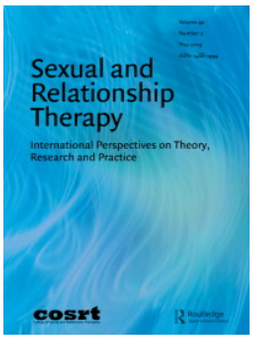


Routledge
Taylor & Francis Group

Sexual and Relationship Therapy

ISSN: 1468-1994 (Print) 1468-1749 (Online) Journal homepage: www.tandfonline.com/journals/csmt20

# Measuring features of asexual identity development: the development and validation of a psychometric scale

Sinéad Kelleher, Mike Murphy & Raegan Murphy

**To cite this article:** Sinéad Kelleher, Mike Murphy & Raegan Murphy (11 Jun 2025): Measuring features of asexual identity development: the development and validation of a psychometric scale, Sexual and Relationship Therapy, DOI: 10.1080/14681994.2025.2507798

**To link to this article:** https://doi.org/10.1080/14681994.2025.2507798



Published online: 11 Jun 2025.

SEXUAL AND RELATIONSHIP THERAPY
https://doi.org/10.1080/14681994.2025.2507798



# Measuring features of asexual identity development: the development and validation of a psychometric scale

Sinéad Kelleher[a], Mike Murphy[b] and Raegan Murphy[b]

[a]School of Psychology, Dublin City University, Dublin, Ireland; [b]School of Applied Psychology, University College Cork, Cork, Ireland

**ABSTRACT**

This study describes the initial steps in the development of the 32-item Assessment of Asexual Identity Development Scale (AAID) to measure variables unique to asexuality. Items were developed through a thematic analysis of findings from previous literature and a pilot measure was administered to a sample of expert reviewers for content analysis ($n=15$). Exploratory factor analysis ($n=825$) and confirmatory factor analysis (CFA) ($n=826$) confirmed the dimensionality, reliability and validity of the AAID scale and good model fit was obtained (comparative fit index = .96, root mean square error of approximation = .038, CMIN/DF = 2.20, $\chi^2=1318.84$). Six factors emerged: Discovering Asexuality, Being Asexual, Asexual Community, Disclosure, Navigating Relationships and Navigating Relationships: Desires. Standardised factor loadings of all items were high or moderate, and all subscales indicated good to excellent internal reliability ($\omega$ = .72–.93). This study supports the internal consistency of the AAID and its subscales, and construct and discriminant validity. Finally, this research demonstrates that AAID scores were stable over five weeks. This measure is a reliable and useful tool to evaluate the development of an asexual identity and will contribute to the growing body of literature on asexuality.

**LAY SUMMARY**

We set out to create a new tool to help us better understand features unique to asexual individuals' identities. This resulted in the development of the Assessment of Asexual Identity Development Scale (AAID), a measure designed to gather reliable insights into the processes surrounding the development of an asexual identity.

**ARTICLE HISTORY**
Received 25 March 2024
Accepted 11 May 2025

**KEYWORDS**
Asexuality; identity development; psychometric measurement; mixed methods

Asexuality is a unique sexual orientation that is characterised by an individual experiencing little or no sexual attraction and identifying along the asexual spectrum (Catri, 2021; Kelleher & Murphy, 2022b). The asexual community is a particularly heterogeneous population, with varying sexual (e.g. asexual, demisexual, gray-asexual),

**CONTACT** Sinéad Kelleher sinead.c.kelleher@dcu.ie School of Psychology, Dublin City University, Glasnevin Campus, D9, Dublin, Ireland.

romantic (e.g. aromantic, gray-romantic, homoromantic) and gender identities (e.g. cis man, cis woman, trans man and trans woman) (Brotto & Yule, 2017; Bulmer & Izuma, 2018; Hammack et al., 2019; Kelleher et al., 2023; Kelleher & Murphy, 2022a; Scherrer, 2008; Weis et al., 2017). Asexuality has received increased academic attention in the past decade (Kelleher et al., 2023; Yule et al., 2015), with investigation surrounding the conceptualisation of asexual identities and characteristics of the asexual population (Yule et al., 2015; Zheng & Su, 2022). This coincides with a growth in the asexual community and increasing visibility of the orientation (Carrigan, 2011; Lund, 2021).

## Asexual identity development

Sexual identity development is the life-long changes, processes and experiences that are subject to an individual's sexual attractions, as well as the integration of multiple facets of identity (Hall et al., 2021; Parmenter et al., 2022). The process of developing a sexual identity is shown to be particularly difficult for non-heterosexual and indeed, asexual people, due to societal heteronormative assumptions (i.e. all people are attracted to the opposite sex) and allonormative beliefs (i.e. all people experience sexual attraction) (Mohr & Kendra, 2011; Mollet, 2023; Mollet & Lackman, 2018). While research indicates that identity exploration and resolution contributes positively towards the wellbeing of non-heterosexual individuals (Rivas-Drake et al., 2014; Romero & Roberts, 2003), a negative or incomplete sense of identity is considered a risk factor for sexual minority individuals' mental health (Meyer, 2013). This is particularly salient among asexual individuals, with many experiencing heightened levels of depression, anxiety and social avoidance when compared to both heterosexual and non-heterosexual populations (Borgogna et al., 2019; Brown et al., 2023; Grant et al., 2014; Marshal et al., 2011; McInroy et al., 2022; Simon et al., 2022; Yule et al., 2013; Zheng & Su, 2022). This may be attributed to greater reports of identity uncertainty among asexual individuals and increased incidences of internalised "acephobia" or asexual prejudice (Zheng & Su, 2022).

Consistent with research surrounding sexual minority orientations, an awareness of the self as different from others has been shown to initiate the discovery of asexuality (Anderson, 2020; Carrigan, 2011; Foster, 2017; Kelleher et al., 2023; Mollet, 2020; Savage, 2019), with relief and self-acceptance marking identity integration (Kelleher et al., 2023; Mitchell & Hunnicutt, 2019; Robbins et al., 2016; Van Houdenhove et al., 2015). Moreover, disclosure and interactions within relationships are central to many asexual individuals' identity development (Foster et al., 2019; Kelleher et al., 2023; Kelleher & Murphy, 2022b; Mitchell & Hunnicutt, 2019; Robbins et al., 2016) and processes of internalising a positive sense of identity (Kelleher et al., 2023). Online communities and other sources of information are also found to be instrumental in asexual individuals' recognition and acceptance of themselves as asexual (Kelleher et al., 2023; McInroy et al., 2022; Robbins et al., 2016).

Although features of asexual identity development correspond with other non-heterosexual identity development models, there are many experiences unique to the asexual population that distinguish them from other sexual minority groups (Greaves et al., 2021; Kelleher et al., 2023; Mitchell & Hunnicutt, 2019; Robbins et al., 2016).

For example, the relatively hidden nature of asexuality has led to heightened levels of confusion among those questioning their sexual identity, and increased incidences of dismissal (Kelleher et al., 2023). Moreover, many asexual individuals experience disbelief when disclosing their asexual identities and the assumption that their lack of sexual attraction may be due to a physical or psychological disorder (Brotto & Milani, 2022; Kelleher et al., 2023; McInroy et al., 2022; Robbins et al., 2016). Limited availability of role models and a lack of cultural scripts have also been shown to hinder allosexual people's (i.e. people who experience sexual attraction to others) ability to accept asexual identities, with asexual people experiencing less familial social support than other sexual minority groups (MacInnis & Hodson, 2012; Simon et al., 2022). This lack of exposure to asexuality has amplified the role of the internet in the development of an asexual identity (Andersson, 2010; Foster et al., 2019; McInroy et al., 2022; Mitchell & Hunnicutt, 2019; Mollet, 2023; Rossi, 2017; Savage, 2019), with many seeking support and validation through online communities (Kelleher & Murphy, 2022b; Robbins et al., 2016). Ultimately, this dismissal or denial of an asexual identity may cause individuals to internalise a negative understanding of their asexuality (Brotto & Yule, 2017; Carrigan, 2011; Mollet, 2020, 2023) and contribute towards mental health difficulties associated with the orientation (Kelleher & Murphy, 2022b).

In the current study, we statistically examine key features underlying asexual individuals' experiences, as well as the development of a measure to better map this. This measure, which will assess the process of searching, of becoming aware of oneself as asexual, and of interactions with others, will shed further light on asexuality-specific developmental pathways (Brotto & Milani, 2022). Specifically, this will encompass processes surrounding identity confusion and an awareness of the self as different, discovering asexuality and sources of information; the role of the internet and asexuality-specific communities; identity acceptance and the integration of sexual and romantic identities; and finally, disclosure of an asexual identity, education and reactions from others.

## Scale development and conceptualisation

A major difficulty when accessing features of sexual minority identity is determining which variables to measure (Mohr & Kendra, 2011). Previous research has focused on multiple aspects of identity such as internalised homonegativity (Moradi et al., 2010), concealment (Meyer, 2007), disclosure (Feldman & Wright, 2013), social support (Bregman et al., 2013), identity uncertainty, and the evaluation of one's group within their wider social sphere (Mohr & Kendra, 2011). Moreover, recent measures of sexual minority identity have adopted a dimensional approach to assessment that includes the evaluation of an individual's social experiences such as prejudice and community involvement, as well as their self-views and the centrality of their identity to their self-concepts (Cramer et al., 2018). Although several measures reliably assess sexual minority identity among both LGB (McCarn & Fassinger, 1996; Mohr & Fassinger, 2000; Mohr & Kendra, 2011; Worthington et al., 2008) and sexual special interest groups (e.g. people of alternative romantic relationships, polyamory and sexual practices) (Cramer et al., 2018), there are currently none which examine features specific to the asexual population. Moreover, while features of asexual identity

development coincide with processes seen within other measures of non-heterosexual identities, there remains no measure to assess experiences unique to asexual people. Although the Asexual Identification Scale (Yule et al., 2015) and the Asexual Microaggression Scale (Foster, 2017) provide valid measures for assessing asexuality and asexual prejudice respectively, they do not examine the experience of developing an asexual identity. Furthermore, although Zheng and Su (2022) measured features of asexual identity development through an adjusted version of the Lesbian, Gay and Bisexual Identity Scale (Mohr & Kendra, 2011), they suggest that specific aspects of asexual identities be explored in future research.

As mentioned previously, the asexual community can be considered diverse, with varying sexual and gender identities (Brotto & Yule, 2017; Kelleher et al., 2023; Weis et al., 2017). Research indicates that asexuality exists along a spectrum, with members of the asexual community experiencing varying levels of sexual attraction and identifying with a range of asexual sub-identities (e.g. asexual, demisexual, gray-asexual) (Hammack et al., 2019; Kelleher et al., 2023). Moreover, when compared to non-asexual populations, asexual individuals are more likely to identify as gender non-binary (Rothblum et al., 2020), and report a higher prevalence of discordant romantic and sexual identities (Antonsen et al., 2020; Clark & Zimmerman, 2022; Zheng & Su, 2018). This brings forth the issue of generalisability and whether it is sensible to conceptualise identity development as common among asexual individuals regardless of their varying sexual, gender and romantic identities. Although there are some discrepancies on the basis of gender and romantic orientation (Haefner, 2011; Kelleher & Murphy, 2022a; MacNeela & Murphy, 2015; Vares, 2018), research suggests that key events and sense-making processes underlying asexual identity development are common throughout the population and follow a typical trajectory (Kelleher et al., 2023). Moreover, although asexual individuals may identify with specific orientations (e.g. biromantic asexual), their involvement within asexual communities and endorsement of a lack of sexual attraction is indicative of their placement along the broader asexual spectrum. Equally, developing a measure that is limited to a specific sexual, romantic or gender identity may negate the complexity of identification within the asexual community (Kelleher et al., 2023) and marginalise those who do not identify within a definitive category. Therefore, creating a measure that encompasses all asexual sub-identities, regardless of gender, sexual or romantic attractions, will ensure inclusivity and allow for the comparison of individuals across the asexual spectrum.

## The present study

This paper reports the development of the 37-item Assessment of Asexual Identity Development Scale (AAID). The purpose of this study is to develop a set of items that assess dimensions of the lives of asexual people and examine features of asexual identity development. This includes uncovering patterns within the data and verifying the factor structure of the resulting scale. This will also involve assessing whether the AAID measures features consistent with asexual identity development models. As the first psychometric tool of its kind, the AAID will provide a standardised method of describing the identity development of asexual individuals and will contribute to a

growing body of literature developing psychometrically and theoretically grounded measures of sexual minority identity. This research topic is timely and corresponds with a growing interest in the processes that underlie asexual identity development (Kelleher & Murphy, 2022b), as well as an increase in empirical research and theoretical articles (Mollet, 2020). Moreover, it is believed that this research will assist in the application of theory and knowledge within clinical settings to better evaluate the processes contributing to the development of an asexual identity and distinguish this from sexual desire disorders.

## Method

Development of the AAID comprised of five phases: item generation; content analysis; exploratory factor analysis (EFA) and confirmatory factor analysis (CFA); convergent and discriminant validity testing; and test-retest reliability. Participants in earlier stages were not targeted for recruitment in later stages. All statistical analyses were conducted using IBM's Statistical Software Package for the Social Sciences (SPSS), version 21.0 and AMOS, version 26.0. Ethical approval was received from the institutional review board at University College Cork and permission to conduct this research was received from the AVEN Project Team.

### *Phase I: Item generation*

The initial pool of 110 items for the AAID (AAID-110) was developed through a thematic analysis of previous investigations surrounding asexual identity development. Specifically, findings from a systematic review of literature (Kelleher et al., 2023), and two qualitative investigations (Kelleher & Murphy, 2022a; 2022b) were subjected to thematic analysis as outlined by Braun and Clarke (2006). This involved coding all elements of the literature that represented some aspect of asexual identity development and subsequently collating these codes into themes. These themes were then used to create an initial item pool which reflected key elements of asexual identity development.

### *Phase II: Content analysis*

A panel of 15 individuals rated the relevance of items included in the AAID-110 self-report questionnaire for clarity and content validity. The panel included members who have completed research with non-heterosexual and/or asexual communities ($n = 10$), as well as members who identify as non-heterosexual and/or asexual ($n = 5$) (Table 1). Both expert judges and members of the target population were consulted to determine if items adequately represented the construct of interest and conceptualisations underlying this research (Morgado et al., 2018; Polit & Beck, 2006). This aligns with recommendations surrounding rigorous scale development procedures and the expectation to provide extensive information on scale reliability and quality (Polit & Beck, 2006). The survey was distributed *via* email and responses were gathered using Qualtrics software (Software Version 2018). There was no difference in how panel members rated items across groups.

