & Wallston, B. S. (1981). Health locus of control scales. *Research with the locus of control construct,* 1(1), 189-243.

Walsh, C., MacMillan, H. L., & Jamieson, E. (2003). The relationship between parental substance abuse and child maltreatment: findings from the Ontario Health Supplement. *Child abuse & neglect*, *27*(12), 1409-1425.

Wang, K. S., & Delgado, M. R. (2019). Corticostriatal circuits encode the subjective value of perceived control. *Cerebral Cortex*, 29(12), 5049-5060.

Wang, S., Tomlinson, E. C., & Noe, R. A. (2010). The role of mentor trust and protégé internal locus of control in formal mentoring relationships. *Journal of applied psychology,* 95(2), 358.

Watson, B., & Lingford-Hughes, A. (2007). Pharmacological treatment of addiction. *Psychiatry*, 6(7), 309-312.

Watson, D. P., & Rollins, A. L. (2015). The meaning of recovery from co-occurring disorder: Views from consumers and staff members living and working in housing first programming. *International Journal of Mental Health and Addiction*, *13*, 635-649.

Watson, D., Kenny, O., & McGinnity, F. (2017). A social portrait of Travellers in Ireland. *Research Series*, *56*, 589-608.

Watson, J. (2011). Understanding survival sex: Young women, homelessness and intimate relationships. *Journal of youth studies*, 14(6), 639-655.

Watson, J., Crawley, J., & Kane, D. (2016). Social exclusion, health and hidden homelessness. *Public health,* 139, 96-102.

Weatherson, B. (2014). Centrality and marginalisation. *Philosophical Studies*, 171, 517-533.

Wei, Y., Zhao, J., Wong, I. C., Wan, E. Y., Taylor, D. M., Blais, J. E., ... & Chan, E. W. (2021). Relation of substance use disorders to mortality, accident and emergency department attendances, and hospital admissions: A 13-year population-based cohort study in Hong Kong. *Drug and alcohol dependence*, *229*, 109119.

Weinberg, D. (2013). Post-humanism, addiction and the loss of self-control: Reflections on the missing core in addiction science. *International Journal of Drug Policy,* 24(3), 173-181.

Welsh, J. W., Tretyak, V., McHugh, R. K., Weiss, R. D., & Bogunovic, O. (2018). Adjunctive pharmacologic approaches for benzodiazepine tapers. *Drug and Alcohol Dependence,* 189, 96-107.

Whitbeck, L. B., Armenta, B. E., & Gentzler, K. C. (2015). Homelessness-related traumatic events and PTSD among women experiencing episodes of homelessness in three US cities. *Journal of traumatic stress,* 28(4), 355-360.

White, W. L. (2007). Addiction recovery: Its definition and conceptual boundaries. *Journal of substance abuse treatment,* 33(3), 229-241.

White, J., Moriarty, Y., Lau, M., Cannings-John, R., Palmer, A., Weightman, A. L., ... & Batty, G. D. (2025). Homelessness, type of homelessness, and risk of cause-specific mortality: a systematic review and meta-analysis of 116 studies comprising 2,563,633 homeless people and 129,292,553 population controls. medRxiv.

Wiechelt, S. A., & Straussner, S. L. A. (2015). Introduction to the special issue: Examining the relationship between trauma and addiction. *Journal of Social Work Practice in the Addictions*, 15(1), 1-5.

Wiens, T. K., & Walker, L. J. (2015). The chronic disease concept of addiction: Helpful or harmful?. Addiction research & theory, 23(4), 309-321.

Wiers, R. W., Gladwin, T. E., Hofmann, W., Salemink, E., & Ridderinkhof, K. R. (2013). Cognitive bias modification and cognitive control training in addiction and related psychopathology: Mechanisms, clinical perspectives, and ways forward. *Clinical Psychological Science*, *1*(2), 192-212.

Wiewel, B., & Hernandez, L. (2022). Traumatic stress and homelessness: a review of the literature for practitioners. *Clinical Social Work Journal,* 50(2), 218-230.

Wilkinson, M. D., Dumontier, M., Aalbersberg, I. J., Appleton, G., Axton, M., Baak, A., ... & Mons, B. (2016). The FAIR Guiding Principles for scientific data management and stewardship. *Scientific data,* 3(1), 1-9.

Williams, J. C. (2011). “Stand up and be counted”: the politics of a homeless enumeration. *Poverty & Public Policy*, *3*(3), 1-27.

Williams, S. L., & Fredrick, E. G. (2015). One size may not fit all: The need for a more inclusive and intersectional psychological science on stigma. *Sex Roles*, *73*, 384-390.

Wilson, A. J., Bonevski, B., Dunlop, A., Shakeshaft, A., Tzelepis, F., Walsberger, S., ... & Guillaumier, A. (2016). 'The lesser of two evils': A qualitative study of staff and client experiences and beliefs about addressing tobacco in addiction treatment settings. *Drug and Alcohol Review,* 35(1), 92-101.

Wilson, I., & Thompson, T. (2021). Association between medically assisted detoxification and neuropathic pain. *Nursing Standard.*

Wilson, S. J. (2015). *The Wiley Handbook on the Cognitive Neuroscience of Addiction.*

Wimmer, C. (2024). Exclusions and Marginalisation. In *Global Handbook of Inequality* (pp. 1-22). Cham: Springer International Publishing.

Winker, G., & Degele, N. (2011). Intersectionality as multi-level analysis: Dealing with social inequality. *European Journal of Women's Studies*, *18*(1), 51-66.

Winn, J. L., Shealy, S. E., Kropp, G. J., Felkins-Dohm, D., Gonzales-Nolas, C., & Francis, E. (2013). Housing assistance and case management: Improving access to substance use disorder treatment for homeless veterans. *Psychological Services,* 10(2), 233.

Witkiewitz, K., Montes, K. S., Schwebel, F. J., & Tucker, J. A. (2020). What is recovery?. *Alcohol Research: Current Reviews*, *40*(3), 01.

Wolf, J., Burnam, A., Koegel, P., Sullivan, G., & Morton, S. (2001). Changes in subjective quality of life among homeless adults who obtain housing: a prospective examination. *Social Psychiatry and Psychiatric Epidemiology*, 36, 391-398.

Wolinsky, F. D., Vander Weg, M. W., Martin, R., Unverzagt, F. W., Willis, S. L., Marsiske, M., ... & Tennstedt, S. L. (2010). Does cognitive training improve internal locus of control among older adults?. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences,* 65(5), 591-598.

Wolstenholme, D., Grindell, C., & Dearden, A. (2017). A co-design approach to service improvement resulted in teams exhibiting characteristics that support innovation. *Design for Health,* 1(1), 42-58.

Wong, B., & Chau, S. (2022). Mixed-race people and social work: a critical literature review. *Journal of Ethnic & Cultural Diversity in Social Work*, 31(6), 315-328.

Wong, P. T., Watters, D. A., & Sproule, C. F. (1978). Initial validity and reliability of the Trent Attribution Profile (TAP) as a measure of attribution schema and locus of control. *Educational and Psychological Measurement,* 38(4), 1129-1134.

Wong, Y. L. I. (2000). Measurement properties of the Center for Epidemiologic studies—Depression Scale in a homeless population. *Psychological assessment,* 12(1), 69.

Wong, Y. L. I., Park, J. M., & Nemon, H. (2006). Homeless service delivery in the context of continuum of care. *Administration in Social Work*, *30*(1), 67-94.

Woodhall-Melnik, J. R., & Dunn, J. R. (2016). A systematic review of outcomes associated with participation in Housing First programs. *Housing Studies,* 31(3), 287-304.

Woodhead, E. L., Brief, D., Below, M., & Timko, C. (2021). Health outcomes among detoxification patients: The role of chronic pain. *Applied Psychology: Health and Well-Being*, 13(4), 922-934.

World Health Organisation (2014). *Global status report on alcohol and health 2014.* https://www.who.int/publications/i/item/global-status-report-on-alcohol-and-health-2014

World Health Organisation. (2024). *Global status report on alcohol and health and treatment of substance use disorders.* https://iris.who.int/bitstream/handle/10665/377960/9789240096745-eng.pdf?sequence=1

World Health Organisation. (2024b). Global status report on alcohol and health and treatment of substance use disorders. Geneva: World Health Organization; 2024. Licence: CC BY-NC-SA 3.0 IGO

World Health Organization. (2018). *Global status report on alcohol and health 2018*. https://iris.who.int/bitstream/handle/10665/274603/9789241565639-eng.pdf?sequence=1

Worley, J. (2021). Substance use withdrawal and detox strategies that work. *Journal of Psychosocial Nursing and Mental Health Services*, 59(9), 12-15.

Wyant, B. E., Karon, S. S., & Pfefferle, S. G. (2019). Housing Options for Recovery for Individuals with Opioid Use Disorder: A Literature Review. *Assistant Secretary for Planning and Evaluation, Office of Disability, Aging and Long-Term Care Policy.*

Xu, L., Carpenter-Aeby, T., Aeby, V. G., Lu, W., Fisher, L., Hardee, M., & Rowson, N. (2016). A systematic review of the literature: Exploring correlates of sexual assault and homelessness. *Trop Med Surgery*, 4, 212.

Yamashita, A., Yoshioka, S. I., & Yajima, Y. (2021). Resilience and related factors as predictors of relapse risk in patients with substance use disorder: a cross-sectional study. *Substance Abuse Treatment, Prevention, and Policy*, 16(1), 40.

Yavorski, J. T. (2021). Homeless to Housed: A Depth Psychological Perspective on Transitioning from Chronic Homelessness to Housing [Master's thesis, Pacifica Graduate Institute].

Ye, Y., & Lin, L. (2015). Examining relations between locus of control, loneliness, subjective well-being, and preference for online social interaction. *Psychological reports*, 116(1), 164-175.

Yoho, D. W. (2016). Looking for the Intersection: Public Libraries, Adult Literacy and Homelessness. *South Carolina Libraries,* 2(2), 3.

Young, J. T., & Hughes, N. (2020). Traumatic brain injury and homelessness: from prevalence to prevention. *The Lancet Public Health*, 5(1), e4-e5.

Zaborowski, R. (2019). Affectivity as an Underlying Factor in Anticipating an Individual's Approach to the Future. *Axiomathes,* 29, 49-60.

Zafar, R., Siegel, M., Harding, R., Barba, T., Agnorelli, C., Suseelan, S., ... & Erritzoe, D. (2023). Psychedelic therapy in the treatment of addiction: the past, present and future. *Frontiers in Psychiatry,* 14, 1183740.

Zaleski, M., Pinsky, I., Laranjeira, R., Ramisetty-Mikler, S., & Caetano, R. (2010). Intimate partner violence and alcohol consumption. *Revista de saude publica*, *44*, 53-59.

Zamenopoulos, T., & Alexiou, K. (2018). Co-design as collaborative research. *Bristol University/AHRC Connected Communities Programme.*

Zanis, D. A., McLellan, A. T., Cnaan, R. A., & Randall, M. (1994). Reliability and validity of the Addiction Severity Index with a homeless sample. *Journal of substance abuse treatment*, 11(6), 541-548.

Zaretzky, K., Flatau, P., & Brady, M. (2008). What is the (net) cost to government of Whiteford, H. A., Ferrari, A. J., Degenhardt, L., Feigin, V., & Vos, T. (2015). The global burden of mental, neurological and substance use disorders: an analysis from the Global Burden of Disease Study 2010. *PloS one*, *10*(2), e0116820.

Zdybek, P. (2016). Does Addiction Therapy Change the Hedonistic Temporal Orientation and the Satisfaction with the Patients' Life?. In *Spin Cycle* (pp. 111-122). Brill.

Zelenko, O., Gomez, R., & Kelly, N. (2021). Research co-design: meaningful collaboration in research. In *How to Be a design academic* (pp. 227-244). CRC Press.

Zemmour, K., Tinland, A., Boucekine, M., Girard, V., Loubière, S., Resseguier, N., ... & French Housing First Study Group. (2016). Validation of the Medication Adherence

Rating Scale in homeless patients with schizophrenia: Results from the French Housing First experience. *Scientific Reports*, 6(1), 31598.

Zemore, S. E., Ziemer, K. L., Gilbert, P. A., Karno, M. P., & Kaskutas, L. A. (2023). Understanding the Shared meaning of Recovery from Substance Use disorders: New findings from the what is Recovery? Study. *Substance abuse: research and treatment*, *17*, 11782218231199372.

Zerger, S. (2002). Substance abuse treatment: What works for homeless people. *A review of the literature. Nashville, TN: National Health Care for the Homeless Council*, 1-62.

Zhang, J. W., Howell, R. T., & Stolarski, M. (2013). Comparing three methods to measure a balanced time perspective: The relationship between a balanced time perspective and subjective well-being. *Journal of Happiness studies,* 14, 169-184.

Zhang, P., Wiens, K., Wang, R., Luong, L., Ansara, D., Gower, S., ... & Hwang, S. W. (2019). Cold weather conditions and risk of hypothermia among people experiencing homelessness: implications for prevention strategies. *International journal of environmental research and public health*, 16(18), 3259.

Zhao, E. (2023). The key factors contributing to the persistence of homelessness. *International Journal of Sustainable Development & World Ecology*, *30*(1), 1-5.

Zieschank, K., Day, J., Ireland, M. J., & March, S. (2021). Co-design and qualitative validation of animated assessment item content for a child-reported digital distress screener. *Internet Interventions,* 24, 100381.

Zimbardo, P. G. and Boyd, J. N. (1999) 'Putting Time in Perspective: A Valid, Reliable Individual-difference Metric'. *Journal of Personality and Social Psychology*. 77: 1271–88.

Zimbardo, P. G., & Boniwell, I. (2004). Balancing one's time perspective in pursuit of optimal functioning. *Positive psychology in practice,* 3, 105-168.

Zlotnick, C., Robertson, M. J., & Lahiff, M. (1999). Getting off the streets: Economic resources and residential exits from homelessness. *Journal of Community Psychology, 27*(2), 209-224.

Appendix A

DCU Research Ethics Committee Approval for DSC Research

DCU

Ms. Lorna Crean
School of Psychology

Dr. Catherine Fassbender
School of Psychology

Dr. Styliani Vlachou
School of Psychology

18th March 2020

REC Reference: DCUREC/2021/051

Proposal Title: The desire for control in addiction and homelessness

Applicant(s): Ms. Lorna Crean, Dr. Catherine Fassbender, Dr. Styliani Vlachou

Dear Colleagues,

Further to full committee review, the DCU Research Ethics Committee approves this research proposal.

Materials used to recruit participants should note that ethical approval for this project has been obtained from the Dublin City University Research Ethics Committee.

Should substantial modifications to the research protocol be required at a later stage, a further amendment submission should be made to the REC.

Yours sincerely,

Dr Geraldine Scanlon
Chairperson

DCU Research & Innovation

Taighde & Nuálaíocht Tacaíocht
Ollscoil Chathair Bhaile Átha Cliath,
Baile Átha Cliath, Éire

Research & Innovation Support
Dublin City University
Dublin 9, Ireland

E research@dcu.ie
www.dcu.ie

DCU Research Ethics Committee

Appendix B

DCU Research Ethics Committee Approval for CTC Research

Ollscoil Chathair Bhaile Átha Cliath
Dublin City University

DCU

13th September 2023

REC Reference: DCUREC/2023/118 (Full Committee Review)

Proposal Title: Interpersonal control and temporal cognition as predictors of problematic substance use recovery

Applicant(s): Ms Lorna Crean, Dr Styliani Vlachou, Dr Catherine Fassbender Dear Colleague(s),

Thank you for your application to DCU Research Ethics Committee (REC). Further to its review by the committee and resting on the assumption of information accuracy and completeness, DCU REC is pleased to issue ethical approval for this research project. Please include reference to this ethical approval in all materials used to recruit research participants.

Researchers are responsible for ensuring that the research project to which this ethical approval refers is carried out as specifically described in the application form. Should modifications to the research project be required at a later stage, researchers must submit a research amendment application form to REC for approval, prior to the implementation of modifications.

Please note that it is the responsibility of the PI to ensure that any other DCU compliance requirements relevant to the research project, such as those related to data protection, insurance, health and safety, or legal issues, are fully met in advance of initiating the project.

As part of DCU REC's ongoing monitoring process, a research progress report may be required. DCU REC will request this report from the PI as appropriate.

DCU REC wishes you every success in your research.

Yours sincerely, DCU Research & Innovation

Dr. Melrona Kirrane
Chairperson
DCU Research Ethics Committee

Research & Innovation Support
Dublin City University

Note: Please retain this approval letter for future publication purposes. Research students should include this letter as a thesis appendix.

Appendix C

Participant and Researcher Risk Management Protocol

Scope of protocol:

This protocol outlines precautions to be taken to prevent the occurrence of health and safety risks to participants and the student researcher during the data collection phase for the study "The effect of homelessness on interpersonal control and temporal cognition as predictors of problematic substance use recovery", and actions to be taken in the event of such a risk.

Precautions:

CCTV surveillance:

All data collection will be monitored by a Coolmine Therapeutic Community staff member via visual-only CCTV surveillance.

Participants will be informed of CCTV surveillance prior to participation via Plain Language Statement, and agree to this via Informed Consent Form.

Assessment room layout:

Assessment room layout will position the student researcher between the participant and the door. The student researcher will ensure she remains between participants and the door out of the assessment room, with a view of both, at all times.

Assurance of confidentiality:

Participants will be informed that disclosure of substance use is confidential and will not be shared with staff.

Frustration:

All assessment materials have been approved by an Expert Advisory Group of individuals in residential PSU detox treatment prior to data collection.

The student will use plain English and a neutral tone at all times during assessment procedures.

Relevant student training:

The student researcher has completed and twice refreshed Management of Actual and Potential Anger (MAPA) training, which prioritises de-escalation, followed by leaving and asking for help before self-defence.

Risk: Participant distress

In the event that a participant becomes distressed during assessment, the student researcher will inform the participant in a calm voice that they are under no obligation to finish the assessment procedure, that they may pause testing procedures if they need a break, or stop entirely if completing would be too upsetting. They will remain with the participant and ask how they may help. If the participant does not know, the student will ensure them that they will remain with them until they feel better, unless this would upset them further. If they do know, and their request is reasonable, such as talking, taking a walk, or speaking with a member of the staff, the researcher will oblige. If the request is unreasonable, the researcher will calmly explain why this is so. When, or if, the participant becomes calm, the researcher will offer them the chance to complete their assessment. Whether or not they do this, the participant will be debriefed and explicitly informed how they may avail of counselling from Coolmine TC.

Should a participant react badly when informed they were mildly deceived to this project's aims, they will be reminded of their right to withdraw all information provided during assessment until their discharge from Coolmine TC and of their right to avail of the free counselling provided by this service.

Risk: General aggression

Should a participant become aggressive in a manner which is not directed at the student researcher, such as shouting that the test is stupid, pushing furniture, or stomping, the student researcher will calmly inform the participant that they are leaving to get a member of staff to help. They will then immediately leave the room and retrieve the staff member watching the CCTV monitor and another staff member if available. The team will then attempt to calm the participant by ensuring that the concerns they have voiced are within their control, and that the team is there to support them. When, or if, the participant becomes calm, the student will offer to reschedule their assessment. Whether or not they do this, the participant will be debriefed and explicitly informed of the free counselling available to them from Coolmine Therapeutic Community. If the client is in crisis, this counsellor will be contacted immediately.

Risk: Targeted aggression

In the unlikely event a participant becomes vocally or physically aggressive in a way targeted towards, or threatening to, the student researcher, the student will immediately leave the assessment room and go to the social carer office. Here, she will inform staff of what occurred from her perspective. She will not re-enter the assessment room or re-engage with the participant. Coolmine TC staff will de-escalate the situation. The assessment procedure

will not continue. Coolmine TC staff will be asked to debrief the participant when they feel it is safe to do so and more than one staff member is present.

Appendix D

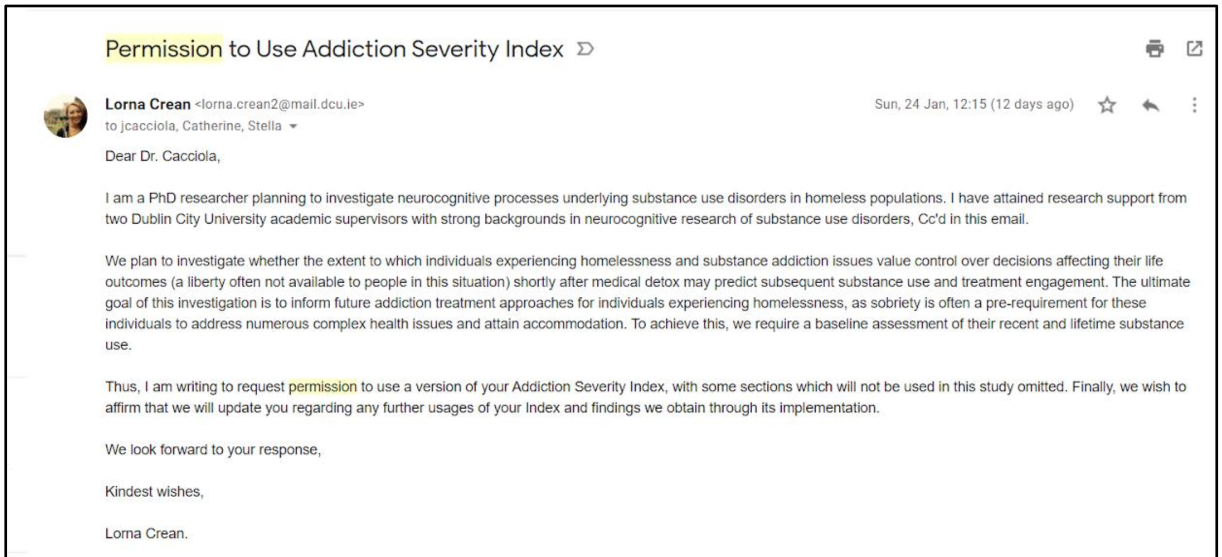
Evidence of External Approvals

Addiction Severity Index

Two emails were sent to authors of the Addiction Severity Index. No response was obtained from either. As this index is readily available on numerous websites, it would seem permission to use this scale is not required. Nonetheless our team plans to update the authors below of any updates regarding the use of their scale.

Figure D1

Permission Request to Use Addiction Severity Index



Permission to Use Addiction Severity Index

Lorna Crean <lorna.crean2@mail.dcu.ie> Sun, 24 Jan, 12:15 (12 days ago)
to jcacciola, Catherine, Stella

Dear Dr. Cacciola,

I am a PhD researcher planning to investigate neurocognitive processes underlying substance use disorders in homeless populations. I have attained research support from two Dublin City University academic supervisors with strong backgrounds in neurocognitive research of substance use disorders, Cc'd in this email.

We plan to investigate whether the extent to which individuals experiencing homelessness and substance addiction issues value control over decisions affecting their life outcomes (a liberty often not available to people in this situation) shortly after medical detox may predict subsequent substance use and treatment engagement. The ultimate goal of this investigation is to inform future addiction treatment approaches for individuals experiencing homelessness, as sobriety is often a pre-requirement for these individuals to address numerous complex health issues and attain accommodation. To achieve this, we require a baseline assessment of their recent and lifetime substance use.

Thus, I am writing to request permission to use a version of your Addiction Severity Index, with some sections which will not be used in this study omitted. Finally, we wish to affirm that we will update you regarding any further usages of your Index and findings we obtain through its implementation.

We look forward to your response,

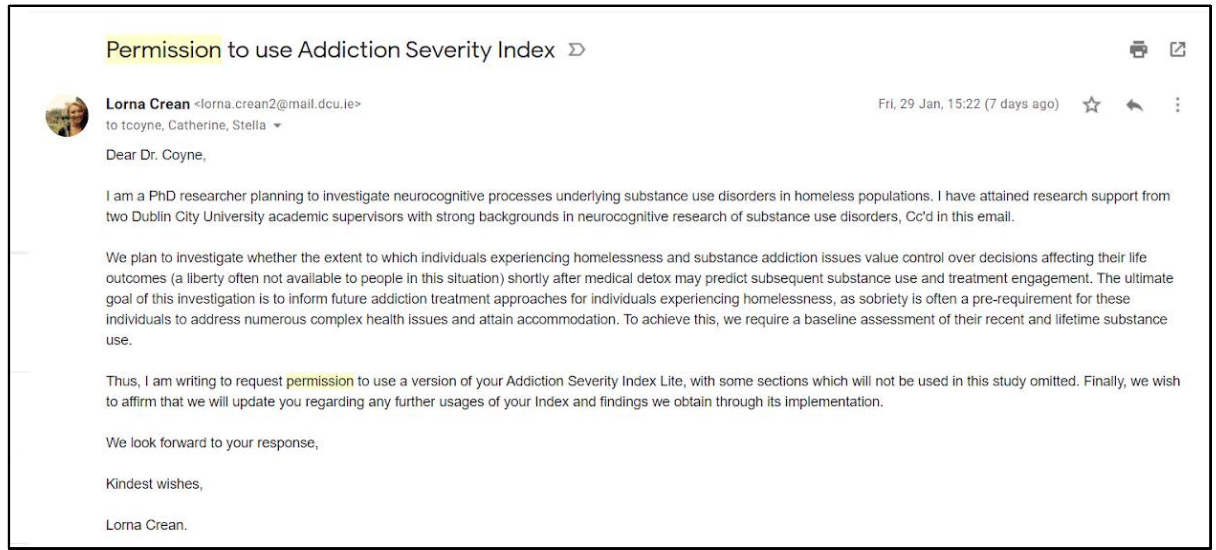
Kindest wishes,

Lorna Crean.

Note. This figure displays an email sent to Dr. Cacciola, requesting permission to use a version of their Addiction Severity Index.

Figure D2

Permission Request to Use Addiction Severity Index Lite



Permission to use Addiction Severity Index

Lorna Crean <lorna.crean2@mail.dcu.ie>
to tcoyne, Catherine, Stella
Fri, 29 Jan, 15:22 (7 days ago)

Dear Dr. Coyne,

I am a PhD researcher planning to investigate neurocognitive processes underlying substance use disorders in homeless populations. I have attained research support from two Dublin City University academic supervisors with strong backgrounds in neurocognitive research of substance use disorders, Cc'd in this email.

We plan to investigate whether the extent to which individuals experiencing homelessness and substance addiction issues value control over decisions affecting their life outcomes (a liberty often not available to people in this situation) shortly after medical detox may predict subsequent substance use and treatment engagement. The ultimate goal of this investigation is to inform future addiction treatment approaches for individuals experiencing homelessness, as sobriety is often a pre-requirement for these individuals to address numerous complex health issues and attain accommodation. To achieve this, we require a baseline assessment of their recent and lifetime substance use.

Thus, I am writing to request permission to use a version of your Addiction Severity Index Lite, with some sections which will not be used in this study omitted. Finally, we wish to affirm that we will update you regarding any further usages of your Index and findings we obtain through its implementation.

We look forward to your response,

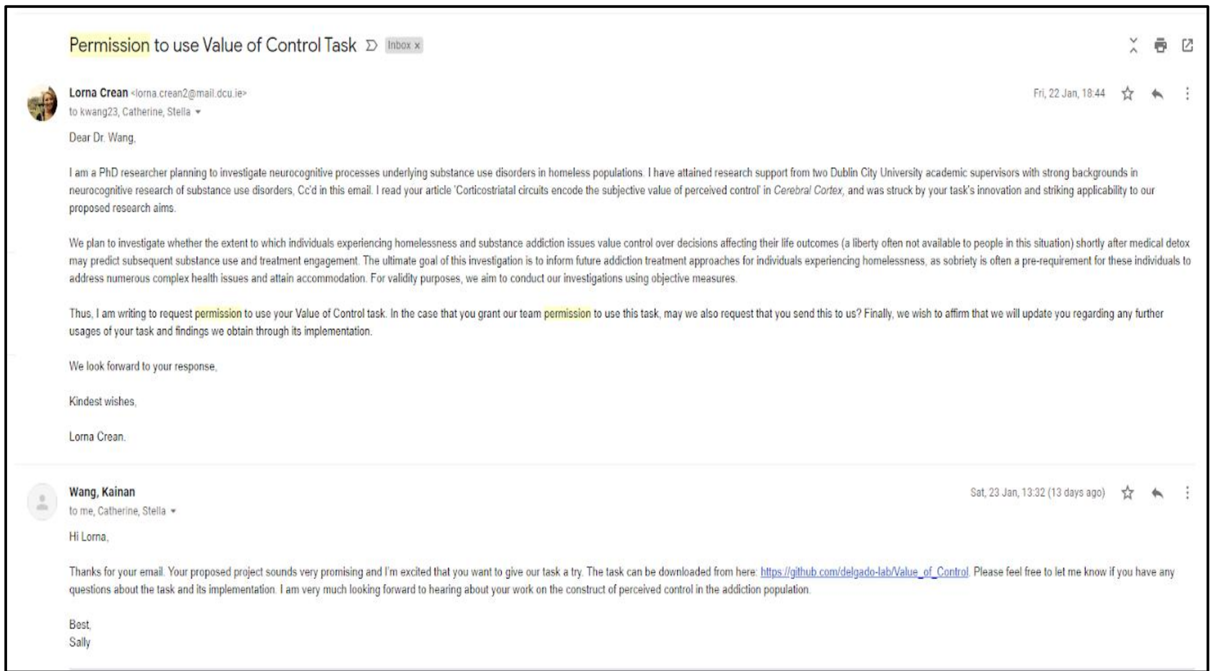
Kindest wishes,

Lorna Crean.

