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Review

Review

Health literacy research on the island of Ireland: a systematic review

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Abstract

Consistently, low health literacy has been found to lead to poorer health outcomes, both internationally, and in Ireland. Given this knowledge, there is a need to understand key thematic trends, methodological approaches and evidence gaps in policy and practice. Seven electronic databases (Science Direct, MEDLINE, CINAHL Complete, Web of Science, Scopus, PsychoINFO, and SPORTDiscus) were searched between October and December 2023 focusing on studies published in English between 2013 and 2023. Initial peer reviewed records ($N = 551$) were screened resulting in 37 studies included in this review. Narrative analysis indicated that across the island of Ireland many studies had narrow populations of focus (e.g. Dublin based, adults, chronic illness populations), limited research design and methodologies (e.g. cross-sectional, narrative, and primary research with short time frames), and lacked rigorous monitoring and evaluation of health literacy as a primary or secondary outcome. Future health literacy research in Ireland should consider: (i) contextual and sociodemographic factors (age, sex, ethnicity, socioeconomic status) when aiming to improve health literacy in different populations, (ii) exploring health literacy beyond the clinical domain, (iii) advocating for sustainability of effective programmes, and (iv) rigorous, longitudinal evaluation of health literacy. Quality research in these areas will support the meaningful and sustainable development of health literacy in Ireland, with findings that can be transferred internationally.

Keywords: health literacy; social determinants of health; health behaviour; systematic review

Contribution to Health Promotion

- Health literacy research is an important cornerstone for supporting progressive health promotion initiatives.
- Synthesizing the existing research in this review provides a better understanding of health literacy policy and practice to inform evidence-based recommendations.
- Targeting sustainable evidenced-based health literacy interventions across the life course, with a focus on different contexts in Ireland, such as education and community settings, will support meaningful health literacy development in Ireland.

INTRODUCTION

Health literacy (HL) is a crucial determinant of health, influencing individuals' ability to access, understand, and apply health information (Sørensen *et al*. 2012). Studies have shown that low HL is associated with poorer health outcomes, increased hospitalizations, and reduced adherence to medical treatment (Berkman *et al*. 2011, Aljassim and Ostini 2020). In Ireland, low HL levels have been observed (Gibney *et al*. 2020), contributing to the general agreement that more needs to be done to support HL promotion in the region (Coughlan *et al*. 2013, Gibney and Doyle 2017, Gibney *et al*. 2020). The European Health Literacy Project provided the first comparative European health literacy survey (HLS-SU) through the HLS-EU Consortium (HLS-EU Consortium 2008), with results demonstrating 40% of Irish adults had inadequate or problematic HL (Sørensen *et al*. 2015). Despite the concerning findings of HLS-SU in 2012, there has been limited oversight and evaluation of HL initiatives in Ireland. The extent to which research, policy, and interventions have evolved over the past decade remains unclear.

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While there is international research exploring the advocacy, promotion, and evaluation of HL, future recommendations for best practice should also consider the specific cultural and contextual environment. Australia, Austria, Portugal, and Scotland utilize public authorities to support the development and implementation of HL strategies and programmes, providing potentially systematic and comprehensive approaches that can be impacted by political change (M-POHL 2023). Ireland, in comparison, utilizes non-governmental actors in the development of plans and programmes, where there is flexibility and independence in facilitating new developments in HL (M-POHL 2023). Notably, Ireland is recognized as one of the only countries in the European Union without universal healthcare coverage for all citizens, offering a 'two-tiered system' which contributes to, and exacerbates, rising health inequalities (Forster *et al.* 2018). What is more, considerations of the two distinct political jurisdictions across the island, the Republic of Ireland and Northern Ireland, should be made. This is because HL development and health inequalities are common challenges across the Island, and as such, learnings from HL research across Ireland can be transferred. In Ireland, the standardized mortality rate for those in the least advantaged socio-economic group was twice as high as those in the most advantaged group based on analysis of data from 2018 (Duffy *et al.* 2022). These inequalities translate into stark differences in life expectancy by socio-economic status. Lower HL can follow a social gradient, potentially reinforcing these existing health inequalities (Protheroe *et al.* 2017). In the most recent Health Inequalities Report for Northern Ireland, the male deprivation gap (7.3 years) showed no notable change since 2015–17, the female deprivation gap (5.1 years) widened slightly over the period (Public Health Information & Research Branch 2023). Higher HL levels can, therefore, contribute to empowering individuals and communities to exert greater control over their health (Aljassim and Ostini 2020) and reduce national health inequalities.

Given these considerations, there is a need to capture the current understanding of HL in the island of Ireland, to better inform policy makers, and other stakeholders. Identifying existing HL related research should offer a clear, comprehensive, transparent and rigorous insight for researchers, practitioners and policy makers. This systematic review aims to critically evaluate HL research conducted in Ireland (2013–23), since the completion of the HLS-SU in 2012. Specifically, it examines (i) key thematic trends, (ii) methodological approaches, and (iii) evidence gaps in policy and practice.

METHODS

Literature selection and search strategy

Seven electronic databases (Science Direct, MEDLINE, CINAHL Complete, Web of Science, Scopus, PsychoINFO, and SPORTDiscus) were searched using Boolean operators (AND/OR), incorporating the relevant terms 'health literacy' and 'Ireland'. These databases were selected to ensure comprehensive coverage across medical, psychological, social science, and educational disciplines. Given the specific requirement of the research to focus on HL on the island of Ireland, the search terms were phrased to represent this. The search was conducted between October and December 2023. All records were exported to the Rayyan systematic review platform for screening using Rayyan—Intelligent Systematic Review managing software (Ouzzani *et al.* 2016) and all duplicates were removed (Fig. 1).

One reviewer (M.M.) screened titles and abstracts using the agreed criterion measures (Table 1). Following this, and to minimize reviewer bias, a second reviewer (H.G.) independently screened 20% sample of titles and abstracts. Using more than one researcher (Torgerson *et al.* 2017) supported a quality review process in challenging eligibility criteria, errors and hidden assumptions in the search (Oliver *et al.* 2017). Where consensus was not reached, a third reviewer (C.S.) screened and concluded. Following screening for title and abstract, full-text copies of potentially relevant studies were obtained and screened for full-text inclusion by one reviewer (M.M.). Where further agreement was required at this stage, perspective of a second reviewer (H.G.) was sought.

Data extraction and reliability

Descriptive data for included studies were extracted (Table 2). Data extraction was completed by one researcher (M.M.) and confirmed by another researcher (H.G.). Please see Supplementary material containing extended study characteristics 37 included studies. For all studies, study characteristics [first author, year, geographical area in Ireland, sample size, study type, participant characteristics (sex, age), HL assessment/measurement, socio-economic measurement/factor funding source (if applicable), and study results] were imputed by a single author (M.M.). In addition, context (delivery type and setting) were coded. Extracted data was subsequently reviewed by the authorship team for accuracy.