**Table 1.** Content analysis.

| No. | I identify as asexual | I identify as an LGBTQIA+ person | I have carried out research in the area of asexuality | I have carried out research in the area of LGBTQIA+ |
|---|---|---|---|---|
| 1 | | | X | |
| 2 | X | X | X | X |
| 3 | | X | | X |
| 4 | | | X | |
| 5 | X | | X | |
| 6 | | | X | |
| 7 | | | X | |
| 8 | X | X | X | X |
| 9 | X | X | | |
| 10 | X | X | X | X |
| 11 | X | X | | |
| 12 | X | X | | |
| 13 | X | X | | |
| 14 | X | X | | |
| 15 | X | X | X | |

The item content validity index (I-CVI) was used to evaluate the relevance of each item (Rodrigues et al., 2017). This involved panel members assessing the relevance of items to their content dimension along four markers that ranged from highly relevant (with a score of 4) to not relevant (with a score of 1). I-CVI was then calculated as the number of raters giving an item a score of "highly relevant" or "relevant" divided by the total number of raters. Although Zamanzadeh et al. (2015) recommend that items with a score of less than 0.7 should be removed from the preliminary measure, we opted to retain all items that scored greater than or equal to 0.6. This more liberal approach to item retention was based on the novel nature of the measure, as well as the large number of recruited panel members making it difficult to achieve consensus (Morgado et al., 2018; Zamanzadeh et al., 2015). Moreover, as items were developed through original and genuine sources (Morgado et al., 2018) it was felt that lower scoring items may still represent key features of asexual identity development. This is in line with recommendations to take into consideration the voice of the target population (Morgado et al., 2018), and in this case, the asexual community. This led to the removal of 40 items and resulted in 70 items to undergo factor analysis (AAID-70). Furthermore, all items, and in particular those which scored between 0.6 and 0.7 were checked and reworded to best align with constructs of interest.

## *Phase III: Administration and analysis of the AAID-70*

### *Participants*

Overall, 1651 participants between the ages of 18 and 90 completed the survey ($M = 26.48$, SD = 7.44). Although the literature lacks consistency on the exact number of participants to be used (Henson & Roberts, 2006), several guidelines were considered. For example, Comrey and Lee, (1992) proposed a guide to sample size for factor analysis that ranged from 50 to 300 and even 1000, which they describe as poor, good and excellent respectively. Similarly, Tabachnick and Fidell, (1996) suggest that 300 participants is sufficient when conducting factor analysis. Despite this, much of the literature suggests that sample size may be dependent upon the number of items included within a scale. Using the variable ratio, it is suggested that an

adequate ratio of participants can range anywhere from 3:1 to 20:1 (Williams et al., 2010), with Suhr (2006) proposing a sample size of 5 times the number of items included within a scale.

A psychometric scale should be generalisable, and the concepts being measured should be applicable among all persons of the target population (El-Den et al., 2020). To adequately represent the diverse population of interest (Flora & Flake, 2017), eligibility criteria for participant selection included individuals who lack sexual attraction, identify as asexual or along the asexual spectrum and are eighteen years of age or over. None of race, gender or romantic identity were considered criteria for exclusion. The majority of participants identified as asexual, gray-asexual and demi-sexual, and had on average, a higher level of education. Moreover, participants identified with a wide range of romantic and gender identities. The demographic profile of participants is shown in detail in Table 2. To avoid sample specific or chance relationships when verifying findings and confirming factor structure, the sample was split in half and data were randomly assigned to undergo EFA ($N = 825$) or CFA ($N = 826$) (Flora & Flake, 2017).

**Table 2.** Demographic characteristics.

| Identity type | *N* | % |
|---|---|---|
| Sexual identity | | |
| Asexual | 1192 | 72.2 |
| Gray-asexual | 216 | 13.1 |
| Demisexual | 162 | 9.8 |
| Self-describe | 52 | 3.1 |
| Aegosexual | 23 | 1.4 |
| Aceflux | 5 | 0.3 |
| Romantic identity | | |
| Heteroromantic | 172 | 10.4 |
| Homoromantic | 109 | 6.6 |
| Biromantic | 260 | 15.7 |
| Panromantic | 173 | 10.5 |
| Demiromantic | 153 | 9.3 |
| Aromantic | 457 | 27.7 |
| Gray-romantic | 178 | 10.8 |
| Self-describe | 129 | 7.8 |
| Aegoromantic | 7 | 0.4 |
| Queer | 13 | 0.8 |
| Gender identity | | |
| Cis man | 123 | 7.5 |
| Cis woman | 830 | 50.3 |
| Trans man | 46 | 2.8 |
| Trans woman | 17 | 1.0 |
| Non-binary/third gender | 463 | 28.0 |
| Self-describe | 77 | 4.7 |
| Agender | 59 | 3.6 |
| Genderfluid | 18 | 1.1 |
| Gender queer | 15 | 0.9 |
| Gender neutral | 2 | 0.1 |
| Education | | |
| <High school degree | 32 | 1.9 |
| High school graduate | 254 | 15.4 |
| College, no degree | 381 | 23.1 |
| Associate degree | 108 | 6.5 |
| Bachelor's degree | 560 | 33.9 |
| Master's degree | 248 | 15.0 |
| Doctoral degree | 28 | 1.7 |
| Professional degree (JD, MD) | 22 | 1.3 |

### Materials

The AAID-70 is comprised of 6 subscales that measure constructs of asexual identity development. These subscales are: Being Asexual; Discovering Asexuality; Being in an Allosexual World; Navigating Relationships; Disclosure; and Internalisation. The subscales of the AAID-70 and details of their content dimensions are presented below. Total AAID scores were calculated by summing responses from all questions. Each item was scored on a 5-point Likert scale ranging from "*strongly agree*" to "*strongly disagree*". As items included in each subscale were phrased either positively or negatively, negatively worded items were reverse scored. Higher scores on each subscale indicate successful identity exploration (i.e. Discovering Asexuality), resolution (i.e. Being Asexual) and internalisation (i.e. Internalisation), as well as more positive interpersonal interactions (i.e. Navigating Relationships, Disclosure and Being in an Allosexual World).

***Being asexual.*** The six items included in this subscale (minimum score = 6, maximum = 30) were designed to measure how individuals understand their asexual identity. This included acceptance of one's asexuality and identification as asexual, the role of the asexual community and displays of pride (e.g. "asexuality is an important part of who I am"). This subscale aligns with key conceptual models of asexual identity development and processes surrounding self-acceptance and identity integration.

***Discovering asexuality.*** The 15 items included in this subscale (minimum = 15, maximum = 75) were designed to measure how asexual individuals come to discover and identify with an asexual identity. This included feeling different, searching for a sexual identity and the role of the asexual community, as well as feelings of acceptance, relief and justification for their lack of sexual attraction (e.g. "I felt relieved upon discovering the asexual orientation"). This subscale aligns with the process of searching and discovering an asexual identity, another key aspect of non-heterosexual and asexual identity development models.

***Being in an allosexual world.*** The seven items included in this subscale (minimum = 7, maximum = 35) were designed to measure how asexual people believe allosexual people (i.e. those who experience sexual attraction) view asexuality. This included the belief that allosexual people question the legitimacy of asexuality, do not view asexuality as a valid sexual identity or consider it a medical condition (e.g. "allosexual people view asexual people: sexually repressed"). This subscale aligns with interpersonal interactions unique to asexual individuals and specifically, the attitudes and opinions that may hinder their identity development.

***Navigating relationships.*** The 18 items included in this subscale (minimum = 18, maximum = 90) were designed to measure how asexual people experience partner relationships with regard to their asexual identities, as well as features of their desired relationships (e.g. "my asexuality is an obstacle within partner relationships"). This subscale is representative of how asexual individuals come to understand and negotiate their relationships with others and examines the significance of partner relationships as a core dimension of their asexual identity development.

***Disclosure.*** The 17 items included in this subscale (minimum = 17, maximum = 85) were designed to measure asexual individuals' approach to disclosure and expected or experienced reactions of others to their asexual identities (e.g. "I am selective in who I come out to"). This subscale aligns with common experiences surrounding the disclosure of an asexual identity and its applicability to a positive sense of identity.

***Internalisation.*** The seven items included in this subscale (minimum = 7, maximum = 35) were designed to measure the negative ways in which many asexual people understand their lack of sexual attraction. This involved an understanding of their asexuality as invisible or confusing, as well as the belief that their asexuality hinders their ability to form relationships (e.g. "I struggle to fit in").

### Procedure

The survey was distributed *via* Qualtrics software (Software Version 2018) to the online platform Asexual Visibility and Education Network (AVEN). Members of the AVEN project team approved the study description and call for participants prior to advertising on the AVEN discussion forum. Data were collected in July 2022. Once participants had completed the questionnaire, they were provided with links to AVEN and other forms of support available to the asexual community. Participants were not compensated.

### Statistical analyses

Factor analysis was used to develop, refine and evaluate the structure of the AAID-70 (Flora & Flake, 2017). This analytic method is particularly suited to the interpretation of data gathered through self-report questionnaires (Williams et al., 2010) and has been applied throughout research measuring identity related constructs of non-heterosexual individuals (Mohr & Kendra, 2011). Moreover, as factor analysis determines how variables correspond with their underlying constructs, this contributed towards greater refinement of theory and enhanced the validity of the resulting measure (Williams et al., 2010). In this study, both EFA and CFA were conducted on the dataset. As items were developed following a review of relevant literature and content analysis with subject experts, an a-priori factor structure was determined prior to psychometric assessment. EFA was considered the most suitable form of factor analysis as it allowed researchers to specify the number of factors to extract based upon a-priori assumptions (Sakaluk & Short, 2017; Suhr, 2006; Taherdoost et al., 2022; Williams et al., 2010). Moreover, EFA by way of principal components, is a good first step when determining underlying factor structure as it yields a measure of all variance and components are considered real factors as they are derived directly from the correlation matrix (Yong & Pearce, 2013).

Factor analysis was used to group variables into meaningful categories based on their shared variance and further defined constructs and patterns in the data so that relationships between items were easily interpretable (Yong & Pearce, 2013). This form of analysis was particularly suited to the large dataset included in this study and had the capacity to reduce items from the questionnaire to a smaller set of underlying constructs or factors (Yong & Pearce, 2013). For example, an asexual individual's

score on questions surrounding their willingness to disclose their orientation, as well as perceived reaction from others, was placed under the factor "Disclosure". This factor, which was not directly measurable itself, was then informed by the individual's response to each item and overall score. When determining which factors items best described, researchers relied on theory and conceptual models surrounding asexual identity development. For example, when analysing the factor "Disclosure" researchers ensured that items loading high on this factor were related to the concept of disclosing an asexual identity and repeated this process until this factor was defined by a distinct cluster of interrelated variables (El-Den et al., 2020).

## Results

### *Reliability*

Internal consistency of items included in each a-priori factor was assessed using Cronbach's alpha ($\alpha$) (Cronbach, 1951). Estimating $\alpha$ contributed towards the validity of analysis and interpretation of data (Cortina, 1993; Tavakol & Dennick, 2011) and was particularly suitable when determining reliability of the Likert-type scales measuring affective constructs (Sharma, 2016). Moreover, calculating $\alpha$ described the extent to which all items included in the AAID-70 measured the same construct and determined internal consistency before carrying out further statistical examination (Mraity et al., 2014). Although Cronbach (1951) suggested a cut-off point of 0.6 for each extracted factor, we opted for 0.7 as an acceptable value for internal consistency (Mraity et al., 2014). Internal consistency of the overall scale was good with a Cronbach's Alpha value of 0.82. However, internal consistency analysis indicated that the a-priori factors "Being in an Allosexual World" and "Disclosure" had several non-performing items that lowered reliability. These items were removed prior to further analysis. All items included in the a-priori factor "Internalisation" were removed as it failed to reach an acceptable level of reliability (Table 3).

**Table 3.** Internal consistency of A-priori factors.

| A-priori factor | Item | $\alpha$ | $\alpha$ (item deleted) |
|---|---|---|---|
| Disclosure | | **.787** | |
| | Coming out is important to me | | .798 |
| | Coming out is unnecessary | | .802 |
| | Important to increase awareness of asexuality | | .788 |
| | Establish my lack of sexual attraction | | .789 |
| Disclosure | | **.836** | |
| | I prefer to keep my sexual orientation private | | .837 |
| Being in an allosexual world | | **.815** | |
| | Invisible | | .817 |
| | Different | | .821 |
| Internalisation | | **.382** | |
| | Have trouble forming relationships | | .251 |
| | Confusing | | .205 |
| | Invisible | | .383 |

The bolded values are intended simply to highlight factors with relatively higher internal consistency (e.g., $\alpha > .70$), following common conventions in reporting reliability estimates.

### Exploratory factor analysis

Exploratory factor analysis (EFA) was carried out on each individual a-priori factor to determine the number of underlying constructs and the factor structure of the observed variables (Child, 1990). This involved performing an initial EFA without rotation and extraction based on eigen value ≥ 1 (Costello & Osborne, 2019; Kaiser, 1960). Additional tests for factor retention were implemented (Velicer & Jackson, 1990) including examination of scree plots and proportion of variance explained ≥ 60% (Costello & Osborne, 2019). To provide measures of statistical probability, the overall significance of each correlation matrix was weighed through Bartlett's Test of Sphericity (Bartlett, 1950; Dziuban & Shirkey, 1974). Results for each factor were significant and indicated their suitability for factor analysis. The Kaiser-Meyer-Olkin (KMO) value for each factor was greater than .6 further indicating the appropriateness of the data for factor analysis (Kaiser, 1974). Communality of each a-priori factor was assessed with the minimum factor loading criterion set to 0.4 as a suitable cut-off value (Beavers et al., 2019). This decision is in line with research which suggests that factor loadings above the 0.4 cut-off point are preferable, irrespective of sample size (Laher, 2010; Tabachnick & Fidell, 1996). When items failed to load on any dimension significantly, EFAs were re-run excluding those items. Where appropriate, factor solutions were forced on remaining items and principal axis factoring was carried out using varimax rotation. Varimax as an orthogonal method of rotation was chosen as it produced a simpler and more easily interpretable structure of factors (Yong & Pearce, 2013). Moreover, as the data corresponded with a-priori assumptions, an orthogonal rotation was considered more accurate (Costello & Osborne, 2019). The impact of cross-loading items was calculated using the process outlined by Hair et al. (2013). Any items that loaded along two factors and were below the 1.5 threshold (Hair et al., 2013) were removed.

Reliability of the resulting a-priori factors and items were calculated using McDonalds Omega ($\omega$). This reliability estimate presented a more realistic estimate of true reliability within each factor (Hayes & Coutts, 2020) and provided a model-based approach to assess scale and subscale reliability (Dunn & McCray, 2020). All $\omega$ values were above 0.7 and indicated good to strong reliability for each factor (Kalkbrenner, 2023). The results of this can be seen in Table 4.

