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REVIEW ARTICLE

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Health literacy evaluation in Latin America and the Caribbean: a scoping review

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ABSTRACT

Background: Health literacy (HL) is crucial for individuals' interactions with health systems and their engagement with health-related information. It is influenced by cultural and linguistic diversity, socioeconomic factors, and the structure of health systems. Latin America and the Caribbean, marked by significant inequities, provide a unique context for investigating HL. Understanding the methods to evaluate HL can enhance the practices of health professionals, guide policymaking, and improve educational initiatives tailored to the specific needs of the region.

Aim: This study aimed to map the methodological approaches used to evaluate HL across populations in Latin America and the Caribbean.

Methods: This review followed the JBI Manual for Scoping Reviews. Databases such as MEDLINE, CINAHL, SCOPUS, Web of Science, EMBASE, SCIELO, LILACS, BDENF, IBECS, and Google Scholar were searched in July 2023. It included primary research that examined HL evaluation using both quantitative and qualitative approaches. The extracted data focused on study characteristics, research design procedures, and the areas and levels of HL assessed.

Results: We analyzed a total of 228 studies published between 2009 and 2022, with 70% published since 2019. A significant portion of the research was conducted in Brazil, Mexico, Chile, and Peru, utilizing a quantitative approach (91%), mainly via cross-sectional designs. The remaining studies employed qualitative (5%) or mixed-methods (4%) approaches. Research design procedures included the use of tools (68.2%), structured questionnaires (20.6%), and semi-structured questionnaires (including focus groups and individual interviews) (11.2%). Most studies targeted patients with chronic diseases in clinical settings, while migrants and Indigenous populations were comparatively understudied. The majority of studies addressed generic, oral, and nutritional HL, primarily using tools such as NVS, S-TOFHLA, and SAHLPA. Despite the variety of tools used, most focused on functional aspects of HL, with limited attention to its multidimensional and evolving nature.

Discussion: To bridge HL gaps, countries in the region must develop culturally and linguistically appropriate tools and focus on under-researched groups, including Indigenous peoples and migrants.

PLAIN LANGUAGE SUMMARY

Health literacy (HL) helps people understand and use health information to make good choices in health. In Latin America and the Caribbean, many people face challenges like poverty and limited access to healthcare. This review looked at 228 studies from 2009 to 2022 to see how HL has been evaluated in the region. Most studies focused on people with chronic illnesses and basic health skills. Few included underserved groups like Indigenous peoples or migrants. More research, better tools, and stronger efforts are needed to make health systems easier for everyone to understand and use.

ARTICLE HISTORY

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KEYWORDS

Health literacy; Latin America; Caribbean region; Cultural diversity

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Introduction

Health literacy is a potential social determinant of health and a key element in addressing health inequities (Nutbeam & Lloyd, 2021). It includes the knowledge and personal competencies developed through daily activities, social interactions, and generational learning. These competencies are influenced by organizational structures and the availability of resources, which collectively enable individuals to access, understand, evaluate, and utilize health information and services to support and sustain personal and community well-being (World Health Organization, 2021).

As a critical predictor of individual health outcomes, health literacy (HL) significantly influences how individuals interact with health systems and engage with health-related information (Cabellos-García et al., 2020). Its evaluation provides insights into patients' abilities to navigate health systems and make informed decisions (Dodson et al., 2015) and can play a crucial role in guiding healthcare professionals to develop strategies that empower individuals and communities to make health-promoting decisions (Batterham et al., 2016). It is essential for analyzing the circumstances of people's lives (Schillinger, 2020), and their ability to comprehend health information (Bitzer & Sørensen, 2018). Efforts to improve health outcomes necessitate a robust definition of HL as a complex process. This process enables individuals to develop competency and adopt healthy behaviors throughout their lifespan. However, simple measurement may not be sufficient for effectively promoting interventions in this process (Pleasant et al., 2016).

Over the past three decades numerous quantitative tools have been developed to assess HL, mainly in high-income regions such as Europe, North America, Australia, and China (Altin et al., 2014; Collins et al., 2012; Haun et al., 2014; Liu et al., 2018; Okan et al., 2018; Zhang et al., 2020). These tools traditionally concentrate on identifying deficits in literacy and numeracy skills within real-life health scenarios (Nguyen et al., 2017).