Quality appraisal

Texts included were assessed for risk of bias by the first author (M.M.). Due to the diversity of studies included in this review, and to provide rigour in the methods used to generate the data as credible and trustworthy, five appraisal tools were utilized to assess quality depending on the study design (see Supplementary Tables of Quality Appraisal). Given the methodological diversity of included studies, multiple critical appraisal tools were used to ensure validity across different study designs. This was to adhere to quality standards, similarly acknowledged by Naef *et al.* (2023), which was in addition to a multidisciplinary team discussion on quality review. These included the Critical Appraisal Skills Programme (CASP 2018), Mixed Methods Appraisal Tool or MMAT (Hong *et al.* 2018), and other standardized critical appraisal tools which were the Quality Appraisal Checklist for quasi-experimental studies (non-randomized) (Barker *et al.* 2024), Critical Appraisal Checklist for Randomized Controlled (Barker *et al.* 2023) and Quality Appraisal of Cross Sectional Studies (JBI 2020). As there was no standardized critical appraisal tool for narrative, case study research with multiple study design components, these studies were assessed as high risk of bias (in accordance with Ayre *et al.* (2023)). Studies were categorized as low risk of bias, moderate risk of bias or high risk of bias according to quality appraisal with the corresponding tool (see Table 2).

RESULTS

This review observed reports on various aspects and demographics in relation to health of populations for HL research in Ireland between 2013 and 2023, with nearly three quarters of studies observed to have low risk of bias (73.0%).

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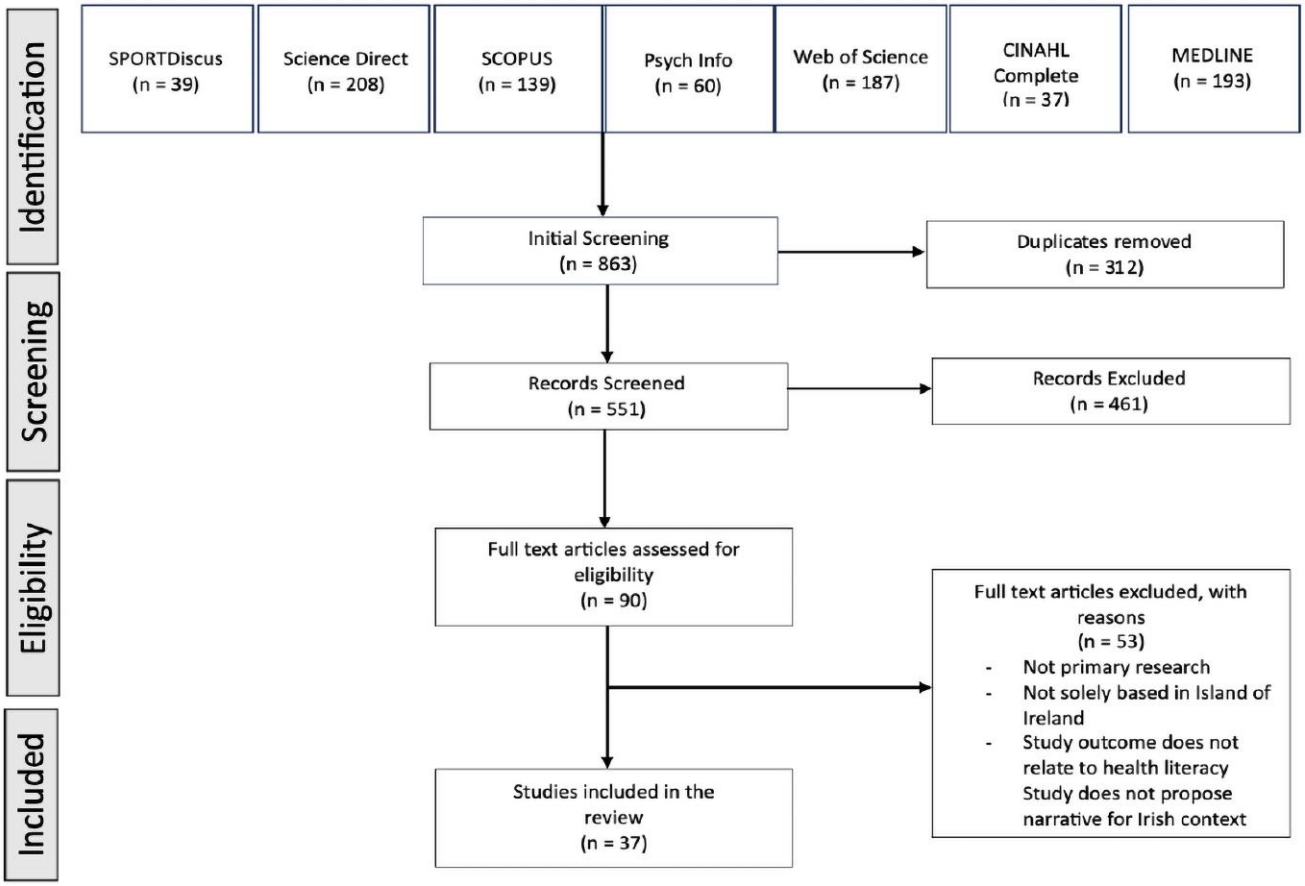

Figure 1. PRISMA flowchart for literature review process.

Table 1. Search criteria.

Inclusion criteria	Criterion	Exclusion criteria
Studies will be included if they report on a HL-related area Includes individual characteristics such as the ability to find, understand, appraise, remember, and apply information to promote and maintain good health and wellbeing. But also a systems approach to HL such as practice, policy, planning and regulations. Case studies Protocol papers Primary studies Systematic Reviews Meta-analysis Review articles	Study focus	Article does not include a focus on HL, health behaviours, health promotion Systematic reviews that do not include primary research studies based on island of Ireland
Any original HL related research or editorials published for the island of Ireland (articles, report, government documents, book)	Type of article	Duplicate publication Full text articles were not available Editorials Book chapters Dissertations Conference abstracts
Published articles based in the island of Ireland	Geographical area of interest	Published outside of the island of Ireland
Published since 01/01/2013, up until the 31/12/2023	Time period	Published before 01/01/2013
All participant groups are included	Participant group	Nil
Any	Setting (e.g. hospital, school, community)	Nil
Published in English	Language	Published in non-English

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Table 2. Study characteristics for 37 included studies.