A final EFA including all a-priori factors was performed using varimax rotation. The communalities table showed that all items loaded significantly (Table 5). Bartlett's Test of Sphericity was significant, $\chi^2(n = 825) = 16{,}208.78$ ($p < .000$) and KMO was 0.87. The factor solution derived from this analysis yielded seven factors for the scale and accounted for 64.51% of variation in the data. Examination of the scree plot (Figure 1) and factor matrix confirmed that the seven-factor solution provided best fit. The factor loading matrix is presented in Table 6.

### Confirmatory factor analysis

In the following phase of analysis, Confirmatory Factor Analysis (CFA) was used to verify the factor structure (Suhr, 2006) and test hypotheses generated through EFA (Henson & Roberts, 2006). A separate dataset was used when completing this stage of the analysis to avoid sample specific chance relationships and to confirm or reject

**Table 4.** Reliability ($\omega$) of A-priori factors.

| Factor, item | Mean | SD | Loading | Error variance | McDonald's omega ($\omega$) |
|---|---|---|---|---|---|
| Being asexual | | | | | .83 |
| I conceal my asexuality | 3.15 | 1.24 | .94 | .65 | |
| I do not present myself as asexual to others | 3.08 | 1.23 | .99 | .51 | |
| I am not openly asexual | 3.17 | 1.31 | 1.03 | .65 | |
| The asexual community | | | | | .87 |
| The asexual community acted as a source of support | 3.86 | 1.06 | .868 | .37 | |
| The asexual community acted as a source of comfort | 4.18 | .97 | .80 | .30 | |
| The asexual community allowed me to share my experiences | 3.75 | 1.03 | .78 | .46 | |
| The asexual community helped me to develop a sense of comradery | 4.13 | .97 | .76 | .35 | |
| Discovering asexuality | | | | | .75 |
| I felt relieved upon discovering the asexual orientation | 4.03 | 1.13 | .33 | 1.16 | |
| Discovering the asexual orientation allowed me to better understand my lack of sexual attraction | 4.59 | .73 | .19 | .49 | |
| Discovering the asexual orientation helped me to accept my differences | 4.22 | .94 | .26 | .81 | |
| Being in an allosexual world | | | | | .83 |
| Sexual repressed | 1.92 | .89 | .68 | .32 | |
| Prudes | 2.02 | 1.03 | .79 | .45 | |
| Late bloomers | 1.73 | .98 | .74 | .42 | |
| Unfeeling | 2.37 | 1.05 | .65 | .69 | |
| Not a legitimate orientation | 2.35 | 1.09 | .69 | .69 | |
| Disclosure | | | | | .88 |
| Unable to understand | 2.14 | 1.05 | .61 | .72 | |
| Dismissive | 2.3 | 1.12 | .77 | .67 | |
| Rejecting | 3.1 | 1.19 | 1 | .42 | |
| Unaccepting | 3.1 | 1.21 | 1.01 | .44 | |
| Disbelieving | 2.35 | 1.17 | .82 | .69 | |
| Supportive | 3.64 | .9 | .51 | .55 | |
| Accepting | 3.68 | .92 | .57 | .51 | |
| Respectful | 3.51 | 1.11 | .69 | .75 | |
| Navigating relationships | | | | | .83 |
| My asexuality is an obstacle within partner relationships | 2.75 | 1.24 | −.06 | 1.52 | |
| My asexuality hinders the development of potential partner relationships | 2.62 | 1.26 | −.04 | 1.58 | |
| Finding a partner is difficult | 2.15 | 1.14 | −.18 | 1.26 | |
| My chances of finding a partner are low | 2.23 | 1.29 | .05 | 1.64 | |
| Navigating relationships: Desires | | | | | .93 |
| Companionship | 4.75 | .66 | .54 | .14 | |
| Intellectual intimacy | 4.51 | .79 | .51 | .37 | |
| Emotional connection | 4.72 | .66 | .56 | .11 | |
| Security | 4.49 | .82 | .57 | .34 | |
| Comfort | 4.69 | .70 | .60 | .13 | |
| Commitment | 4.38 | .90 | .60 | .45 | |
| Support | 4.70 | .66 | .56 | .12 | |
| Respect | 4.74 | .67 | .53 | .17 | |
| Emotional intimacy | 4.61 | .77 | .62 | .22 | |
| Affection | 4.41 | .89 | .58 | .45 | |

**Table 5.** Communalities.

| | Initial | Extraction |
|---|---|---|
| My asexuality is an obstacle within partner relationships | .538 | .580 |
| My asexuality hinders the development of potential partner relationships | .558 | .637 |
| Finding a partner is difficult | .529 | .582 |
| My chances of finding a partner are low | .445 | .424 |
| Companionship | .668 | .684 |
| Intellectual intimacy | .464 | .425 |
| Emotional connection | .742 | .742 |
| Security | .554 | .504 |
| Comfort | .745 | .744 |
| Commitment | .471 | .467 |
| Support | .720 | .716 |
| Respect | .648 | .610 |
| Emotional intimacy | .680 | .643 |
| Affection | .486 | .439 |
| Unable to understand | .409 | .373 |
| Dismissive | .488 | .462 |
| Rejecting | .692 | .638 |
| Unaccepting | .677 | .632 |
| Disbelieving | .503 | .497 |
| Supportive | .597 | .479 |
| Accepting | .661 | .566 |
| Respectful | .511 | .501 |
| Not a legitimate orientation | .388 | .415 |
| Sexually repressed | .495 | .574 |
| Unfeeling | .388 | .398 |
| Prudes | .491 | .561 |
| Late bloomers | .506 | .594 |
| The asexual community acted as a source of support when discovering the asexual orientation | .614 | .675 |
| The asexual community acted as a source of comfort when discovering the asexual orientation | .621 | .677 |
| The asexual community allowed me to share my experiences when discovering the asexual orientation | .554 | .600 |
| The asexual community helped me to develop a sense of comradery when discovering the asexual orientation | .574 | .642 |
| I felt relieved upon discovering the asexual orientation | .392 | .528 |
| Discovering the asexual orientation allowed me to better understand my lack of sexual attraction | .366 | .470 |
| Discovering the asexual orientation helped me to accept my differences | .391 | .520 |
| I conceal my asexuality | .508 | .609 |
| I do not present myself as asexual to others | .528 | .669 |
| I am not openly asexual | .512 | .615 |

the factor pattern (Flora & Flake, 2017). A correlated factors model was fitted to the data using SPSS's statistical package titled AMOS (Arbuckle, 2015). The factor structure obtained from EFA was assessed and validated using maximum likelihood CFA with the second dataset ($n = 826$). For the purpose of model identification, loadings for the first item of each factor and item residuals were fixed to 1.0 (Rhudy et al., 2020). Initial results showed that standardised factor loadings were above 0.5 and did

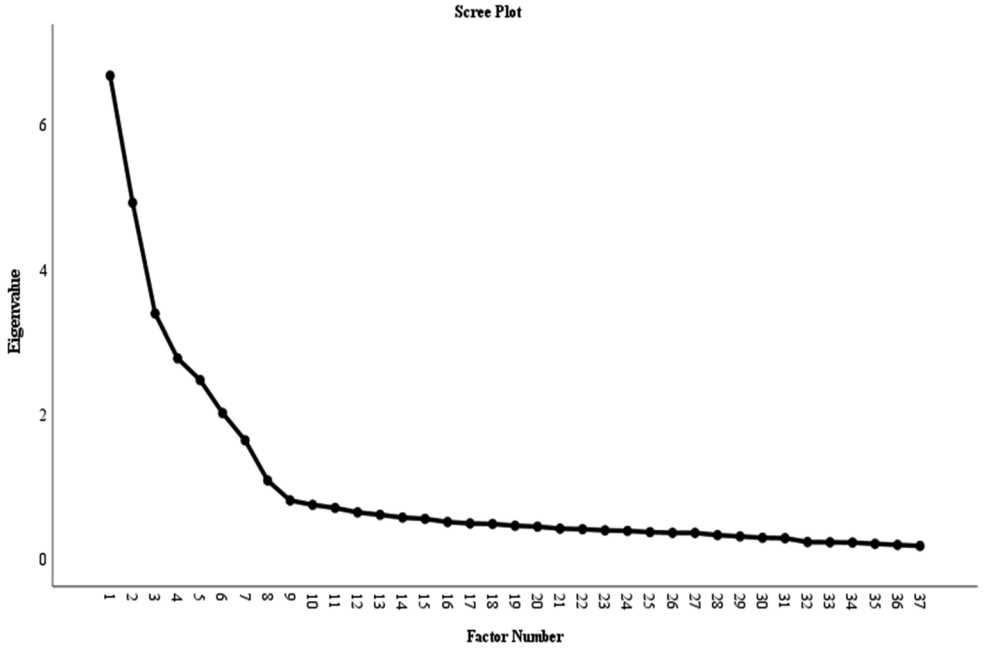


**Figure 1.** Scree plot.

not need to be removed prior to assessing the model fit (Hamid et al., 2022). Overall fit for the initial model (M1) was determined through multiple goodness-of-fit indices (Boley et al., 2014; Wan et al., 1996) including absolute fit indices, incremental fit indices and parsimony fit indices. Expected cut-off points for fit indices were as follows: root mean square error of approximation (RMSEA) < 0.08; comparative fit index (CFI) > 0.9; CMIN/DF > 3,0; NFI > 0.9; GFI > 0.9; increase in AIC and BIC.

The CFA revealed good model fit for the following fit indices: CMIN/DF = 4.34 and SRMR = .046. Although the chi-square statistic was notably high and significant: $\chi^2$ (608) = 2640.38($p < .000$), this was attributable to the large sample size (Boley et al., 2014). As a result, this indicator was substituted for the root mean square error of approximation (RMSEA) and the comparative fit index (CFI), which are less sensitive to large sample size (Boley et al., 2014; Hair et al., 2010). Despite this, several fit indices were poor or did not meet criteria for good model fit: RMSEA = .064, CFI = .89, NFI = .857, GFI = .843, AIC = 2330.38 and BIC =3278.46 (Boley et al., 2014; Hair et al., 2010; Hu & Bentler, 1999) (Table 7).

Adequate model fit was obtained through model re-specification based on the modification indices (Byrne, 2001). This involved re-specifying error covariances that contributed substantially to model misspecification as free parameters (Abubakari et al., 2012) (see Table 8). Thus, the model was modified by correlating the residuals of the highest modification indices in the eight successive CFA models. These modifications provided a significant improvement in the resulting CFA model without changing the structure of item factor loadings. Invariance of the model was evaluated using the $\chi^2$ difference test ($\Delta\chi^2$), with a decrease in $\chi^2$ indicative of non-invariance (Cheung & Rensvold, 2002; Rhudy et al., 2020). However, considering the large

**Table 6.** Factor matrix.

| | Factor | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Comfort | **.819** | .244 | −.103 | .029 | −.019 | −.002 | −.024 |
| Emotional connection | **.816** | .218 | −.153 | .020 | −.059 | −.021 | −.035 |
| Support | **.813** | .202 | −.106 | .011 | −.039 | .015 | −.024 |
| Companionship | **.783** | .184 | −.175 | −.035 | .003 | .014 | −.073 |
| Emotional intimacy | **.762** | .206 | −.114 | .012 | −.066 | −.021 | −.042 |
| Respect | **.753** | .173 | −.101 | .006 | −.043 | .010 | .009 |
| Security | **.691** | .121 | −.079 | .046 | .002 | .038 | .047 |
| Commitment | **.642** | .208 | −.069 | .078 | .014 | −.020 | .012 |
| Intellectual intimacy | **.633** | .103 | −.086 | .016 | −.036 | .006 | .064 |
| Affection | **.609** | .219 | −.068 | .021 | −.097 | −.031 | −.068 |
| Rejecting | −.283 | **.691** | .021 | −.276 | .041 | −.006 | −.040 |
| Unaccepting | −.276 | **.679** | .019 | −.294 | .073 | −.054 | −.030 |
| Disbelieving | −.218 | **.636** | .054 | −.170 | .075 | .085 | −.016 |
| Accepting | −.032 | **.601** | .256 | −.352 | .113 | −.030 | .027 |
| Dismissive | −.234 | **.600** | .080 | −.152 | .114 | .073 | −.016 |
| Respectful | −.057 | **.592** | .170 | −.325 | .089 | .002 | .075 |
| Supportive | .019 | **.558** | .240 | −.325 | .055 | −.012 | .036 |
| Unable to understand | −.224 | **.538** | −.006 | −.135 | .075 | .085 | −.048 |
| The asexual community acted as a source of support when discovering the asexual orientation | .241 | −.143 | **.665** | .095 | .200 | .234 | −.226 |
| The asexual community helped me to develop a sense of comradery when discovering the asexual orientation | .225 | −.121 | **.656** | .036 | .257 | .177 | −.217 |
| The asexual community acted as a source of comfort when discovering the asexual orientation | .242 | −.137 | **.654** | .026 | .289 | .214 | −.207 |
| The asexual community allowed me to share my experiences when discovering the asexual orientation | .264 | −.130 | **.648** | .156 | .131 | .119 | −.196 |
| Late bloomers | −.134 | .310 | −.188 | **.553** | .350 | .128 | −.013 |
| Prudes | −.146 | .335 | −.182 | **.531** | .297 | .156 | .012 |
| Sexually repressed | −.191 | .354 | −.199 | **.502** | .327 | .105 | .040 |
| Not a legitimate orientation | −.130 | .306 | −.152 | **.443** | .280 | .075 | .023 |
| Unfeeling | −.163 | .325 | −.240 | **.370** | .265 | .025 | −.018 |
| My asexuality is an obstacle within partner relationships | −.107 | .263 | .223 | .243 | **−.556** | .279 | .062 |
| My asexuality hinders the development of potential partner relationships | −.092 | .294 | .255 | .287 | **−.555** | .291 | .042 |
| Finding a partner is difficult | −.221 | .233 | .210 | .243 | **−.538** | .262 | .132 |

(*Continued*)

**Table 6.** Continued.

| | Factor | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| My chances of finding a partner are low | −.026 | .288 | .153 | .231 | **−.472** | .188 | .074 |
| I am not openly asexual | −.083 | .224 | .270 | .252 | −.161 | **−.612** | −.147 |
| I do not present myself as asexual to others | −.024 | .199 | .328 | .304 | −.118 | **−.607** | −.217 |
| I conceal my asexuality | −.102 | .280 | .205 | .320 | −.162 | **−.585** | −.081 |
| Discovering the asexual orientation helped me to accept my differences | .197 | .002 | .389 | .068 | .114 | −.124 | **.545** |
| I felt relieved upon discovering the asexual orientation | .164 | −.090 | .375 | .115 | .187 | −.152 | **.530** |
| Discovering the asexual orientation allowed me to better understand my lack of sexual attraction | .213 | −.022 | .318 | .016 | .191 | −.085 | **.528** |

The bolded values are intended simply to highlight factors with relatively higher internal consistency (e.g., $\alpha > .70$), following common conventions in reporting reliability estimates.