In Latin America and the Caribbean, studies evaluating HL across various populations have emerged, with recent research conducted in Brazil (Assunção et al., 2022; Borges et al., 2022; Costa et al., 2023; Scortegagna et al., 2021; Soares et al., 2021), Chile (Figueroa Saavedra et al., 2020; Glasinovic et al., 2022; Torrejón-Peces et al., 2021), Peru (Penaloza et al., 2019; Rosas-Chavez et al., 2019; Sánchez-Rueda et al., 2022), Mexico (Mávita-Corral, 2018; Mora-Molina et al., 2018; Sánchez-Arenas et al., 2021) and Barbados (Krishnamurthy et al., 2021; Quimby-Worrell, 2019), among others. A preliminary search identified 17 systematic review studies on existing tools for evaluating HL (Assunção et al., 2022; Guo et al., 2018; Haun et al., 2014; Hesselink et al., 2022; Jordan et al., 2011; Lee et al., 2017; 2021; Levic et al., 2021; Liu et al., 2018; Nguyen et al., 2017; O Neill et al., 2014; O'Connor et al., 2014; Oh et al., 2021; Parthasarathy et al., 2014; Tavousi et al., 2022; Urstad et al., 2022; Zhang et al., 2020). However, previous studies have not addressed the Latin American and Caribbean region. Moreover, while three scoping reviews have mapped the quantitative evaluation of HL through existing tools, they failed to include studies conducted specifically in this region (Bremer et al., 2021; Chen et al., 2022; Pantuzza et al., 2022). To date, mapping studies that utilize methodological approaches beyond quantitative ones to evaluate HL in Latin America and the Caribbean have not been identified. Such studies could provide a current synthesis of the progress in knowledge within the region.

The Caribbean region, although geographically diverse (Organization for Economic Co-operation and Development/Banco Mundial, 2023), exhibits a recurring pattern of migration between neighboring countries (McAuliffe & Triandafyllidou, 2021) and possesses historical, cultural, and socioeconomic characteristics that significantly differentiate it from developed countries (Viana et al., 2017). The processes of health, illness, care, and prevention among various immigrant groups may show similarities and divergences compared to the care models of health professionals (Martin et al., 2018). Latin America and the Caribbean, considered one of the most unequal regions in the world, are also characterized by the prevalence of communicable diseases, as well as chronic conditions and high mortality rates due to external causes (Organization for Economic Co-operation and Development/Banco Mundial, 2023; Faria et al., 2023). Given these multifaceted challenges, developing effective health strategies that address the complex realities of the Latin America and the Caribbean region is imperative (Organization for Economic Co-operation and Development/Banco Mundial, 2023). It is crucial to acknowledge that diversity in culture and HL can impede effective health communication,

as cultural aspects, including beliefs and values, influence the development of HL skills (Singleton & Krause, 2009).

Exploring the evaluation of HL in Latin America and the Caribbean offers a comprehensive overview of the current state of HL in the region, provides valuable insights from existing research, identifies gaps in clinical practice, and informs future investigations and the development of public policies.

Given this context, this study aimed to map the methodological approaches used to evaluate health literacy across populations in Latin America and the Caribbean.

Methods

This scoping review study adopted the JBI methodology (Peters et al., 2020), and employed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist tool (Tricco et al., 2018). The protocol was registered on the Open Science Framework platform (https://doi.org/10.17605/OSF.IO/AFBDT). Ethics approval was not required for the study design.

The authors confirm that the data supporting the findings of this study are openly available within the article and its supplemental materials on Figshare at https://doi.org/10.6084/m9.figshare.28187879

Review questions

This review sought to answer the following questions: "What qualitative, quantitative and mixed-methods approaches have been used to evaluate HL in Latin America and the Caribbean?" and "What are the characteristics of these methodological approaches, including the research design procedures, as well as the area and level of HL evaluated?"

Eligibility criteria

Eligibility criteria of our study have been developed according to the PCC (population, concept, and context) mnemonic for constructing research questions (Peters et al., 2020; Pollock et al., 2023) (Table 1).

This study focused on primary research examining HL evaluation using quantitative, qualitative, or mixed-methods approaches across various age groups, involving individuals residing in or assisted by countries within Latin America and the Caribbean. Expert opinions, experience reports, scoping and systematic reviews, theses and dissertations, as well as unpublished works, were excluded.

To define the countries within the geographic region of Latin America and the Caribbean, we utilized the reference from the United Nations Educational, Scientific and Cultural Organization (UNESCO), which encompasses 20 countries in Latin America (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela) and 16 in the Caribbean (Saint Vincent and the Grenadines, Guadeloupe, Martinique, the U.S. Virgin Islands, Puerto Rico, Aruba, Jamaica, Barbados, Trinidad and Tobago, the Bahamas, Guyana, Grenada, Curacao, Suriname, Belize, and French Guiana) (United Nations Educational, Scientific and Cultural Organization, 2001).

Table 1. PCC framework for the research questions and eligibility criteria.

PCC element	Description
P (population)	Population of any age group residing in Latin America and the Caribbean
C (concept)	Quantitative, qualitative or mixed-methods approaches for health literacy evaluation
C (context)	Any health context, such as hospitals, outpatient clinics, schools, and other care-related settings, not limited to these.

Search strategy

The following databases were used: EMBASE, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Scopus, Scientific Electronic Library Online (SciELO), Latin American and Caribbean Literature in Health Sciences (LILACS), Nursing Database (BDENF), IBECS, and the Regional Portal of the Virtual Health Library (VHL). Additional resources consulted were the Web of Science Core Collection (Clarivate Analytics), Education Resources Information Center (ERIC), and gray literature sources, such as Google Scholar, were also consulted.