Reference	Aims & objectives	Population (% sex, additional demographic info, setting)	Health literacy measurement/ evaluation (Tools and techniques)	Quality appraisal
Best *et al.* (2016)	Conceptualize the process of online help-seeking among adolescent males.	*N* = 56; 100% Male **Adolescent Education Population** **SES:** School sampled as lower deprivation area **Location:** Belfast	**Qualitative;** Focus Group interviews	Low
Browne *et al.* (2017)	Establish the current setting of their health care provision, their preferred setting, reasons why and their source of health education regarding their chronic illness.	*N* = 24; 58% Female **Chronic Illness Population** (Adult) **SES:** not reported **Location:** West of Ireland	**Qualitative;** Individual Interview responses generating three phases of open coding	Low
Byrne *et al.* (2015)	Assess the MHL of Irish adolescents, specifically in relation to their knowledge of depression. This study also explored the help-giving responses of adolescents towards their depressed peers. Sex differences in MHL and help-giving responses were investigated.	*N* = 187; 51% Female **Adolescent Education Population** **SES:** Level of Education: *using parental education achievement* **Location:** Wicklow and Carlow	**Quantitative/Qualitative;** Adapted version of the Burns and Rapee (2006) vignettes—5 vignettes. (Two characters, Tony and Emily, displayed five of the nine DSM-IV (American Psychiatric Association, 1994) symptoms of depression). Questions from Friend in Need Questionnaire developed by Burns and Rapee (2006).	Moderate
Chambers *et al.* (2015)	Explore MHL through the use of vignettes and to begin to articulate a broader definition. The research was undertaken, in part, to guide the provision of content for an online youth mental health resource (www.reachout.com) operated by the Inspire Ireland Foundation.	*N* = *42*; Sex not reported **Adolescent and Young Adult Population** **SES:** Education/employment circumstances, Area of residence *(Result/measurements not reported in study)* **Location:** Limerick and Cork	**Qualitative;** Exploration of MHL in response to fictional vignettes	Low
Clarke *et al.* (2021a)	Investigate for the first time in a population-based sample of HNC survivors (i) the socio- demographic and clinical profile of HL and (ii) associations between HL and HRQL, self-management behaviours and FoR.	*N* = 395; 31% Female **Adults HNC survivor Population** **SES:** Level of Education: *educational achievement* Employment status Medical Card status Residential Area Living Arrangement Further Demographic: *Relationship status* **Location:** Not reported	**Quantitative;** HL was measured using the single-item Brief Health Literacy Screen (Chew *et al.* 2008)	Low
Clarke *et al.* (2021b)	Investigate (i) colorectal cancer knowledge and HL, (ii) cancer beliefs and emotional attitudes to cancer and FIT-based screening and (iii) social influences. The secondary aim was to determine if these associations differed between consistent versus inconsistent screening participants.	*N* = 2299; *N* = 1988 Users; 48% Female **Clinical Adult Population** **SES:** Living Arrangement Deprivation indication Area of residence, highest level of education, employment status, medical card status *(result/measurements not reported in this study)* **Location:** Tallaght, Dublin	**Quantitative;** HL (TDF domain: Knowledge) was measured using a validated single item subjective measure ('how confident are you filling out medical forms by yourself?')	Low
Coughlan *et al.* (2013)	Answer the research question about which strategy should be chosen the principal approach—that is, should Irish health policymakers view HL as predominately a public health or a health inequalities issue?	*N* = 12 513; 55% Female Age range: 18+ years **Adult Community Population** **SES:** Education: *educational achievement* Employment status General medical services status Private Health Insurance Residential Area (district electoral division) **Location:** Not stated (National)	**Quantitative;** Survey Question relating to motivation for health literate healthcare system	Low

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Table 2. Continued

Reference	Aims & objectives	Population (% sex, additional demographic info, setting)	Health literacy measurement/ evaluation (Tools and techniques)	Quality appraisal
Doyle *et al.* (2013)	Describe an education intervention for medical students and PILs and report medical student analysis of PILs on smoking	*N* = 337; 50% Female **Adult Educational/Clinical Population** **SES:** not reported Nationality **Location:** Psychology Department in Royal College of Surgeons Ireland, Dublin	**Quantitative;** PIL 1: Irish Health Foundation 'Stopping smoking for a happy and health heart'. PIL 2: Irish Cancer Society 'Smoking: Get help, get unhooked'	Moderate
Drummond *et al.* (2019)	Investigate (i) men's cancer information seeking behaviours, (ii) the effect of HL on men's cancer information seeking behaviour, and (iii) men's preferences for cancer information by their level of HL.	*N* = 259; 100% Male **Adult Clinical Population** **SES:** Education: *educational achievement* Medical Card status Private Medical Insurance: Employment status Nationality **Location:** Not stated (Ireland)	**Quantitative;** 1. A single item, the Brief Screening Questionnaire 'How confident are you filling out medical forms by yourself,' scored on a 5-point Likert scale. (Chew *et al.* 2004). 2. Subjective HL validated using REALM and short test of functional HL in adults	Low
Duffy *et al.* (2021)	Examine how coaches' MHL and role perceptions would relate to their engagement in these helping behaviours with young people in the sporting environment. The study sought to examine different components of MHL relevant specifically to depression, namely, recognition of the signs and symptoms of depression and knowledge of treatment options.	*N* = 296; 14% Female **Adult Community Population** **SES:** not reported **Location:** Not formally reported (noted 32 counties in Ireland)	**Quantitative;** 22-item measure examining participants' MHL for depression including depression literacy questionnaire (Griffiths *et al.* 2004)	Low
Duggan *et al.* (2014)	Determine the prevalence of limited HL, and the relation between HL and beliefs about medicines, in an obstetric population.	*N* = 404; 100% Female **Obstetric Adult Population** **SES:** Education: *educational achievement* **Location:** Cork	**Quantitative;** REALM; Other Measurement: BMQ	Low
Gibney and Doyle (2017)	Investigate the relationship between self-rated HL and self-reported exercise frequency among people aged 50+ in Ireland.	*N* = 389; 52.2% Female **Adult Community Population** **SES:** Education: *educational achievement* Financial Deprivation Social Status Marriage status Living Arrangement **Location:** Not reported (Ireland survey)	**Quantitative;** HLS-EU (Ireland)	Low
Gibney *et al.* (2020)	Estimate and compare the associations between health status, health behaviours, and healthcare utilization within different levels of social status in the Irish population	*N* = 1005; 57% Female **Adolescent and Adult Community Population** **SES:** Education: *educational achievement* Self-perceived Social Status Self-Perceived Health Longstanding Health Condition in last 6 months Smoking Status Hospital Visits in last 12 months **Location:** Not reported.	**Quantitative;** HLS-EU (Ireland)	Moderate
Gilhooley *et al.* (2019)	Travellers' experience of skin disease and their relationships with healthcare providers.	*N* = 30; 100% Female **Adult Community Population** **SES:** Literacy Level Further Education Qualification	**Qualitative;** Focus Group interviews	Low

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Table 2. Continued

Reference	Aims & objectives	Population (% sex, additional demographic info, setting)	Health literacy measurement/ evaluation (Tools and techniques)	Quality appraisal
		Community Health Worker Living Arrangement **Location:** County Leitrim, County Mayo and County Galway		
Goss *et al.* (2021)	Improve the HL and subsequent health outcomes of adolescents in Ireland.	$N = 962$; 42.5% Female **Adolescent Education Population** **SES:** DEIS School recruitment **Location:** Leinster	**Quantitative/Qualitative;** Designed questionnaire for adolescents and Focus Group interviews	Low
Goss *et al.* (2022)	Explore the health needs, practices and ideas of students and staff in low socioeconomic schools in Ireland through initial co-design workshops to develop a future HL intervention.	$N = 26$ teaching staff; $N = 33$ students; Sex not reported **Adolescent and Adult Education Population** **SES:** DEIS School recruitment **Location:** not reported (part of larger study—Leinster)	**Qualitative;** Focus group interviews	Low
Jackson *et al.* (2020)	Investigate associations between HL and cystic fibrosis (CF) outcomes and compare HL in a sample from both the Irish CF and general populations	$N = 251$; 42.2% Female **Adolescent and Adult Clinical Population** **SES:** Education: *educational achievement* Health measures descriptors: *Not reported* **Location:** Not reported	**Quantitative;** HLS-EU-Q16	Low
Mackey *et al.* (2019a)	Establish if HL is linked to poorer outcomes and behaviours in patients with chronic pain	$N = 131$; 68% Female **Adult Clinical Population** **SES:** Education, employment, private healthcare (Social Class) **Location:** Dublin	**Quantitative;** NVS	Low
Mackey *et al.* (2019b)	Investigate associations between healthcare utilization and varying levels of HL in individuals with and without chronic pain.	$N = 262$; 59% Female **Adult Clinical Population** **SES:** Education: *educational achievement* Employment Status Household Income Social Class Health Insurance Health Service Utilization **Location:** Dublin	**Quantitative;** NVS	Low
Mathew and Kabir (2022)	Aim: Estimate the prevalence of OHL among the third level university students in Cork City and identifies determinants of OHL by exploring potential correlates. Objectives: 1. To estimate the prevalence of OHL among third level university students in Cork City. 2. To identify potential correlates of OHL, including self-rated oral health status.	$N = 1487$; 73% Female **Adult Education Population** **SES:** Financial security (not reported) **Location:** Cork City	**Quantitative;** Oral HL assessment (Chew *et al.* 2008)	Low
McGuirk and Frazer (2021)	Aims: Explore the area of MHL in post-secondary students while considering student MWB, and the post-secondary campus climate. Mediating variables, which may be significant predictors of student's MWB	$N = 100$; 55% Female **Adult Educational Population** **SES:** Education: *educational achievement* Mental Wellbeing (MWB) **Location:** Dublin	**Quantitative;** Mental Health Literacy Scale (O'Connor and Casey, 2015)	Low