Note. This figure shows an email sent to Dr. Coyne, requesting permission to use a version of their Addiction Severity Index Lite.

Figure D3

Permission Request to Use Value of Control Task



Permission to use Value of Control Task Inbox

Lorna Crean <lorna.crean2@mail.dcu.ie>
to kwang23, Catherine, Stella
Fri, 22 Jan, 18:44

Dear Dr. Wang,

I am a PhD researcher planning to investigate neurocognitive processes underlying substance use disorders in homeless populations. I have attained research support from two Dublin City University academic supervisors with strong backgrounds in neurocognitive research of substance use disorders, Cc'd in this email. I read your article 'Corticostriatal circuits encode the subjective value of perceived control' in *Cerebral Cortex*, and was struck by your task's innovation and striking applicability to our proposed research aims.

We plan to investigate whether the extent to which individuals experiencing homelessness and substance addiction issues value control over decisions affecting their life outcomes (a liberty often not available to people in this situation) shortly after medical detox may predict subsequent substance use and treatment engagement. The ultimate goal of this investigation is to inform future addiction treatment approaches for individuals experiencing homelessness, as sobriety is often a pre-requirement for these individuals to address numerous complex health issues and attain accommodation. For validity purposes, we aim to conduct our investigations using objective measures.

Thus, I am writing to request permission to use your Value of Control task. In the case that you grant our team permission to use this task, may we also request that you send this to us? Finally, we wish to affirm that we will update you regarding any further usages of your task and findings we obtain through its implementation.

We look forward to your response,

Kindest wishes,

Lorna Crean.

Wang, Kainan
to me, Catherine, Stella
Sat, 23 Jan, 13:32 (13 days ago)

Hi Lorna,

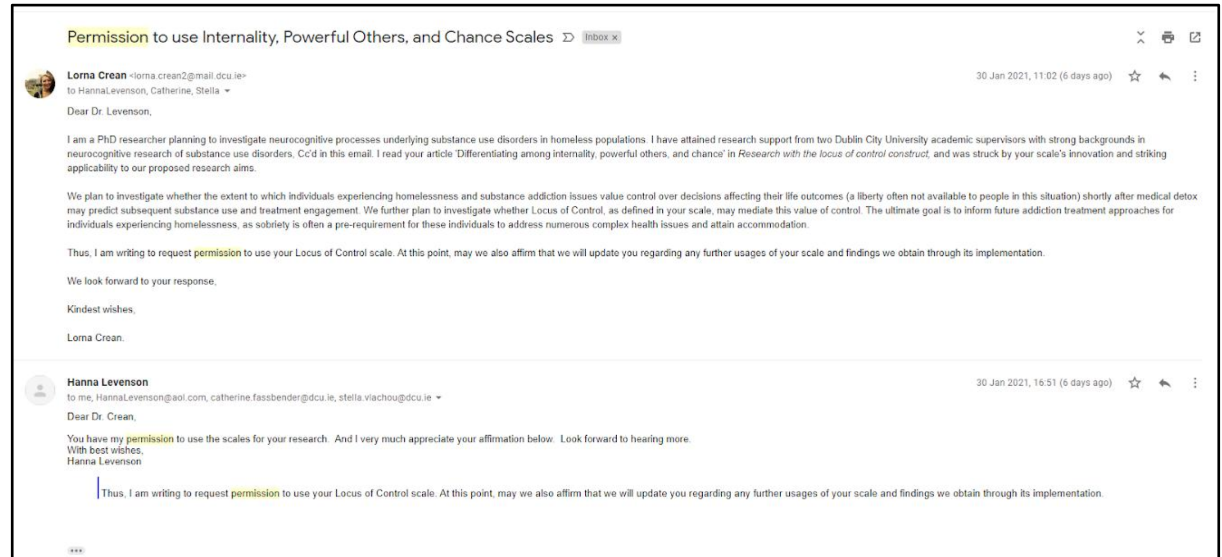
Thanks for your email. Your proposed project sounds very promising and I'm excited that you want to give our task a try. The task can be downloaded from here: https://github.com/delgado-lab/Value_of_Control. Please feel free to let me know if you have any questions about the task and its implementation. I am very much looking forward to hearing about your work on the construct of perceived control in the addiction population.

Best,
Sally

Note. This figure depicts an email sent to Dr. Wang, requesting to use their Value of Control Task.

Figure D4

Permission Request to Use Internality, Powerful Others, and Chance Scales



Permission to use Internality, Powerful Others, and Chance Scales Inbox x

Lorna Crean <lorna.crean2@mail.dcu.ie> 30 Jan 2021, 11:02 (6 days ago)
to HannaLevenson, Catherine, Stella

Dear Dr. Levenson,

I am a PhD researcher planning to investigate neurocognitive processes underlying substance use disorders in homeless populations. I have attained research support from two Dublin City University academic supervisors with strong backgrounds in neurocognitive research of substance use disorders, Cc'd in this email. I read your article 'Differentiating among internality, powerful others, and chance' in *Research with the locus of control construct*, and was struck by your scale's innovation and striking applicability to our proposed research aims.

We plan to investigate whether the extent to which individuals experiencing homelessness and substance addiction issues value control over decisions affecting their life outcomes (a liberty often not available to people in this situation) shortly after medical detox may predict subsequent substance use and treatment engagement. We further plan to investigate whether Locus of Control, as defined in your scale, may mediate this value of control. The ultimate goal is to inform future addiction treatment approaches for individuals experiencing homelessness, as sobriety is often a pre-requirement for these individuals to address numerous complex health issues and attain accommodation.

Thus, I am writing to request permission to use your Locus of Control scale. At this point, may we also affirm that we will update you regarding any further usages of your scale and findings we obtain through its implementation.

We look forward to your response,

Kindest wishes,

Lorna Crean.

Hanna Levenson 30 Jan 2021, 16:51 (6 days ago)
to me, HannaLevenson@aol.com, catherine.fassbender@dcu.ie, stella.vlachou@dcu.ie

Dear Dr. Crean,

You have my permission to use the scales for your research. And I very much appreciate your affirmation below. Look forward to hearing more.
With best wishes,
Hanna Levenson

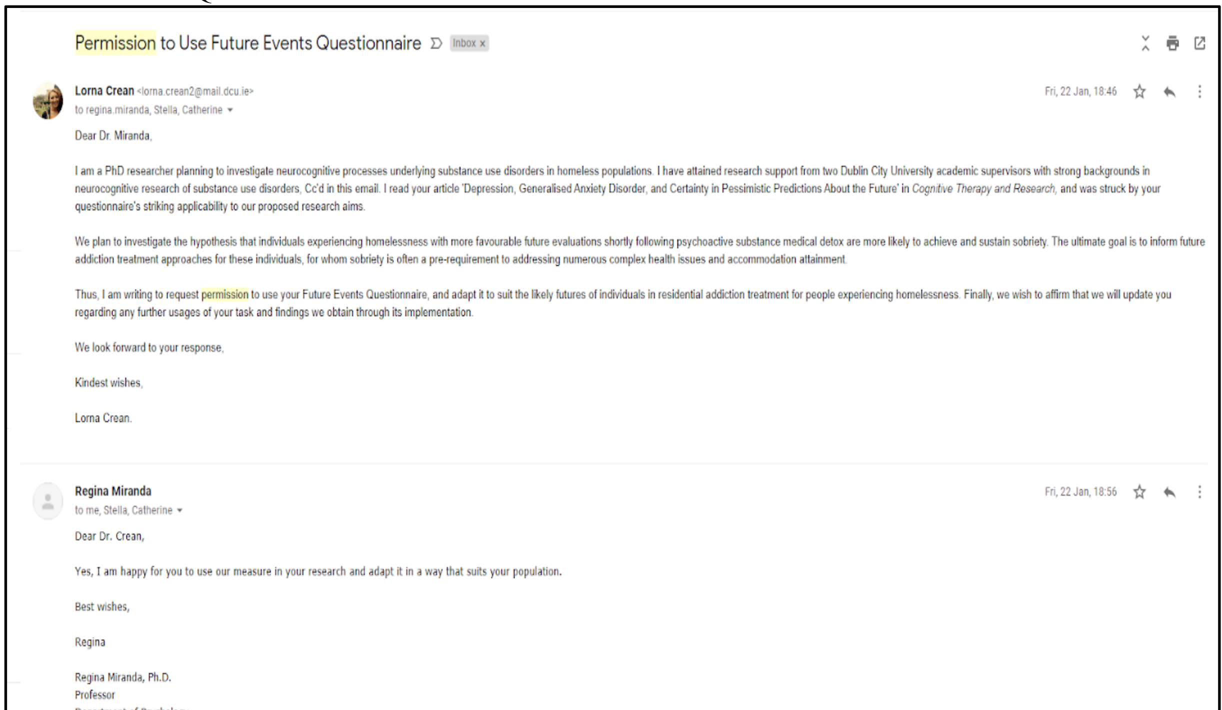
> Thus, I am writing to request permission to use your Locus of Control scale. At this point, may we also affirm that we will update you regarding any further usages of your scale and findings we obtain through its implementation.

Note. This figure exhibits an email sent to Dr. Levenson, requesting to use their Internality, Powerful Others, and Chance Scales.

Figure D5

Permission Request to Future Events Questionnaire

Note. This figure displays an email sent to Dr. Miranda, requesting permission to use their Future Events Questionnaire



Permission to Use Future Events Questionnaire Inbox x

Lorna Crean <lorna.crean2@mail.dcu.ie> Fri, 22 Jan, 18:46
to regina.miranda, Stella, Catherine

Dear Dr. Miranda,

I am a PhD researcher planning to investigate neurocognitive processes underlying substance use disorders in homeless populations. I have attained research support from two Dublin City University academic supervisors with strong backgrounds in neurocognitive research of substance use disorders, Cc'd in this email. I read your article 'Depression, Generalised Anxiety Disorder, and Certainty in Pessimistic Predictions About the Future' in *Cognitive Therapy and Research*, and was struck by your questionnaire's striking applicability to our proposed research aims.

We plan to investigate the hypothesis that individuals experiencing homelessness with more favourable future evaluations shortly following psychoactive substance medical detox are more likely to achieve and sustain sobriety. The ultimate goal is to inform future addiction treatment approaches for these individuals, for whom sobriety is often a pre-requirement to addressing numerous complex health issues and accommodation attainment.

Thus, I am writing to request permission to use your Future Events Questionnaire, and adapt it to suit the likely futures of individuals in residential addiction treatment for people experiencing homelessness. Finally, we wish to affirm that we will update you regarding any further usages of your task and findings we obtain through its implementation.

We look forward to your response,

Kindest wishes,

Lorna Crean.

Regina Miranda Fri, 22 Jan, 18:56
to me, Stella, Catherine

Dear Dr. Crean,

Yes, I am happy for you to use our measure in your research and adapt it in a way that suits your population.

Best wishes,

Regina

Regina Miranda, Ph.D.
Professor

Appendix E

Expert Advisory Group Participant Informed Consent Form

<u>Can A Guessing Game Predict Recovery?</u>

Expert Advisory Group Participant Informed Consent Form

Student Researcher: Lorna Crean **Contact:** lorna.crean2@mail.dcu.ie

Research Supervisors: Styliani Vlachou **Contact:** stella.vlachou@.dcu.ie

Catherine Fassbender **Contact:** catherine.fassbender@dcu.ie

Sure Steps Counselling: **Contact:** 1800 844 600 (Freephone)

This study will investigate if ability to score highly on a guessing game can predict recovery from problematic substance use with Dublin Simon Community's treatment clients.

It is being run as part of an overall PhD project to improve problematic substance use treatment for individuals experiencing homelessness.

However, some of the questionnaires we intend to use were not designed for use with people experiencing homelessness.

Because of this, we would like your help to make these questionnaires suitable for Dublin Simon Community treatment clients by giving feedback and suggestions during this Expert Advisory Group.

The people present will be:

1) Detox unit clients

2) a Detox support worker

3) the research team

Your name will not be attached to this form or the recording of your answers to this, nor will it be attached to any feedback or suggestions you provide during the Expert Advisory Group.

If you would like to participate, please tick YES or NO to the following statements.

	YES	NO
• I understand why I am being asked to participate in this Expert Advisory Group.	□	□
• I have had the opportunity to ask questions and talk about this study and Expert Advisory Group.	□	□
• I understand that I do not need to respond to every part of this Expert Advisory Group, especially if I feel that doing so would cause me stress.	□	□
• I understand that I can choose not to participate.	□	□
• I understand that this study is not connected to Detox service staff, and that my treatment will not change if I do or do not participate, or because of how I answer questions.	□	□
• I understand that I can leave this Expert Advisory Group at any stage without having to provide an explanation.	□	□

Please tick this box if you wish to take part in this Expert Advisory Group: □

Appendix F

Staff Information Sheet for Cognitive Predictors of Problematic Substance Use Recovery in Individuals Experiencing Homelessness

Psychological Traits of Problematic Substance Use Recovery in Individuals Experiencing Homelessness

STAFF INFO

What is this research about?

Identifying psychological traits that correspond with *Problematic Substance Use (PSU)* recovery informs treatment professionals and clients which ways of thinking and behaving should be encouraged/ discouraged to promote recovery.

Research has identified such traits, but not whether their role may be affected by housing status.

However, evidence suggests many psychological traits *including those important for PSU recovery* are affected by homelessness.

Therefore, this study aims to compare psychological traits of PSU recovery in individuals with and without independent housing.

What is involved for staff?

- Clients may ask you for their PASS ID, or to text/ email this to Lorna.
- When a client volunteers, we will email you a link to a *volunteer screen form* which asks you to indicate if you feel volunteer (*PASS ID*____) has sufficient cognitive capacity to participate (to prevent potential embarrassment) and if they are taking any psychoactive medicines (to account for the effects of these on cognitive test performance).
- We will check proposed assessment times with you before confirming with volunteers to make sure they suit your staff and service.
- We ask that you let us know once you are aware any client is due for discharge by emailing Lorna, e.g.,:

"PASS ID _______ is due for discharge tomorrow/ within the next three days/ week/ on 17/04/23 etc."

As you should not know who is participating, we ask that you do this for all clients. We will then contact participants to arrange a time to meet to obtain consent to access their behavioural warning data.

For more information:

Ms. L. Crean: lorna.crean2@mail.dcu.ie
083 301 2470
Dr. C. Fassbender: catherine.fassbender@dcu.ie
Dr. S. Vlachou: stella.vlachou@dcu.ie

Dublin Simon Community | IRISH RESEARCH COUNCIL An Chomhairle um Thaighde in Éirinn | DCU

What is involved?

We will make client addresses every couple of weeks and hang recruitment posters around the Recovery Services.

As this study collects sensitive data from vulnerable adults, *anonymity is important. Clients must understand this study is not linked to the care they receive from this service or its staff, as this could influence their responses or decision to participate.*

Therefore, we will not collect clients' names, or tell staff who is participating.

Clients can enrol by giving us their PASS ID. They can do this in person, using the phone number on our posters, *or asking staff to text/ email Lorna.* We can then arrange an assessment time.

Before assessment, we will test participants for presence of substances via breath and urinalysis.

Assessments will take place in a meeting room in your service. They will last around 40 minutes.

We hope to compare participants' scores with their substance use during treatment. To do this, we must obtain consent again before discharge for the quality team to share this information with us.

What are the benefits of involvement?

PSU treatment clients often enjoy participating in research as it allows them to help future individuals with similar issues. It might also be a new, stimulating experience for some.

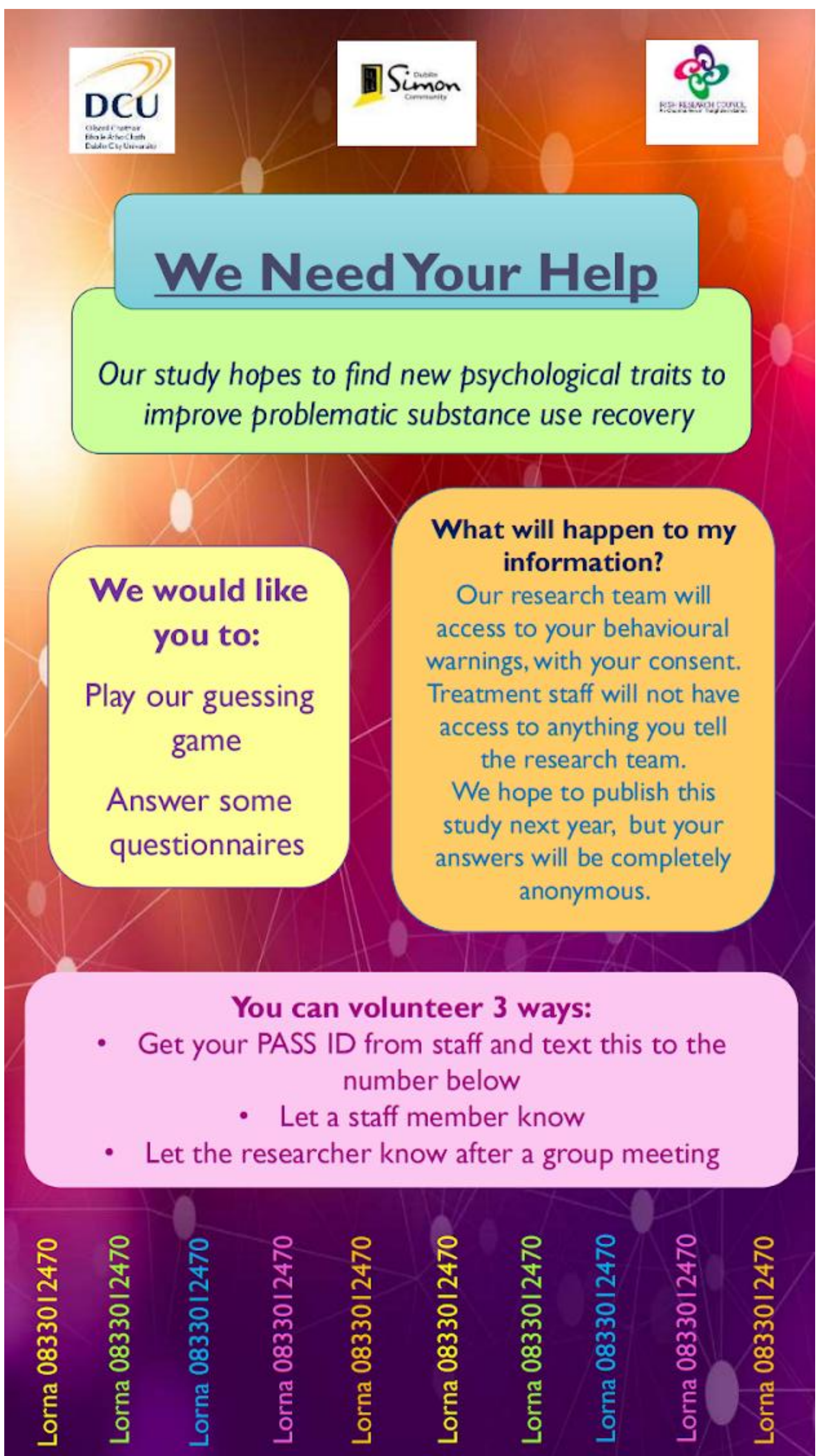
Staff will receive study results prior to publication. It is hoped these will improve recovery understanding, approaches, and outcomes.

When will this take place?

We hope to obtain a sample of 36 participants from the Ellen Hall, Clonskeagh, Deanswift and Roylands services by June.

Appendix G

Recruitment Poster



Appendix H

Volunteer Screen Form

Volunteer Screen Form

Volunteer Name ______________________

Volunteer ID ______________________

Staff Signature ______________________

Date ______________________

Do you believe this client has sufficient cognitive capacity to understand and respond appropriately to questions asked by this research study? If appropriate, please give details.

____

____

____

Is this participant taking psychoactive medications? Yes No

If so, please detail the medications being taken and their dosages

Medicine	Dose

Appendix I

Participant Information Sheet for DSC Participants

The following slides will explain our study.

If you understand all the content on a slide, press the green button to continue.

If you do not understand any part of the content of a slide, ask me before continuing.

Can a Guessing Game Predict Recovery?

Plain Language Statement

Student Researcher:	Ms. Lorna Crean	**Contact:** lorna.crean2@mail.dcu.ie
Research Supervisors:	Dr. Styliani Vlachou	**Contact:** stella.vlachou@dcu.ie
	Dr. Catherine Fassbender	**Contact:** catherine.fassbender@dcu.ie
DCU Research Ethics Committee:		**Contact:** rec@dcu.ie
Sure Steps Counselling:		**Contact:** 1800 844 600 (Freephone)

What is this research about?

This research aims to see if performance in a guessing game is linked to Problematic Substance Use recovery in treatment.

Why is this research needed?

- Homelessness and Problematic Substance Use are increasing issues globally.
- Problematic Substance Use is one of the leading causes, and consequences, of homelessness.
- To exit homelessness, individuals must often overcome many issues which would be extremely difficult to accomplish under the influence of alcohol or drugs. Thus, understanding traits of individuals who do well in Problematic Substance Use treatment is very important to helping people experiencing Problematic Substance Use and homelessness live independently in future.

What is involved?

- Tests will be in a Recovery service room set aside for this project and last about 40 minutes.
- Before participating you will be asked to give breath and urine samples so I can check that your answers are not influenced by substances. Recovery staff will never be told if a substance shows in either of these samples. If a substance shows, we can reschedule for another time.

What is involved?

- You will first be asked to describe your accommodation and substance use in the last 30 days and your lifetime, recorded in a paper questionnaire. You will then play a guessing game on a computer. After this, you will be read two short questionnaires from this computer that you will answer using colour buttons. If you do not understand any of the questions, you can check with me. You may take as many breaks as you like during these tests.
- After this, you will not have to do anything differently than you would otherwise during your admission. However, just before discharge I will contact you to arrange to meet again for your consent for Dublin Simon Community's Treatment Services Quality Team to share your potential behavioural warnings and discharge date with me in a password-protected file, so I can see if there is a relationship between our tests and substance use during early recovery. This will occur just before discharge in your Recovery service if planned, and afterwards in DCU if unplanned. This second consent should not take longer than 5 minutes.

Who can take part?

Recovery Service clients who understand English.

How will my privacy be protected?

- We checked with Recovery staff that it was safe for every study volunteer to take part before participation. PASS IDs, and not names, were used to do this so it is completely anonymous.
- Staff are not told which PASS IDs are and are not participating. They are also not told any answers to questionnaires, scores on computer tests, or breathalyser/ urine test results. Therefore, your care from this service will not be affected in any way by your decision to participate in this study, or how you respond.

How will my privacy be protected?

- Every participant will be given a random 5-digit number (e.g., 86394) from a computer. All test scores will be labelled using this number only. However, to compare these scores with treatment outcomes, the researcher must be able to tell who owns each number. Because of this, random 5 -digit numbers and related PASS IDs will be stored in a separate password-protected file that only the research team will be able to access.
- Study information from a named person will only be accessible to identified officials, e.g., gardai, outside the research team if this is legally required. This includes if the researcher feels there is a potential danger to you or another person.
- All data will be deleted five years after this study is published.

How will my data be used?

- Anonymous scores and treatment outcomes will be compared. This will help us see if this game is linked to people's recovery during Problematic Substance Use treatment.
- Results may be published by Dublin Simon Community.
- The research team also hopes to publish this study.

What are the benefits?

This study will help us understand what ways of thinking improve chances of Recovery. Research participants also often feel good about playing an important role in helping others who find themselves in a similar situation in the future.

What are the risks?

Some of the questions, such as those about your beliefs about the future, housing and substance use histories, could cause you stress or make you upset. If you feel this is likely to happen, please do not take part. If you do take part, and do not want to answer any of these, or other questions on the day, please ask to skip them.

If for any reason you become stressed because of taking part in this study, you can contact any of the Dublin City University researchers or ethics committee listed above, Recovery Service staff, or free 'Sure Steps' counselling service provided by Dublin Simon Community. In the case of the university research team and ethics committee, you can ask a Dublin Simon Community staff member to email for you.

Can I change my mind to participate during or after the experiment?

You can withdraw at any stage before, during, and up to one year after your assessment when the file linking PASS IDs to test scores will be deleted. At this point, test scores will be completely anonymous so it will not be possible to change your mind.

How can I find the results of this study?

We really appreciate you taking the time to participate in our study. This study should be published by the end of 2023. To find this, you can contact any Dublin Simon Community service or member of the research team at that time and ask them to give you a copy.

Who is funding this study?

This study is funded by Dublin Simon Community and the Irish Research Council.

What if I have more questions later?

I will give you a card with my research team's contact details before we leave. If you have any questions about this study in future, you can use the details on this card to contact our team. If you lose this, you can ask a member of Dublin Simon Community staff to put you in contact with us.

This is the end of our Plain Language Statement. If you have any other questions, please ask now.

Appendix J

Participant Information Sheet for CTC Participants

The following slides explain our study.

If you understand all the content on a slide, press the green button to continue.

If you do not understand any part of a slide, ask me before continuing.

Can a Guessing Game Predict Recovery?

Plain Language Statement

Student Researcher: Lorna Crean **Contact:** lorna.crean2@mail.dcu.ie

Research Supervisors: Styliani Vlachou **Contact:** stella.vlachou@dcu.ie

Catherine Fassbender **Contact:** catherine.fassbender@dcu.ie

How will my data be protected?

By participating in this study, you will submit personal data to Dublin City University's School of Psychology. As such, DCU is the Data Controller and must comply with data protection rules under the General Data Protection Regulation (GDPR) and the Data Protection Acts 1988 to 2018.

Data protection concerns the safeguarding of privacy rights of individuals in relation to the processing of their personal data. Personal data means any information relating to an identifiable, living individual.

As Data Controller, DCU is responsible for the personal data you provide with your freely given and informed consent. After your assessments I will give you a card with contact details for each member of our research team, DCU's Research Ethics Committee and Data Protection Officer, who you can contact to withdraw your participation, or discuss any ethical or data protection concerns you may have.

How will my data be protected?

The categories of personal data which we will collect from you are:

- Gender Identity
- Health

Personal data that you submit to this study will be used to investigate if homelessness may have a psychological effect on recovery from Problematic Substance Use.

How will my data be protected?

When you volunteered, we asked treatment staff if you have any psychological or medical issues that may affect your ability to participate. However, staff were told that all volunteers may not become participants and so they will not know if you are a participant or not.

Any information you provide to us during your assessments will **not** be shared with staff.

How will my data be protected?

Every participant will be given a random 5-digit number (e.g., 86394) by a computer. All test scores will be labelled using this number only. However, to compare these scores with treatment outcomes, the researcher must be able to tell who owns each number. Because of this, names attached to numbers will be recorded in a separate password-protected file that only the research team can access. Your name/ research ID combination will be deleted from this file after you have discharged from this Coolmine TC service. All other personal data you provide will only be identifiable by the 5-digit number once your name is deleted. We will hold this data (without your name attached) for five years after which it will be deleted by Dr. Fassbender.

Personal data provided as part of this study will be held safely and securely in accordance with DCU's Data Privacy Policy. All computer files will be password-protected using passwords only the research team have access to. Paper files will be immediately stored in a locked filing cabinet in Dr. Fassbender's office after every assessment.

How will my data be protected?