**Table 7.** Model indices.

| Model | Chi-Square ($\chi^2$) | DF | RMSEA | CFI | CMIN/DF | NFI | GFI | AIC | BIC |
|---|---|---|---|---|---|---|---|---|---|
| Model 1 (M1) | 2640.38 | 608 | .064 | .886 | 4.34 | .857 | .843 | 2830.38 | 3278.46 |
| Model 2 (M2) | 2140.91 | 607 | .055 | .914 | 3.53 | .88 | .873 | 2332.91 | 2785.71 |
| Model 3 (M3) | 1962.44 | 606 | .052 | .92 | 3.24 | .89 | .88 | 2156.44 | 2613.95 |
| Model 4 (M4) | 1873.09 | 605 | .05 | .93 | 3.09 | .89 | .89 | 2069.09 | 2531.32 |
| Model 5 (M5) | 1767.41 | 604 | .048 | .94 | 2.93 | .91 | .89 | 1965.41 | 2432.35 |
| Model 6 (M6) | 1570.08 | 603 | .04 | .95 | 2.60 | .92 | .90 | 1770.08 | 2241.74 |
| Model 7 (M7) | 1491.88 | 602 | .04 | .95 | 2.48 | .92 | .91 | 1693.88 | 2170.25 |
| Model 8 (M8) | 1426.50 | 601 | .04 | .95 | 2.37 | .92 | .91 | 1630.50 | 2111.59 |
| Model 9 (M9) | 1318.84 | 600 | .038 | .96 | 2.20 | .93 | .92 | 1524.84 | 2010.65 |

DF: degrees of freedom; M1: initial model; M9: final model.

simple size, alternative measures of non-invariance were also used (Byrne et al., 2007; Chen, 2007). This included a decrease in CFI ≥ to 0.005 and an increase in RSMEA ≥ to 0.01. Model 9 showed a substantial increase in model fit for all fit indices (RMSEA = .038, CFI = .96, CMIN/DF = 2.20 and SRMR = .039) and a notable increase in fit compared to model 1 (ΔRMSEA = .026, ΔCFI = .074). Thus, invariance was demonstrated as evidenced by improvements in both the CFI and RMSEA. Fit statistics for models 1–9 are presented in Table 8.

Standardised factor loadings of all items included in Model 9 were high or moderate (see Table 9). All subscales had an $\omega$ value greater than 0.7 and indicated good to excellent internal consistency. Based on the large sample size, acceptable measures and path diagram, it is concluded that the AAID is good model fit (see Figure 2 path diagram). A complete version of the 37-item AAID can be found in Appendix A.

**Table 8.** Error covariances.

| Model | Error covariances | Items |
|---|---|---|
| Model 2 (M2) | e7–e11 | Unaccepting – Supportive |
| Model 3 (M3) | e3–e4 | Finding a partner is difficult – My chances of finding a partner are low |
| Model 4 (M4) | e25–e26 | Security – Comfort |
| Model 5 (M5) | e7–e8 | Accepting – Respectful |
| Model 6 (M6) | e11–e8 | Respectful – Supportive |
| Model 7 (M7) | e24–e30 | Emotional Connection – Emotional intimacy |
| Model 8 (M8) | e30–e31 | Emotional Intimacy – Affection |
| Model 9 (M9) | e5–e9 | Unaccepting – Rejecting |

**Table 9.** Factor loadings M9.

| Factor, item | Mean (*SD*) | $\omega$ | Standardised factor loadings |
|---|---|---|---|
| Navigating relationships: Desires | | .93 | |
| Emotional connection | 4.69 (.688) | | .87 |
| Comfort | 4.61 (.740) | | .85 |
| Support | 4.64 (.703) | | .86 |
| Companionship | 4.72 (.647) | | .86 |
| Emotional intimacy | 4.56 (.797) | | .72 |
| Respect | 4.72 (.666) | | .83 |
| Security | 4.34 (.903) | | .65 |
| Commitment | 4.33 (.933) | | .68 |
| Affection | 4.34 (.947) | | .64 |
| Intellectual intimacy | 4.56 (.735) | | .72 |
| Disclosure | | .89 | |
| Unaccepting | 2.98(1.12) | | .78 |
| Disbelieving | 2.32(1.12) | | .78 |
| Accepting | 3.51(.90) | | .54 |
| Respectful | 3.39(.99) | | .54 |
| Rejecting | 3.02(1.17) | | .75 |
| Dismissive | 2.27(1.12) | | .81 |
| Supportive | 3.47(.88) | | .47 |
| Unable to understand | 2.14(.98) | | .68 |
| Being asexual | | .88 | |
| Conceal my asexuality | 3.05 (1.247) | | .82 |
| Not openly asexual | 3.02 (1.338) | | .81 |
| Do not present | 3.01 (1.209) | | .88 |
| Asexual community | | .72 | |
| Source of support | 3.52 (1.145) | | .86 |
| source of comfort | 3.79 (1.110) | | .85 |
| Comradery | 3.66 (1.143) | | .81 |
| Share experiences | 3.49 (1.111) | | .81 |
| Navigating relationships | | .83 | |
| Hinders | 2.44 (1.204) | | .94 |
| Obstacle | 2.51 (1.197) | | .73 |
| Finding is difficult | 2.10 (1.152) | | .63 |
| Chances are low | 2.27 (1.307) | | .57 |
| Being in an allosexual world | | .85 | |
| Late bloomers | 1.84 (.967) | | .77 |
| Prudes | 1.97 (1.010) | | .81 |
| Sexually repressed | 1.89 (.916) | | .81 |
| Unfeeling | 2.29 (1.080) | | .65 |
| Not legitimate | | | .65 |
| Discovering asexuality | | .72 | |
| Better understand | 4.30 (.987) | | .65 |
| Relieved | 4.12 (1.063) | | .65 |
| Accept differences | 4.28 (1.038) | | .75 |

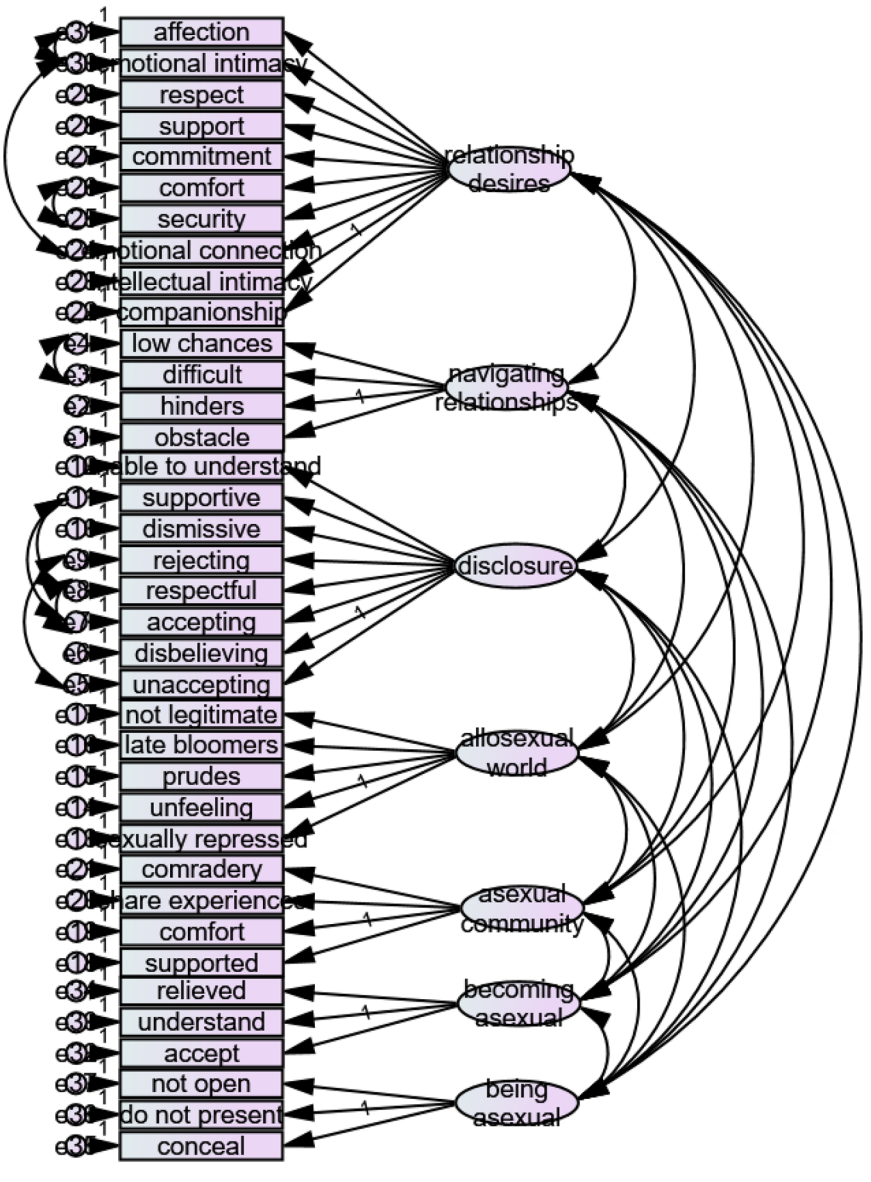


**Figure 2.** Path diagram.

### *Phase IV: Convergent/divergent validity and additional reliability data*

This phase aimed to determine the construct validity of the 37-item AAID through convergent and divergent validity. Five measures were used to assess convergent validity and one measure to assess discriminant validity.

#### *Convergent validity*

It was hypothesised that a significant relationship would exist between AAID subscales *Being Asexual* and *Discovering Asexuality*, and the Self-Acceptance of Sexuality Inventory (SASI). Specifically, those who report greater acceptance of their asexuality

and identification as asexual will also display greater levels of self-acceptance as measured by the SASI. It is hypothesised that a significant relationship will exist between the AAID subscale *Being in an Allosexual World* and attitudes towards asexuality (ATA), with participants who believe that allosexual people view asexuality as illegitimate or invalid adopting more negative attitudes towards asexuality. Furthermore, it is hypothesised that individuals who consider asexuality as an obstacle within their relationships, as measured by the subscale *Navigating Relationships*, will also report more negative attitudes towards asexuality as measured by the ATA. It is hypothesised that a significant relationship will exist between asexual and non-heterosexual sense of community, with LGBT connectedness being related to higher scores on the AAID subscale *Asexual Community*. A correlation is expected to exist between the AAID subscale *Navigating Relationships: Desires* and the "Intimacy" factor from the Relationship Beliefs Scale. For example, participants who display a greater willingness to engage in relationships with partners will score higher on the desire for intimacy (i.e. love, respect, communication, etc.) as measured by the Intimacy factor. Finally, it is hypothesised that a significant relationship will exist between the subscale *Disclosure* and the "Individualised Growth" factor from the Coming-out Growth Scale (COGS). Specifically, that those who experience more positive reactions to their disclosure will display greater gains in identity strength and well-being associated with coming out to others.

### *Discriminant validity*

Discriminant validity was assessed using the Sexual Orientation Beliefs Scale (SOBS). As the AAID aims to measure features specific to the development of an asexual identity, it was hypothesised that the AAID will be either not, or minimally correlated with the SOBS.

### *Participants*

Overall, 238 participants between the ages of 18 and 23 completed the survey ($M = 29.3$, SD = 9.3). Again, the survey was distributed *via* Qualtrics software to the online platform AVEN. Data were collected between the 17th of September, 2023 to the 9th of October 2023. Participants identified along the asexual spectrum and described a range of romantic and gender identities. Eligibility criteria involved individuals who lack sexual attraction, identify as asexual or along the asexual spectrum, and are over eighteen years of age. To ensure that the same participants were not included in both samples (phases IV and V), they were asked to indicate whether they had previously completed the survey. Those which chose "yes" were removed from the sample at this stage. None of race, gender or romantic identity were considered criteria for exclusion.

### *Materials*

***Assessment of Asexual Identity Development (AAID).*** The set of 37 items yielded from the exploratory and confirmatory factor analysis was administered to participants. Internal consistency estimate for the AAID are as follows: Being Asexual, Discovering Asexuality, Asexual Community, Being in an Allosexual World, Disclosure, Navigating Relationships and Navigating Relationships: Desires.

***Self-Acceptance of Sexuality Inventory (Camp et al., 2022).*** The Self-Acceptance of Sexuality Inventory (SASI) is a measure of self-acceptance of sexuality that may be used across people with varying sexual and gender identities. Higher scores indicate greater acceptance of one's sexuality.

***Attitudes Towards Asexuality Scale (Hoffarth et al., 2016).*** The Attitudes Towards Asexuality (ATA) scale is a measure of anti-asexual bias consisting of sixteen items. Higher scores indicate more negative attitudes towards asexuality.

***Connectedness to the LGBT Community (Frost & Meyer, 2012).*** The measure of connectedness to the LGBT community assesses individuals' sense of connection to the LGBT community. This scale is comprised of eight questions ranging from 1 (agree strongly) to 4 (disagree strongly). Talk about the fact that this scale has been designed to be used with a diverse range of sexual identities. Thus, it will be modified slightly to correspond with asexual people.

### *Relationship Beliefs Scale (Fletcher & Kininmonth, 1992)*

The factor "Intimacy" from the Relationship Beliefs Scale measures beliefs and interpersonal attitudes concerning the development of intimacy or closeness. Higher scores indicate a stronger belief that features associated with intimacy lead to greater relationship success. Talk about using different subscales and the fact that they may be used separately or together and this is why we have picked specific ones.

### *Coming-Out Growth Scale (Vaughan, 2007)*

The Coming Out Growth Scale (COGS) may be used to assess growth after disclosing one's sexual minority identity to others. Specifically, the factor

***Sexual Orientation Beliefs Scale (Arseneau et al., 2013).*** The factor "Naturalness" from Sexual Orientation Beliefs Scale (SOBS) measures an individual's basic belief that sexual orientation is innate and biologically based. Although sexual orientation beliefs are considered a proximal construct of sexual orientation identity, they are conceptually distinct, with beliefs pertaining to the attitudes that surround sexual orientation.

### *Participants and procedure*

Once participants completed the online survey from phase IV, they were given the option to provide their email address and be contacted again in three weeks to complete the 37-item AAID a second time. Participants also created a unique identifier code that they were informed would be used to connect their responses from the two time points.