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Table 2. Continued

Reference	Aims & objectives	Population (% sex, additional demographic info, setting)	Health literacy measurement/ evaluation (Tools and techniques)	Quality appraisal
	will also be explored as part of the research. Objectives 1. To examine various potential predictors of MWB with regard to post-secondary students. 2. To understand the impact, if any, that the post-secondary campus climate has on the MWB post-secondary education students.			
McHugh *et al.* (2022)	Medicine maker aims to build on need for public engagement by detailing insights into the design of implementation of engagement activities. To reflect core aspects of health literacy (public engagement gap on how medicines are made, drug safety and quality control, access to information and pharmacovigilance) while also being open to ancillary areas of HL brought forward by audience interaction.	Sample size not reported **Education Population** Workshop Initial 5 (Pilot) • Secondary School • Youth Group • Active retirement group • Teacher group Workshop Main Phase (post Pilot) *N* = 91 5 schools **Location:** not reported	**Qualitative/Quantitative**	High
McKenna *et al.* (2023)	Raising awareness of HL with recipients of adult literacy classes, introducing them to PPI and the HL Committee, exploring their experience in using health services, prioritizing issues to include in the HL action plan, and identifying opportunities for further PPI contributions.	*N* = 6; 83% Female **Adult Clinical Population** **SES:** Not reported **Location:** Not reported	**Qualitative**	Moderate
McKenna *et al.* (2017)	Describe individuals' experiences of accessing, understanding, appraising and applying health information; explore the barriers and facilitators to using these skills; and to describe the experience of information exchange in health consultations.	*N* = 26; 62% Female **Adult Community/Clinical Population** **SES:** Education: *educational achievement* Social class Health Service Access **Location:** Not reported	**Qualitative;** HLS-EU-47 and interview	Low
McKenna *et al.* (2018)	Explore developments in the use of HL skills for individuals in the context of managing risk factors for CVD.	*N* = 19; 58% Female **Adult Community/Clinical Population** **SES:** Education: *educational achievement* Social Class Health Service Access Length of Time with risk factors/ illness **Location:** West of Ireland	**Qualitative;** HLS-EU-47 and interview	Moderate
McManus *et al.* (2018)	Investigate the impact of a Universal Medication Schedule (UMS) on participants' ability to understand and consolidate a medication regimen compared to usual care.	*N* = 76; 36.8% Female **Adult Clinical Population** **SES:** Education: *educational achievement* Medical Indicator **Location:** Dun Laoghaire, Dublin	**Quantitative;** NVS	Moderate

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Table 2. Continued

Reference	Aims & objectives	Population (% sex, additional demographic info, setting)	Health literacy measurement/ evaluation (Tools and techniques)	Quality appraisal
Ní Chorcora and Swords (2022)	Explore Irish primary school teachers' MHL and help-giving responses with regard to hypothetical children presented with clinical and non-clinical levels of mental health difficulties.	*N* = 356; 83.1% Female **Adult Educational Population** **SES:** not reported **Location:** not reported	**Quantitative;** Exploration of MHL in response to fictional vignettes	Low
O'Keeffe *et al.* (2016)	The relationship between MHL regarding schizophrenia and psychiatric stigma in the Republic of Ireland	*N* = 1001; 51.0% Female **Adolescent and Adult Community Population** **SES:** Education: *educational achievement* Employment status Socioeconomic status Relationship status **Location:** • 30.3% Dublin (Urban) • 25.3% Leinster (excluding Dublin) (Rural) • 25.4% Munster (Rural) • 19.1% Connacht/Ulster (Rural)	**Quantitative;** Survey using vignette	High
O'Keeffe *et al.* (2023)	The Design and Implementation of a Novel Mental Health Literacy Educational Intervention Program in Gaelic Footballers	*N* = 145; (70 intervention; 74 control); 62.1% Female **Adult Community Population** **SES:** Education: *educational achievement* Current playing level History of injury **Location:** All Ireland	**Quantitative;** Mental Health Literacy Scale	Low
O Riordan *et al.* (2021)	Examine older dialysis patients' understanding of haemodialysis, their engagement in end-of-life care planning and their satisfaction with life on haemodialysis.	*N* = 15; 46% Female **Adult Clinical Population** **SES:** not reported **Location:** not reported	**Qualitative;** Individual Interviews	Low
Quinn *et al.* (2019)	Investigate radiation therapists' knowledge and awareness of HL and perceptions of their role in supporting patients with low HL.	*N* = 16; 100% Female **Adult Clinical Population** **SES:** not reported **Location:** not reported (three Oncology departments in Republic of Ireland)	**Qualitative;** Individual Interviews with Radiotherapists (Interview questions to assess how radiotherapists assess HL of patients)	Low
Rutherford *et al.* (2018)	Examine the accuracy of risk perception of women attending a breast cancer family history clinic, and to explore the relationship between risk perception accuracy and HL.	*N* = 86; 100% Female (Age not reported) **Adult Clinical Population** **SES:** Not reported **Location:** Cork	**Quantitative;** NVS	Low
Smeaton (2023)	Show how the interplay between HL and data literacy can be used and taught together.	*N* = 169 > 350; Age range not reported; **Education Population** **Location:** Not reported (HEI Setting)	**Quantitative;** Access to FLOURISH online resources	High
Smith *et al.* (2022)	Investigate adolescent's perceptions of the specific LifeLab learning activities which emerged from Phase 1 (previous study) in order to guide refinements and inform the final intervention structure prior to a pilot trial and thereby improve the potential efficacy of this intervention.	*N* = 22; Sex not reported **Adolescent Education Population** **SES:** DEIS School recruitment **Location:** Dublin	**Qualitative;** Co-design workshops	Low