Confidentiality of information can only be protected within the limitations of the law - i.e., it is possible for data to be subject to subpoena, freedom of information claim or mandated reporting by some professions.

Your Rights

You have a number of rights under data protection rules including:

- The right to be informed of what happens to personal data relating to you
- The right of access to personal data relating to you, and to obtain a copy
- The right to rectification if an error is contained in the personal data relating to you
- The right to erasure of personal data relating to you (in certain circumstances)
- The right to restrict processing of personal data relating to you (in certain circumstances)
- The right to data portability
- The right to object to processing of personal data relating to you (in certain circumstances)
- Rights in relation to automated decision making and profiling

Your Rights

These rights are available where the applicable criteria are met and subject to certain exceptions under data protection law. For example, it may not be possible to comply with a request to erase data where DCU has a legal obligation to retain records, or where it is necessary and proportionate to keep such data for the purposes of defending legal claims, and/or to protect the vital interests of a data subject.

To exercise your rights, or if you have any questions in relation to your personal data, you may contact the DCU Data Protection Unit at data.protection@dcu.ie. For further information, please visit https://www.dcu.ie/ocoo/data-protection-unit. General information on how DCU collects, uses, and discloses personal data, and on your data protection rights, is available on the DCU Privacy Policy.

You have the right under data protection law to complain to the Data Protection Commission (www.dataprotection.ie), but we ask that you contact us first so we may resolve any arising issues together.

What is this research about?

Problematic Substance Use is a psychological issue where a person uses substances such as alcohol, cannabis, cocaine, or heroin in a way that negatively affects their lives and yet the person struggles to stop using them.

Problematic Substance Use is a growing global concern. Individuals experiencing homelessness are at increased risk. Psychological research helps to improve Problematic Substance Use recovery.

Many of the target traits found to influence Problematic Substance Use have been found influenced by homelessness in separate research papers. However, homelessness is not accounted for in Problematic Substance Use research to date. Therefore, findings may not accurately apply to homeless or housed people.

All data we collect is to see if we can find ways of thinking or acting that promote Problematic Substance Use (PSU) recovery. These can then be encouraged in future people struggling with this issue to help them recover more easily. We will also check if homelessness has a psychological effect on PSU recovery.

What is involved?

Tests will take part in a room of your treatment service set aside for this project and last no longer than 1 hour.

First, you will be asked for your consent to take part in this study using button presses like this form and a voice recording to ensure it is you pressing the buttons.

You will then complete a paper questionnaire. I will ask you to describe your accommodation and substance use in the last 30 days and lifetime. You will also be asked to indicate your gender identity and if you have stayed in hospital, psychiatric, or Problematic Substance Use treatment in the last month. You will be asked how long it may have been since you were last in prison and how many months you may have spent there if this ever occurred. My team does not wish to know about previous crimes you may have committed.

What is involved?

Next, you will play a guessing game and answer three short questionnaires which will include questions about potential recent and future life events. Like this form, these will be presented on a computer and responded to with buttons.

If you do not feel comfortable answering any question, please respond 'skip'. You do not need to say why. Skipping questions provides more accurate information than answers you know to be incorrect. If you do not understand a question, please check before responding. You may take as many breaks as you like during these tests.

After this, you will not have to do anything differently than you would otherwise during your admission. However, with your consent, the research team will access staff notes of your substance use during treatment admission and discharge. These will be compared with your test scores to see if there is a pattern across clients.

Who can take part?

Problematic Substance Use treatment clients who understand English.

How will my data be used?

All information we collect will be labelled using random 5-digit participant ID numbers. Paper data will be stored in Dr. Fassbender's office for one year and computer data until study publication. This information, alongside your treatment outcome data, will also be input to a password-protected Excel sheet in my research team's password-protected DCU GDrive for analysis. This file will be kept for 5 years following publication, in case it is needed for future research. After these time points, paper data will be shredded and computer data deleted by Dr. Fassbender.

What are the benefits?

This study may improve future Problematic Substance Use treatment whether or not it is correct, as staff will have more information about what is important or works. As recovery is often considered a lifelong process, you could benefit from your participation if you remain sober or relapse. Research participants also often feel good about playing an important role in helping others who find themselves in a similar situation in the future.

What are the risks?

Some of the questions, such as those about your past and future beliefs, and housing and substance use histories, could cause you stress. If you feel this is likely to happen, please do not take part. If you do take part, and do not want to answer any of these or other questions, please ask to skip them.

If for any reason you become stressed because of taking part in this study, you can contact any of the Dublin City University researchers/ ethics committee, or service staff to arrange counselling. In the case of the university research team and ethics committee, you can ask a treatment staff member to email for you.

Can I change my mind to participate during or after the experiment?

You may change your mind to participate from this moment until your discharge from this Coolmine TC service. After you have been discharged, your name/ research ID combination will be deleted from our file, making it impossible to withdraw your responses from our data sets. To withdraw your participation, please contact any member of the research team using the card I give you after your assessment. If you do not have email access, you can ask a member of Coolmine staff to do this for you.

How can I find the results of this study?

We hope to publish this study by the end of 2024. To find this, you can ask any member of Coolmine staff or of the research team after that time to give you an academic or plain English copy and discuss results with you.

This study will also be included in my PhD thesis, and I hope to present it at an international conference next year.

Who is funding this study?

This study is funded by the Irish Research Council with Dublin Simon Community.

What if I have more questions later?

I will give you a card after your assessment with phone numbers you can contact after I leave. If you would like to access your data or have questions about how it is used you can contact any member of our research team.

If you have any concerns about how your data is used in this project you can contact DCU's Data Protection Officer. You may also contact the Irish Data Protection Commission on their website. If you have any ethical concerns about the study and wish to contact an independent person from the study, please contact DCU's Research Ethics Committee. If you don't have phone or internet access, cannot read or write, or lose your card you can ask a member of my team or Coolmine staff to help you with this.

This is the end of the Plain Language Statement.

If you have any more questions about this information, please ask now.

Appendix K

Informed Consent Form for DSC Participants

The following slides present our informed consent form.
This form will present statements about study participation.
If you do not understand a statement, please ask me.

If you agree to a statement, press the green button.
If you do not agree to a statement, press the red button.

If you have a question about these instructions, ask me now.
If you understand completely, press the green button.

Can A Guessing Game Predict Recovery?

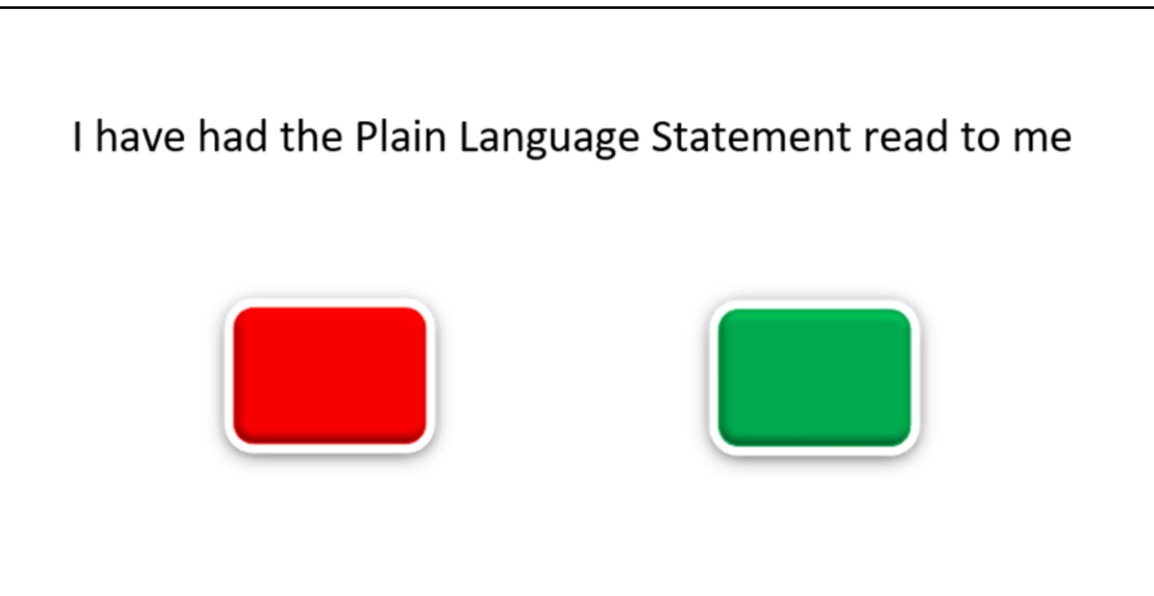
Informed Consent Form

Student Researcher:	Lorna Crean	**Contact:** lorna.crean2@mail.dcu.ie
Research Supervisors:	Styliani Vlachou	**Contact:** stella.vlachou@.dcu.ie
	Catherine Fassbender	**Contact:** catherine.fassbender@dcu.ie
DCU Research Ethics Committee:		**Contact:** rec@dcu.ie
Sure Steps Counselling:		**Contact:** 1800 844 600 (Freephone)

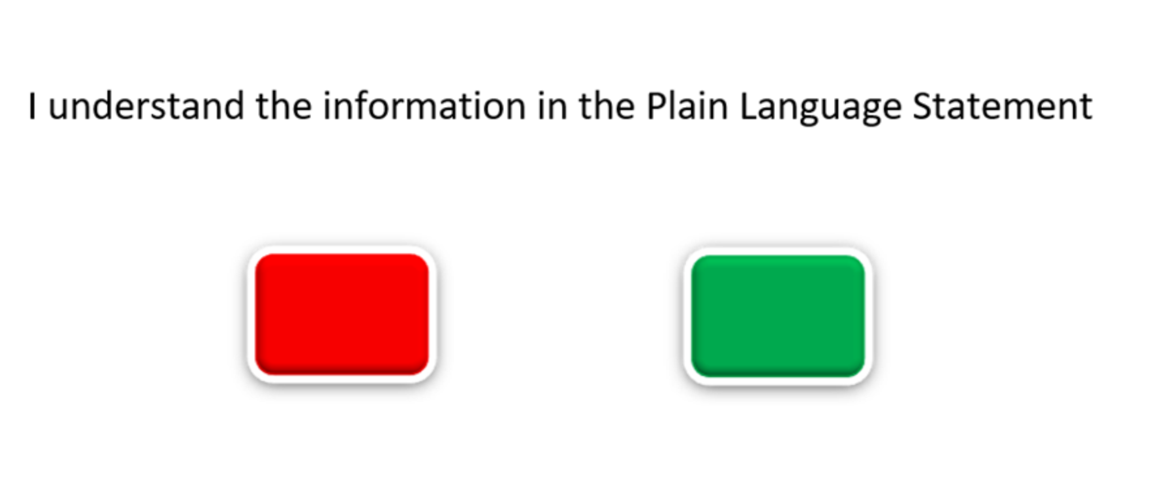
This study is of the researcher's PhD in Problematic Substance Use in homeless individuals.

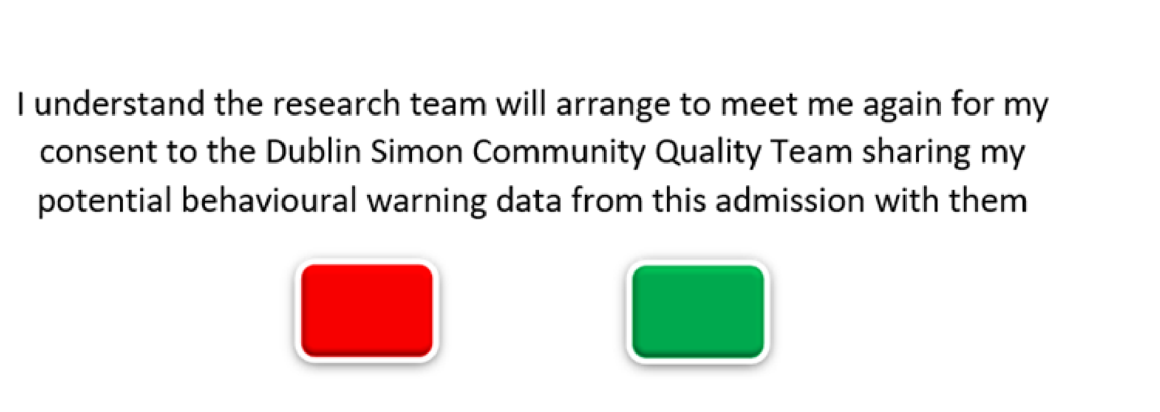
Homelessness and Problematic Substance Use are increasing issues in Ireland, and globally. Problematic Substance Use is one of the leading causes, and consequences, of homelessness. To exit homelessness, people must often overcome many issues which would be extremely difficult under the influence of alcohol or drugs. Thus, Problematic Substance Use treatment is often necessary to live independently.

However, slips and relapses are common in Problematic Substance Use treatment and recovery. The aim of this research is to discover better ways of treating Problematic Substance Use.



I have had the opportunity to ask questions and talk about this study


I understand the information in the Plain Language Statement


I understand the research team will arrange to meet me again for my
consent to the Dublin Simon Community Quality Team sharing my
potential behavioural warning data from this admission with them

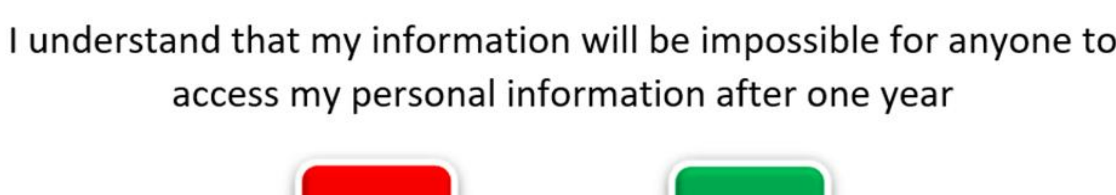
I understand that I can skip any questions in this study if I feel answering them would cause me stress

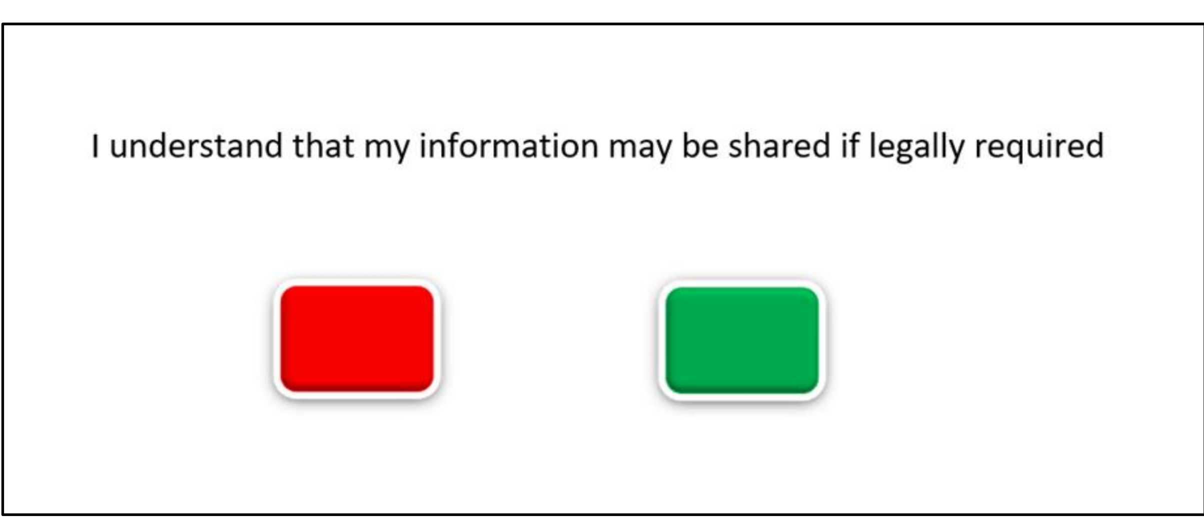
I understand that I can choose not to participate

I understand that this study is not connected to recovery service staff and that my treatment will not change:

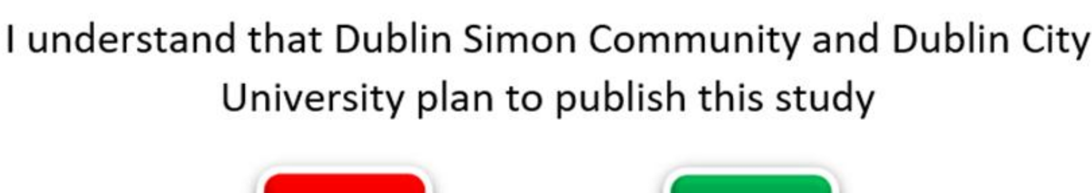
- if I do or do not participate, or
- because of how I answer questions

I understand that I can pull out of this study during tests and up to about 12 months after I participate, and that after this it will not be possible to delete my information

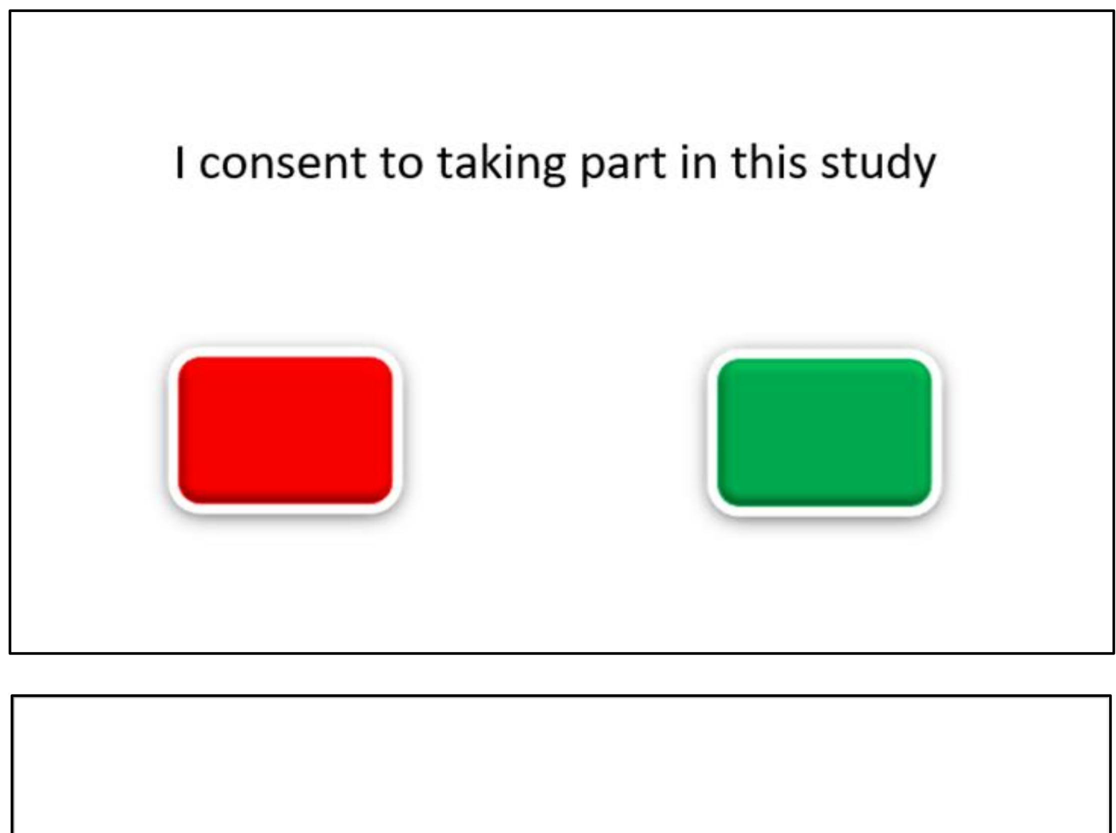




I understand that all study data will be destroyed between three and five years after this study is published



I understand that individual participants will not be named in any publications from this study



The consent form is now complete.

Press the green button to begin the study.

Appendix L

Informed Consent Form for CTC Participants

The following slides present our informed consent form.
This form will present statements about study participation.
If you do not understand a statement, please ask me.

If you agree to a statement, press the green button.
If you do not agree to a statement, press the red button and let me know. You do not need to tell me why.

If you have a question about these instructions, ask me now.
If you understand completely, press the green button.

This study is part of my PhD in the psychology Problematic Substance Use recovery for individuals experiencing and not experiencing homelessness.

Problematic Substance Use often has devastating effects for individuals. Psychological research can help to improve recovery from this issue. Homelessness may psychologically influence individuals recovering from Problematic Substance Use. However, this does not yet seem to have been investigated. This will be addressed in this project. Results may improve future Problematic Substance Use treatment for individuals experiencing and not experiencing homelessness.

Can A Guessing Game Predict Recovery?

Informed Consent Form

Student Researcher: Lorna Crean **Contact:** lorna.crean2@mail.dcu.ie

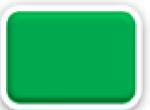
Research Supervisors: Styliani Vlachou **Contact:** stella.vlachou@dcu.ie

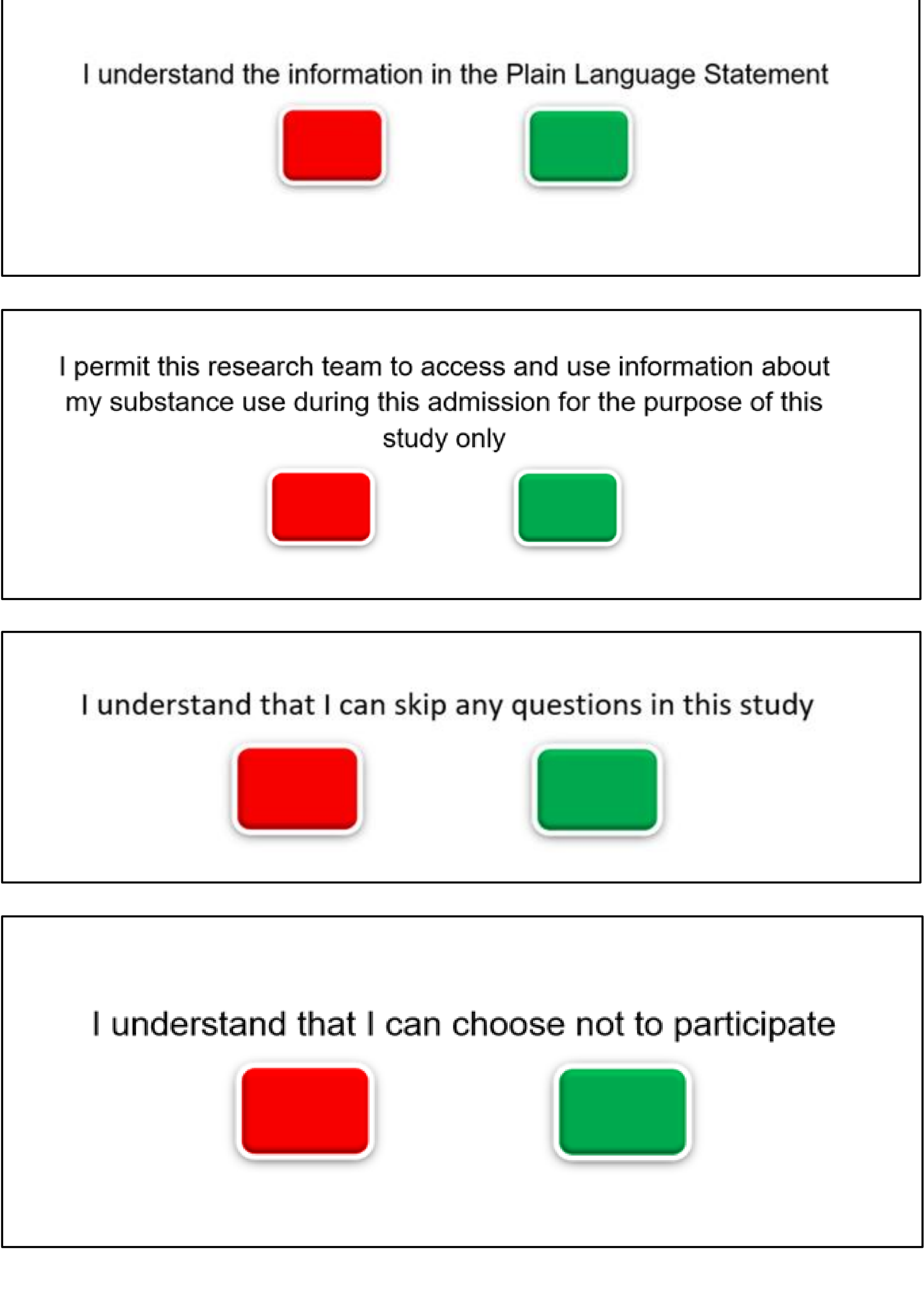
Catherine Fassbender **Contact:** catherine.fassbender@dcu.ie

DCU Research Ethics Committee: **Contact:** rec@dcu.ie

I have had the Plain Language Statement read to me

I have had the opportunity to ask questions and talk about this study

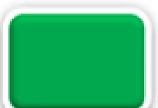



I understand the information in the Plain Language Statement
I permit this research team to access and use information about my substance use during this admission for the purpose of this study only
I understand that I can skip any questions in this study
I understand that I can choose not to participate

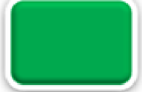
I understand that this study is not connected to recovery service staff and that my treatment will not change;

- If I do or do not participate, or
- Because of how I answer questions,

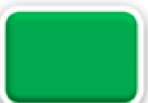
Because staff will not be told any information I provide and will only be informed of my decision to participate after I have discharged



I understand that I can pull out of this study during tests and until I discharge from this Coolmine TC service using the email addresses on the business card I will be given after my assessment, and that after this it will be impossible to delete my information



I understand that my information may be shared if legally required



I understand that all study data will be destroyed approximately five years after this study is published

I understand that it is planned to publish the combined results of all participants on the internet

I consent to take part in this study

The consent form is now complete.

Press the green button to begin the study.

Appendix M

Addiction Severity Index - Adapted

Addiction Severity Index *Lite*

Clinical/Training Version

Thomas McLellan, Ph.D.
John Cacciola, Ph.D.
Deni Carise, Ph.D.
Thomas H. Coyne, MSW

Remember: This is an interview, not a test

Item numbers circled are to be asked at follow-up.

INTRODUCING THE ASI: Seven potential problem areas: Medical, Employment/Support Status, Alcohol, Drug, Legal, Family/Social, and Psychological. All clients receive this same standard interview. All information gathered is confidential.
There are two time periods we will discuss:
1. The past 30 days
2. Lifetime

Patient Rating Scale: Patient input is important. For each area, I will ask you to use this scale to let me know how bothered you have been by any problems in each section. I will also ask you how important treatment is for you for the area being discussed.
The scale is:
0 - Not at all
1 - Slightly
2 - Moderately
3 - Considerably
4 - Extremely

If you are uncomfortable giving an answer, then don't answer.

Please do not give inaccurate information!

INTERVIEWER INSTRUCTIONS:
1. Leave no blanks.
2. Make plenty of Comments (if another person reads this ASI, they should have a relatively complete picture of the client's perceptions of his/her problems).
3. -9 = Question not answered.
   -8 = Question not applicable.
4. Terminate interview if client misrepresents two or more sections.
5. When noting comments, please write the question number.

HALF TIME RULE: If a question asks the number of months, round up periods of 14 days or more to 1 month. Round up 6 months or more to 1 year.

CONFIDENCE RATINGS: ⇒ Last two items in each section.
⇒ Do not over interpret.
⇒ Denial does not warrant misrepresentation.
⇒ Misrepresentation = overt contradiction in information.

Probe, cross-check and make plenty of comments!

HOLLINGSHEAD CATEGORIES:
1. Higher execs, major professionals, owners of large businesses.
2. Business managers if medium sized businesses, lesser professions, i.e., nurses, opticians, pharmacists, social workers, teachers.
3. Administrative personnel, managers, minor professionals, owners/ proprietors of small businesses, i.e., bakery, car dealership, engraving business, plumbing business, florist, decorator, actor, reporter, travel agent.
4. Clerical and sales, technicians, small businesses (bank teller, bookkeeper, clerk, draftsperson, timekeeper, secretary).
5. Skilled manual - usually having had training (baker, barber, brakeperson, chef, electrician, fireman, machinist, mechanic, paperhanger, painter, repairperson, tailor, welder, police, plumber).
6. Semi-skilled (hospital aide, painter, bartender, bus driver, cutter, cook, drill press, garage guard, checker, waiter, spot welder, machine operator).
7. Unskilled (attendant, janitor, construction helper, unspecified labor, porter, including unemployed).