## *Results*

The correlations presented in Table 10 provide support for the construct validity of the AAID. Correlations of .50 and above were considered large, correlations

**Table 10.** Correlations.

| Correlations | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SOBS | Being asexual | Discovering asexuality | SASI | Allosexual world | ATA | Navigating relationships | Asexual community | C S | Navigating relationships: D | R B S | Disclosure | COGS |
| SOBS | Pearson Correlation | 1 | .016 | .119 | .115 | .020 | .040 | .052 | .017 | −.003 | −.266** | −.024 | .012 | −.030 |
| | Sig. (2-tailed) | | .836 | .124 | .136 | .796 | .629 | .504 | .823 | .968 | <.001 | .761 | .881 | .698 |
| | *N* | 169 | 169 | 169 | 169 | 169 | 150 | 169 | 169 | 169 | 169 | 169 | 169 | 169 |
| Being asexual | Pearson correlation | .016 | 1 | .016 | .292** | −.085 | .107 | .230** | .058 | .139 | −.042 | .097 | .083 | .318** |
| | Sig. (2-tailed) | .836 | | .836 | <.001 | .269 | .194 | .003 | .453 | .071 | .584 | .212 | .283 | <.001 |
| | *N* | 169 | 169 | 169 | 169 | 169 | 150 | 169 | 169 | 169 | 169 | 169 | 169 | 169 |
| Discovering asexuality | Pearson correlation | .119 | .016 | 1 | .358** | .007 | .146 | .105 | .388** | .325** | .054 | .050 | .011 | .380** |
| | Sig. (2-tailed) | .124 | .836 | | <.001 | .930 | .074 | .173 | <.001 | <.001 | .486 | .518 | .888 | <.001 |
| | *N* | 169 | 169 | 169 | 169 | 169 | 150 | 169 | 169 | 169 | 169 | 169 | 169 | 169 |
| SASI | Pearson correlation | .115 | .292** | .358** | 1 | .125 | .357** | .219** | .126 | .198** | −.120 | −.035 | .080 | .422** |
| | Sig. (2-tailed) | .136 | <.001 | <.001 | | .106 | <.001 | .004 | .104 | .010 | .121 | .653 | .300 | <.001 |
| | *N* | 169 | 169 | 169 | 169 | 169 | 150 | 169 | 169 | 169 | 169 | 169 | 169 | 169 |
| Allosexual world | Pearson correlation | .020 | −.085 | .007 | .125 | 1 | −.028 | −.013 | .046 | −.058 | .131 | −.184* | .382** | .023 |
| | Sig. (2-tailed) | .796 | .269 | .930 | .106 | | .734 | .870 | .552 | .455 | .091 | .017 | <.001 | .771 |
| | *N* | 169 | 169 | 169 | 169 | 169 | 150 | 169 | 169 | 169 | 169 | 169 | 169 | 169 |
| ATA | Pearson correlation | .040 | .107 | .146 | .357** | −.028 | 1 | .064 | .082 | .216** | .038 | .141 | .061 | .256** |
| | Sig. (2-tailed) | .629 | .194 | .074 | <.001 | .734 | | .434 | .318 | .008 | .648 | .085 | .462 | .002 |
| | *N* | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| Navigating relationships | Pearson correlation | .052 | .230** | .105 | .219** | −.013 | .064 | 1 | .045 | .045 | −.262** | −.143 | −.032 | .108 |
| | Sig. (2-tailed) | .504 | .003 | .173 | .004 | .870 | .434 | | .563 | .561 | <.001 | .064 | .678 | .163 |
| | *N* | 169 | 169 | 169 | 169 | 169 | 150 | 169 | 169 | 169 | 169 | 169 | 169 | 169 |
| Asexual community | Pearson correlation | .017 | .058 | .388** | .126 | .046 | .082 | .045 | 1 | .590** | .194* | .046 | .062 | .376** |
| | Sig. (2-tailed) | .823 | .453 | <.001 | .104 | .552 | .318 | .563 | | <.001 | .011 | .553 | .421 | <.001 |
| | *N* | 169 | 169 | 169 | 169 | 169 | 150 | 169 | 169 | 169 | 169 | 169 | 169 | 169 |
| C S | Pearson correlation | −.003 | .139 | .325** | .198** | −.058 | .216** | .045 | .590** | 1 | .195* | .238** | .147 | .457** |
| | Sig. (2-tailed) | .968 | .071 | <.001 | .010 | .455 | .008 | .561 | <.001 | | .011 | .002 | .057 | <.001 |
| | *N* | 169 | 169 | 169 | 169 | 169 | 150 | 169 | 169 | 169 | 169 | 169 | 169 | 169 |

(*Continued*)

**Table 10.** Continued.

| | | Correlations | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SOBS | Being asexual | Discovering asexuality | SASI | Allosexual world | ATA | Navigating relationships | Asexual community | C S | Navigating relationships: D | R B S | Disclosure | COGS |
| Navigating relationships desires | Pearson correlation | −.266** | −.042 | .054 | −.120 | .131 | .038 | −.262** | .194* | .195* | 1 | .280** | .195* | .172* |
| | Sig. (2-tailed) | <.001 | .584 | .486 | .121 | .091 | .648 | <.001 | .011 | .011 | | <.001 | .011 | .026 |
| | *N* | 169 | 169 | 169 | 169 | 169 | 150 | 169 | 169 | 169 | 169 | 169 | 169 | 169 |
| R B S | Pearson correlation | −.024 | .097 | .050 | −.035 | −.184* | .141 | −.143 | .046 | .238** | .280** | 1 | .128 | .240** |
| | Sig. (2-tailed) | .761 | .212 | .518 | .653 | .017 | .085 | .064 | .553 | .002 | <.001 | | .097 | .002 |
| | *N* | 169 | 169 | 169 | 169 | 169 | 150 | 169 | 169 | 169 | 169 | 169 | 169 | 169 |
| Disclosure | Pearson correlation | .012 | .083 | .011 | .080 | .382** | .061 | −.032 | .062 | .147 | .195* | .128 | 1 | .183* |
| | Sig. (2-tailed) | .881 | .283 | .888 | .300 | <.001 | .462 | .678 | .421 | .057 | .011 | .097 | | .018 |
| | *N* | 169 | 169 | 169 | 169 | 169 | 150 | 169 | 169 | 169 | 169 | 169 | 169 | 169 |
| COGS | Pearson correlation | −.030 | .318** | .380** | .422** | .023 | .256** | .108 | .376** | .457** | .172* | .240** | .183* | 1 |
| | Sig. (2-tailed) | .698 | <.001 | <.001 | <.001 | .771 | .002 | .163 | <.001 | <.001 | .026 | .002 | .018 | |
| | *N* | 169 | 169 | 169 | 169 | 169 | 150 | 169 | 169 | 169 | 169 | 169 | 169 | 169 |

**Correlation is significant at the .01 level (2-tailed). *Correlation is significant at the .05 level (2-tailed).

between .30 and .50 were considered moderate, and correlations lower than .30 were considered small (Cohen, 1988). As hypothesised, greater self-acceptance of sexuality as measured by the SASI were strongly associated with higher scores on the subscales *Being Asexual* ($r$ = .223, $p$ < .01) and *Discovering Asexuality* ($r$ = .317, $p$ < .01). Measures of LGBT connectedness and intimacy were associated with higher scores on the subscales *Asexual Community* ($r$ = .610, $p$ < .01) and *Navigating Relationships: Desires* ($r$ = .284, $p$ < .01) respectively. Higher scores on the subscale *Disclosure* were related to "Individualised Growth" as measured by the COGS ($r$ = .185, $p$ < .01). However, more negative attitudes towards asexuality as measured by the ATA were not significantly correlated with the subscales *Being in an Allosexual World* ($r$ = −.030, $p$ < .66) and *Navigating Relationship* ($r$ = .079, $p$ < .249). In terms of discriminant validity, as hypothesised, the AAID was not correlated with sexual orientation beliefs ($r$ = −.078, $p$ = .229).

This study provided initial information regarding the factor structure of the AAID as well as additional support regarding the construct validity of the AAID. The next study sought to assess the temporal stability of the AAID, through testing the test-retest reliability of AAID scores.

### *Phase V: Test-retest reliability*

To assess the measure's time stability, a subset of 56 participants from the sample completed the measure five weeks after first administration. The intraclass correlation coefficient was used as the scale was not randomly selected and consistency between subjects was assumed to be stable for constructs of interest across the two-time points (Qin et al., 2019). The test-retest coefficients for the subscales were as follows: Discovering Asexuality ($\alpha$ = .74, $p$<.001), Being Asexual ($\alpha$ = .79, $p$<.001), Asexual Community ($\alpha$ = .85, $p$<.001), Being in an Allosexual World ($\alpha$ = .40, $p$=.03), Disclosure ($\alpha$ = .61), Navigating Relationships ($\alpha$ = .65, $p$<.001) and Navigating Relationships: Desire ($\alpha$ = .86, $p$<.001).

## Discussion

Despite a growing interest among researchers in asexuality and the processes that underly asexual people's experiences, little attention has been given towards statistical examination of the asexual population and the development of a psychometric tool to describe this. Thus, the purpose of this study was to develop a valid and reliable measure to quantitatively assess processes associated with identity development among asexual individuals. The AAID was developed through a series of steps including the creation of an initial item pool, evaluation of the relevance and content validity of each item, and subsequently, factor analysis and test-rest reliability to facilitate the selection of final items. This provided preliminary support for the psychometric soundness of the AAID and its suitability as a theoretically based, multidimensional measure of the processes that surround asexual identity development. This was evidenced through high levels of internal consistency among items, as well as good model fit and acceptable factor loadings. A major innovation of the AAID is its

availability for use among people who identify along the asexual spectrum and report various romantic and gender identities. This enables researchers to integrate the AAID within broader investigations on asexuality without being constrained to asexual-allosexual dichotomies. Furthermore, this aligns with the intent to develop a measure that does not negate the complexity of identification within the asexual community (Kelleher et al., 2023) and marginalise those who do not identify within a definitive category.

Conceptual models of non-heterosexual (e.g. Feldman & Wright, 2013; Hall et al., 2021; Meyer, 2007; Moradi et al., 2010; Parmenter et al., 2022) and asexual identity development (Kelleher et al., 2023; Kelleher & Murphy, 2022a, 2022b; Robbins et al., 2016; Scherrer, 2008), as well as measures of both asexual (e.g. Foster, 2017; Yule et al., 2015) and non-heterosexual identities (Mohr & Fassinger, 2000; Mohr & Kendra, 2011; Worthington et al., 2008), informed the initial a-priori factor structure and later defined constructs and patterns in the data during factor analysis. This encompassed processes surrounding identity confusion and an awareness of the self as different, discovering asexuality and sources of information; the role of asexuality-specific communities; identity acceptance and the integration of sexual and romantic identities; and finally, disclosure of an asexual identity and reactions from others.

It was hypothesised that the data used in CFA would fit the factor model established in EFA. When compared with model 1, the fit of model 9 was improved as evidenced by a decrease in CFI and increase in RMSEA. Moreover, factor analysis supported five of the originally proposed AAID factors and established the additional subscales "Navigating Relationships: Desires" and "Asexual Community". Although items were written to correspond with the dimension of "Internalisation", this factor was eliminated prior to factor analysis due to poor reliability. Thus, factor analysis uncovered seven interrelated but independent dimensions that underly the construct of asexual identity development—namely, (a) Being Asexual, (b) Discovering Asexuality, (c) Asexual Community, (d) Being in an Allosexual World, (e) Disclosure, (f) Navigating Relationships and (g) Navigating Relationships: Desires.

Convergent validity was demonstrated by the existence of relationships between the AAID subscales and scales measuring similar constructs. As hypothesised, Being Asexual and Discovering Asexuality scores were related to self-acceptance of sexuality, as measured by the SASI. This indicates that those who were more accepting of their asexuality were also more likely to be accepting of their sexual identity. This corresponds with research which suggests that the process of discovering and becoming comfortable with a non-heterosexual identity may result in greater sexual identity acceptance (Cass, 1979; Perrin-Wallqvist & Lindblom, 2015). Similarly, Asexual Community Scores were related to LGBT connectedness, indicating that those who had higher levels of connectedness to asexual communities would endorse a greater sense of connection to non-heterosexual communities. Again, this corresponds with research which suggests that both non-heterosexual and asexual communities play an important role in the recognition and acceptance of sexual identity (Bregman et al., 2013; Cramer et al., 2018; Kelleher et al., 2023). Navigating Relationships: Desires scores were related to attitudes concerning the development of intimacy or closeness within relationships. This is in line with evidence surrounding asexual individuals'

motivations towards relationships and potential desires for intimacy and closeness (Carvalho & Rodrigues, 2022; Dawson et al., 2016). Finally, Disclosure scores were related to individualised growth as measured by the Coming Out Growth Scale. This indicates that those who experience more positive reactions to the disclosure of their asexuality will display greater gains in identity strength associated with coming out to others (Robbins et al., 2016; Vaughan & Waehler, 2010).

This pattern of correlations did not emerge for the remaining subscales of Being in an Allosexual World and Navigating Relationships, however. This may be because neither of these subscales measure attitudes towards the asexual orientation which is what the ATA measures; instead, they describe other peoples' attitudes towards the orientation and the experiences of asexual people and unlike the ATA, do not measure asexual individuals' attitudes towards asexuality. As expected, no relationship was found to between an individual's sexual orientation beliefs and the AAID, displaying divergent validity. The internal consistency of individualised subscales ranged from moderate to good. Additionally, the test-retest reliability over a five-week period demonstrated high to moderate temporal stability for all subscales, apart from the subscale Being in an Allosexual World. Low temporal stability for this subscale may be due to its measurement of other people's attitudes towards asexuality, as well as the contextualised nature of this construct. For example, it is possible that asexual peoples' perceptions of how other people view asexuality is subject to change and dependent upon their most recent interpersonal interactions. Thus, this subscale was removed from the final measure due to a lack of convergent validity and temporal stability.

The six factors included in the AAID are consistent with features of both non-heterosexual and asexual identity development models. Specifically, factors converged with dimensions of non-heterosexual identity exploration and integration (McCarn & Fassinger, 1996; Worthington et al., 2002, 2008), efforts to conceal or disguise one's sexuality (Meyer, 2007), as well as processes surrounding disclosure and social support gained through non-heterosexual communities (Bregman et al., 2013; Cramer et al., 2018). Similarly, the underlying structure of the AAID aligned with current theorising and models of asexual identity development (Kelleher et al., 2023; Kelleher & Murphy, 2022a, 2022b; Robbins et al., 2016).