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Table 2. Continued

Reference	Aims & objectives	Population (% sex, additional demographic info, setting)	Health literacy measurement/ evaluation (Tools and techniques)	Quality appraisal
Sullivan *et al.* (2022)	Explore the impact of these learning experiences on medical students' development of paediatric communication skills and their preparedness for clinical placement as well as the impact of the workshops on the children's HL.	Sex not reported; Primary school children aged 7–9 years old (Age not reported); **Adult Clinical Population (Children Clinical Population)** **SES:** DEIS School recruitment **Location:** Not reported	**Quantitative/Qualitative** HLS-SU HL Survey (Children); questionnaire about their perceived ability/knowledge in certain areas of paediatrics; Focus Group interviews (Medical Students)	Low
Sutton *et al.* (2018)	Assess the feasibility of a psychosis information intervention for healthcare professionals and non-health care community workers in contact with young people in Ireland. The intervention was designed to: 1. Improve knowledge of the signs and symptoms of psychosis, 2. Increase awareness of services available for psychosis, 3. Enhance confidence in providing help to people displaying psychosis signs and symptoms	$N = 755$; 73.9% Female **Adolescent and Adult Clinical/ Community population** **SES:** Employment (Profession) **Location:** Not reported	**Quantitative;** PICQ	Low
Toibin *et al.* (2017)	Establish a baseline level of HL and participation in patients attending primary care physiotherapy and compare the impact of implementing Ask Me 3 on patients level of HL and participation	$N = 5$ physiotherapists; $N = 29$ physiotherapy patients; Age not reported; Sex not reported **Adult Clinical Population** **SES:** not reported **Location:** not reported	**Quantitative/Qualitative;** NVS and bespoke questionnaire with 10 questions.	Moderate

BMQ, Belief About Medicines Questionnaire; CF, cystic fibrosis; CVD, cardiovascular disease; DEIS, *Delivering Equality of Opportunity in Schools*; DSM-IV/ DSM-V, Diagnostic and Statistical Manual of Mental Disorders; FIT, Faecal Immunochemical Test; FoR, Fear of Response; HEI, higher education institution; HL, health literacy; HLS-EU, European Health Literacy Survey; HNC, head and neck cancers'; HRQL, health-related quality of life; MHL, mental health literacy; MWB, mental wellbeing; NVS, Newest Vital Sign; OHL, oral health literacy; PICQ, psychosis information and confidence questionnaire; PIL, patient information leaflet; PPI, Patient Public Involvement; REALM, Rapid Estimate of Adult Literacy in Medicine; SES, Socio Economic Status; TDF, theoretical domains framework; UMS, Universal Medication Schedule.

Subsequently, HL can be viewed as both the process and the outcome of people's interactions with the culture and society in which they live (Keleher and Hagger 2007).

Population recruitment and sociodemographic information

Recruitment across the island demonstrated a range of population demographic indicators and study focus interests. Where studies reported location (as appropriate to the methodology), the majority listed cities within the island with other geographical areas included: Dublin (Doyle *et al.* 2013, McManus *et al.* 2018, Mackey *et al.* 2019a, 2019b, Clarke *et al.* 2021b, McGuirk and Frazer 2021, Smith *et al.* 2022); Cork (Duggan *et al.* 2014, Chambers *et al.* 2015, Rutherford *et al.* 2018, Mathew and Kabir 2022); and Belfast (Best *et al.* 2016). Three studies (Browne *et al.* 2017, McKenna *et al.* 2018, Gilhooley *et al.* 2019) were based in the West of Ireland, spanning across counties. Where studies have not reported age explicitly (16.2% of the included studies), narrative information can be inferred to relate to adult or older age groups (Toibin *et al.* 2017, Rutherford *et al.* 2018, Quinn *et al.* 2019, Ní Chorcora and Swords 2022, McKenna *et al.* 2023, Smeaton 2023) and adolescent age groups, which formed 10.8% of the findings (Best *et al.* 2016, Goss *et al.* 2021, 2022, Smith *et al.* 2022). Adolescent and adult samples were incorporated in 13.5% of studies (Byrne *et al.* 2015, Chambers *et al.* 2015, O'Keeffe *et al.* 2016, Gibney *et al.* 2020, Jackson *et al.* 2020). No study observed children (<13 years old) in their HL reporting. Within adult focused research, participants attending adult literacy classes (McKenna *et al.* 2023); workforce population samples (Sutton *et al.* 2018, Quinn *et al.* 2019, Duffy *et al.* 2021, Ní Chorcora and Swords 2022); and third level students attending a higher education institution (McGuirk and Frazer 2021, Mathew and Kabir 2022, Smeaton 2023) were observed.

Methods of reporting sociodemographic and/or socioeconomic characteristics varied. Education was often reported in studies (54.0%) as a proxy measure. However, this was reported in various ways: highest education level achieved by the participant involved in the investigation (Coughlan *et al.* 2013, Duggan *et al.* 2014, O'Keeffe *et al.* 2016, Gibney and Doyle 2017, McKenna *et al.* 2017, 2018, McManus *et al.* 2018, Drummond *et al.* 2019, Mackey *et al.* 2019a, Gibney *et al.* 2020, Clarke *et al.* 2021a, O'Keeffe *et al.* 2023) and parents' highest level of education achieved (Byrne *et al.* 2015). In research including school aged participants, studies were observed to include school deprivation level. Four studies (Goss *et al.* 2021, 2022, Smith *et al.* 2022, Sullivan *et al.* 2022); involved schools within the Irish Department of Education's 'Delivering Equality of Opportunities in Schools' action plan. Level of deprivation indicators were included in demographic information for adults (Gibney and Doyle 2017, Clarke *et al.* 2021b), with social class

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(McKenna et al. 2017, 2018, Mackey et al. 2019a, 2019b) and social status (Gibney and Doyle 2017, Gibney et al. 2020) also observed.

Studies reporting on clinical participants generally included a measure of healthcare or health service access within Ireland, such as medical card status and/or private health insurance as an indicator of socioeconomic status (Coughlan et al. 2013, McKenna et al. 2018, Drummond et al. 2019, Mackey et al. 2019a, 2019b, Clarke et al. 2021a). Studies also included a measure of residential information such as participants living arrangements (Gibney and Doyle 2017, Gilhooley et al. 2019, Clarke et al. 2021a, 2021b), as well as residential area breakdown for rural/urban population sample (Coughlan et al. 2013, Clarke et al. 2021a). Employment was reported by 13.5% of studies involving participants. Employment data included: current employment level (employed/unemployed); retired or not working (Coughlan et al. 2013, Mackey et al. 2019b, Clarke et al. 2021a); employment profession (O'Keeffe et al. 2016, Sutton et al. 2018); and studies which also captured data on participants' general income (Mackey et al. 2019a, 2019b).

Sampling, study design, and timeframe

Specific purposive sampling was used for 21.6% of the included studies within this review. Critical case sampling (selecting a small number of important cases) was employed for research studies focusing on Ireland's only indigenous ethnic minority group, recognized as the travelling community (Gilhooley et al. 2019). Where specific recruitment information was noted, but not specific sampling methods, targeted recruitment was utilized for 43.2% of studies. Purposeful targeted recruitment was used for the majority of studies (64.9%) included in this review.