LIST OF COMMONLY USED DRUGS:

Alcohol:	Beer, wine, liquor
Methadone:	Dolophine, LAAM
Opiates:	Pain killers = Morphine, Diluadid, Demerol, Percocet, Darvon, Talwin, Codeine, Tylenol 2,3,4, Robitussin, Fentanyl
Barbiturates:	Nembutal, Seconal, Tuinol, Amytal, Pentobarbital, Secobarbital, Phenobarbital, Fiorinol
Sed/Hyp/Tranq:	Benzodiazepines = Valium, Librium, Ativan, Serax Tranxene, Xanax, Miltown, Other = ChloralHydrate (Noctex), Quaaludes Dalmane, Halcion
Cocaine:	Cocaine Crystal, Free-Base Cocaine or "Crack," and "Rock Cocaine"
Amphetamines:	Monster, Crank, Benzedrine, Dexedrine, Ritalin, Preludin, Methamphetamine, Speed, Ice, Crystal
Cannabis:	Marijuana, Hashish
Hallucinogens:	LSD (Acid), Mescaline, Mushrooms (Psilocybin), Peyote, Green, PCP (Phencyclidine), Angel Dust, Ecstacy
Inhalants:	Nitrous Oxide, Amyl Nitrate (Whippits, Poppers), Glue, Solvents, Gasoline, Toluene, Etc.

Just note if these are used: Antidepressants,
Ulcer Meds = Zantac, Tagamet
Asthma Meds = Ventoline Inhaler, Theodur
Other Meds = Antipsychotics, Lithium

ALCOHOL/DRUG USE INSTRUCTIONS:
The following questions refer to two time periods: the past 30 days and lifetime. Lifetime refers to the time prior to the last 30 days. However, if the client has been incarcerated for more than 1 year, you would only gather lifetime information, unless the client admits to significant alcohol/drug use during incarceration. This guideline only applies to the Alcohol/Drug Section.

⇒ 30 day questions only require the number of days used.
⇒ Lifetime use is asked to determine extended periods of use.
⇒ Regular use = 3+ times per week, binges, or problematic irregular use in which normal activities are compromised.
⇒ Alcohol to intoxication does not necessarily mean "drunk", use the words "to feel or felt the effects", "got a buzz", "high", etc. instead of intoxication. As a rule of thumb, 5+ drinks in one sitting, or within a brief period of time defines "intoxication."
⇒ How to ask these questions:
→ "How many days in the past 30 have you used...?"
→ "How many years in your life have you regularly used...?"

General Information

Date: ________________________ Participant ID: _____________________

D.O.B.: ______________________ Service: ___________________________

Days in Service: ___________________

Previous Positive: Urinalysis: ___________________________

Breath Test: ____________________________

Ethnicity:

Irish	
Irish Traveller	
Other White background (specify)	
African	
Other Black background (specify)	
Roma	
Arabic	
Chinese	

Indian / Pakistani / Bangladeshi	
Any other Asian background	
Other, including mixed background (specify)	

Gender:

Cisgender Male	
Cisgender Female	
Transgender Male	
Transgender Female	
Transitioning Male	
Transitioning Female	
Transitioned Male	
Transitioned Female	
Non-binary	
Gender fluid	
Agender	
Pangender	
Other	

How are you feeling?

____

____

____

____

____

Researcher Notes

____

____

____

____

____

____

Have you been residing in any of the following environments where drugs are prohibited in the last 30 days?

Jail	
Medical Treatment	
Psychiatric Treatment	

Problematic Substance Use Treatment	
Other	
No	

How many days? _______________

Comments

____

____

____

____

____

____

ALCOHOL/DRUGS

Route of Administration Types:
1 - Oral   2 - Nasal   3 - Smoking   4 - Non-IV injection   5 - IV

Note the usual or most recent route. For more than one route, choose the most severe. The routes are listed from least severe to most severe.

		A. Past 30 Days	B. Lifetime (Years)	C. Route of Admin
D1.	Alcohol (any use at all)	__ __	__ __	
D2.	Alcohol (to intoxication)	__ __	__ __	
D3.	Heroin	__ __	__ __	__
D4.	Methadone	__ __	__ __	__
D5.	Other Opiates/Analgesics	__ __	__ __	__
D6.	Barbiturates	__ __	__ __	__
D7.	Other Sedatives/Hypnotics/ Tranquilizers	__ __	__ __	__
D8.	Cocaine	__ __	__ __	__
D9.	Amphetamines	__ __	__ __	__
D10.	Cannabis	__ __	__ __	__
D11.	Hallucinogens	__ __	__ __	__
D12.	Inhalants	__ __	__ __	__
D13.	More than one substance per day *including alcohol*	__ __	__ __	

D17. How many times have you had Alcohol D.T.'s? __ __
Delirium Tremens (DTs): *Occur 24-48 hours after last drink, or significant decrease in alcohol intake, shaking, severe disorientation, fever, hallucinations, they usually require medical attention.*

ALCOHOL/DRUGS COMMENTS
(Include the question number with your notes)

ALCOHOL/DRUGS (cont)

How many times in your life have you been treated for:

D19* Alcohol abuse? __ __

D20* Drug abuse? __ __

Include detoxification, halfway houses, in/outpatient counseling, and AA or NA (if 3+ meetings within one month period).

How many of these were detox only?

D21* Alcohol? __ __
If D19 = 0, then D21 = -8

D22* Drugs? __ __
If D20 = 0, then D22 = -8

How much money would you say you spent during the past 30 days on:

D23 Alcohol? $__ __,__ __ __

D24 Drugs? $__ __,__ __ __

Only count actual ***money*** *spent. What is the financial burden caused by drugs/alcohol?*

D25 How many days have you been treated in an outpatient setting for alcohol or drugs in the past 30 days? __ __
Include AA/NA

For Questions D28-D31, ask patient to use the Patient Rating Scale
The patient is rating the need for additional substance abuse treatment.

How many days in the past 30 have you experienced:

D26 Alcohol problems? __ __

How troubled or bothered have you been in the past 30 days by these:

D28 Alcohol problems? __

How important to you *now* is treatment for these:

D30 Alcohol problems? __

How many days in the past 30 have you experienced:

D27 Drug problems? __ __
Include only craving, withdrawal symptoms, disturbing effects of use, or wanting to stop and being unable to.

How troubled or bothered have you been in the past 30 days by these:

D29 Drug problems? __

How important to you *now* is treatment for these:

D31 Drug problems? __

CONFIDENCE RATINGS

Is the above information significantly distorted by:

D34 Client's misrepresentation? __
0 - No 1 - Yes

D35 Client's inability to understand? __
0 - No 1 - Yes

ALCOHOL/DRUG COMMENTS
(Include the question number with your notes)

Legal Status

What caused you to admit to Problematic Substance Use treatment services?

For example, people may wish to be sober because they are pregnant, or for probation.

____

____

How many months have you been in prison in your life?

How long has it been since you were last in prison?

Comments

Accommodation Status

Are you homeless?

How many months have you been homeless?

What type of accommodation were you in before admission?

How long were you there?

____

Comments

____

____

____

____

____

____

____

____

____

Appendix N

Desire for Control SuperLab Task

Thank you for taking part.

The aim of this game is to earn as many points as possible by correctly choosing which of four coloured squares hide orange circles. You play this game with a computer-partner. First you play a training round, followed by four real rounds.

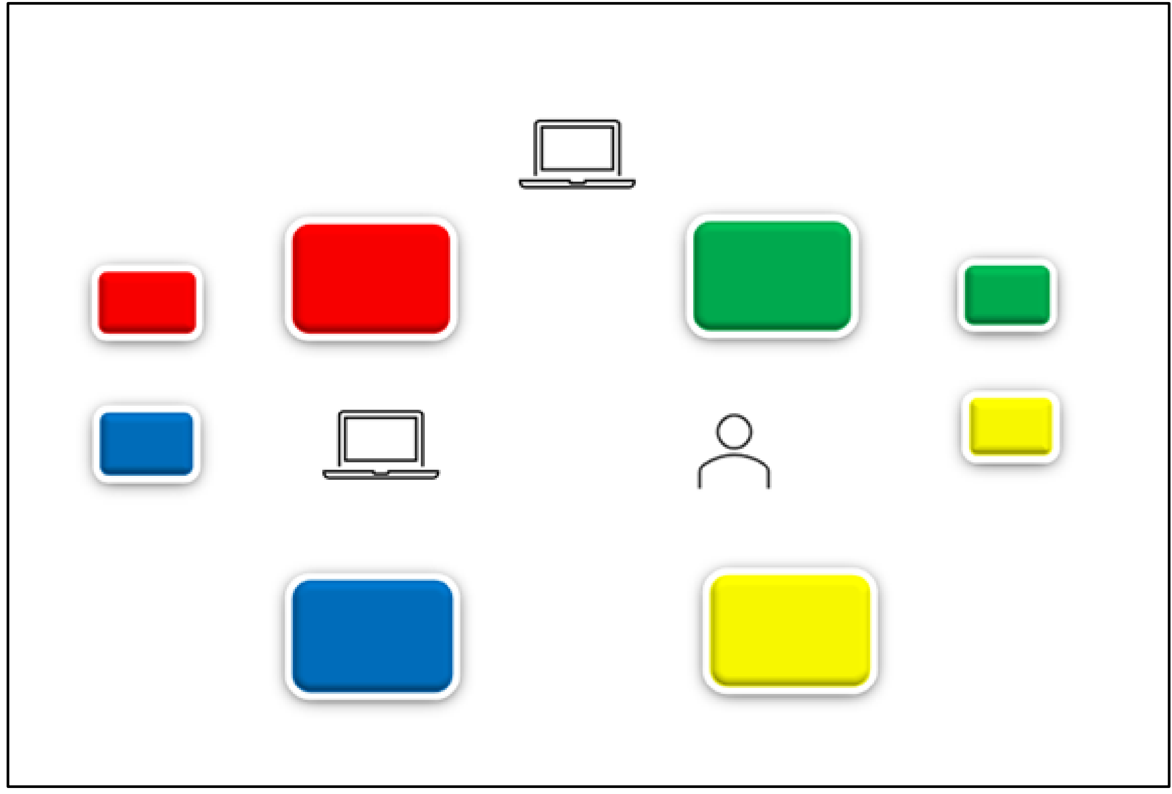
The training round consists of 20 trials. Before each trial you choose yourself or your computer-partner to play. You will see the player to be selected at the top of the screen, with the self and computer-partner options on the left and right sides. Choose the player on top by pressing a button on your response pad on the same side as the player on screen. The game will not move forward until the correct player is chosen.

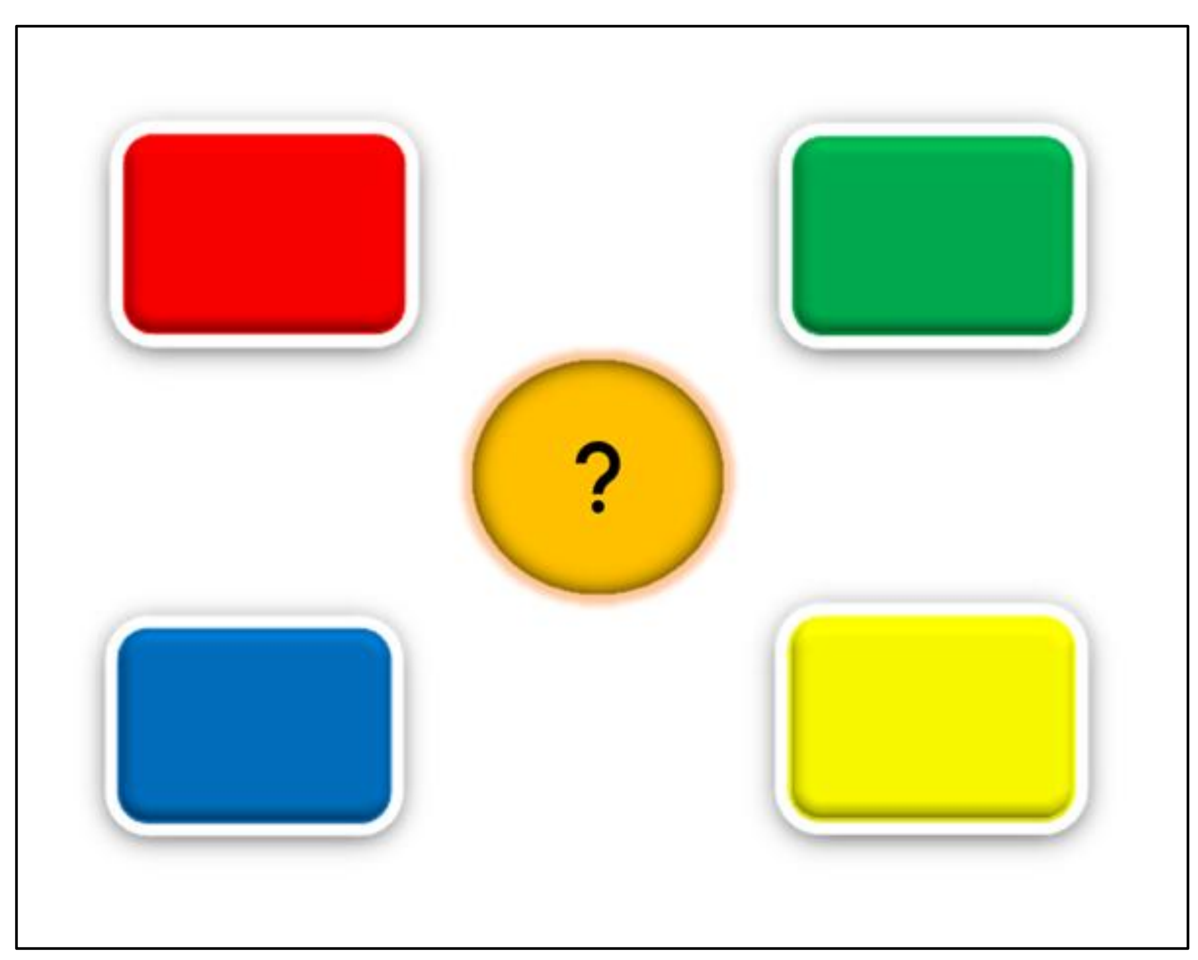
After choosing your player, you will see four coloured squares. Two of these hide purple circles and two orange circles. If you are playing, pick a square you think hides an orange circle. If your computer-partner is playing, they will choose for you, but you will not see which square they pick. Whether you or your computer partner plays, you will be told if the chosen square was orange and correct or purple and incorrect.

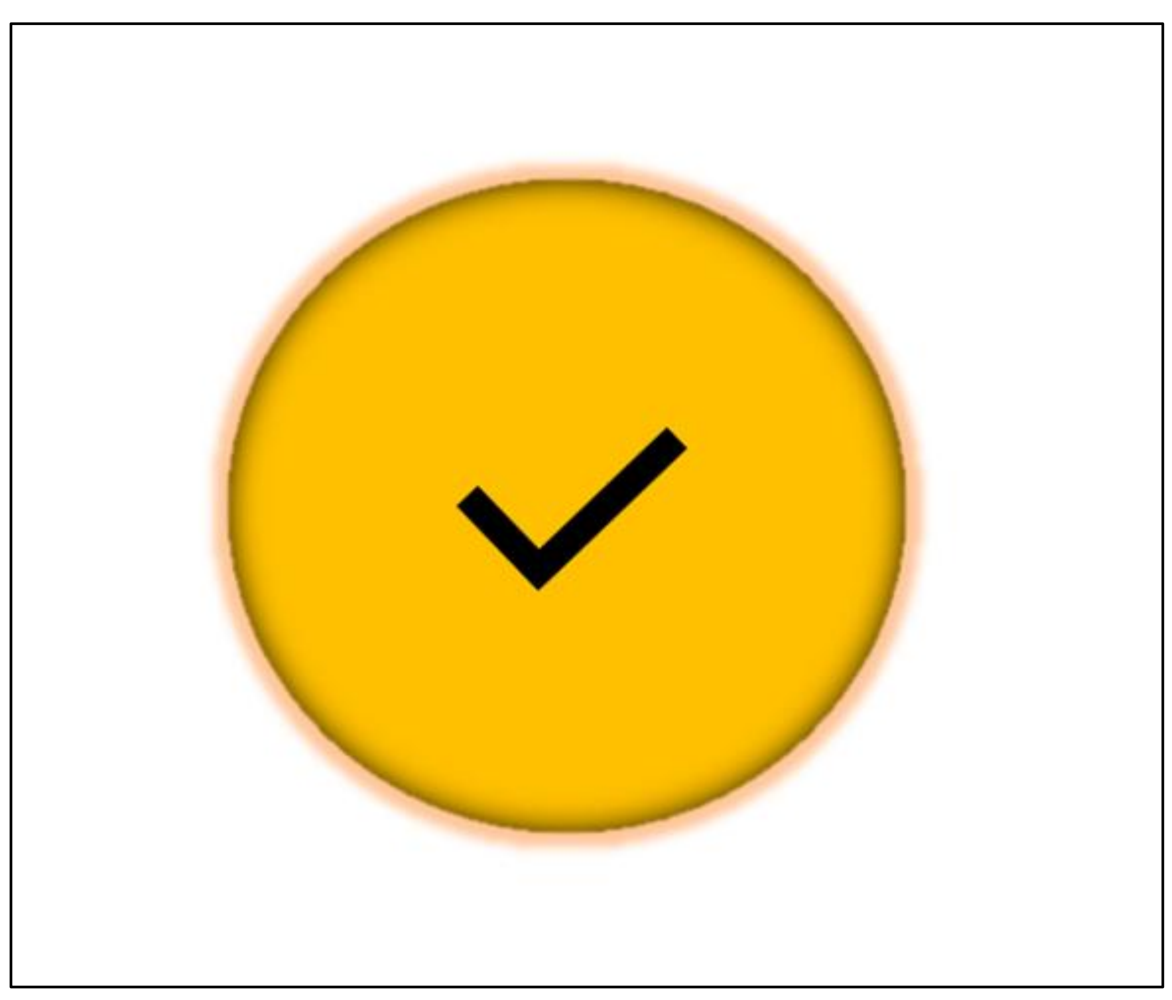
Points are not earned in this training round.

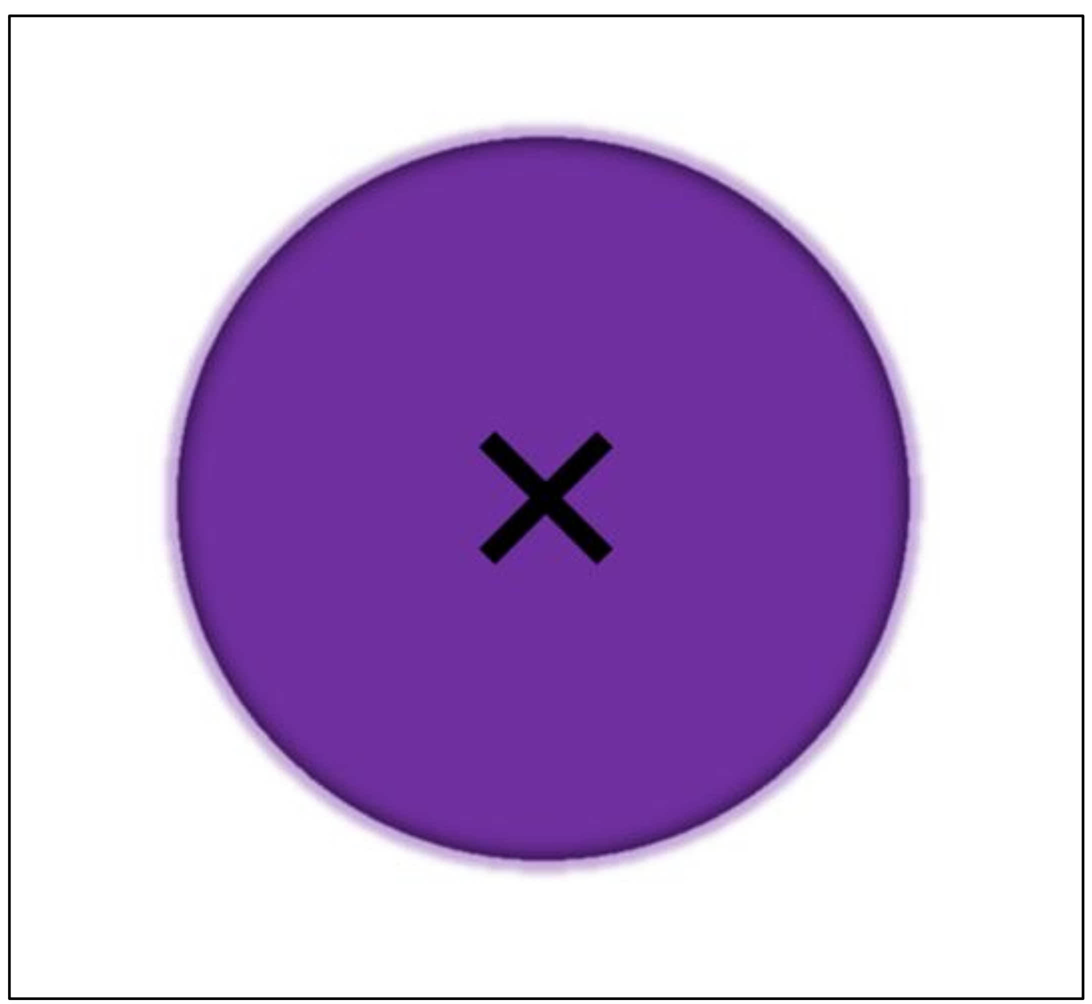
If you have any questions, please ask now.

If you are sure you understand, press any key to continue.









Well done!

Now let's start the real game.

This game has four rounds, with 22 trials per round. These are like the training round, but with some differences.

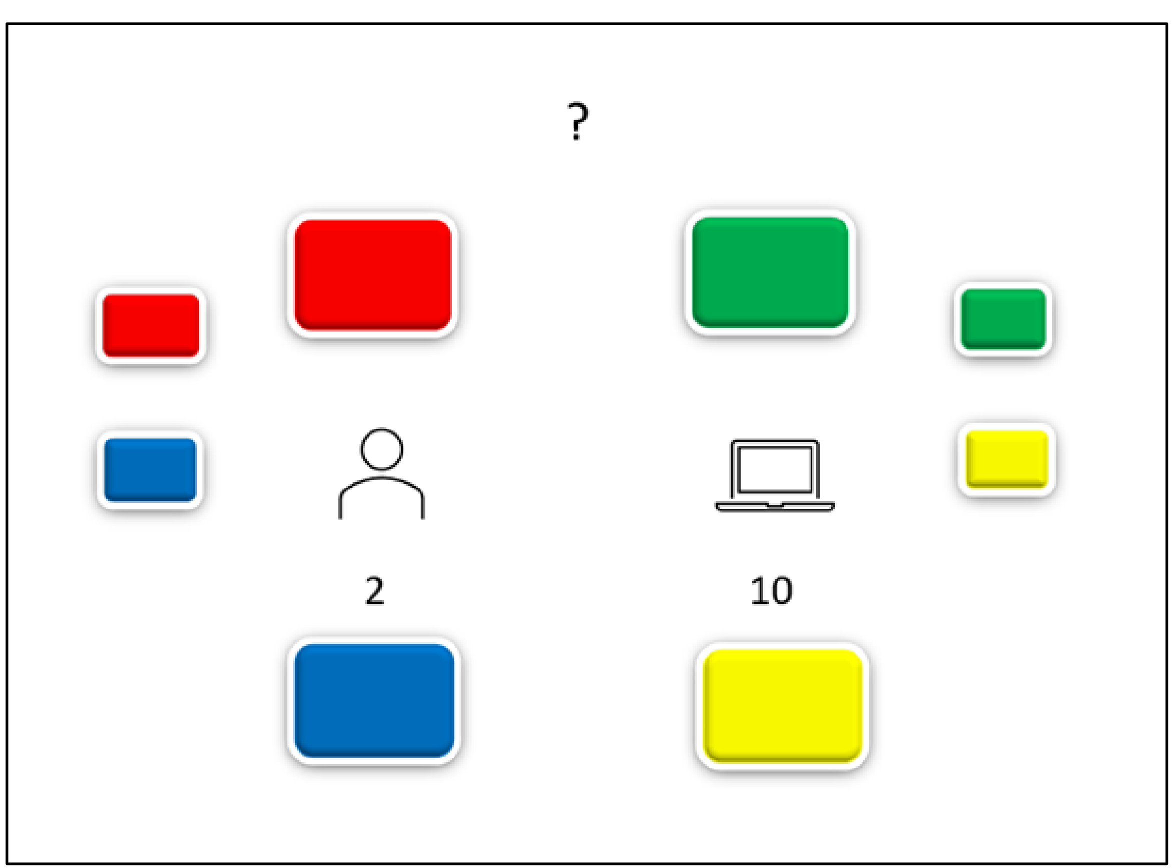
You are not told which player to choose. Instead, you choose who plays each trial. This is done by pressing a button on the same side of the response pad as the player on screen.

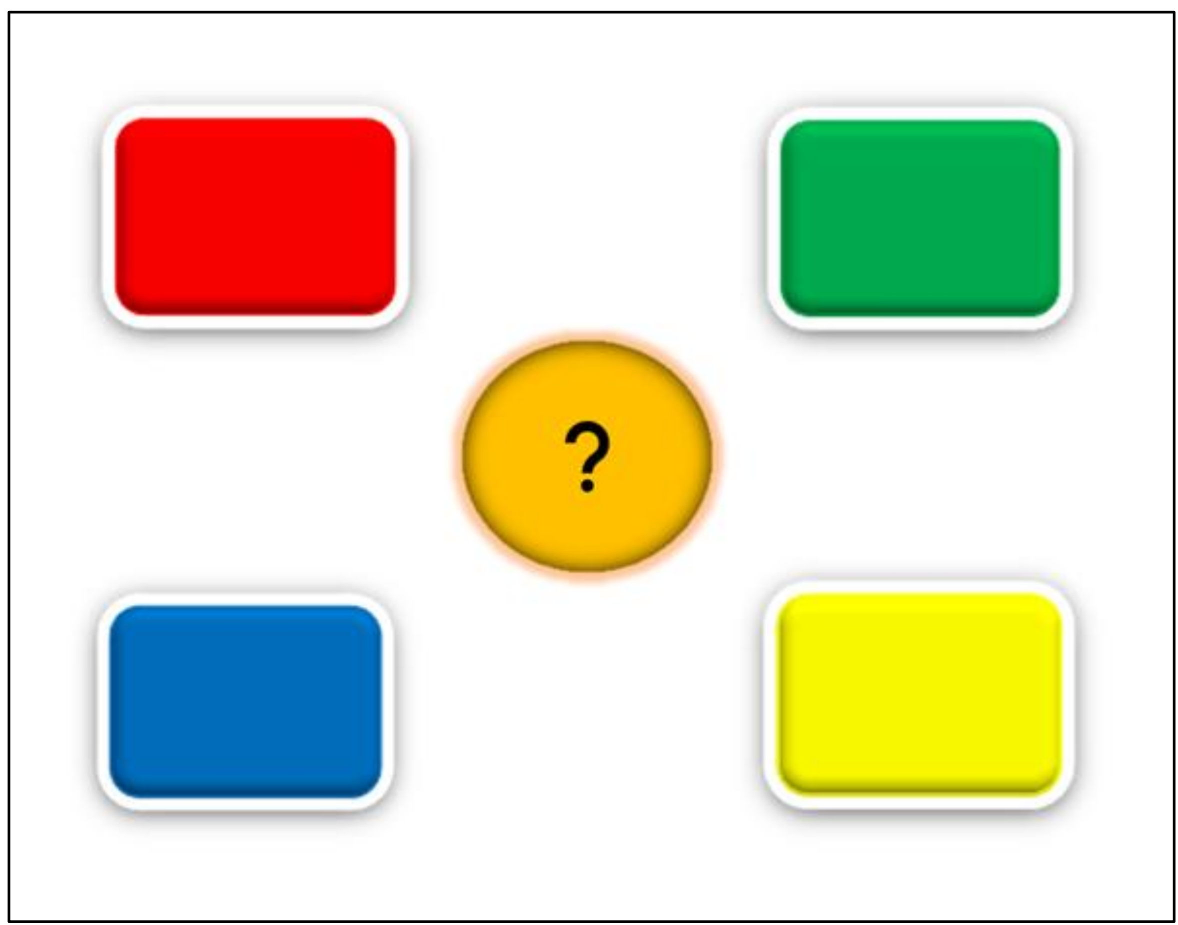
You earn points for each correct guess made by you or your computer-partner. Within each trial, the amount of points that can be won by you or your computer-partner is different. Also, the number of points that can be won by both players changes across trials. Pay attention to the amount of points that can be won by each player in each trial. Incorrect guesses do not lose points.