Items included in the subscales "Discovering Asexuality" and "Being Asexual" expand upon theories surrounding the process of exploring and becoming aware of one's sexual identity (e.g. Cass, 1979; Fassinger & Miller, 1996; Troiden, 1989). Features included in the measure such as an individual's ability to "understand" a lack of sexual attraction and "accept" their differences, aligns with identity integration and the ability to commit to a sexual orientation (Kroger, 2015; Rosario et al., 2006, 2011). Moreover, processes of exploring, integrating and committing to an asexual identity also compare to more recent models of both non-heterosexual (e.g. McCarn & Fassinger, 1996) and heterosexual (e.g. Worthington et al., 2002, 2008) identity development. For example, the AAID yielded features similar to the Measure of Sexual Identity Exploration and Commitment (Worthington et al., 2008) and accounted for processes surrounding "Exploration" (i.e. Discovering Asexuality) and "Synthesis/Integration" (i.e. Being Asexual). Moreover, the factor structure of the AAID reflects key aspects of asexual identity development outlined within literature

(e.g. Kelleher et al., 2023; Kelleher & Murphy, 2022a, 2022b; Robbins et al., 2016; Scherrer, 2008). Such aspects unique to asexual identities were targeted within the measure and intended to reflect "Identity Confusion" and "Discovery of Terminology" (i.e. Discovering Asexuality) (McInroy et al., 2022; Mitchell & Hunnicutt, 2019; Robbins et al., 2016; Van Houdenhove et al., 2015). For example, items which underpin stages of identity acceptance and integration coincide with asexual individuals' ability to "understand that asexuality is a valid orientation" and reject "their initial pathologization of their lack of sexual interest" (Robbins et al., 2016, p. 758). Furthermore, items surrounding the discovery of asexuality and experiences specific to identity exploration, align with identity confusion and self-realisation (Robbins et al., 2016). The subscales produced in this study are also consistent with Mollet's (2020, p. 195) Asexual Student Expatiation (ASE) Model whereby the process of developing an asexual identity is believed to involve "exploring identities and becoming aware of asexuality as an identity".

The subscales "Disclosure" and "Navigating Relationships" are consistent with asexual individuals' experiences of disclosing their identities and how they interpret their relationships with others (Kelleher et al., 2023; Maxwell, 2017; Robbins et al., 2016; Van Houdenhove et al., 2015; Vares, 2018). Items such as "accepting" and "supportive" converge with processes surrounding identity disclosure and social support gained through non-heterosexual communities (Bregman et al., 2013; Cramer et al., 2018). Moreover, this aligns with socially mediated aspects of non-heterosexual identities, including disclosure to socially important groups (e.g. parents, other family members, friends) (Dunlap, 2016). This in turn, corresponds with Robbins and colleagues' model whereby "Coming Out" and identity disclosure are key features of asexual identity development (McInroy et al., 2022; Robbins et al., 2016). Furthermore, items such as "disbelieving" and "unable to understand" correspond with dismissal and denial from others (Robbins et al., 2016; Van Houdenhove et al., 2015) and the uniquely challenging experience of disclosing an asexual identity (Rosario et al., 2006, 2011). Items including "asexuality is an obstacle within partner relationships" and "chances of finding a partner are low" were targeted within the current measure and intended to reflect the challenges of dating as an asexual person (Bishop et al., 2020; Dunlap, 2016). Moreover, the emergence of "Navigating Relationships: Desires" as an independent subscale highlights many asexual individuals' motivations to engage in relationships and fosters an understanding of the variability associated with asexual identities. These subscales correspond with asexual individuals' motivations to form relationships as well as how the negative reactions of others may impede their identity development (Maxwell, 2017; Van Houdenhove et al., 2015; Vares, 2018, 2021).

The final subscale "Asexual Community" supports the contention that developing a sense of community is instrumental in asexual individuals' recognition and acceptance of themselves as asexual (Kelleher et al., 2023; McInroy et al., 2022; Robbins et al., 2016). Equally, this corresponds with the role of group membership in other models of non-heterosexual identity development (e.g. Fassinger & Miller, 1996; McCarn & Fassinger, 1996) and engagement with non-heterosexual related social activities, (Rosario et al., 2006, 2011). Specifically, items such as "allowed me to share my experiences" and "helped me to develop a sense of comradery" are reminiscent of the role that online communities play in the expression and acceptance

of an asexual identity (Craig & McInroy, 2014). Moreover, this subscale aligns with how information can facilitate an individual's ability to label and legitimize their identities as seen within conceptual models of asexual identity development (McInroy et al., 2022; Robbins et al., 2016). Such aspects unique to asexual identities were targeted within the measure and intended to reflect how a supportive environment and sense of community can enhance the recognition of asexual individuals' identities and mitigate negative experiences (Foster et al., 2019; MacNeela & Murphy, 2015; Scherrer, 2008).

### *Demographic characteristics and participant distribution*

Findings suggest that a number of factors are related to asexuality including a greater number of female and gender non-binary identities, as well as a mostly white and relatively young sample that hail from Western societies. Moreover, the diverse range of romantic and gender identities present within our sample is indicative of asexuality as an especially diverse population. Similar to previous research surrounding asexuality, participants included within this study were relatively young (Rothblum et al., 2020). This may be as a result of the recent ascent of the asexual community and the younger profile of participants exposed to online forums (Rothblum et al., 2020). Moreover, the majority of participants identified as white/Caucasian and over half resided in the United States of America. This corresponds with the typical demographic profiles of asexual participants (Antonsen et al., 2020; Greaves et al., 2017), as well as findings from the Asexual Community Survey Summary Report (Weis et al., 2017). Participants were highly educated with few obtaining less than a high school degree. This aligns with findings from previous research in which the vast majority of asexual people have been shown to be highly educated (Antonsen et al., 2020).

Participants included within this study were mostly female or gender non-binary which corresponds with past research surrounding gender distributions within the asexual community. For example, our findings are similar to the prevalence of female and gender-non-binary identities reported within previous studies (Antonsen et al., 2020; Bogaert, 2004; Greaves et al., 2017; Kelleher & Murphy, 2022a; Rothblum et al., 2020; Zheng & Su, 2018) and again corresponds with the lower number of male respondents included within the Asexual Community Survey Summary Report (Weis et al., 2017). Moreover, gender distributions identified within this study align closely with the 2016 Asexual Census and are comparable to other estimates of non-binary identities among asexual people (Brotto et al., 2010; Hinderliter, 2009; MacNeela & Murphy, 2015; Yule et al., 2013). The large proportion of female participants included within this study aligns with quantitative and qualitative investigations surrounding asexuality and may derive from both allonormative and heteronormative assumptions. For example, gender divisions seen within the asexual community may be as a result of the societal expectation that men are more sexually active than women (Kelleher & Murphy, 2022a; MacNeela & Murphy, 2015; Mitchell & Hunnicutt, 2019; Robbins et al., 2016; Rothblum et al., 2020) and exposed to greater levels of stigmatisation (Bogaert, 2004). Moreover, the prevalence of gender non-binary participants may be

attributable to asexual individuals' ability to explore their gender identities and the societal expectations of what this means (Mitchell & Hunnicutt, 2019). For example, as many asexual people do not engage in sexual intercourse and do not feel the need to attract a sexual partner, this may lessen the applicability of gender roles (Antonsen et al., 2020), and grant them the ability to understand their gender identities in non-traditional ways (Rothblum et al., 2020). Moreover, an absence of sexual attraction that typically determines gender presentations and a resistance towards the gender binary may provide asexual people with further freedom to explore their gender identities (Antonsen et al., 2020; DeLuzio Chasin, 2011).

The wide range of romantic identities included within this study is indicative of the heterogenous nature of the asexual community and corresponds with existing research. For example, Antonsen et al. (2020) found a high prevalence of romantic attraction within the asexual community, with 74% of participants reporting something other than an aromantic identity. Moreover, the presence of romantic attraction that extends beyond opposite and same-sex attractions has been shown throughout research (Brotto et al., 2010; Kelleher & Murphy, 2022a; Scherrer, 2008), with asexual people found to be less gender specific in their romantic interests (Antonsen et al., 2020). This corresponds with the diverse nature of asexuality and the higher prevalence of biromantic, homoromantic, panromantic, aromantic and unspecified identities (Antonsen et al., 2020; Kelleher & Murphy, 2022a; Scherrer, 2008; Zheng & Su, 2018). This range of romantic attractions may be interpreted through asexual participants' ability to reject gender binaries (Gazzola & Morrison, 2012; MacNeela & Murphy, 2015) and develop sexual and romantic attraction independently of sex/gender (Brotto et al., 2010; Scherrer, 2008).

### *Limitations and future recommendations*

Although the present study informs research and practice in a number of ways, findings should be interpreted in light of some limitations. To begin, the results of this study may be influenced by sampling bias and the selection of participants who are highly motivated to participate in research about asexuality. Although recruitment was not limited geographically, the prevalence of participants from democratic countries means that findings are not generalisable outside of this population. This likely resulted in lower variability and mean levels of several AAID items than would have been found in a more diverse group. Thus, future research should cross validate the factor structure, reliability, and validity of the AAID with samples that consist of racially and ethnically diverse participants. Moreover, follow-up studies may indicate whether the AAID is an appropriate measure to assess differences in identity development across varying gender and romantic identities. For example, future studies should examine measurement invariance across identity sub-groups (i.e. gender and romantic identity) and determine whether the overall factor structure fits well for all groups. Comparison of AAID scores across asexual and allosexual groups may confirm whether the measure accurately examines features specific to asexual identity development. Moreover, evaluation of other psychometric properties such as test-retest reliability, convergent validity and discriminant validity may ensure the representativeness and stability of the AAID. Future research should investigate the longitudinal measurement invariance of the scale to indicate whether

the AAID is suitable for studies of identity development over time. This may shed further light on asexuality-specific developmental pathways and differentiate this from HSSD and SIAD (Brotto & Milani, 2022). Finally, as participants were gathered online, this may limit the generalisability of findings to asexual individuals who are not exposed to asexual forums. Thus, future research should endeavour to assess the validity of the AAID among asexual individuals who are not recruited online.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## References


Abubakari, A.-R., Jones, M. C., Lauder, W., Kirk, A., Devendra, D., & Anderson, J. (2012). Psychometric properties of the Revised Illness Perception Questionnaire: Factor structure and reliability among African-origin populations with type 2 diabetes. *International Journal of Nursing Studies*, *49*(6), 672–681. https://doi.org/10.1016/j.ijnurstu.2011.11.008

Anderson, S. M. (2020). Gender matters: The perceived role of gender expression in discrimination against cisgender and transgender LGBQ individuals. *Psychology of Women Quarterly*, *44*(3), 323–341. https://doi.org/10.1177/0361684320929354

Andersson, K. (2010). *"We have a name for something I've felt all my life"—Discovering and explaining asexuality* (p. 28). Lund University.

Antonsen, A. N., Zdaniuk, B., Yule, M., & Brotto, L. A. (2020). Ace and aro: Understanding differences in romantic attractions among persons identifying as asexual. *Archives of Sexual Behavior*, *49*(5), 1615–1630. https://doi.org/10.1007/s10508-019-01600-1

Arbuckle, J. L. (2015). *IBM® SPSS® Amos™ 25 user's guide* (p. 720). IBM.

Arseneau, J. R., Grzanka, P. R., Miles, J. R., & Fassinger, R. E. (2013). Development and initial validation of the Sexual Orientation Beliefs Scale (SOBS). *Journal of Counseling Psychology*, *60*(3), 407–420. https://doi.org/10.1037/a0032799

Bartlett, M. S. (1950). Tests of significance in factor analysis. *British Journal of Psychology*, *3*, 77–85.

Beavers, A., Lounsbury, J., Richards, J., Huck, S., Skolits, G., & Esquivel, S. (2019). Practical considerations for using exploratory factor analysis in educational research. *Practical Assessment, Research, and Evaluation*, *18*(1), 6. https://doi.org/10.7275/qv2q-rk76

Bishop, M. D., Fish, J. N., Hammack, P. L., & Russell, S. T. (2020). Sexual identity development milestones in three generations of sexual minority people: A national probability sample. *Developmental Psychology*, *56*(11), 2177–2193. https://doi.org/10.1037/dev0001105

Bogaert, A. F. (2004). Asexuality: Prevalence and associated factors in a national probability sample. *Journal of Sex Research*, *41*(3), 279–287. https://doi.org/10.1080/00224490409552235

Boley, B. B., McGehee, N. G., Perdue, R. R., & Long, P. (2014). Empowerment and resident attitudes toward tourism: Strengthening the theoretical foundation through a Weberian lens. *Annals of Tourism Research*, *49*, 33–50. https://doi.org/10.1016/j.annals.2014.08.005

Borgogna, N. C., McDermott, R. C., Aita, S. L., & Kridel, M. M. (2019). Anxiety and depression across gender and sexual minorities: Implications for transgender, gender nonconforming, pansexual, demisexual, asexual, queer, and questioning individuals. *Psychology of Sexual Orientation and Gender Diversity*, *6*(1), 54–63. https://doi.org/10.1037/sgd0000306

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Bregman, H. R., Malik, N. M., Page, M. J. L., Makynen, E., & Lindahl, K. M. (2013). Identity profiles in lesbian, gay, and bisexual youth: The role of family influences. *Journal of Youth and Adolescence*, *42*(3), 417–430. https://doi.org/10.1007/s10964-012-9798-z

Brotto, L. A., Knudson, G., Inskip, J., Rhodes, K., & Erskine, Y. (2010). Asexuality: A mixed-methods approach. *Archives of Sexual Behavior*, *39*(3), 599–618. https://doi.org/10.1007/s10508-008-9434-x

Brotto, L. A., & Milani, S. (2022). Asexuality: When sexual attraction is lacking. In D. P. VanderLaan & W. I. Wong (Eds.), *Gender and sexuality development* (pp. 567–587). Springer International Publishing. https://doi.org/10.1007/978-3-030-84273-4_19

Brotto, L. A., & Yule, M. (2017). Asexuality: Sexual orientation, paraphilia, sexual dysfunction, or none of the above? *Archives of Sexual Behavior*, *46*(3), 619–627. https://doi.org/10.1007/s10508-016-0802-7

Brown, G., Cheva, A., Fraser, M., & Zeglin, R. J. (2023). Asexuality: A content analysis of sex therapy journals. *Psychology & Sexuality*, *14*(1), 17–30. https://doi.org/10.1080/19419899.2022.2052943

Bulmer, M., & Izuma, K. (2018). Implicit and explicit attitudes toward sex and romance in asexuals. *Journal of Sex Research*, *55*(8), 962–974. https://doi.org/10.1080/00224499.2017.1303438

Byrne, B. M. (2001). Structural equation modeling with AMOS, EQS, and LISREL: Comparative approaches to testing for the factorial validity of a measuring instrument. *International Journal of Testing*, *1*(1), 55–86. https://doi.org/10.1207/S15327574IJT0101_4

Byrne, B. M., Stewart, S. M., Kennard, B. D., & Lee, P. W. H. (2007). The Beck Depression Inventory-II: Testing for measurement equivalence and factor mean differences across Hong Kong and American adolescents. *International Journal of Testing*, *7*(3), 293–309. https://doi.org/10.1080/15305050701438058

Camp, J., Vitoratou, S., & Rimes, K. A. (2022). The Self-Acceptance of Sexuality Inventory (SASI): Development and validation. *Psychology of Sexual Orientation and Gender Diversity*, *9*(1), 92–109. https://doi.org/10.1037/sgd0000445

Carvalho, A. C., & Rodrigues, D. L. (2022). Sexuality, sexual behavior, and relationships of asexual individuals: Differences between aromantic and romantic orientation. *Archives of Sexual Behavior*, *51*(4), 2159–2168. https://doi.org/10.1007/s10508-021-02187-2

Cass, V. C. (1979). Homosexual identity formation: A theoretical model. *Journal of Homosexuality*, *4*(3), 219–235. https://doi.org/10.1300/J082v04n03_01

Catri, F. (2021). Defining asexuality as a sexual identity: Lack/little sexual attraction, desire, interest and fantasies. *Sexuality & Culture*, *25*(4), 1529–1539. https://doi.org/10.1007/s12119-021-09833-w

Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, *14*(3), 464–504. https://doi.org/10.1080/10705510701301834

Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal*, *9*(2), 233–255. https://doi.org/10.1207/S15328007SEM0902_5

Child, D. (1990). *The essentials of factor analysis* (2nd ed., pp. viii, 120). Cassell Educational.