Research undertaken in HL over the last ten years in Ireland reported a range of research designs. Qualitative methods (29.7%) and quantitative methods (56.8%) were applied with further studies (13.5%) utilizing mixed methods reporting (Byrne et al. 2015, Toibin et al. 2017, Goss et al. 2021, McHugh et al. 2022, Sullivan et al. 2022). A majority of studies reported using a cross sectional design in their methodology (45.9%). Two studies (on separate phases of a longitudinal study consisting of a 12 month period) provided time point reporting on HL at baseline and the development of HL capacities of individuals attending a structured cardiovascular risk reduction programme (12 weeks) in Ireland (McKenna et al. 2017, 2018). Similarly, there were other examples of connected research outputs on HL (Goss et al. 2021, 2022, Smith et al. 2022). One study (Jackson et al. 2020) presented information on HL from a larger project in a clinical population in Ireland, with a further study similarly using survey results from a larger project (Coughlan et al. 2013). Two studies (Gibney and Doyle 2017, Gibney et al. 2020) utilized larger study methodologies, in this case the HLS-SU, to report on HL survey results in Ireland.

The publication of HL intervention studies (13.5%) was evident over the last 10 years. Regardless of the specific research aims of these intervention studies, all study populations, with the expectation of one community based Gaelic football player intervention (O'Keeffe et al. 2023), were focused on clinical HL samples. Where specific research study design approaches were not reported, and where study methods were not part of a larger project, different descriptive approaches were reported in 18.9% of studies. Three research papers detailed narrative and descriptive processes for HL educational outcomes for third level education or Higher Education Institution students (Doyle et al. 2013, McHugh et al. 2022, Smeaton 2023).

The use of vignettes within qualitative research over the last ten years was also evident, with 13.5% of studies reported use or development of vignettes in their methods. These were mostly linked to development of HL outcomes in youth (Byrne et al. 2015, Chambers et al. 2015, Goss et al. 2021, 2022, Ní Chorcora and Swords 2022), with three of these studies focusing specifically on mental health literacy or MHL (Byrne et al. 2015, Chambers et al. 2015, Ní Chorcora and Swords 2022). Vignettes were used for a co-design process in two studies (Goss et al. 2022, Smith et al. 2022), with co-creation similarly used (McKenna et al. 2023) for a qualitative participatory community-based research study design to support a hospital based HL plan.

Where studies reported the timeframes of data collection (21.6% of all studies included in this review), timeframes spanned from <1 month (Duggan et al. 2014): <2 months (Browne et al. 2017); <6 months (Rutherford et al. 2018, Goss et al. 2022, Mathew and Kabir 2022, Smith et al. 2022); and 13 months (Jackson et al. 2020). One intervention research study (Sutton et al. 2018) detailed delivery of the intervention for 82 occasions over an 8 year period. Traction in the field of HL in Ireland has grown steadily in the last decade, with 15 studies published in the initial years (pre-2019), and 22 studies published in the last 5 year period, with 15 of these since 2020.

Research specific domains including clinical, education, community and mental health

There were 19 clinical population studies published in Ireland within the last 10 years. Topics of focus included: obstetrics (Duggan et al. 2014); chronic illness (Browne et al. 2017); chronic pain: (Mackey et al. 2019a, 2019b); cystic fibrosis (Jackson et al. 2020); cancer (Rutherford et al. 2018, Clarke et al. 2021a , 2021b); and populations and patients on dialysis (O Riordan et al. 2021). Also considered within this theme were studies that focused on clinical practitioners' development of skills for improving HL during their medical training (Doyle et al. 2013, Sullivan et al. 2022).

The educational system is also a dominant space for HL research on the island of Ireland in the last decade. This review highlighted research in schools (Best et al. 2016, Goss et al. 2021, 2022, McGuirk and Frazer 2021, Smith et al. 2022), studies that included teachers (Ní Chorcora and Swords 2022), and research exploring oral health literacy (OHL) in third level students (Mathew and Kabir 2022). Community settings/groups were also viewed as a key domain for HL research in Ireland over the last decade. Notably, two studies focused on community sports coaches and HL (Duffy et al. 2021, O'Keeffe et al. 2023). Both studies reported on HL research in Gaelic games with study focus ranging from coaches (Duffy et al. 2021) to players (O'Keeffe et al. 2023). The experience of skin disease and relationships with healthcare providers in Traveller women in Ireland formed one study (Gilhooley et al. 2019). We also identified studies that had conducted secondary data analysis of national survey data. Two studies utilized the HLS-SU to report on HL for a sub-sample of 389 participants (Gibney and Doyle 2017) and 1005 participants (Gibney et al. 2020). One

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study reported on the relationship between MHL regarding schizophrenia and psychiatric stigma in the Republic of Ireland (O'Keeffe *et al.* 2016).

Eight studies (Byrne *et al.* 2015, Chambers *et al.* 2015, Best *et al.* 2016, O'Keeffe *et al.* 2016, 2023, Duffy *et al.* 2021, McGuirk and Frazer 2021, Ní Chorcora and Swords 2022) reported on MHL specifically. This included MHL research in: youth (Byrne *et al.* 2015 , Chambers *et al.* 2015, Best *et al.* 2016); educational settings (McGuirk and Frazer 2021, Ní Chorcora and Swords 2022); and in sport settings (Duffy *et al.* 2021, O'Keeffe *et al.* 2023). One study focused on MHL assessment regarding a specific aspect of mental health for the general public (O'Keeffe *et al.* 2016).

Monitoring and evaluation of HL

Individual HL was the only reported measure for monitoring and evaluation of HL. Organizational HL was not included in any review studies. Evaluation of HL, when employing quantitative methods, reported the use of surveys (51.4%). Commonly adopted assessment tools included: Newest Vital Sign (Toibin *et al.* 2017, McManus *et al.* 2018, Rutherford *et al.* 2018, Mackey *et al.* 2019a, 2019b); HLS-SU (McKenna *et al.* 2017, 2018, Jackson *et al.* 2020); Rapid Estimate of Adult Literacy in Medicine or REALM (Duggan *et al.* 2014, Drummond *et al.* 2019); Mental Health Literacy Scale (McGuirk and Frazer 2021, O'Keeffe *et al.* 2023); and OHL (Mathew and Kabir 2022). Qualitative studies utilising interviews supported 13.5% of research outcomes in the last ten years. The use of qualitative methods varied in the evaluation of HL with semi structured individual interviews (Browne *et al.* 2017, Quinn *et al.* 2019, O Riordan *et al.* 2021); focus group interviews (Gilhooley *et al.* 2019, Goss *et al.* 2021, Smith *et al.* 2022); vignette responses (Chambers *et al.* 2015, O'Keeffe *et al.* 2016); and survey questions through a qualitative evaluation (Coughlan *et al.* 2013), all observed during this time. Research specifically on MHL also utilized mental health assessment measures including a self-report Psychosis Information and Confidence Questionnaire (PICQ) (Sutton *et al.* 2018) and a 22 item measure on depression literacy (Duffy *et al.* 2021).

Where HL was measured, five studies reported >50% outcome for limited or inadequate measure of HL in their findings (McKenna *et al.* 2017, 2018, Mackey *et al.* 2019a, 2019b, Mathew and Kabir 2022). These low levels of HL were also reflected in specific studies that focussed on clinical settings/populations (McKenna *et al.* 2017, 2018, Mackey *et al.* 2019a, 2019b). The relationship of sex and HL was included in findings for three studies (Mackey *et al.* 2019b, Jackson *et al.* 2020, McGuirk and Frazer 2021) with a significantly ($P < .001$) higher level of adequate HL being observed in female participants compared to male (Mackey *et al.* 2019b, McGuirk and Frazer 2021). A significant association between limited HL and finding medical booklets and leaflets difficult to understand, was a further outcome noted in relation to health knowledge and understanding (McManus *et al.* 2018).