Do you understand how to play the game?

If you have any questions, please ask now.

If you are sure you understand and are ready to begin, press any button on your response pad to begin the game.


?
2
10


?

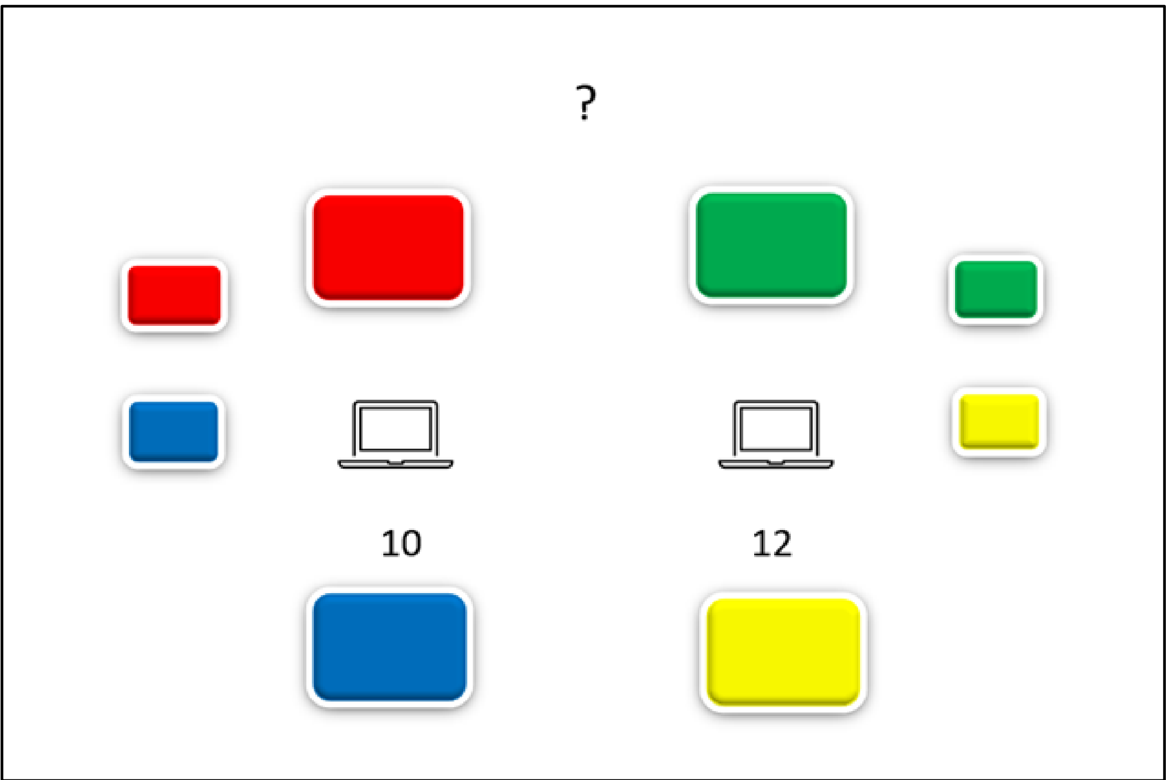
Good job!

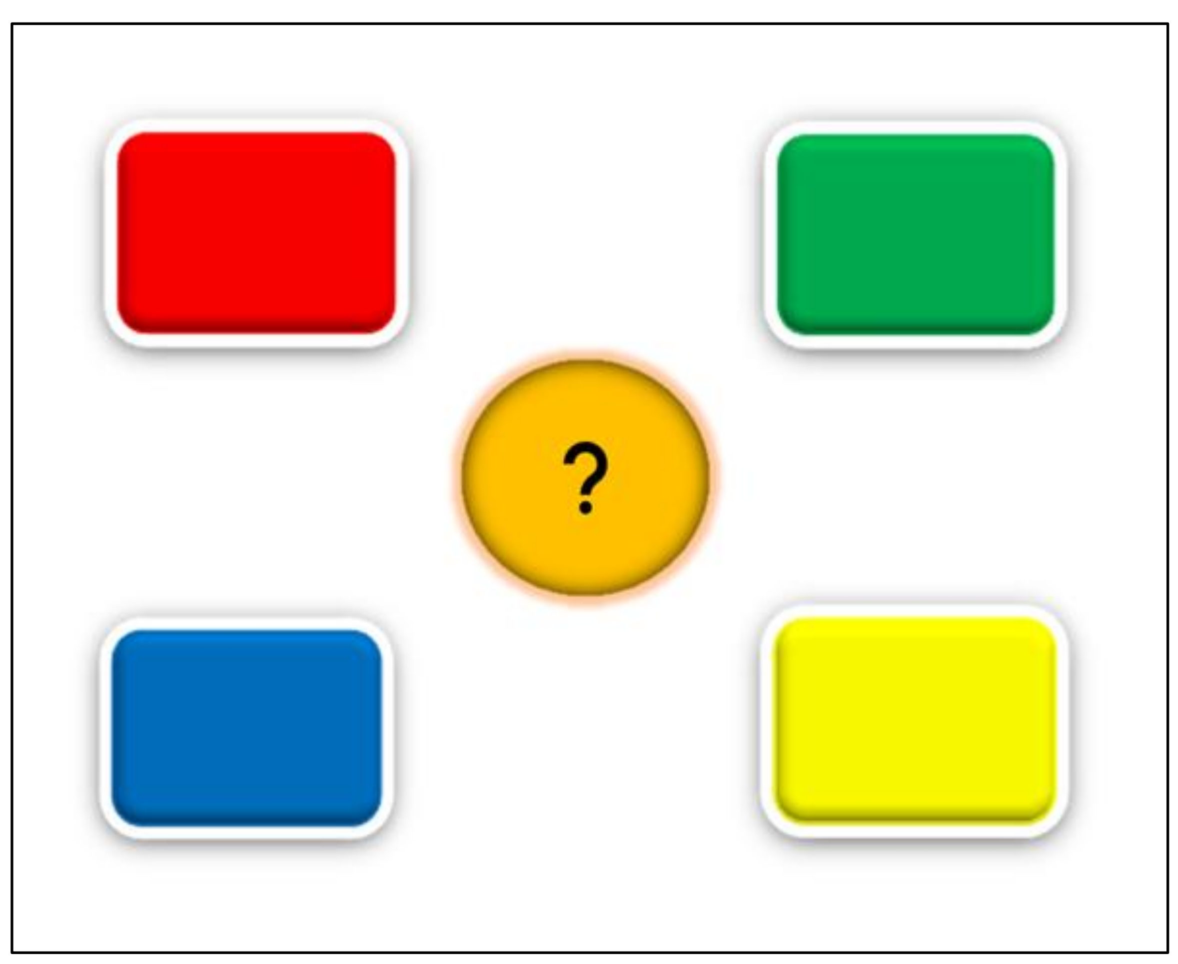
You're probably getting the hang of this now... Is there anything you want to ask or check at this stage?

Ok, this next round will be like the last, but with one difference... Instead of choosing whether you or your computer-partner plays, you choose between two self or computer-partner options for different numbers of points. For example, between you for 2 points and you for 10 points, or between your computer-partner for 4 points and your computer-partner for 10 points... Does this make sense?

All points won will still be yours. There will be 22 trials again in this round.

If you are sure you understand and are ready to play the next round, press any key to start.





Congratulations, you're over halfway there!

This round will be like the first of the real game. You will choose between yourself and your computer-partner for different numbers of points. The only difference is that this time the self and computer-partner options will be presented on the other side of the screen. You still choose by pressing a button on the same side of your response pad as the player is presented on screen.

If you have any questions, feel free to ask. Also, if you would like a break now, or at any stage of your assessments do not hesitate to ask.

When you are sure you understand how to play the next round and are ready to begin, press any button on your pad.

Well done, this is the final round.

This round will be like round 2; you will not decide who plays in each round, only how many points the player may earn. For example, you will choose whether you play for 6 or 10 points, or whether your computer-partner plays for 10 or 18 points. Remember that no matter who plays, any points won are yours and you do not lose points for incorrect guesses.

Do you understand how to play this round?

If you have any questions, don't be embarrassed and ask now. You may also ask during the round.

If you are sure you understand how to play this round and are ready to begin, press any button on your response pad.

Congratulations, you've finished the game!

You'll hear your score after you complete the questionnaires.

Appendix O

Multidimensional Locus of Control Scales

You will be read a number of sentences.

Answer how much you agree with each sentence using the buttons.

Green buttons mean you agree, red buttons mean you disagree.
1 means slightly, 2 means somewhat, 3 means very.

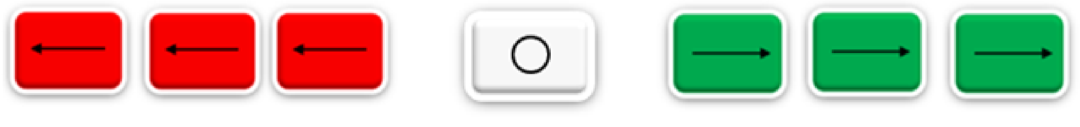
Try to answer as many questions as you can so we can get a good understanding of the psychology of problematic substance use recovery. However, if you do not feel comfortable responding to an item, or feel it doesn't apply to you, you may skip it by pressing the middle button. If you want to let the researcher know why you chose to skip (it made you uncomfortable/ it did not apply etc.) you may do so.

If you have a question about one of the sentences, ask the researcher before answering.

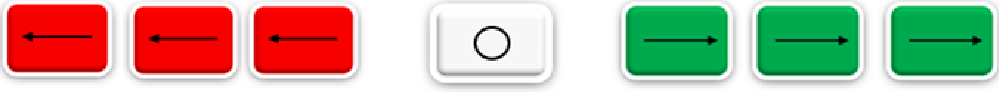
If you have a question about these instructions, ask the researcher now.

If you understand, press the middle button to start.

To a great extent my life is controlled by accidental happenings

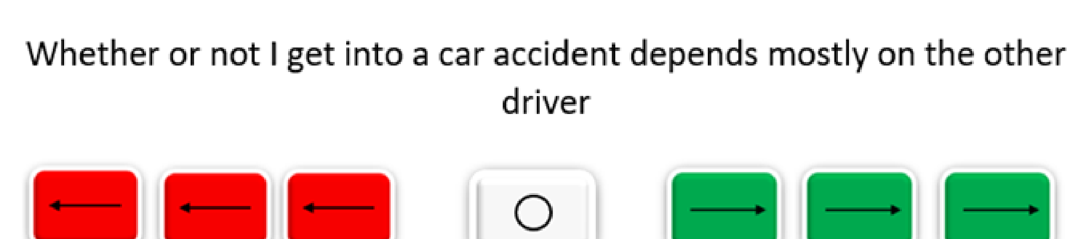


Often there is no chance of protecting my personal interests from bad luck



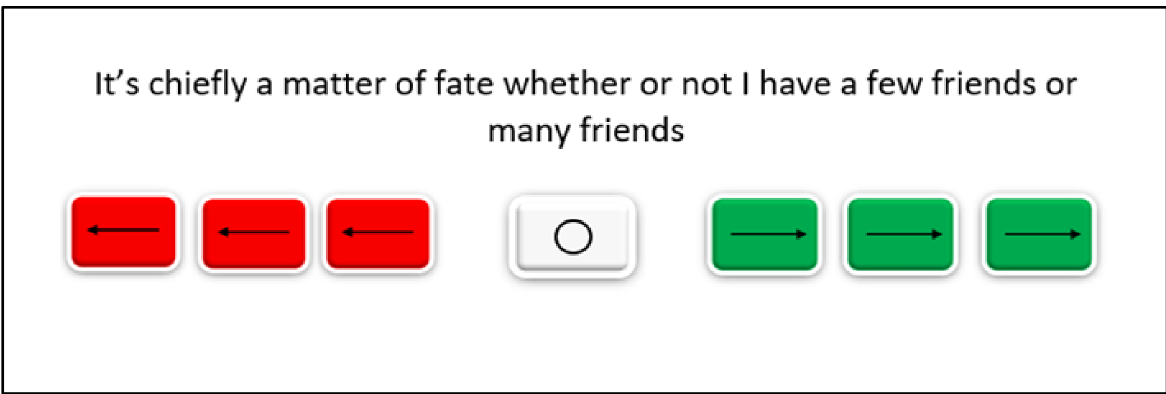
Whether or not I get into a car accident is mostly a matter of luck

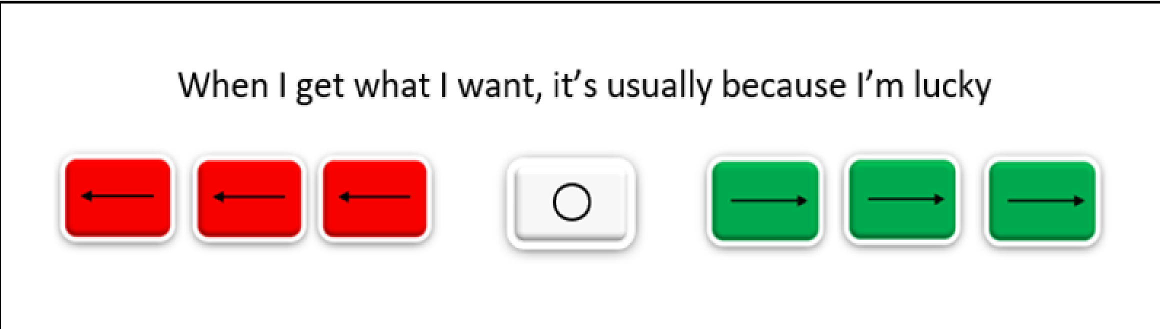
Whether or not I get into a car accident depends mostly on the other driver

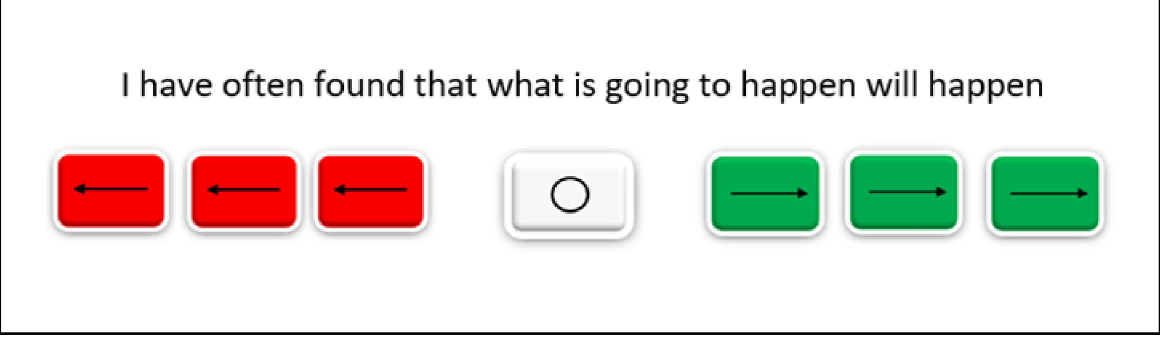


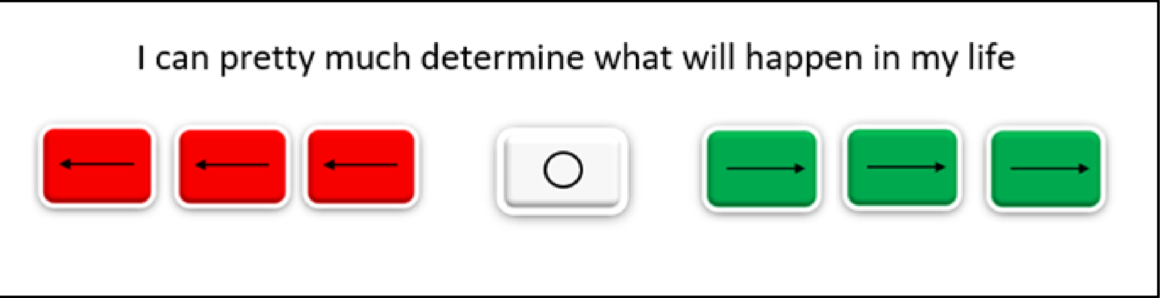
Whether or not I get into a car accident depends mostly on how good a driver I am

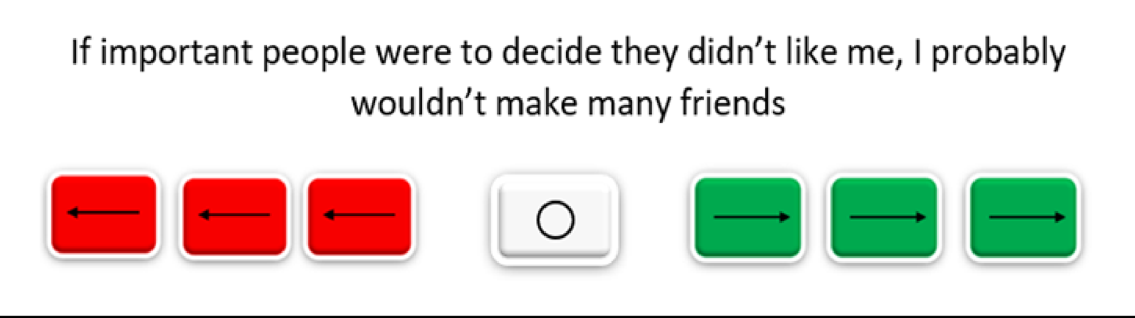
It's chiefly a matter of fate whether or not I have a few friends or many friends

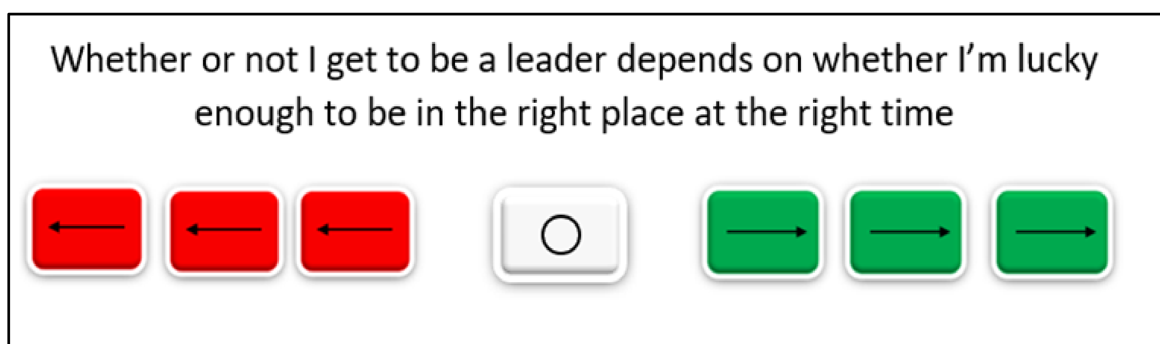


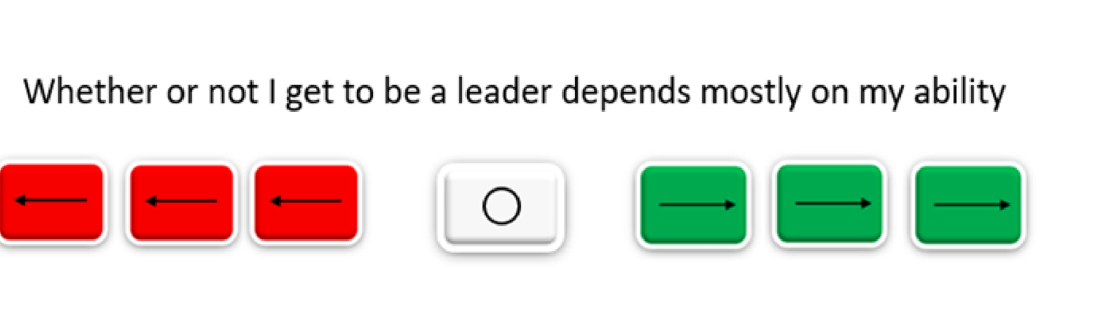

When I get what I want, it's usually because I'm lucky

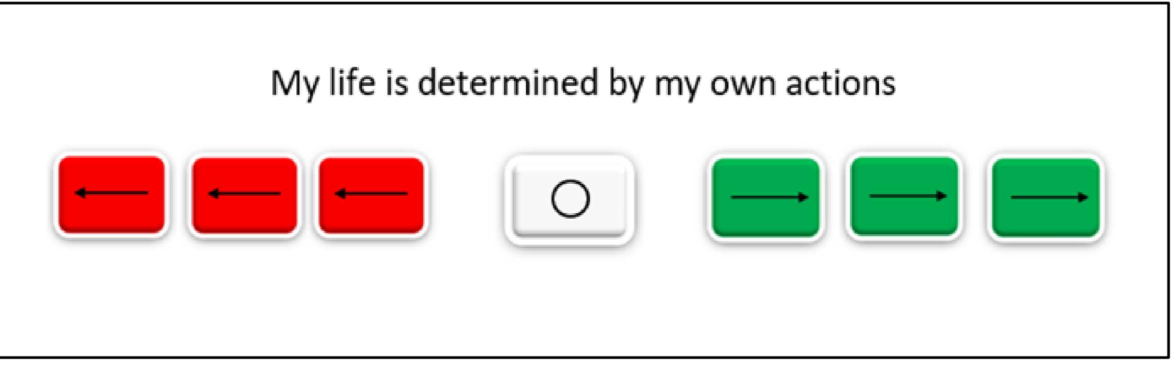

I have often found that what is going to happen will happen

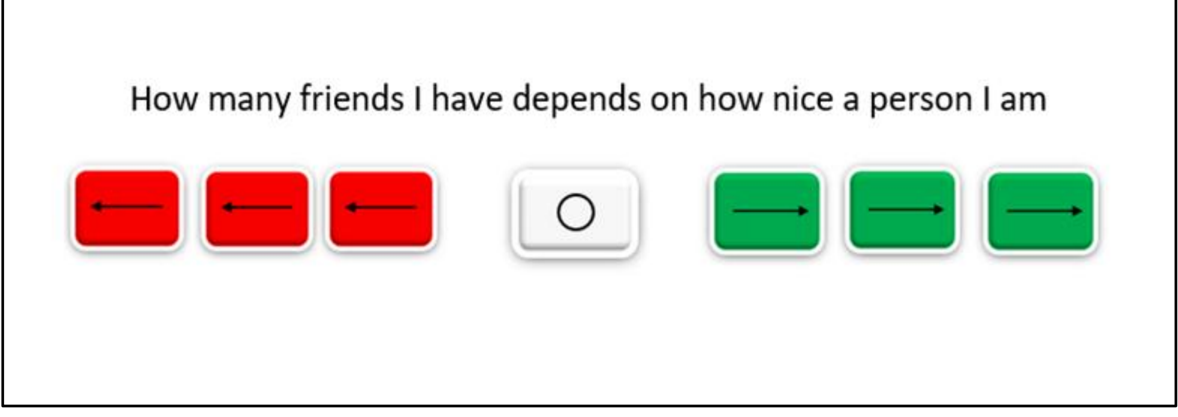

I can pretty much determine what will happen in my life

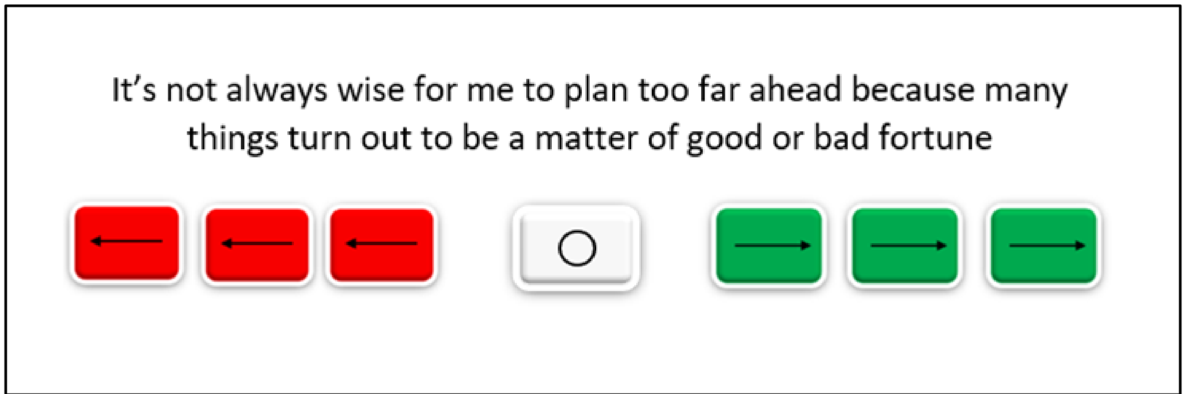

If important people were to decide they didn't like me, I probably wouldn't make many friends


Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time

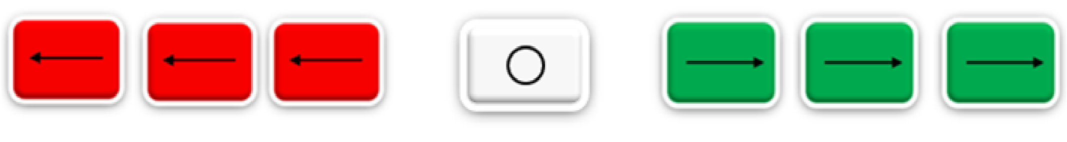

Whether or not I get to be a leader depends mostly on my ability


My life is determined by my own actions

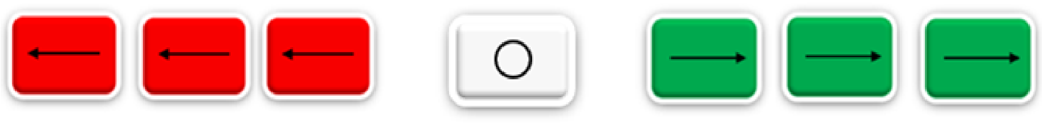

How many friends I have depends on how nice a person I am


It's not always wise for me to plan too far ahead because many
things turn out to be a matter of good or bad fortune

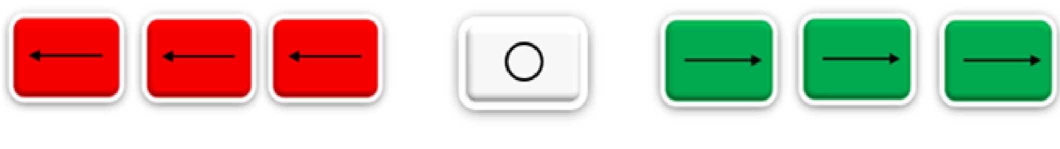
In order to have my plans work, I make sure that they fit in with the desires of people who have power over me



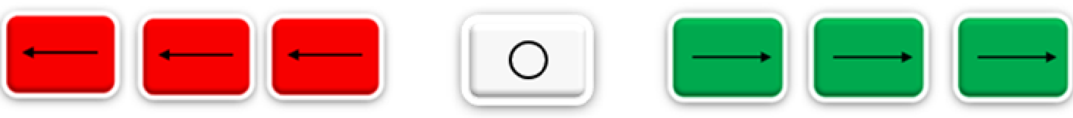
When I make plans, I am almost certain to make them work

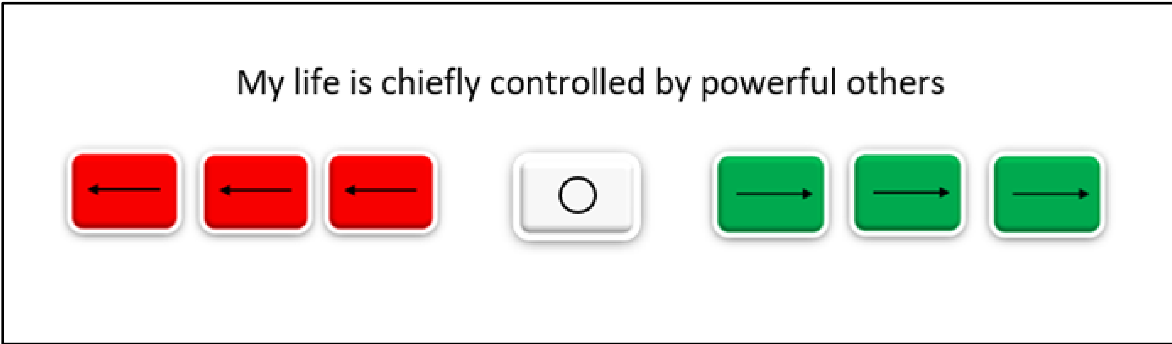


Getting what I want requires pleasing those people above me



Although I might have good ability, I will not be given leadership responsibility without appealing to those in positions of power

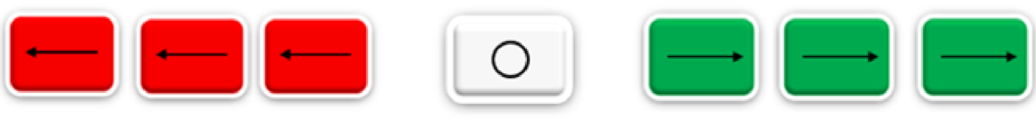



My life is chiefly controlled by powerful others

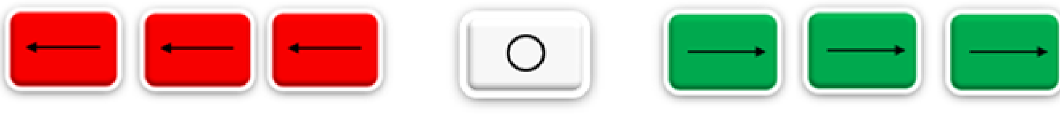
I feel like what happens in my life is mostly determined by powerful people

I am usually able to protect my personal interests

People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups



When I get what I want, it's usually because I worked hard for it



The consent form is now complete.