Clark, A. N., & Zimmerman, C. (2022). Concordance between romantic orientations and sexual attitudes: Comparing allosexual and asexual adults. *Archives of Sexual Behavior*, *51*(4), 2147–2157. https://doi.org/10.1007/s10508-021-02194-3

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Routledge. https://doi.org/10.4324/9780203771587

Comrey, A. L., & Lee, H. B. (1992). *A first course in factor analysis*. Psychology Press.

Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology*, *78*(1), 98–104. https://doi.org/10.1037/0021-9010.78.1.98

Costello, A., & Osborne, J. (2019). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research, and Evaluation*, *10*(1), 7. https://doi.org/10.7275/jyj1-4868

Craig, S. L., & McInroy, L. (2014). You can form a part of yourself online: The influence of new media on identity development and coming out for LGBTQ youth. *Journal of Gay & Lesbian Mental Health*, *18*(1), 95–109. https://doi.org/10.1080/19359705.2013.777007

Cramer, R. J., Golom, F. D., Gemberling, T. M., Trost, K., Lewis, R., & Wright, S. (2018). Examining the lesbian, gay, and bisexual identity scale among members of an alternative sexuality special interest group. *Archives of Sexual Behavior*, *47*(4), 1251–1264. https://doi.org/10.1007/s10508-017-1120-4

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*(3), 297–334. https://doi.org/10.1007/BF02310555

Dawson, M., McDonnell, L., & Scott, S. (2016). Negotiating the boundaries of intimacy: The personal lives of asexual people. *The Sociological Review*, *64*(2), 349–365. https://doi.org/10.1111/1467-954X.12362

DeLuzio Chasin, C. (2011). Theoretical issues in the study of asexuality. *Archives of Sexual Behavior*, *40*(4), 713–723. https://doi.org/10.1007/s10508-011-9757-x

Dunlap, A. (2016). Changes in coming out milestones across five age cohorts. *Journal of Gay & Lesbian Social Services*, *28*(1), 20–38. https://doi.org/10.1080/10538720.2016.1124351

Dunn, K. J., & McCray, G. (2020). The place of the bifactor model in confirmatory factor analysis investigations into construct dimensionality in language testing. *Frontiers in Psychology*, *11*, 1357. https://doi.org/10.3389/fpsyg.2020.01357

Dziuban, C. D., & Shirkey, E. C. (1974). When is a correlation matrix appropriate for factor analysis? Some decision rules. *Psychological Bulletin*, *81*(6), 358–361. https://doi.org/10.1037/h0036316

El-Den, S., Schneider, C., Mirzaei, A., & Carter, S. (2020). How to measure a latent construct: Psychometric principles for the development and validation of measurement instruments. *The International Journal of Pharmacy Practice*, *28*(4), 326–336. https://doi.org/10.1111/ijpp.12600

Fassinger, R. E., & Miller, B. A. (1996). Validation of an inclusive model of sexual minority identity formation on a sample of gay men. *Journal of Homosexuality*, *32*(2), 53–78. https://doi.org/10.1300/J082v32n02_04

Feldman, S. E., & Wright, A. J. (2013). Dual impact: Outness and LGB identity formation on mental health. *Journal of Gay & Lesbian Social Services*, *25*(4), 443–464. https://doi.org/10.1080/10538720.2013.833066

Flora, D. B., & Flake, J. K. (2017). The purpose and practice of exploratory and confirmatory factor analysis in psychological research: Decisions for scale development and validation. *Canadian Journal of Behavioural Science / Revue Canadienne Des Sciences du Comportement*, *49*(2), 78–88. https://doi.org/10.1037/cbs0000069

Foster, A. B. (2017). *Measuring social invisibility and erasure: Development of the asexual microaggressions scale - ProQuest*. https://www.proquest.com/openview/f9ecc30ff624bd60492b2d0341d47234/1?pq-origsite=gscholar&cbl=18750

Foster, A. B., Eklund, A., Brewster, M. E., Walker, A. D., & Candon, E. (2019). Personal agency disavowed: Identity construction in asexual women of color. *Psychology of Sexual Orientation and Gender Diversity*, *6*(2), 127–137. https://doi.org/10.1037/sgd0000310

Frost, D. M., & Meyer, I. H. (2012). Connectedness to the LGBT Community Scale. Journal of Sex Research.

Gazzola, S. B., & Morrison, M. A. (2012). Asexuality: An emergent sexual orientation. In *Sexual minority research in the new millennium* (pp. 21–44). Nova Science Publishers.

Grant, J. E., Odlaug, B. L., Derbyshire, K., Schreiber, L. R. N., Lust, K., & Christenson, G. (2014). Mental health and clinical correlates in lesbian, gay, bisexual, and queer young adults. *Journal of American College Health*, *62*(1), 75–78. https://doi.org/10.1080/07448481.2013.844697

Greaves, L. M., Barlow, F. K., Huang, Y., Stronge, S., Fraser, G., & Sibley, C. G. (2017). Asexual identity in a New Zealand national sample: Demographics, well-being, and health. *Archives of Sexual Behavior*, *46*(8), 2417–2427. https://doi.org/10.1007/s10508-017-0977-6

Greaves, L. M., Stronge, S., Sibley, C. G., & Barlow, F. K. (2021). Asexual identity, personality, and social motivations in a New Zealand national sample. *Archives of Sexual Behavior*, *50*(8), 3843–3852. https://doi.org/10.1007/s10508-021-02038-0

Haefner, C. (2011). *Asexual scripts: A grounded theory inquiry into the intrapsychic scripts asexuals use to negotiate romantic relationships* [Institute of Transpersonal Psychology]. https://www.proquest.com/dissertations-theses/asexual-scripts-grounded-theory-inquiry-into/docview/875157958/se-2

Hair, J. F., Black, W. C., & Babin, B. J. (2010). *Multivariate data analysis: A global perspective*. Pearson Education.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2013). *Multivariate data analysis*. Pearson Education Limited.

Hall, W. J., Dawes, H. C., & Plocek, N. (2021). Sexual orientation identity development milestones among lesbian, gay, bisexual, and queer people: A systematic review and meta-analysis. *Frontiers in Psychology*, *12*, 753954. https://doi.org/10.3389/fpsyg.2021.753954

Hamid, M., Mustafa, Z., Mohd Suradi, N. R., Idris, F., & Abdullah, M. (2022). Multi-factor of employee values: A confirmatory factor analytics (CFA) validation. *African Journal of Business Management*, *5*(32), 12632–12640. https://doi.org/10.5897/AJBM11.2224

Hammack, P. L., Frost, D. M., & Hughes, S. D. (2019). Queer intimacies: A new paradigm for the study of relationship diversity. *Journal of Sex Research*, *56*(4–5), 556–592. https://doi.org/10.1080/00224499.2018.1531281

Hayes, A. F., & Coutts, J. J. (2020). Use omega rather than Cronbach's alpha for estimating reliability. But…. *Communication Methods and Measures*, *14*(1), 1–24. https://doi.org/10.1080/19312458.2020.1718629

Henson, R. K., & Roberts, J. K. (2006). Use of exploratory factor analysis in published research: Common errors and some comment on improved practice. *Educational and Psychological Measurement*, *66*(3), 393–416. https://doi.org/10.1177/0013164405282485

Hinderliter, A. C. (2009). Methodological issues for studying asexuality. *Archives of Sexual Behavior*, *38*(5), 619–621. https://doi.org/10.1007/s10508-009-9502-x

Hoffarth, M. R., Drolet, C. E., Hodson, G., & Hafer, C. L. (2016). Development and validation of the Attitudes Towards Asexuals (ATA) scale. *Psychology & Sexuality*, *7*(2), 88–100. https://doi.org/10.1080/19419899.2015.1050446

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118

Kaiser, H. F. (1960). Directional statistical decisions. *Psychological Review*, *67*(3), 160–167. https://doi.org/10.1037/h0047595

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, *39*(1), 31–36. https://doi.org/10.1007/BF02291575

Kalkbrenner, M. T. (2023). Alpha, omega, and H internal consistency reliability estimates: Reviewing these options and when to use them. *Counseling Outcome Research and Evaluation*, *14*(1), 77–88. https://doi.org/10.1080/21501378.2021.1940118

Kelleher, S., & Murphy, M. (2022a). *Asexual identity development and internalisation: A thematic analysis*. https://www.tandfonline.com/doi/epub/10.1080/14681994.2022.2091127?needAccess=true

Kelleher, S., & Murphy, M. (2022b). The identity development and internalization of asexual orientation in women: An interpretative phenomenological analysis. *Sexual and Relationship Therapy*, *39*(2), 359–389. https://doi.org/10.1080/14681994.2022.2031960

Kelleher, S., Murphy, M., & Su, X. (2023). Asexual identity development and internalisation: A scoping review of quantitative and qualitative evidence. *Psychology & Sexuality*, *14*(1), 45–72. https://doi.org/10.1080/19419899.2022.2057867

Kroger, J. (2015). Identity development through adulthood: The move toward "wholeness". In The Oxford *handbook of identity development* (pp. 65–80). Oxford University Press.

Laher, S. (2010). Using exploratory factor analysis in personality research: Best-practice recommendations: Original research. *SA Journal of Industrial Psychology*, *36*(1), 1–7. https://doi.org/10.10520/EJC89195

Lund, E. M. (2021). Violence against asexual individuals. In E. M. Lund, C. Burgess, & A. J. Johnson (Eds.), *Violence against LGBTQ+ persons: Research, practice, and advocacy* (pp. 179–183). Springer International Publishing. https://doi.org/10.1007/978-3-030-52612-2_13

MacInnis, C. C., & Hodson, G. (2012). Intergroup bias toward "Group X": Evidence of prejudice, dehumanization, avoidance, and discrimination against asexuals. *Group Processes & Intergroup Relations*, *15*(6), 725–743. https://doi.org/10.1177/1368430212442419

MacNeela, P., & Murphy, A. (2015). Freedom, invisibility, and community: A qualitative study of self-identification with asexuality. *Archives of Sexual Behavior*, *44*(3), 799–812. https://doi.org/10.1007/s10508-014-0458-0

Marshal, M. P., Dietz, L. J., Friedman, M. S., Stall, R., Smith, H. A., McGinley, J., Thoma, B. C., Murray, P. J., D'Augelli, A. R., & Brent, D. A. (2011). Suicidality and depression disparities between sexual minority and heterosexual youth: A meta-analytic review. *The Journal of Adolescent Health*, *49*(2), 115–123. https://doi.org/10.1016/j.jadohealth.2011.02.005

Maxwell, D. (2017). *It's not just about sex: Asexual identity and intimate relationship practices* [PhD thesis]. University of York. https://etheses.whiterose.ac.uk/18006/

McCarn, S. R., & Fassinger, R. E. (1996). Revisioning sexual minority identity formation: A new model of lesbian identity and its implications for counseling and research. *The Counseling Psychologist*, *24*(3), 508–534. https://doi.org/10.1177/0011000096243011

McInroy, L. B., Beaujolais, B., Leung, V. W. Y., Craig, S. L., Eaton, A. D., & Austin, A. (2022). Comparing asexual and non-asexual sexual minority adolescents and young adults: Stressors, suicidality and mental and behavioural health risk outcomes. *Psychology & Sexuality*, *13*(2), 387–403. https://doi.org/10.1080/19419899.2020.1806103

Meyer, I. H. (2007). Prejudice and discrimination as social stressors. In *The health of sexual minorities: Public health perspectives on lesbian, gay, bisexual, and transgender populations* (pp. 242–267). Springer Science+Business Media. https://doi.org/10.1007/978-0-387-31334-4_10

Meyer, I. H. (2013). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychology of Sexual Orientation and Gender Diversity*, *1*(S), 3–26. https://doi.org/10.1037/2329-0382.1.S.3

Mitchell, H., & Hunnicutt, G. (2019). Challenging accepted scripts of sexual "normality": Asexual narratives of non-normative identity and experience. *Sexuality & Culture*, *23*(2), 507–524. https://doi.org/10.1007/s12119-018-9567-6

Mohr, J., & Fassinger, R. (2000). Measuring dimensions of lesbian and gay male experience. *Measurement and Evaluation in Counseling and Development*, *33*(2), 66–90. https://doi.org/10.1080/07481756.2000.12068999

Mohr, J. J., & Kendra, M. S. (2011). Revision and extension of a multidimensional measure of sexual minority identity: The Lesbian, Gay, and Bisexual Identity Scale. *Journal of Counseling Psychology*, *58*(2), 234–245. https://doi.org/10.1037/a0022858

Mollet, A. L. (2020). "I have a lot of feelings, just none in the genitalia region": A grounded theory of asexual college students' identity journeys. *Journal of College Student Development*, *61*(2), 189–206. https://doi.org/10.1353/csd.2020.0017

Mollet, A. L. (2023). "It's easier just to say I'm queer": Asexual college students' strategic identity management. *Journal of Diversity in Higher Education*, *16*(1), 13–25. https://doi.org/10.1037/dhe0000210

Mollet, A. L., & Lackman, B. R. (2018). Asexual borderlands: Asexual collegians' reflections on inclusion under the LGBTQ umbrella. *Journal of College Student Development*, *59*(5), 623–628. https://doi.org/10.1353/csd.2018.0058