Education, classified by highest level of completion, was reported as a significantly associated ($P < .001$) with HL by a proportion of studies (Duggan *et al.* 2014, Mackey *et al.* 2019a, 2019b, Clarke *et al.* 2021a). Within study comparisons regarding type of education was also measured (Mathew and Kabir 2022) finding non-medical students had higher inadequate OHL (7.4%) compared to medical students (4.9%: $P = .081$).

One study (Mackey *et al.* 2019b) reported HL levels according to participant employment status in Ireland. Subsequent findings indicated inadequate HL for those employed (41%); inadequate HL for unemployed persons (10%); inadequate HL for those unable to work (27%) and inadequate HL for retired individuals (23%). Household income was also a reported evaluation measure for HL, with inadequate HL reported for 65% of participants sampled who had monthly household incomes of <€1350 (Mackey *et al.* 2019b). Furthermore, medical card holders (54%) were observed in one study (Clarke *et al.* 2021a) to have higher levels of inadequate HL ($P < .001$) compared to non-medical card holders.

Health knowledge and understanding were specifically evaluated across studies included in this review. Limited participant understanding was found (O Riordan *et al.* 2021), along with participants' poor HL and participant suffering, to limit patient empowerment. Other psychological factors that impact the application of HL capabilities were also observed (McKenna *et al.* 2017). This included perceptions of control, such as being confident and proactive as opposed to not having control, and also dealing with family history in cardiovascular disease. Emotional reactions, including anxiety and coping, were also reported (McKenna *et al.* 2017).

Empowerment or ownership of knowledge and understanding was also found in relation to specific interventions undertaken to develop HL. Specifically, in one qualitative study, data contained positive statements from patients in the intervention group regarding trust and empowerment to participate in the effect of healthcare communication intervention (Toibin *et al.* 2017). HL improved significantly ($P < .01$), and most elements of participation increased slightly in both the groups (control and intervention) establishing the empowerment of the clinical population involved (Toibin *et al.* 2017). Further to this, healthcare providers' perceived effect of low HL (for individuals accessing healthcare), observed paternalistic attitude of patients (wanting the doctor to make treatment decisions); family interference and decreased patient autonomy; patient's ability to manage self-care and side-effects (Quinn *et al.* 2019).

Health information sourcing was also a component observed in HL research, with studies reporting on participants' identification of where their health knowledge is formed (O'Keeffe *et al.* 2016, Browne *et al.* 2017, McKenna *et al.* 2017, McManus *et al.* 2018, Gilhooley *et al.* 2019). Using HL capacities for self-management of health and illness was found to allow health information seeking through: keeping motivated; active and passive information seeking; appraising information and making sense of information (McKenna *et al.* 2017). Healthcare providers were also reported as health information sources and support (Browne *et al.* 2017, McKenna *et al.* 2017, Gilhooley *et al.* 2019). General practitioners (GPs) were cited as the main source of health information for patients (Browne *et al.* 2017). Consequently, GPs were also highlighted (59.8%) as a support for individuals to gain health support (O'Keeffe *et al.* 2016).

In youth, it was found that 65.8% of adolescents would cite a mental health professional as the support for individuals who require healthcare intervention when mental health issues were recognized in a peer (Byrne *et al.* 2015). However, findings regarding help and support from other support professionals indicated that 95.6% teachers believed they did not have adequate training to support children with mental difficulties (Ní Chorcora and Swords 2022). The relationship

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with healthcare providers, including the qualities of the provider (listening, good rapport, trust and feeling cared for), and the support for accessing and appraising information with the healthcare provider, was found to be important (McKenna *et al.* 2017). Trust and communication were also found to be key considerations for healthcare providers in research focus with traveller populations (Gilhooley *et al.* 2019). When relationships with healthcare providers deteriorated, as a result of bilateral poor HL in travellers (insufficient information received on management skin disease along with lower literacy levels), disillusionment with the medical profession ensued. This was compounded by literacy challenges and barriers (McManus *et al.* 2018, Gilhooley *et al.* 2019). For example, participants reported their literacy levels were not assessed or considered before information was provided, resulting in some participants receiving incomprehensible information (Gilhooley *et al.* 2019). Over half of participants in a further study of ward patients across eight hospitals, reported challenges in understanding medical booklets or leaflets as well as difficulty filling out medical forms (McManus *et al.* 2018). Indeed, 45.7% of participants in a national community based study expressed motivation for a health literate health care system (Coughlan *et al.* 2013).

Advocacy for HL

Looking for information and health support was identified in a number of studies in relation to HL, with some studies focusing on specific health topics. MHL was explicitly reported upon, 54.5% of participants reported seeking help if in same situation (O'Keeffe *et al.* 2016) with other participants suggesting specific online strategies including search strategies and pathways for help-seeking (informal and formal online help-seeking) (Best *et al.* 2016). In one study, men's cancer seeking behaviour was observed, reporting that 50.4% actively looked for cancer information and nearly all of those that did, reported it easy to find (Drummond *et al.* 2019).

Supporting HL of individuals for the future was a key theme throughout the literature suggesting action for HL service providers in Ireland. Student feedback on patient information leaflets cited the importance of tailoring information for HL, including readability, and the utility of psychological theory for healthcare professionals (Doyle *et al.* 2013). Limited HL awareness by healthcare professionals, as well as limited screening for HL in patients in healthcare environments has been reported in Ireland (Quinn *et al.* 2019). Research identified that experiential learning during clinical placements left students feeling more prepared for clinical practice (Sullivan *et al.* 2022). Indeed, participants felt learning in this way offered a good foundation and graded exposure, as well as changing perspectives and addressing fears for practitioners to build confidence, and develop a paediatric mindset.

The impact of others in supporting both one's own HL, and supporting the development of others, was evident over the last 10 years. Where studies reported on healthcare or educational professionals, the impact of others in supporting HL was evident. Gaelic games coaches working with youth were found to have increased MHL, which was significantly related to promotion in health via breadth of their role in supporting the young person (Duffy *et al.* 2021). Importantly, MHL in coaches was found to be directly associated with role efficacy and role breadth in early intervention for supporting young people's mental health. Irish Primary school teachers were able to correctly recognize a cluster of symptoms in a child as either anxiety or depression and distinguish between a child with an internalizing disorder and a child experiencing situational distress (Ní Chorcora and Swords 2022). Over half (54.5%) of teachers reported help giving responses for interaction with a child experiencing depression. However, it is noted that teachers' confidence in their ability to help was the strongest predictor of their likelihood to help ($P < .05$). For young people, the impact of others on HL can be seen where study outcomes report perceived mental health to be more important than physical health for overall wellbeing (Goss *et al.* 2021). Indeed, one study's responses were reflective of young people who are empathetic and view mental health from the perspective less as a marginal issue but a shared humanity (Chambers *et al.* 2015).