Press the green button to begin the study.

Appendix P

Future Events Questionnaire

In this questionnaire, you will be read a number of statements about events or situations that could occur in the future.

When you have read and understood a statement, press the middle button.

You will then be asked whether or not you think this is likely to occur for you.

Answer yes by pressing the green button. Answer no by pressing the red button.

You will then be asked to indicate how certain you feel this will or will not happen. Answer using the middle buttons:

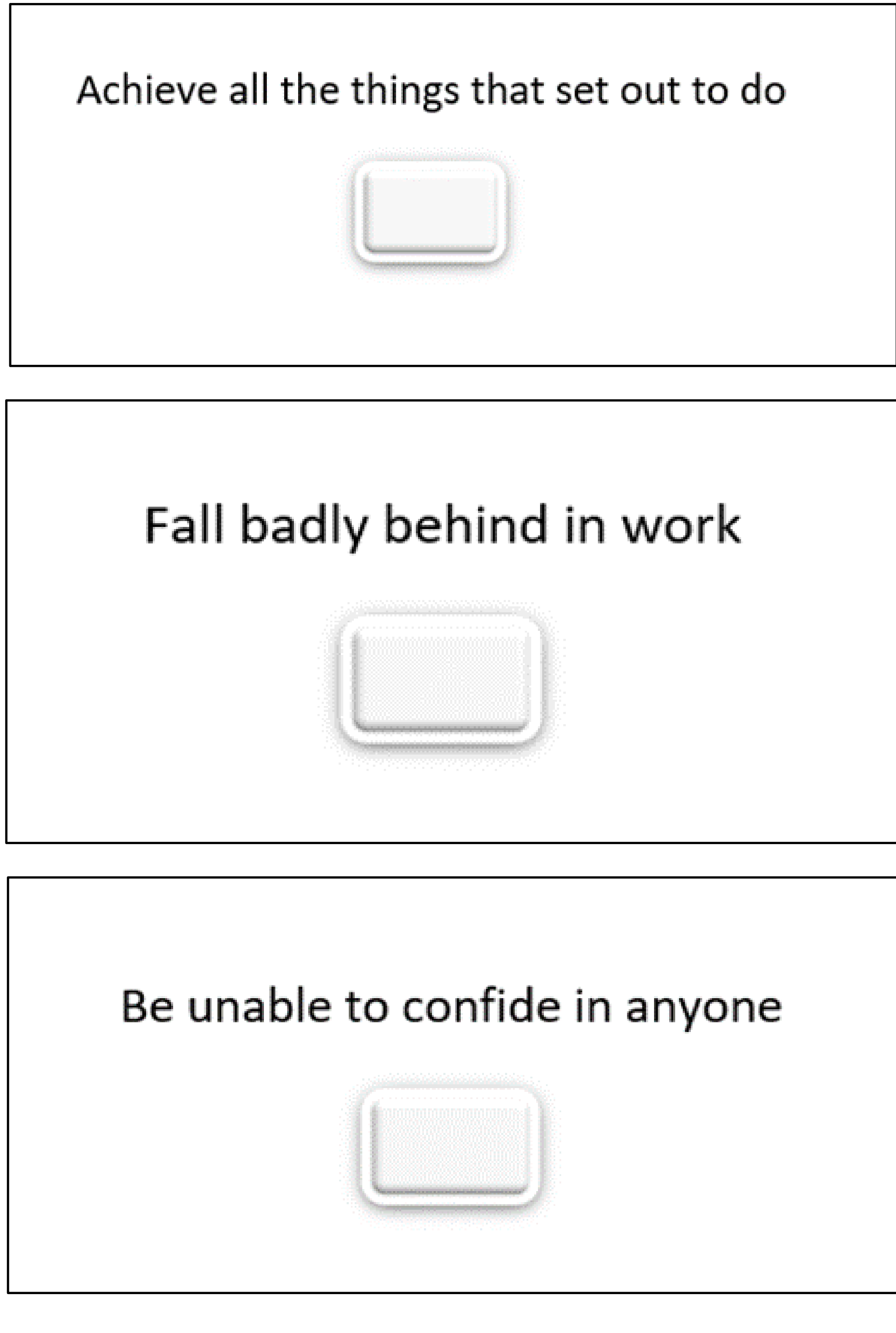
1 = "Not at all certain"

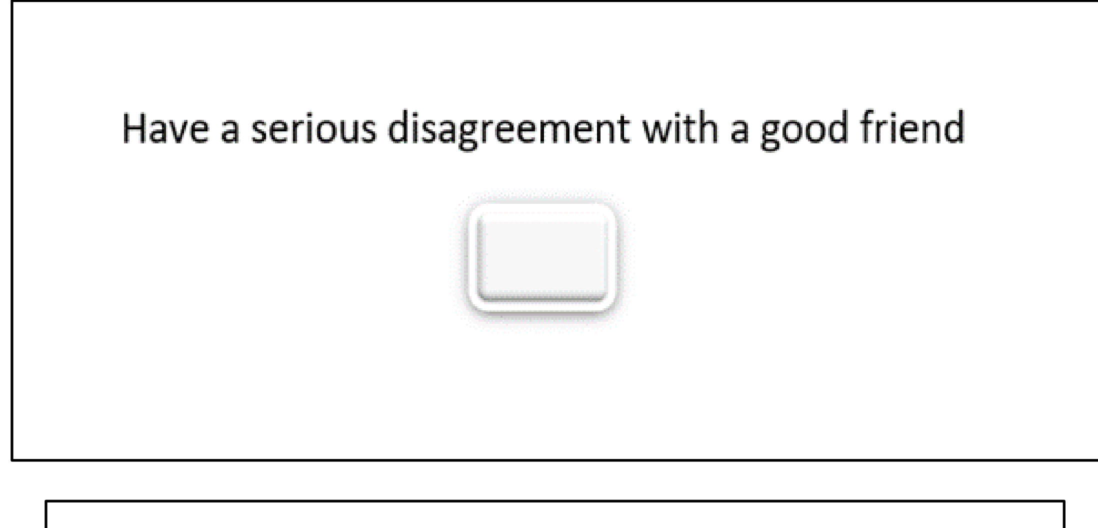
5 = "As certain as can be"

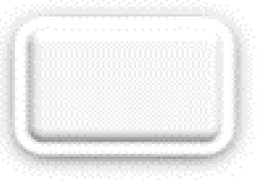
If you have any questions about any of the items, ask me before answering.

If you have any questions about these instructions, please ask now.

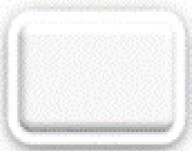
If you are sure you understand, press the middle button to continue.

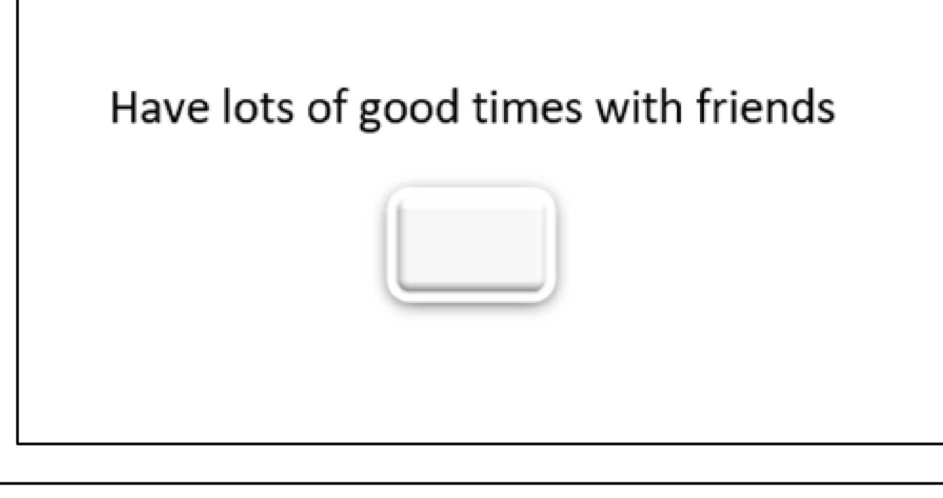

Achieve all the things that set out to do
Fall badly behind in work
Be unable to confide in anyone



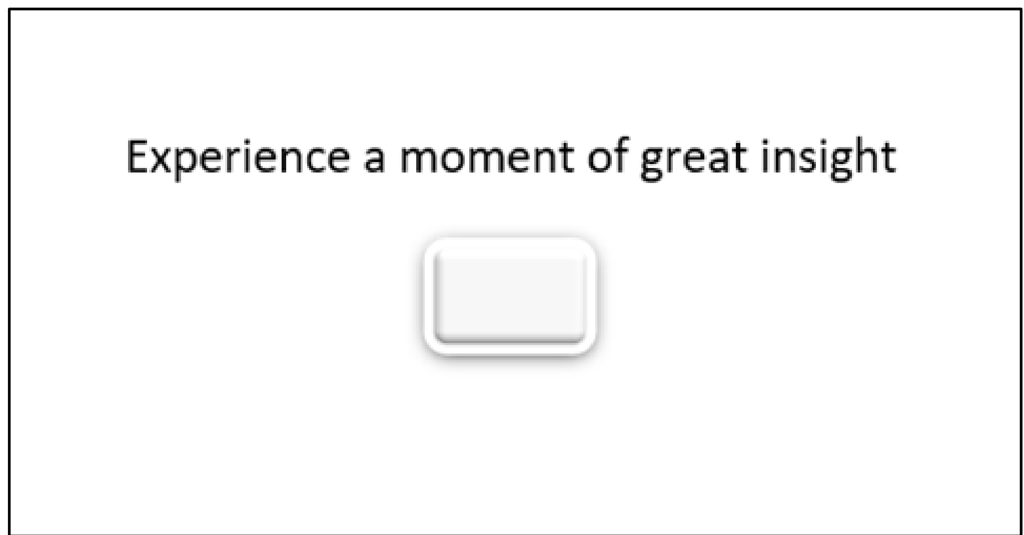


Be thought of as a failure by people



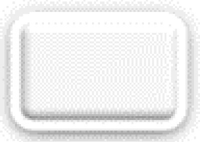

Have lots of good times with friends

Be honoured for a major achievement

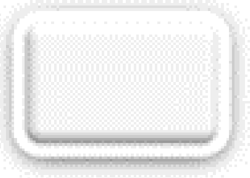

Experience a moment of great insight

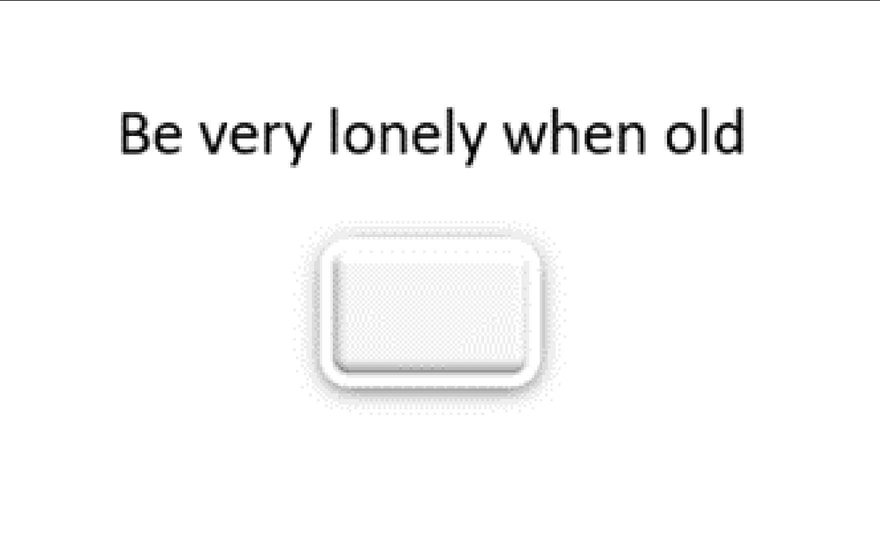
Have an important promise broken

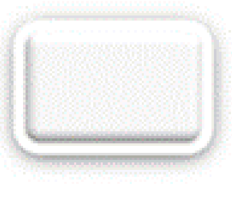
Have things not work out as hoped



Feel misunderstood by people







How certain of this response are you?

1 2 3 4 5

Appendix Q

Recent Life Events Questionnaire

In this questionnaire you will be read a number of events.

After each event you will be asked whether or not this occurred for you in the last year.

Press the green button to say yes or the red button to say no.

If you say yes, you will be asked if the event still affects you or your life.

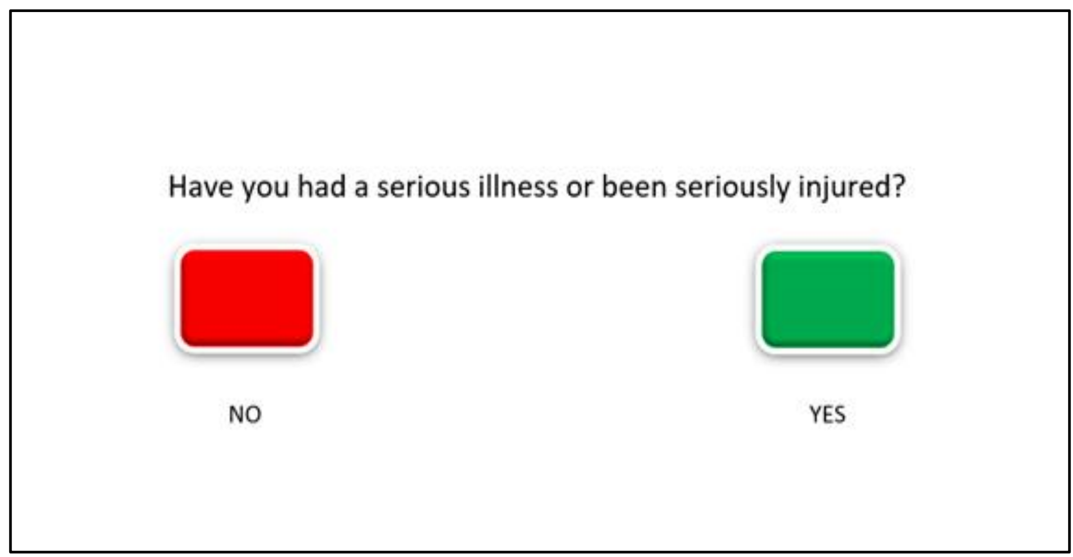
You will not be asked to describe how, just if the even still affects you.

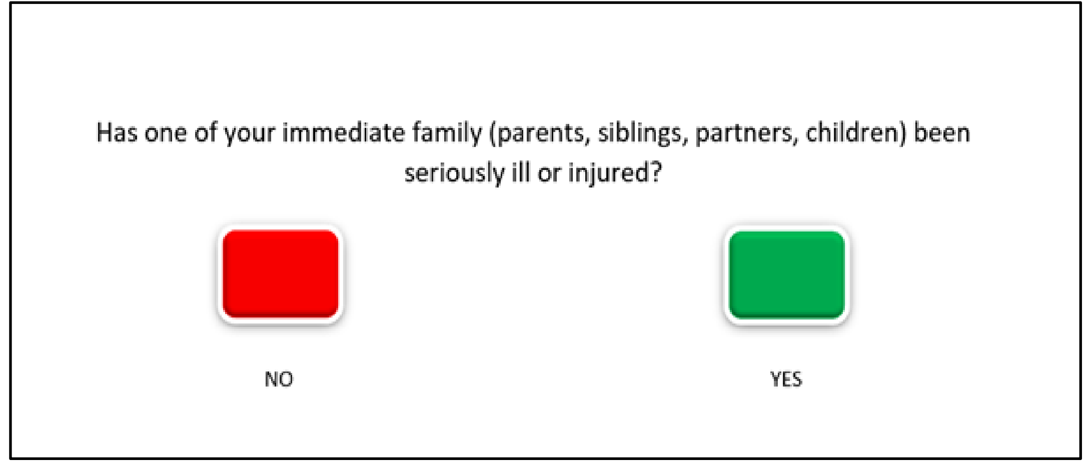
Use the green button for yes and the red for no.

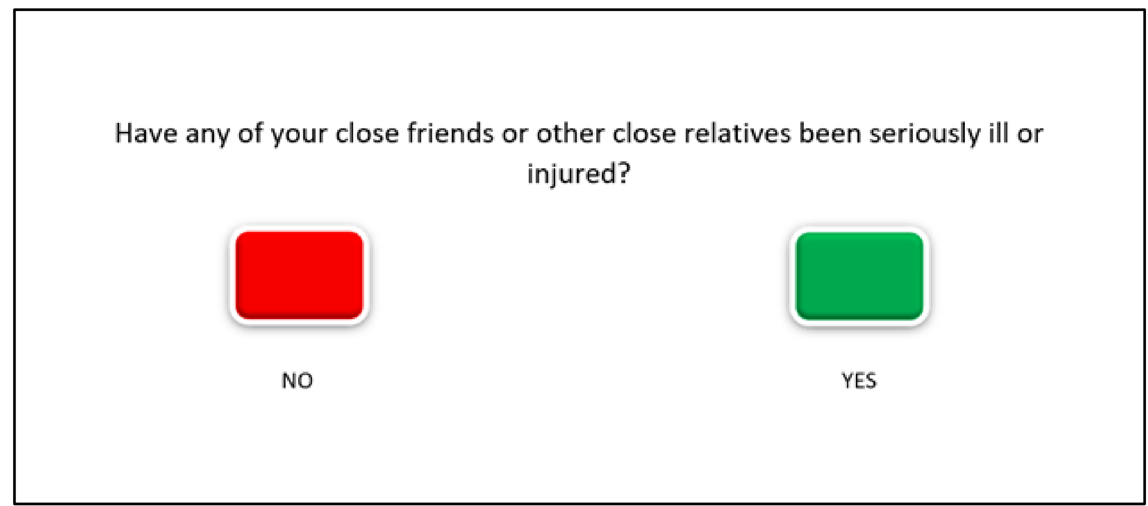
If you have any questions about any of the events, or want them read again, please ask me before responding.

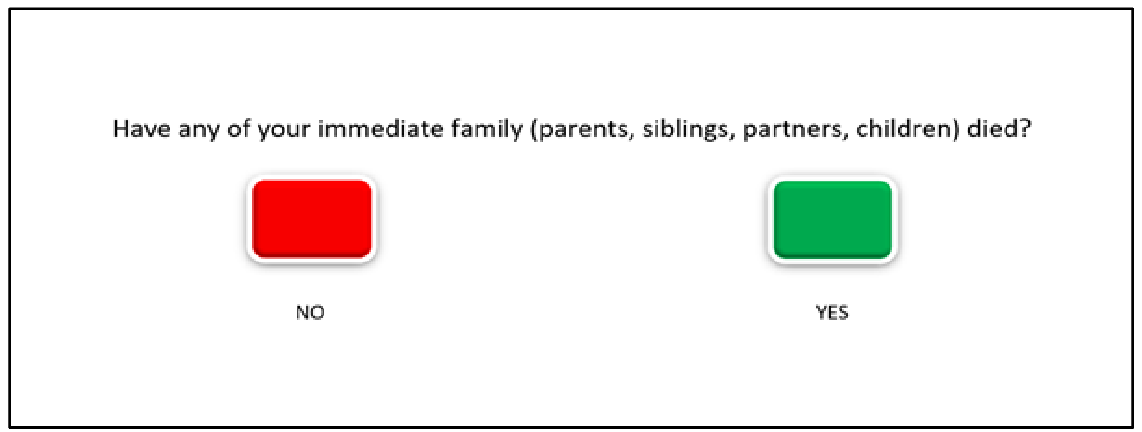
If you have any questions about these instructions, ask me now.

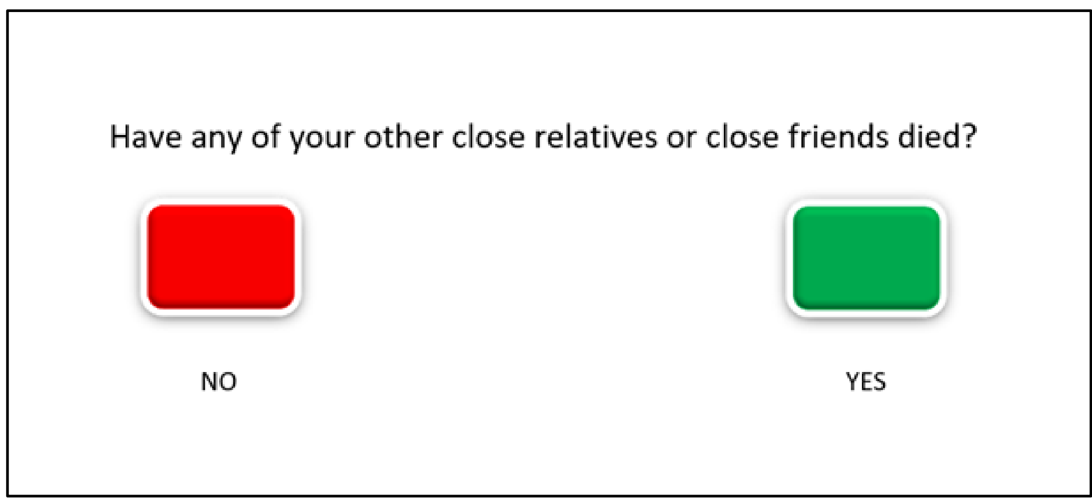
If you are sure you understand how this questionnaire will run, and how to respond, press the middle button to continue.

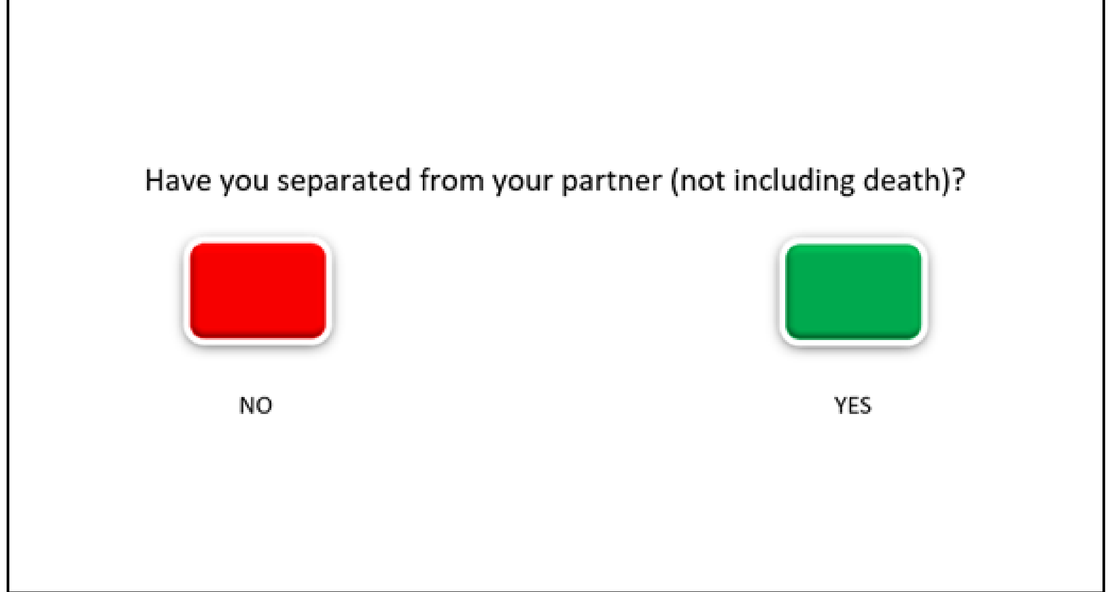

Have you had a serious illness or been seriously injured?
NO
YES

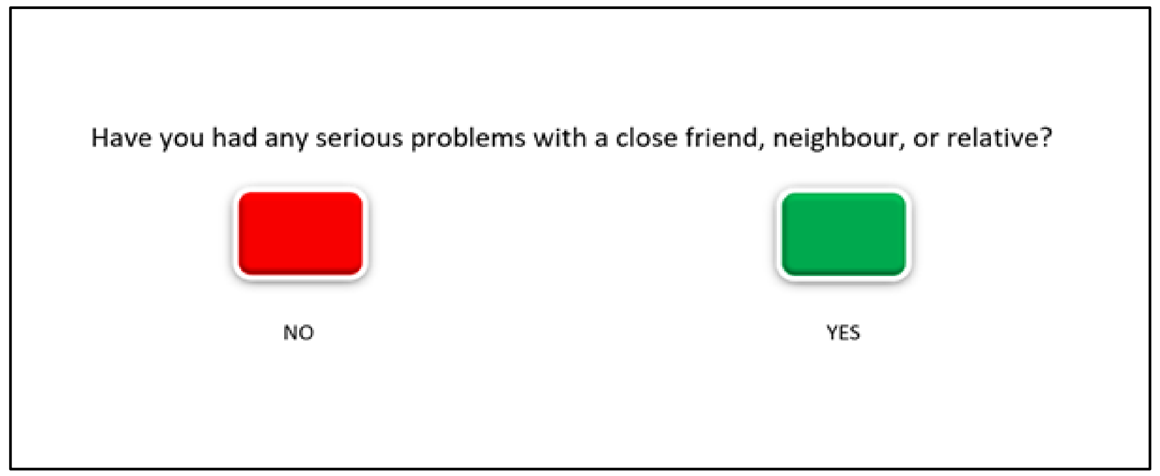

Has one of your immediate family (parents, siblings, partners, children) been seriously ill or injured?
NO
YES

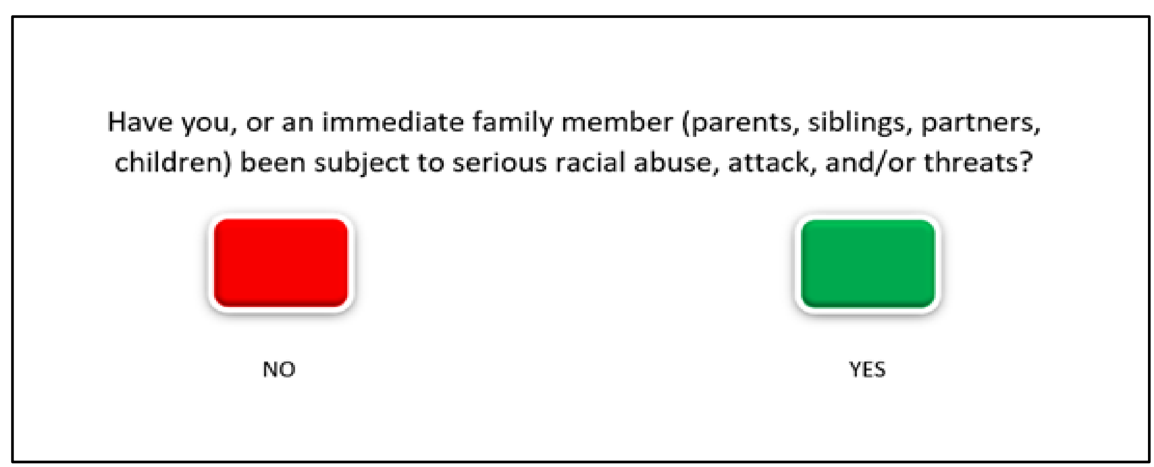

Have any of your close friends or other close relatives been seriously ill or injured?
NO
YES