Moradi, B., Wiseman, M. C., DeBlaere, C., Goodman, M. B., Sarkees, A., Brewster, M. E., & Huang, Y.-P. (2010). LGB of color and white individuals' perceptions of heterosexist stigma, internalized homophobia, and outness: Comparisons of levels and links. *The Counseling Psychologist*, *38*(3), 397–424. https://doi.org/10.1177/0011000009335263

Morgado, F. F. R., Meireles, J. F. F., Neves, C. M., Amaral, A. C. S., & Ferreira, M. E. C. (2018). Scale development: Ten main limitations and recommendations to improve future research practices. *Psicologia: Reflexão e Crítica*, *30*(1), 3. https://doi.org/10.1186/s41155-016-0057-1

Mraity, H., England, A., & Hogg, P. (2014). Developing and validating a psychometric scale for image quality assessment. *Radiography*, *20*(4), 306–311. https://doi.org/10.1016/j.radi.2014.04.002

Parmenter, J. G., Galliher, R. V., Yaugher, A. C., & Maughan, A. D. A. (2022). Intersectionality and identity configurations: A qualitative study exploring sexual identity development among emerging adults within the United States. *Emerging Adulthood*, *10*(2), 372–385. https://doi.org/10.1177/2167696820946597

Perrin-Wallqvist, R., & Lindblom, J. (2015). Coming out as gay: A phenomenological study about adolescents disclosing their homosexuality to their parents. *Social Behavior and Personality: An International Journal*, *43*(3), 467–480. https://doi.org/10.2224/sbp.2015.43.3.467

Polit, D. F., & Beck, C. T. (2006). The content validity index: Are you sure you know what's being reported? Critique and recommendations. *Research in Nursing & Health*, *29*(5), 489–497. https://doi.org/10.1002/nur.20147

Qin, S., Nelson, L., McLeod, L., Eremenco, S., & Coons, S. J. (2019). Assessing test–retest reliability of patient-reported outcome measures using intraclass correlation coefficients: Recommendations for selecting and documenting the analytical formula. *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation*, *28*(4), 1029–1033. https://doi.org/10.1007/s11136-018-2076-0

Qualtrics. (2018). *Qualtrics (Version 2018)* [Computer software]. Qualtrics. https://www.qualtrics.com

Rhudy, J. L., Arnau, R. C., Huber, F. A., Lannon, E. W., Kuhn, B. L., Palit, S., Payne, M. F., Sturycz, C. A., Hellman, N., Guereca, Y. M., Toledo, T. A., & Shadlow, J. O. (2020). examining configural, metric, and scalar invariance of the pain catastrophizing scale in native American and non-Hispanic white adults in the Oklahoma study of Native American Pain Risk (OK-SNAP). *Journal of Pain Research*, *13*, 961–969. https://doi.org/10.2147/JPR.S242126

Rivas-Drake, D., Seaton, E. K., Markstrom, C., Quintana, S., Syed, M., Lee, R. M., Schwartz, S. J., Umaña-Taylor, A. J., French, S., & Yip, T. (2014). Ethnic and racial identity in adolescence: implications for psychosocial, academic, and health outcomes. *Child Development*, *85*(1), 40–57. https://doi.org/10.1111/cdev.12200

Robbins, N. K., Low, K. G., & Query, A. N. (2016). A qualitative exploration of the "coming out" process for asexual individuals. *Archives of Sexual Behavior*, *45*(3), 751–760. https://doi.org/10.1007/s10508-015-0561-x

Rodrigues, I. B., Adachi, J. D., Beattie, K. A., & MacDermid, J. C. (2017). Development and validation of a new tool to measure the facilitators, barriers and preferences to exercise in people with osteoporosis. *BMC Musculoskeletal Disorders*, *18*(1), 540. https://doi.org/10.1186/s12891-017-1914-5

Romero, A. J., & Roberts, R. E. (2003). The impact of multiple dimensions of ethnic identity on discrimination and adolescents' self-estees. *Journal of Applied Social Psychology*, *33*(11), 2288–2305. https://doi.org/10.1111/j.1559-1816.2003.tb01885.x

Rosario, M., Schrimshaw, E. W., Hunter, J., & Braun, L. (2006). Sexual identity development among lesbian, gay, and bisexual youths: Consistency and change over time. *Journal of Sex Research*, *43*(1), 46–58. https://doi.org/10.1080/00224490609552298

Rosario, M., Schrimshaw, E. W., & Hunter, J. (2011). Different patterns of sexual identity development over time: Implications for the psychological adjustment of lesbian, gay, and bisexual youths. *Journal of Sex Research*, *48*(1), 3–15. https://doi.org/10.1080/00224490903331067

Rossi, J. (2017). *Passing when asexual: Methods for appearing straight* (p. 24). Mckendree.edu.

Rothblum, E. D., Krueger, E. A., Kittle, K. R., & Meyer, I. H. (2020). Asexual and non-asexual respondents from a U.S. population-based study of sexual minorities. *Archives of Sexual Behavior*, *49*(2), 757–767. https://doi.org/10.1007/s10508-019-01485-0

Sakaluk, J. K., & Short, S. D. (2017). A methodological review of exploratory factor analysis in sexuality research: Used practices, best practices, and data analysis resources. *Journal of Sex Research*, *54*(1), 1–9. https://doi.org/10.1080/00224499.2015.1137538

Savage, C. (2019). *The impact of experiences of asexual students in four-year institutions of higher education* [Thesis]. https://ttu-ir.tdl.org/handle/2346/85057

Scherrer, K. S. (2008). Coming to an asexual identity: Negotiating identity, negotiating desire. *Sexualities*, *11*(5), 621–641. https://doi.org/10.1177/1363460708094269

Sharma, B. (2016). A focus on reliability in developmental research through Cronbach's Alpha among medical, dental and paramedical professionals. *Asian Pacific Journal of Health Sciences*, *3*(4), 271–278. https://doi.org/10.21276/apjhs.2016.3.4

Simon, K. A., Hawthorne, H. M., Clark, A. N., Renley, B. M., Farr, R. H., Eaton, L. A., & Watson, R. J. (2022). Contextualizing the well-being of asexual youth: Evidence of differences in family, health, and school outcomes. *Journal of Youth and Adolescence*, *51*(1), 128–140. https://doi.org/10.1007/s10964-021-01500-5

Suhr, D. (2006). *200-31: Exploratory or confirmatory factor analysis?* (p. 17). https://support.sas.com/resources/papers/proceedings/proceedings/sugi31/200-31.pdf

Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics* (3rd ed.). HarperCollins College Publishers.

Taherdoost, H., Sahibuddin, S., & Jalaliyoon, N. (2022). *Exploratory factor analysis; concepts and theory* (SSRN Scholarly Paper No. 4178683). Social Science Research Network. https://papers.ssrn.com/abstract=4178683

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, *2*, 53–55. https://doi.org/10.5116/ijme.4dfb.8dfd

Troiden, R. R.Dr. (1989). The formation of homosexual identities. *Journal of Homosexuality*, *17*(1–2), 43–73. https://doi.org/10.1300/J082v17n01_02

Van Houdenhove, E., Gijs, L., T'Sjoen, G., & Enzlin, P. (2015). Stories about asexuality: A qualitative study on asexual women. *Journal of Sex & Marital Therapy*, *41*(3), 262–281. https://doi.org/10.1080/0092623X.2014.889053

Vares, T. (2018). 'My [asexuality] is playing hell with my dating life': Romantic identified asexuals negotiate the dating game. *Sexualities*, *21*(4), 520–536. https://doi.org/10.1177/1363460717716400

Vaughan, M. D. (2007). Coming Out Growth Scale. *Journal of Adult Development*. https://doi.org/10.1037/t07457-000

Vaughan, M. D., & Waehler, C. A. (2010). Coming out growth: Conceptualizing and measuring stress-related growth associated with coming out to others as a sexual minority. *Journal of Adult Development*, *17*(2), 94–109. https://doi.org/10.1007/s10804-009-9084-9

Velicer, W. F., & Jackson, D. N. (1990). Component analysis versus common factor analysis: Some further observations. *Multivariate Behavioral Research*, *25*(1), 97–114. https://doi.org/10.1207/s15327906mbr2501_12

Wan, C. K., Jaccard, J., & Ramey, S. L. (1996). The relationship between social support and life satisfaction as a function of family structure. *Journal of Marriage and the Family*, *58*(2), 502–513. https://doi.org/10.2307/353513

Weis, R., Tomaskovic-Moore, S., Bauer, C., Miller, T. L., Adroit, M., & Baba, A. (2017). *2017 and 2018* Asexual community survey summary report. https://acecommunitysurvey.org/wp-content/uploads/2020/10/2017-and-2018-asexual-community-survey-summary-report.pdf

Williams, B., Onsman, A., & Brown, T. (2010). Exploratory factor analysis: A five-step guide for novices. *Australasian Journal of Paramedicine*, *8*(3), 1–13. https://doi.org/10.33151/ajp.8.3.93

Worthington, R. L., Navarro, R. L., Savoy, H. B., & Hampton, D. (2008). Development, reliability, and validity of the Measure of Sexual Identity Exploration and Commitment (MOSIEC). *Developmental Psychology*, *44*(1), 22–33. https://doi.org/10.1037/0012-1649.44.1.22

Worthington, R. L., Savoy, H. B., Dillon, F. R., & Vernaglia, E. R. (2002). Heterosexual identity development: A multidimensional model of individual and social identity. *The Counseling Psychologist*, *30*(4), 496–531. https://doi.org/10.1177/00100002030004002

Yong, A. G., & Pearce, S. (2013). A beginner's guide to factor analysis: Focusing on exploratory factor analysis. *Tutorials in Quantitative Methods for Psychology*, *9*(2), 79–94. https://doi.org/10.20982/tqmp.09.2.p079

Yule, M. A., Brotto, L. A., & Gorzalka, B. B. (2013). Mental health and interpersonal functioning in self-identified asexual men and women. *Psychology and Sexuality*, *4*(2), 136–151. https://doi.org/10.1080/19419899.2013.774162

Yule, M. A., Brotto, L. A., & Gorzalka, B. B. (2015). A validated measure of no sexual attraction: The Asexuality Identification Scale. *Psychological Assessment*, *27*(1), 148–160. https://doi.org/10.1037/a0038196

Zamanzadeh, V., Ghahramanian, A., Rassouli, M., Abbaszadeh, A., Alavi-Majd, H., & Nikanfar, A.-R. (2015). Design and implementation content validity study: Development of an instrument for measuring patient-centered communication. *Journal of Caring Sciences*, *4*(2), 165–178. https://doi.org/10.15171/jcs.2015.017

Zheng, L., & Su, Y. (2018). Patterns of asexuality in China: Sexual activity, sexual and romantic attraction, and sexual desire. *Archives of Sexual Behavior*, *47*(4), 1265–1276. https://doi.org/10.1007/s10508-018-1158-y

Zheng, L., & Su, Y. (2022). Sexual minority identity and mental health among individuals on the asexuality spectrum in China: A longitudinal study. *Archives of Sexual Behavior*, *51*(7), 3627–3636. https://doi.org/10.1007/s10508-022-02395-4

## Appendix A: AAID

Before completing this questionnaire, please note the following: Some of you may prefer to use a label other than "asexual" to describe your sexual orientation (e.g. asexual, demi-sexual, gray-asexual). We use the term asexual in this questionnaire as convenience and we ask for your understanding if this term does not completely capture your sexual identity.

### *Navigating relationships: desires*

Please indicate on a scale of 1–5 how much the following words or phrases accurately describe what you hope to gain from a partner relationship: (1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree) ∗Partner Relationships: an intimate relationship that may involve emotional or physical intimacy

| | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|---|---|---|---|---|---|
| Emotional connection | | | | | |
| Comfort | | | | | |
| Support | | | | | |
| Companionship | | | | | |
| Emotional intimacy | | | | | |
| Respect | | | | | |
| Security | | | | | |
| Commitment | | | | | |
| Affection | | | | | |
| Intellectual intimacy | | | | | |

### *Disclosure*

Please indicate on a scale of 1–5 how much the following words or phrases accurately describe other people's reactions to coming out as asexual: (1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree) ∗Coming out as asexual: A process whereby asexual people share their identity openly with other people

| | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|---|---|---|---|---|---|
| Unaccepting | | | | | |
| Disbelieving | | | | | |
| Accepting | | | | | |
| Respectful | | | | | |
| Rejecting | | | | | |
| Dismissive | | | | | |
| Supportive | | | | | |
| Unable to understand | | | | | |

### Being asexual

For each of the following statements please mark the response which you feel best describes your current experience as an asexual person: (1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree)

| | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|---|---|---|---|---|---|
| I conceal my asexuality | | | | | |
| I am not openly asexual | | | | | |
| I do not present myself as asexual to others | | | | | |

### Asexual community

Please indicate on a scale of 1 to 5 to what extent the following statements describe how you came to discover your asexuality? (1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree)

| | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|---|---|---|---|---|---|
| The asexual community acted as a source of support when discovering the asexual orientation | | | | | |
| The asexual community acted as a source of comfort when discovering the asexual orientation | | | | | |
| The asexual community helped me to develop a sense of comradery when discovering the asexual orientation | | | | | |
| The asexual community allowed me to share my experiences when discovering the asexual orientation | | | | | |

### Navigating relationships

Please indicate on a scale of 1–5 how much the following statements accurately describe your experience of partner relationships: (1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree) *Partner Relationships: an intimate relationship that may involve emotional or physical intimacy

| | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|---|---|---|---|---|---|
| My asexuality hinders the development of potential partner relationships | | | | | |
| My asexuality is an obstacle within partner relationships | | | | | |
| Finding a partner is difficult | | | | | |
| My chances of finding a partner are low | | | | | |

## Being in an allosexual world

Please indicate on a scale of 1–5 how you think allosexual people view asexual people: (1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree) *Allosexual People: People who experience sexual attraction of any kind (i.e. heterosexual, homosexual, bisexual, pansexual)

| | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|---|---|---|---|---|---|
| Late bloomers | | | | | |
| Prudes | | | | | |
| Sexually repressed | | | | | |
| Unfeeling | | | | | |
| Not a legitimate orientation | | | | | |

## Discovering asexuality asexual

Please indicate on a scale of 1 to 5 how much the following statements accurately describe how you felt after discovering the asexual orientation: (1 = strongly disagree; 2 = disagree; 3 = neither agree nor disagree; 4 = agree; 5 = strongly agree)

| | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|---|---|---|---|---|---|
| Discovering the asexual orientation allowed me to better understand my lack of sexual attraction | | | | | |
| I felt relieved upon discovering the asexual orientation | | | | | |
| Discovering the asexual orientation helped me to accept my differences | | | | | |