Intervention through HL education, with a focus on youth, was also evident in study findings within recent years (Goss *et al.* 2022, McHugh *et al.* 2022, Smith *et al.* 2022, Smeaton 2023). HL education has been promoted through different health topics such as food choice, mental health and wellbeing, physical activity and sedentary behaviour, sleep and substance misuse (Goss *et al.* 2022), influence of social media, real life learning and lifestyle behaviours (Smith *et al.* 2022) as well as behaviour change content (Smeaton 2023) in HL development research. The preferred delivery of HL interventions was also valued if it was 'hands on' (McHugh *et al.* 2022) and interactive (Smith *et al.* 2022) when supporting HL in a younger demographic. Different pedagogical approaches also including 'healthy competition', problem solving and variety and choice (Smith *et al.* 2022) were further reported as preferred engagement strategies for young people engaging in HL.

DISCUSSION

Notably, this review found a dominance of research on individual HL, specifically on adult populations, and within clinical settings which have shaped the HL landscape in Ireland. A lack of focus on organizational HL demonstrates a research gap in accounting for both the individual prerequisites and the demands and complexity of the system in which individuals operate (Lindert *et al.* 2023). This was also coupled with a larger regional focus on HL in more urban areas (32%), for example, cities such as Dublin and Cork, with minimal research in rural populations. Similar to Choudhry *et al.* (2019) in Australia, we found a large number of studies illustrating the importance of HL in medicine and public health. This trend in adult clinical population HL research mirrors global findings (Bröder *et al.* 2019, Domanska *et al.* 2020), and posits a need for a contextual understanding of HL in children and young people. Understood to be a lifelong process (Drummond *et al.* 2019), HL development, with good health behaviours fostered early in life, can track into adulthood. Promisingly, more recently there has been a growing increase in research focusing on HL in Irish youth found in this review (Byrne *et al.* 2015, Best *et al.* 2016, Goss *et al.* 2022, Smith *et al.* 2022). This presents a proactive and preventative approach to HL development, although future research is needed to explore the impact of specific interventions in this context.

Two thirds of studies in this review utilized short term, cross sectional and narrative research. Reliance on a narrow timeframe of research over the last decade limits the ability to assess causality or long-term impact of interventions.

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Healthcare is known to be continuously changing and the responsibility for its rising demands are placed on both individuals and professionals to comprehend and keep abreast with research in the health field (Choudhry *et al.* 2019). The dominance in short term research in Ireland means that fully contextualized insights cannot be founded to prioritize and support dedicated HL interventions. Coupled with the limited insight into organizational HL, key insight for healthcare policy and practice is also reduced. Similar to findings on the Irish health reform system 2018–23 (Schulmann *et al.* 2024), there is a failure to invest necessary resources in capacity which lie crucially in the implementation capacity aspect in Ireland. As the only western European country that does not offer universal coverage of primary care (Burke *et al.* 2018), a call for sustained and progressive development across the health system in Ireland is required with a priority towards targeted support for HL development across the life course.

Worryingly, low levels of HL in Ireland have been consistently reported throughout the last decade in Ireland. This mirrors European trends (Sørensen *et al.* 2015), highlighting the importance of targeting HL as a national imperative. Our review did find a variety of methods used to assess HL across the Island. As such, this does present some challenges in comparing HL levels across different studies, both nationally and internationally. Globally, however, no clear 'consensus' on HL measurement is noted (Altin *et al.* 2014), and differing assessments have been observed to vary in how they transform the concept of HL into a measurable construct, with some measures involving limited conceptual dimensions of HL (Fan *et al.* 2021). Identifying transparent, rigorous, and consistent HL could support future research and intervention approaches.

Contextual relevant HL levels have been reported in our review that have linked to various sociodemographic and socioeconomic descriptors. A relationship, therefore, with differing factors impacting on HL can be observed in Ireland. This is reflective of international research, that has positioned HL on a socioeconomic gradient (Mantwill *et al.* 2015, Stormacq *et al.* 2019). Social determinants or factors for health have included education, housing, employment, healthcare services, food security and living conditions (Whitehead and Dahlgren, 2006). However, the location of research over the last ten years in Ireland has been towards specific city and suburb areas and may not be reflective of a varying demographic profile on the Island. In a recent systematic review of HL (Aljassim and Ostini 2020), various sociodemographic factors were explored for urban and rural populations with an observation that living in a rural area is typically not the reason for HL disparities. Ireland is a mix of rural and urban communities and recognizably, therefore, disparities exist and require attention as gaps within the research indicate that current research is not fully capturing the long term, real world implications of HL interventions in Ireland. Targeting interventions for contextual sociodemographic factors can support valuable HL outcomes. Development of sustainable research outputs in these areas, and across these sectors, can help support a broader focus on HL policy and practice in youth and adult populations across different settings.

STRENGTHS AND LIMITATIONS

To the authors' knowledge, this detailed review is the first of its kind to focus on HL on the island of Ireland. Consequently, it contributes to the understanding of HL promotion in the region, and globally, through examining the background and context, early policy, research, programmes, and the challenges for implementation. Valuably, studies included had different characteristics, including a wide range of outcomes. However, this makes it difficult to make a clear and high-quality comparison and heterogeneity may influence the reliability of our results. Critically, this systematic review only included journal publications and lacked inclusion of grey literature potentially omitting valuable insights on policy interventions not captured in academic databases. As such, there may be programmes and initiatives in relation to HL which occur across Ireland that we have not included in this review.

Given the lack of child and adolescent-focused studies, effective HL education could be incorporated into national curricula for Ireland (e.g. as part of health education in secondary schools). This shift in focus onto early intervention can provide a potential for longitudinal research to be implemented, addressing the current dominance of cross-sectional studies in Ireland. Funding agencies can further support this focus by prioritizing longitudinal studies evaluating the long-term impact of HL interventions. Where primary-care and clinical facing HL is a focus, piloted primary-care-based interventions for HL could be implemented across both rural and urban areas, particularly in areas of socioeconomic disadvantage. Specifically, mirroring the rural-urban community structure on the island of Ireland can provide positive solutions to HL development across clinical, education and community domains.

CONCLUSION

Several themes were identified in the literature that contextualize HL in Ireland and link to global HL challenges, developments and priorities. Fittingly, key outcomes from this systematic review are offered to support health care policy and practice, with quality research needed in these areas to support meaningful and sustainable development of HL. Emphasis on interventions (Shao *et al.* 2023) and longitudinal research (Sayah *et al.* 2016) has been shown to create impactful change in targeting development of HL across the lifecourse, with important insights into the development of HL beginning in early life as contextual relevant (Clouston *et al.* 2017). Future research should reach further beyond the clinical domain and monitor and evaluate HL through methods that are rigorous, relevant and comparable to global standards. A move towards a sustained research informed approach, across the lifecourse will support targeted and meaningful HL development across the island of Ireland. In consideration of the increasing focus of HL research and development since the publication of HLS-EU, with traction specifically seen in this review since 2021, it would seem that the stage is set for future research to target these gaps to have meaningful change in health and wellbeing.

Author contributions

M.M.: Writing—original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation. S.B.: Writing—review & editing, Supervision, Funding acquisition. C.S.: Writing—review & editing. H.G.: Writing—

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review & editing, Supervision, Project administration, Funding acquisition, Formal analysis, conceptualization.

Supplementary data

Supplementary data is available at *Health Promotion International* online.

Conflict of interest

The authors declare that they have no known financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Data availability

Data sharing is not applicable to this review article as data is available within the article or its Supplementary material.

Ethical statement

An ethics statement is not applicable because this study is exclusively based on published literature.

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