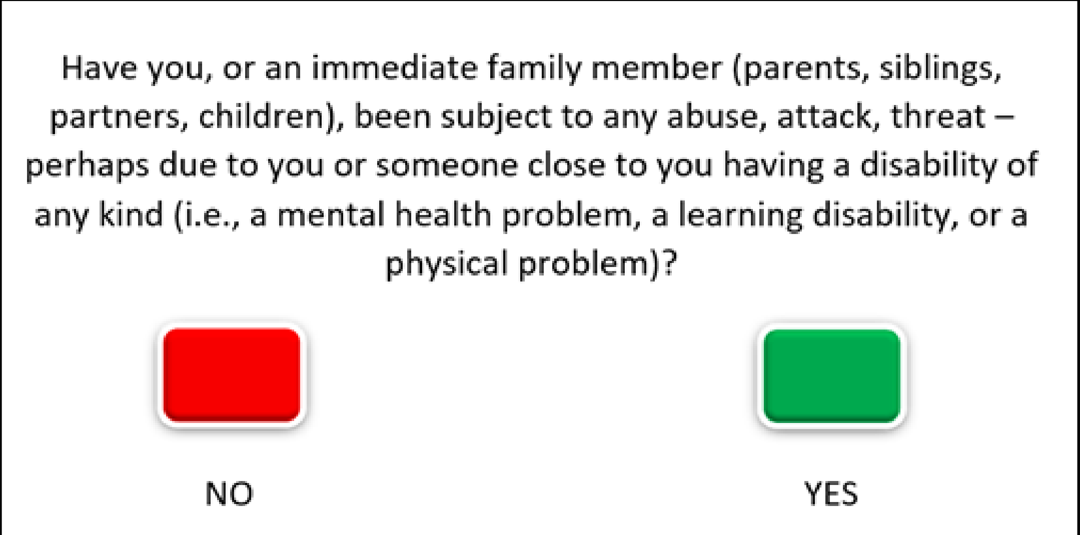

Have any of your immediate family (parents, siblings, partners, children) died?
NO
YES

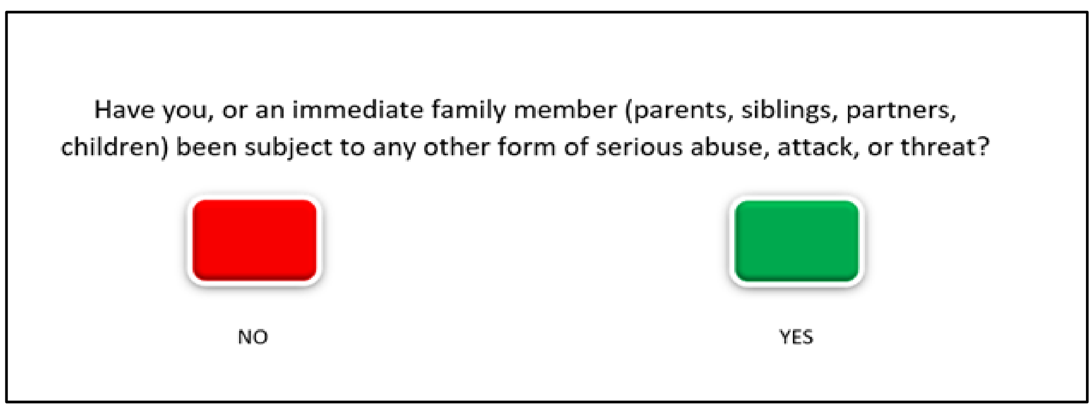

Have any of your other close relatives or close friends died?
NO
YES

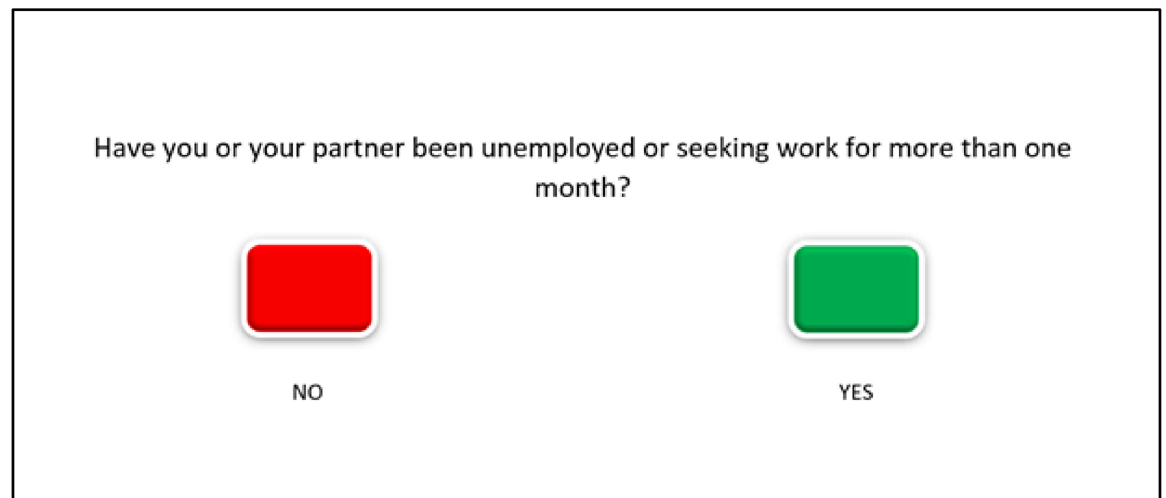

Have you separated from your partner (not including death)?
NO
YES

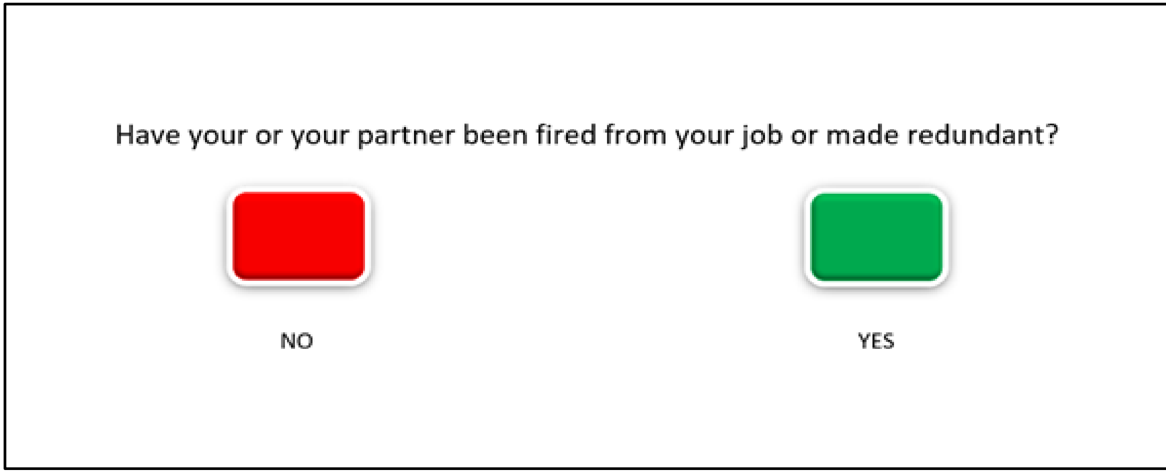

Have you had any serious problems with a close friend, neighbour, or relative?
NO
YES

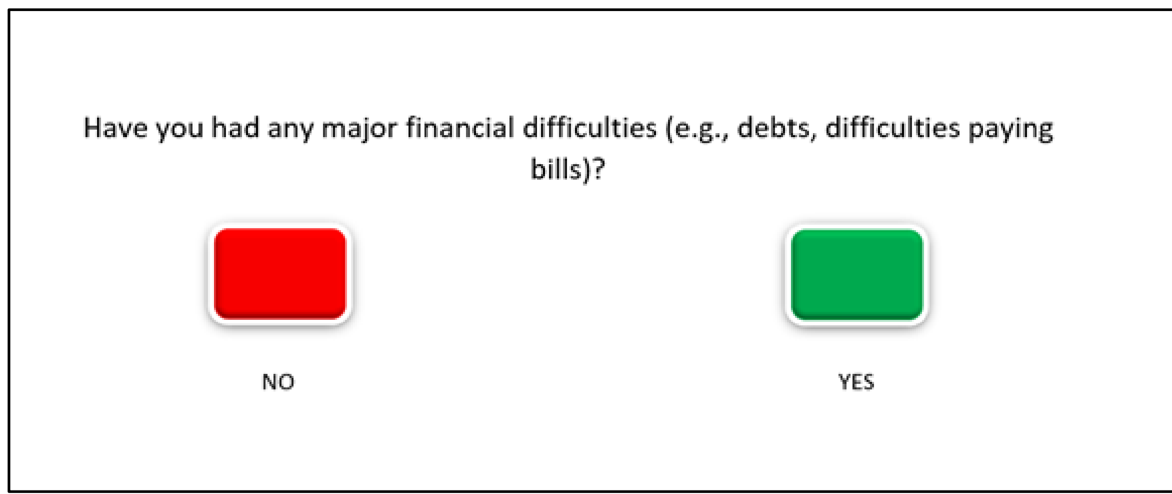

Have you, or an immediate family member (parents, siblings, partners, children) been subject to serious racial abuse, attack, and/or threats?
NO
YES

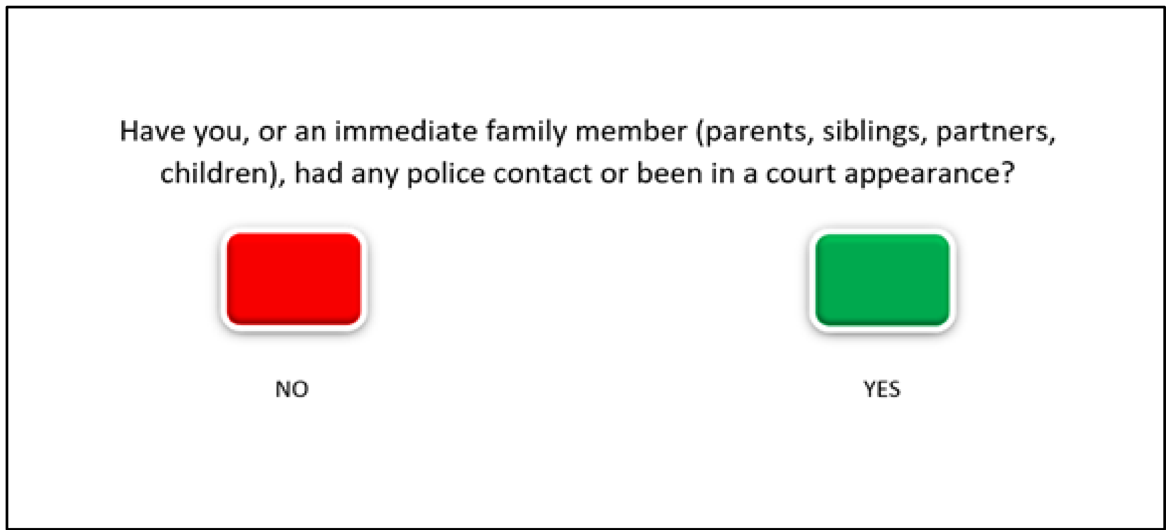

Have you, or an immediate family member (parents, siblings, partners, children), been subject to any abuse, attack, threat – perhaps due to you or someone close to you having a disability of any kind (i.e., a mental health problem, a learning disability, or a physical problem)?
NO
YES

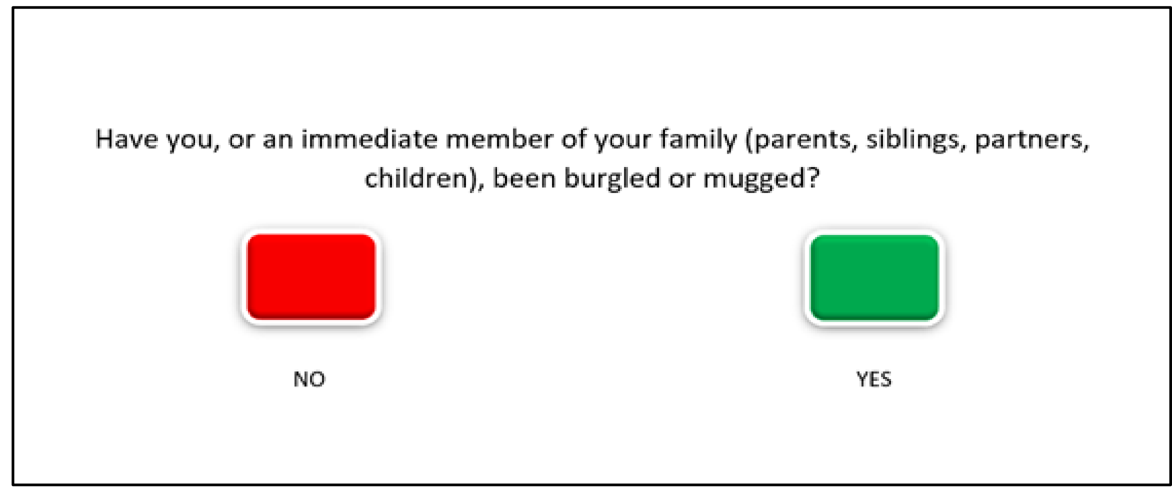

Have you, or an immediate family member (parents, siblings, partners, children) been subject to any other form of serious abuse, attack, or threat?
NO
YES

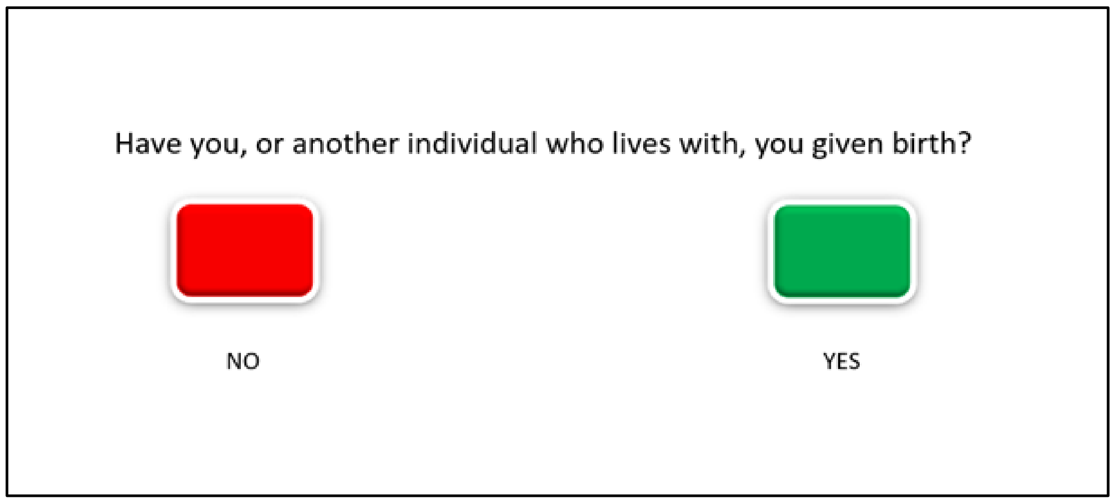

Have you or your partner been unemployed or seeking work for more than one month?
NO
YES

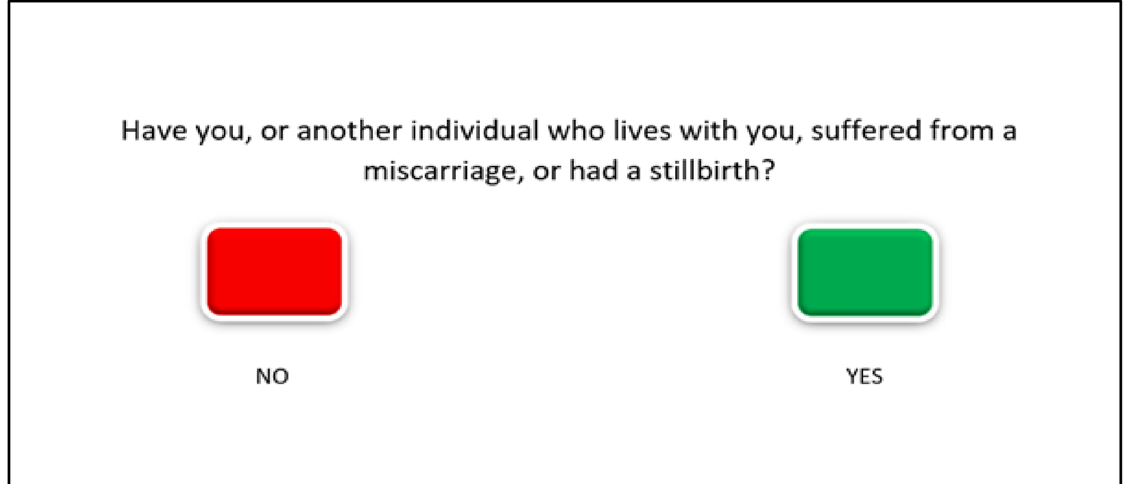

Have your or your partner been fired from your job or made redundant?
NO
YES

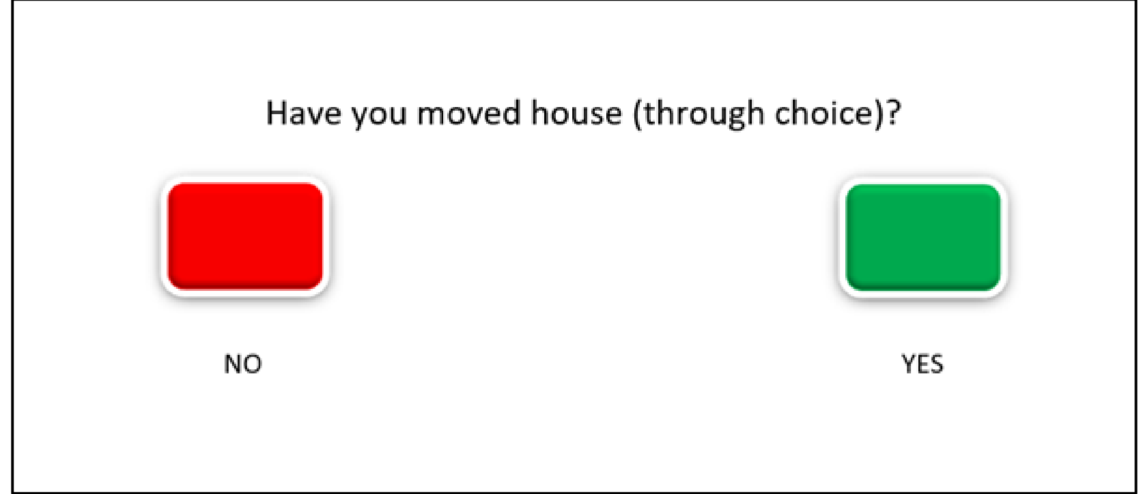

Have you had any major financial difficulties (e.g., debts, difficulties paying bills)?
NO
YES

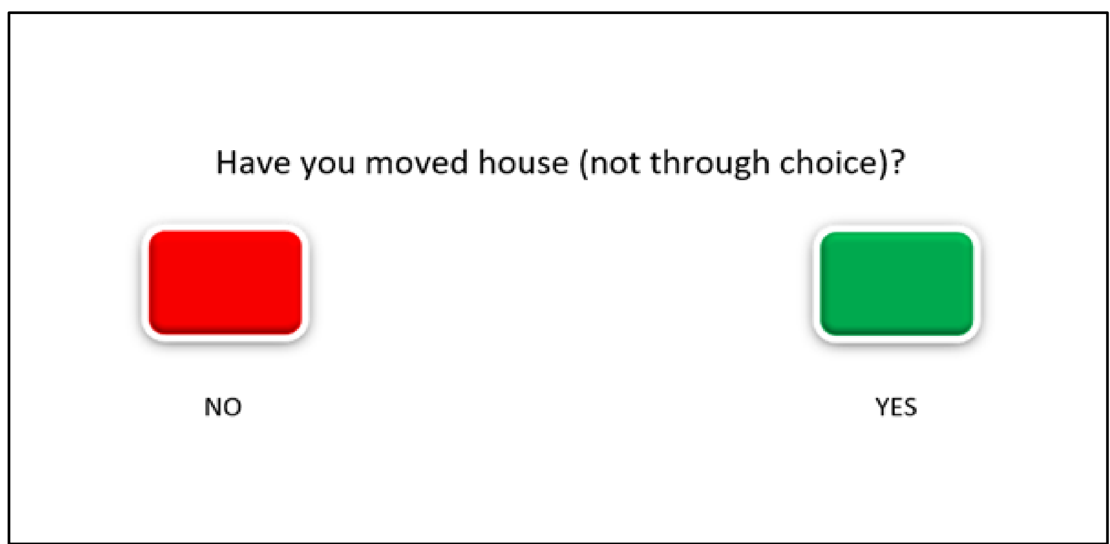

Have you, or an immediate family member (parents, siblings, partners, children), had any police contact or been in a court appearance?
NO
YES


Have you, or an immediate member of your family (parents, siblings, partners, children), been burgled or mugged?
NO
YES

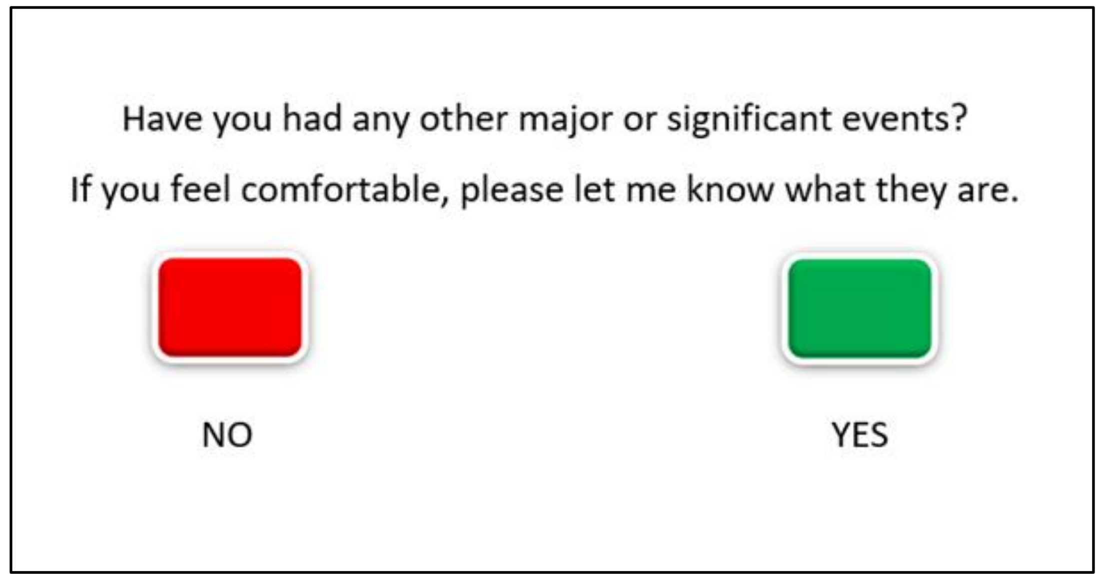

Have you, or another individual who lives with, you given birth?
NO
YES

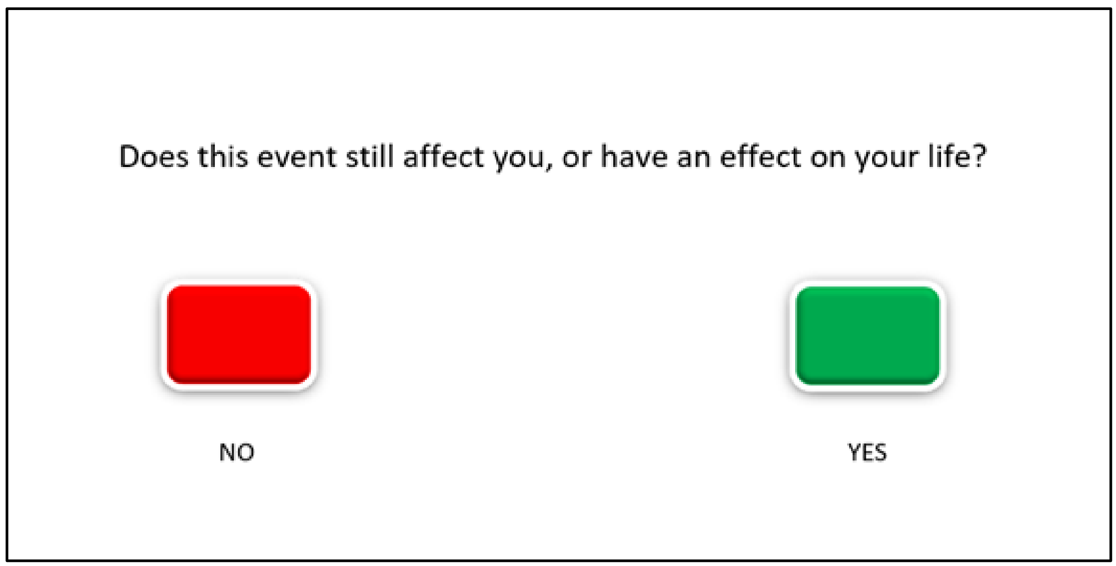

Have you, or another individual who lives with you, suffered from a miscarriage, or had a stillbirth?
NO
YES


Have you moved house (through choice)?
NO
YES


Have you moved house (not through choice)?
NO
YES

Have you had any housing difficulties?
NO
YES


Have you had any other major or significant events?
If you feel comfortable, please let me know what they are.
NO
YES



You have completed the experiment, well done!

Press the middle button to continue.

Appendix R

Debrief Sheet for DSC Participants

Can Value of Control Predict Problematic Substance Use Treatment Success?

Debriefing Sheet

Student Researcher:	Lorna Crean	**Contact:** lorna.crean2@mail.dcu.ie
Research Supervisors:	Styliani Vlachou	**Contact:** stella.vlachou@dcu.ie
	Catherine Fassbender	**Contact:** catherine.fassbender@dcu.ie
DCU Research Ethics Committee:		**Contact:** rec@dcu.ie
Sure Steps Counselling:		**Contact:** 1800 844 600 (Freephone)

Before taking part, you were told that this study investigates whether your performance in a guessing game is linked to your Problematic Substance Use recovery in treatment. This was not completely true. It actually investigates whether the value participants place on control in this game (choosing to play yourself for smaller amounts) is linked to their recovery progress.

You were not told this as we felt that if participants knew what this study hoped to discover before taking part, they might change how they played the game (consciously or subconsciously). This would mean our results would not be real, or able to contribute to better Problematic Substance Use treatment programmes in the future.

We would like to request that you do not tell other Recovery clients what this study is actually investigating, to help us find out if this trait may actually play a role in supporting sobriety.

If you have any questions about the study at this stage, please ask the researcher or a member of the Recovery service staff.

If you would like to change your mind about taking part in this study, you can still do this for one year. After this time, your name will be deleted and it will be impossible to delete your information.

THANK
YOU!

Appendix S

Debrief Sheet for CTC Participants

Can Value of Control Predict Problematic Substance Use Treatment Success?

Debriefing Sheet

Student Researcher: Lorna Crean **Contact:** lorna.crean2@mail.dcu.ie

Research Supervisors: Styliani Vlachou **Contact:** stella.vlachou@dcu.ie

Catherine Fassbender **Contact:** catherine.fassbender@dcu.ie

Before taking part, you were told this study investigates whether guessing game performance predicts Problematic Substance Use recovery. Now we would like to tell you that it more specifically looks at whether 'Desire for Control' (choosing yourself or your computer-partner to play) predicts recovery.

You were not told this as we felt that if participants knew what this study hoped to discover before taking part, they might change how they played the game (consciously or subconsciously). This would mean our results would not be real, or able to help create better Problematic Substance Use treatment programmes in the future.

We would like to request that you do not tell other clients what this study is actually investigating, to help us find out if this trait may actually play a role in achieving sobriety.

If you are upset by any part of this study, please contact a member of our team, Coolmine staff or your Coolmine counsellor. If you have any questions about the study at any stage, please ask a member of our team or your service staff. Contact details for these are on the business card I will give you after this debrief.

If you have any ethical or data protection concerns regarding this project and would like to speak to an independent party, please contact:

DCU Research Ethics Committee: rec@dcu.ie

Data Protection Officer (Martin Ward): data.protection@dcu.ie

You may change your mind about taking part in this study at any stage during your admission. After this time, your name will be deleted and it will be impossible to remove your specific information.

Appendix T

Contact Cards for DSC Participants

Can Value of Control Predict Problematic Substance Use Treatment Success?

Contact Info

Student Researcher:	Lorna Crean	**Contact:** lorna.crean2@mail.dcu.ie
Research Supervisors:	Styliani Vlachou	**Contact:** stella.vlachou@dcu.ie
	Catherine Fassbender	**Contact:** catherine.fassbender@dcu.ie
DCU Research Ethics Committee:		**Contact:** rec@dcu.ie
Sure Steps Counselling:		**Contact:** 1800 844 600 (Freephone)

Appendix U

Contact Cards for CTC Participants

<u>Can a Guessing Game Predict Recovery?</u>

Plain Language Statement

Student Researcher:	Lorna Crean	**Contact:** lorna.crean2@mail.dcu.ie
Research Supervisors:	Styliani Vlachou	**Contact:** stella.vlachou@dcu.ie
	Catherine Fassbender	**Contact:** catherine.fassbender@dcu.ie
Data Protection Officer:	Martin Ward	**Contact:** 01-7005118
Research Ethics Committee:	Secretary	**Contact:** 01 700 8000

Appendix V

Treatment Outcomes Data Collection Consent Form

Can A Guessing Game Predict Recovery?

Behavioural Warning Data Sharing Informed Consent

Student Researcher: Ms. Lorna Crean **Contact:** lorna.crean2@mail.dcu.ie

Research Supervisors: Dr. Styliani Vlachou **Contact:** stella.vlachou@dcu.ie

Dr. Catherine Fassbender **Contact:** catherine.fassbender@dcu.ie

DCU Research Ethics Committee: **Contact:** rec@dcu.ie

Sure Steps Counselling: **Contact:** 1800 844 600 (Freephone)

This study is part of the researcher's PhD in Problematic Substance Use in individuals experiencing homelessness.

Homelessness and Problematic Substance Use are increasing issues in Ireland, and globally. Problematic Substance Use is one of the leading causes, and consequences, of homelessness. To exit homelessness, people must often overcome many issues which would be extremely difficult under the influence of alcohol or drugs. Thus, Problematic Substance Use treatment is often necessary to live independently.

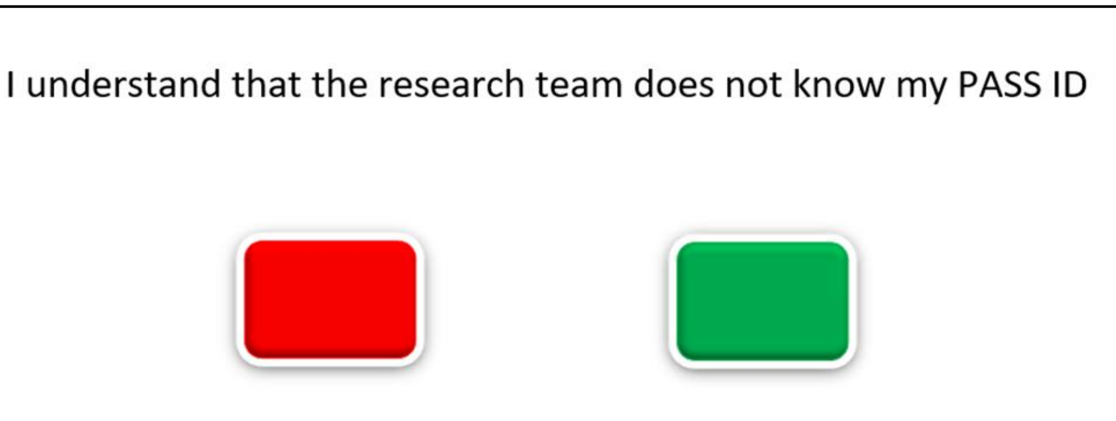
However, slips and relapses are common in Problematic Substance Use treatment and recovery. The aim of this research is to discover better ways of treating Problematic Substance Use. To do this, we hope to compare participants results' from our earlier tests with their potential substance use during treatment.

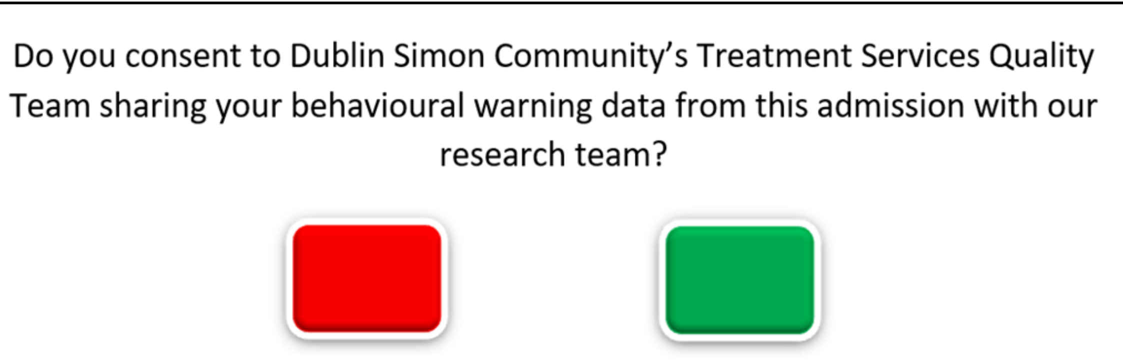
As such, we would like your permission for the Dublin Simon Community Treatment Services Quality Team to extract your behavioural warning information from this admission and share this with the research team in a secure password-protected file. Only the Dublin Simon Community Quality Team and DCU Research team will have access to this file (approximately 5 people). Your name will not be attached to this information at any stage in this process. When the Quality Team shares this information with the research team, it will be labelled using your PASS ID. After this, it will be assigned the same random 5-digit number given to your previous test scores. The random 5-digit numbers connected to participants PASS IDs will be in a separate password-protected file that only the research team can access.

I understand that the research team wants my behavioural warning data for the purpose of this study only, with the hopes of improving recovery outcomes for future people with problematic substance use

I understand that only the research team will have access to this information

I understand that this information is only identifiable to people who have access to my PASS ID





Appendix W

Treatment Outcomes Data Collection Sheet

No.	Name	Admission Date	Discharge Date	Follow-up Treatment	Number of Slips in Treatment
1	E.g., Joe Bloggs	23/10/23	04/03/24	DSC Aftercare	2
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

Appendix X

DCU Research Ethics Committee Approval for EFT Intervention Study

Ollscoil Chathair Bhaile Átha Cliath
Dublin City University

DCU

Lorna Crean
School of Psychology

1st July 2024

REC Reference: DCUREC/2024/126 **(Full Committee Review)**

Proposal Title: Episodic future thinking for problematic substance use recovery in a sample of individuals experiencing homelessness

Applicant(s): Lorna Crean, Dr Catherine Fassbender. Dr Styliani Vlachou

Dear Colleague(s),

Thank you for your application to DCU Research Ethics Committee (REC). Further to its review by the committee and resting on the assumption of information accuracy and completeness, DCU REC is pleased to issue ethical approval for this research project. Please include reference to this approval in all materials used to recruit research participants.

Researchers are responsible for ensuring that the research project to which this ethical approval refers is carried out as specifically described in the application form. Should modifications to the research project be required at a later stage, researchers must submit a research amendment application form to REC for approval, prior to the implementation of modifications.

Please note that it is the responsibility of the PI to ensure that any other DCU compliance requirements relevant to the research project, such as those related to data protection, insurance, health and safety, or legal issues, are fully met in advance of initiating the project.

As part of DCU REC's ongoing monitoring process, a research progress report may be required. DCU REC will request this report from the PI as appropriate.

DCU REC wishes you every success in your research.

Yours sincerely,

DCU
Research & Innovation

Dr Melrona Kirrane
Chairperson
DCU Research Ethics Committee

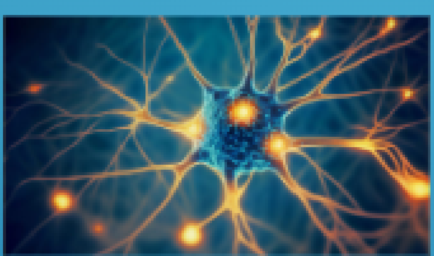
Research & Innovation Support
Dublin City University,
Dublin 9, Ireland
E research@dcu.ie
www.dcu.ie

Appendix Y

Episodic Future Thinking For PSU Recovery in PEH recruitment Poster

Would you like to participate in our research?

Investigating the relationship between positive thinking and substance use



My Information

- Staff will not be told who is participating until everyone currently in unit has discharged
- Staff will never be told any responses to tests

What's involved?

- We'll ask about your average pre-entry substance use
- We'll ask you to think about positive future or past events
- You'll complete 2 questionnaires and a computer game
- Staff will let us know if you consumed substances the week after your test

If you want to take part, call or text **083301247**, let a staff member know, or if you see the researcher in the unit you can tell her in person.

Appendix Z

Participant Information Sheet for PoC EFT Intervention Study

The following slides explain our study.

If you understand all the content on a slide, press the white button to continue.

If you do not understand any part of a slide, ask me before continuing.

Positive Thinking and Substance Use

Participant Information Sheet

Student Researcher:	Ms. Lorna Crean	**Contact:** lorna.crean2@mail.dcu.ie
Research Supervisors:	Dr. Styliani Vlachou	**Contact:** stella.vlachou@dcu.ie
	Dr. Catherine Fassbender	**Contact:** catherine.fassbender@dcu.ie

What is this research about?

This research aims to see how positive thinking might be related to problematic substance use recovery.

Why is this research needed?

- Homelessness and Problematic Substance Use are increasing issues globally.
- Problematic Substance Use is one of the leading causes, and consequences, of homelessness.
- To exit homelessness, individuals must often overcome many issues which would be extremely difficult under the influence of alcohol or drugs. Thus, understanding thought patterns of individuals who do well in Problematic Substance Use treatment is very important to helping people experiencing Problematic Substance Use and homelessness to live independently in future.

What is involved?

- Tests will be in a Detox service room set aside for this project and last about 40 minutes.
- You will first be asked simple questions about your date of birth, gender, ethnicity, indication of pre-entry substance use, and post-discharge accommodation arrangements.
- I will then ask you to think of 3 positive events that could happen at 5 different timepoints in your life. After this you will choose the most vivid for each timepoint.
- Next you will complete a questionnaire using the button pad. I will remind you of your life events throughout this questionnaire. If you don't understand a question, please check before answering. Accurate responses are important to create research that can help future people experiencing problematic substance use and homelessness.
- You can take as many breaks as you like during your session.
- Following your session, you will not have to do anything differently than you would otherwise during your admission.

Who can take part?

Dublin Simon Community Detox Service clients who understand English. Participation is voluntary and does not affect the care you receive from Dublin Simon Community staff.

How will my privacy be protected?

- You volunteered to participate using your PASS ID number. As only Irish homeless service staff have access to the PASS system, my research team cannot identify these numbers.
- Although we may have had to ask staff for your PASS ID to volunteer, staff were informed that not all volunteers might get the chance to participate due to study limitations, time constraints etc. Therefore, staff will not know who did and did not participate.
- Staff will also not be told how you answer any questions within your session. The care you receive from Dublin Simon Community staff will therefore not be influenced by your decision to participate in this study, or how you respond during it. This also allows you to respond as authentically as possible, which is important for this project to help people in future who experience problematic substance use and homelessness.

How will my privacy be protected?

- Every participant is given a random 5-digit research ID number (e.g., 86394) from a computer. All study data will be labelled using this number only. However, to compare these scores with your substance use during treatment, I must be able to tell who owns each number. Because of this, Research-PASS ID combinations will be stored in a separate password-protected file that only the research team can access.
- When every client currently in the unit has left this service, our team will share a document containing participants' PASS IDs and session dates with the Detox manager in an encrypted file. The Detox manager will then complete this form by indicating the substance use of each participant in the week following their session. When this is complete, all Research-PASS ID combinations will be deleted and your test scores will be completely unidentifiable.

How will my privacy be protected?

- Confidentiality of information can only be protected within the limitations of the law i.e., it is possible for data to be subject to subpoena, freedom of information claim or mandated reporting by some professions. This means that study information from a named person will only be accessible to identified officials, e.g., gardai, outside the research team if this is legally required. This includes if the researcher feels there is a potential danger to you or another person.
- All study data will be deleted five years after this study is published or by 31/12/29 if not published.

How will my data be used?

- Anonymous test scores and potential substance use one week after your session will be compared. This will help us see if positive thinking may be linked to abstinence during Problematic Substance Use treatment.
- Dublin Simon Community hopes to publish this study on their website.
- The research team hopes to publish this study in a scientific journal. This is the main means of communication between problematic substance use researchers and psychologists or treatment staff.

Who is responsible for the data I provide to this project?

DCU is this study's Data Controller, meaning this university is responsible for handling and processing the personal data you provide according to the General Data Protection Regulations. If you are concerned about how your data is handled at any stage in this study you can contact DCU's Data Protection Officer Mr. Martin Ward – data.protection@dcu.ie Tel: 01-7005118/01- 7008257. You also have the right to report a complaint about our use of your personal data to the Irish Data Protection Commission.

What are the benefits?

This study will help us understand what ways of thinking contribute to abstinence during problematic substance use treatment. Research participants also often feel good about playing an important role in helping others who find themselves in a similar situation in the future.

What are the risks?

Some questions could cause you upset. If you feel this could happen, please don't take part. If you take part, you may skip any questions that make you uncomfortable.

If for any reason you become stressed because of taking part in this study, you can contact any member of my research team, DCU's Research Ethics Committee, Recovery Service staff, or free 'Sure Steps' counselling service provided by Dublin Simon Community using the contact card I will give you after your session. If you don't have email access, you can ask a Dublin Simon Community staff member to email for you.

Can I change my mind to participate during or after the experiment?

You may change your mind to participate until your discharge from this service. After this, your Research-PASS ID combination will be deleted from our file, making it impossible to identify your information and withdraw your responses from our data sets. To withdraw your participation, please contact any member of the research team using the information on the card I give you after your assessment. If you do not have email access, you can ask a member of staff to do this for you.

How can I find the results of this study?

We really appreciate you taking the time to participate in our study. This study should be published by the end of 2024. To find this, you can contact any Dublin Simon Community service or member of the research team at that time and ask them to send you a copy.

Who is funding this study?

This study is funded by Dublin Simon Community and the Irish Research Council.

What if I have more questions later?

If you have any questions about this study in future, you can contact any member of my research team using the details on the card I give you after your session. If you lose this, you can ask a member of Dublin Simon Community staff to put you in contact with us.

This is the end of our Participant Information Sheet.

If you have any other questions, please ask now.

Appendix AA

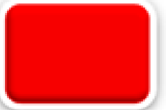
Informed Consent Form

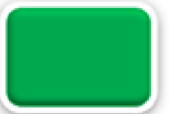
This study is part of my PhD in Problematic Substance Use recovery for people experiencing homelessness.

Homelessness and Problematic Substance Use are increasing issues globally. Problematic Substance Use is one of the leading causes, and consequences, of homelessness. To exit homelessness, people must often overcome many issues which would be extremely difficult under the influence of alcohol or drugs. Thus, Problematic Substance Use treatment is often necessary to live independently.

However, slips and relapses are common in Problematic Substance Use treatment and recovery. The aim of this research is to discover better ways of treating Problematic Substance Use.

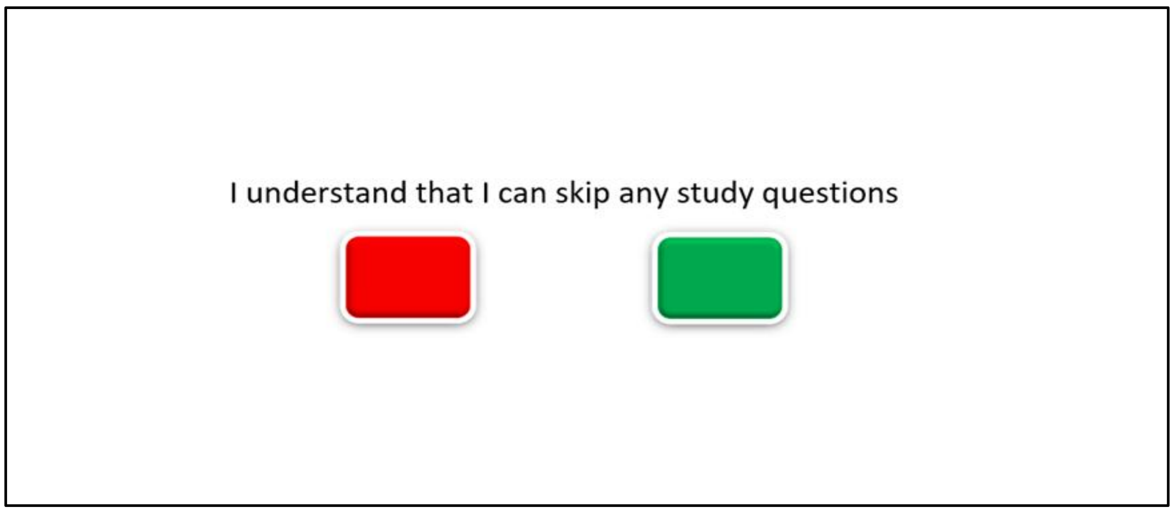
I have had the Participant Information Sheet read to me

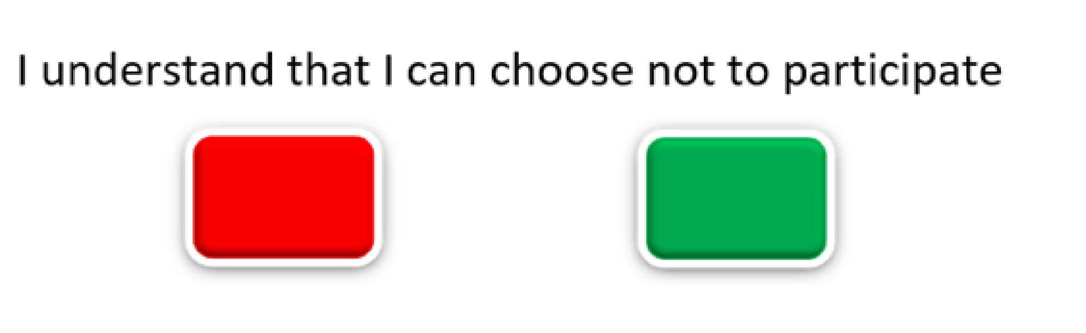




I have had the opportunity to ask questions and talk about this study

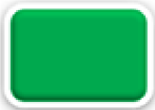
I understand the information in the Participant Information Sheet

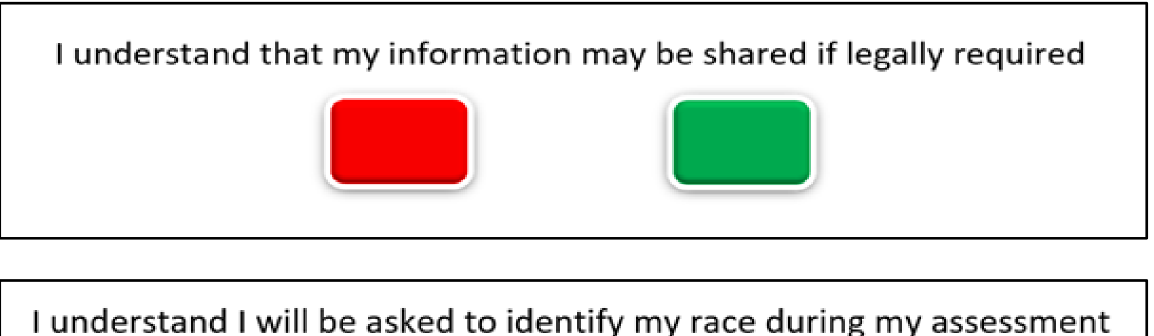




I understand that this study is not connected to Dublin Simon Community staff, and that my treatment will not change if I do or do not participate, or because of how I answer questions

I understand that my study information can be deleted at any point of my admission until discharge, when my Research-PASS ID link will be deleted, and that after that time it will not be possible to identify and delete my data

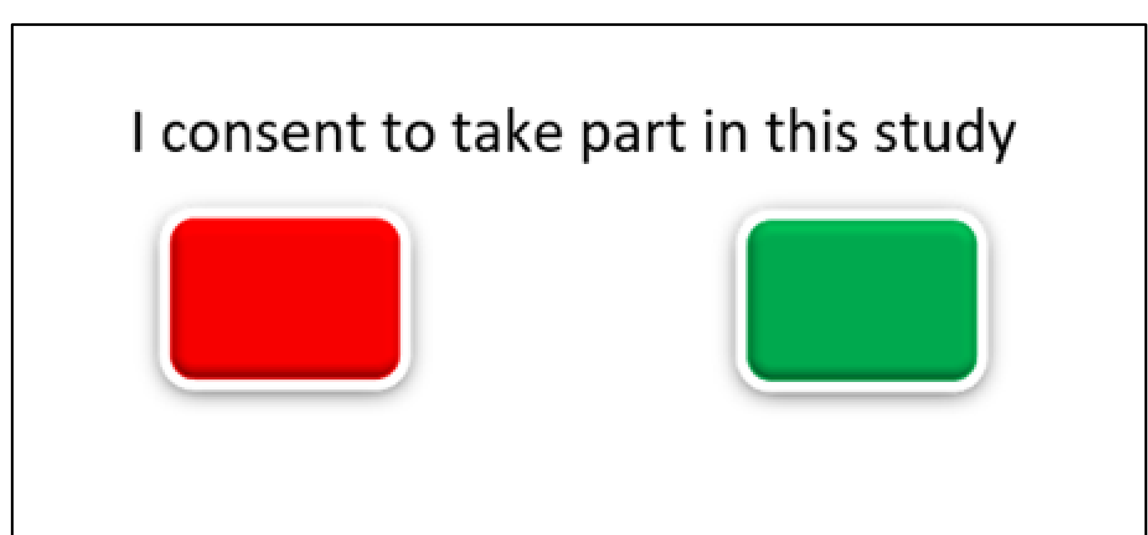




I understand I will be asked to identify my race during my assessment

I understand the research team will collect information about my pre-entry substance use if I agree to participate

I understand that all study data will be destroyed five years after this study is published or 31/12/29 if not published



Appendix AB

Demographic Information

Research ID: ____________ Date:_______________

D.O.B.:______________

Ethnicity:

Irish		Arabic	
Irish Traveller		Chinese	
Other White background (specify)		Indian / Pakistani / Bangladeshi	
African		Any other Asian background	
Other Black background (specify)		Other, including mixed background (specify)	
Roma			

Gender:

Cisgender Male		Transitioned Female	
Cisgender Female		Non-binary	
Transgender Male		Gender fluid	
Transgender Female		Agender	
Transitioning Male		Pangender	

Transitioning Female		Other	
Transitioned Male			

Please describe your average daily substance use before entry to Dublin Simon Community's Detox Service:

____

____

____

____

Has your post-discharge accommodation been arranged?

____

____

____

____

Appendix AC

EFT Positive Autobiographical Event Generation

We will now think of positive thoughts about your life, unrelated to substance use.

Please imagine 3 positive events that could occur 1 day from now.

____

____

____

Please imagine 3 positive events that could occur 1 week from now.

____

____

____

Please imagine 3 positive events that could occur 1 month from now.

____

____

____

Please imagine 3 positive events that could occur 3 months from now.

____

____

____

Please imagine 3 positive events that could occur 1 year from now.

____

____

____

Thank you!

I will now ask you to select the most vivid event from each time point.

Of the positive events you said could occur 1 day from now;

"__________",

"______________", and

"____________________",

which is the most vivid?

Of the positive events which you said could occur 1 week from now;

"__________",

"______________",

and "____________________",

which is the most vivid?

Of the positive events which you said could occur 1 month from now;

"__________",

"______________", and

"____________________",

which is the most vivid?

Of the positive events which you said could occur 3 months from now;

"__________",

"______________",

and "____________________",

which is the most vivid?

Of the positive events which you said could occur 1 year from now;

“__________”,

“______________”, and

“____________________”,

which is the most vivid?

Well done!

Appendix AD

ERT Positive Autobiographical Event Generation

We will now think of positive thoughts about your life, unrelated to substance use.

Please imagine 3 positive events that occurred between 07:00 and 10:00 yesterday.

1. ____

0. ____

0. ____

Please imagine 3 positive events that occurred between 10:00 and 13:00 yesterday.

0. ____

0. ____

0. ____

Please imagine 3 positive events that occurred between 13:00 and 16:00.

0. ____

0. ____

0. ____

Please imagine 3 positive events that occurred between 16:00 and 19:00.

0. ____

0. ____

0. ____

Please imagine 3 positive events that occurred between 19:00 and 22:00.

0. ____

0. ____

0. ____

Thank you!

I will now ask you to choose the most vivid event from each time period.

Of the positive events you said occurred between 07:00 and 10:00 yesterday;

"__________",

"______________", and

"____________________",

which is the most vivid?

Of the positive events which you said occurred between 10:00 and 13:00;

"__________",

"______________",

and "____________________",

which is the most vivid?

Of the positive events which you said occurred between 13:00 and 16:00;

"__________",

"______________", and

"____________________",

which is the most vivid?

Of the positive events which you said occurred between 16:00 and 19:00;

"__________",

"______________",

and "____________________",

which is the most vivid?

Of the positive events which you said occurred between 19:00 and 22:00;

"__________",

"______________", and

"____________________",

which is the most vivid?

Well done!

You will now imagine your most vivid event from each timepoint for 30 seconds.

Appendix AE

Intervention Study Debrief Sheet

Debrief Sheet

Student Researcher:	Lorna Crean	**Contact:** lorna.crean2@mail.dcu.ie
Research Supervisors:	Styliani Vlachou	**Contact:** stella.vlachou@dcu.ie
	Catherine Fassbender	**Contact:** catherine.fassbender@dcu.ie
DCU Research Ethics Committee:		**Contact:** rec@dcu.ie
Sure Steps Counselling:		**Contact:** 1800 844 600 (Freephone)

Before taking part, you were told this study investigates the link between positive thinking and substance use. Positive thinking has been found to improve recovery. But did you know there may be a link between positive future thinking specifically and abstinence. This is what we're trying to figure out.

Our participants are alternately assigned to one of two groups according to the order of their test session: one visualising positive future events and the other positive past events.

We would like to see if there is a difference between positive future or past thinking on abstinence.

We would also like to see if this might work through the thought patterns checked in the questionnaire. The thought patterns checked by this questionnaire was Locus of Control: the extent to which people think they, more powerful others, chance, or fate might influence their life outcomes.

You were not told before your session as research participants are found to often change their responses, subconsciously or consciously, when they know what is being researched. This affects research accuracy, and in our case, the potential for this small intervention to be integrated to future recovery programmes and help people maintain abstinence.

For this reason, we also ask that you do not tell other clients the true purpose of this study; if you are asked you can say something like we asked you to think about positive events and then do questionnaires. You can discuss the project freely with participants who have left the service.

Aside from this you do not need to do anything different from now on.

If you are upset by any part of this study, please contact a member of the research team, Detox staff, or Sure Steps counselling service using the details provided.

If you have any questions about the study at this stage, please ask the researcher or a member of Detox staff.

If you would like to change your mind about taking part in this study, you may do this until your discharge from this service. After this time, your name will be deleted and it will be impossible to delete your information.

Appendix AF

Contact Cards: Positive Thinking and Substance Use

Positive Thinking and Substance Use

Contact Card

Student Researcher:	Lorna Crean	**Contact:** lorna.crean2@mail.dcu.ie
Research Supervisors:	Styliani Vlachou	**Contact:** stella.vlachou@dcu.ie
	Catherine Fassbender	**Contact:** catherine.fassbender@dcu.ie
DCU Research Ethics Committee:		**Contact:** rec@dcu.ie
Sure Steps Counselling:		**Contact:** 1800 844 600 (Freephone)

Appendix AG

Post-intervention Substance Use Data

Participant PASS ID	Assessment Period	Substance Use
12345	24/05/24 - 31/05/24	1. 3 cans cider 2. Half joint cannabis 3. 2 xanax