A comprehensive search was conducted in MEDLINE and the Virtual Health Library (VHL) to refine the keywords, titles, and abstracts, thus expanding the search scope. The search strategy deployed in MEDLINE via the US National Library of Medicine Institute of Health (PUBMED) was adapted for use across databases to ensure a thorough and consistent approach, without imposing time frame or language limitations.

The search, conducted on July 13, 2023, was undertaken by two skilled reviewers and a librarian with expertise in evidence searches within health platforms, guaranteeing methodological rigor. Detailed search strategies are provided in Supplemental Material 1.

Study selection

The retrieved studies were processed using EndNote v. X9 (Clarivate Analytics, USA), with duplicates removed. Selection was performed using the Rayyan platform for systematic reviews to manage the process (Ouzzani et al., 2016). Two independent reviewers (ELL and LMM) screened eligible abstracts for full-text review. After the initial screening, two reviewers (ELL and LMM) worked independently to screen full-text items for inclusion. Any disagreements between the reviewers were resolved through discussion with a third member of the research team (VVB). No manual search for the reference lists of the articles included was conducted. The search and selection process, as well as the inclusion of studies are depicted in a PRISMA flowchart. Duplicates not identified by the reference and review managers were also identified during full-text review.

Data extraction

The JBI methodology (Peters et al., 2020) was used for data extraction (Supplemental Material 2). A Microsoft Excel spreadsheet was used to record the extracted information (Table 2).

Analysis and presentation of the results

The data synthesis process and analytical description were conducted by two researchers (ELL, VBB) through an interactive process, according to JBI recommendations (Pollock et al., 2023). The methods employed in the included studies were delineated following Creswell and Creswell (2018), which posits that researchers choose not only between qualitative, quantitative, or mixed-methods approaches but also select a specific research design from three available options to guide the study procedures (Figure 1).

To identify the levels of HL assessed in the included studies, we adopted the classification of Nutbeam (Nutbeam, 2000), which delineates three progressive stages based on the capabilities HL

Table 2. Information extracted from the included articles.

Extraction category	Description/elements included
General characteristics	Authors, title, country, journal, year of publication, language, study aim; methodological approach; target or age group; sample size, setting
Research design procedures	Research design procedures to evaluate health literacy (following Creswell's typology (Creswell & Creswell, 2018) - Quantitative, qualitative and mixed methods)
Area and level of health literacy	Area (generic or specific) and level of health literacy (following Nutbeam's classification (Nutbeam, 2000) - Basic or functional HL, communicative or interactive HL, and critical HL)

Figure 1. Framework of research approaches and design options based on Creswell's typology.

enables individuals to achieve: basic or functional HL, communicative or interactive HL, and critical HL. The areas of HL addressed by the data collection procedures were categorized into either generic or specific HL areas. These specific areas include mental HL, media literacy, oral literacy, and vaccine literacy, as well as HL pertaining to a particular population or disease. Regarding the settings in which data were collected, they were classified into three categories: clinical (places where health services are provided), non-clinical (public spaces, schools, and universities for collective coexistence), and mixed (instances encompassing both aforementioned categories). For a more detailed presentation of the extracted data, we utilized descriptive formats, including simple frequency counts, figures, and heat maps.

Results

Study inclusion

During the initial search, a total of 16,707 records were identified. After the removal of duplicates, 11,383 studies were screened based on their titles and abstracts. Subsequently, 622 full-text studies were retrieved for further screening, ultimately resulting in the inclusion of 228 studies. Additional duplicates, not detected by the reference and review management software during the screening process, were identified and excluded (Figure 2).

General characteristics of the included studies

A detailed summary of the general characteristics of the 228 studies is available in Supplemental Material 3. Among the 36 countries in Latin America and the Caribbean, we identified 20 countries that have evaluated HL using various methodological approaches. Most studies were conducted in Brazil (n = 163, 68.8%), Mexico (n = 15; 6.3%), Chile (n = 11; 4.6%), and Peru (n = 8; 3.4%), representing roughly 83% of the total (Figure 3).

Additionally, seven international multicenter studies were identified (Bray et al., 2021; Cajita et al., 2017; Dongarwar & Salihu, 2019; Ghisi et al., 2021; Hagger et al., 2018; Marzo et al., 2022; Rivadeneira, Salvador, et al., 2022). It is important to note that in calculating the number of studies per country, multicenter studies were counted more than once, leading to a total of 238 studies.

The temporal distribution of publications indicates that the initial records of HL evaluation in the region appeared in 2009 (Carthery-Goulart et al., 2009; Konfino et al., 2009; Vílchez-Román et al., 2009). More than 70% of the studies (n = 163; 71.4%) have been conducted since 2019, with the peak of publications occurring in 2021 and 2022 (n = 91; 39.9%).

Despite the majority of studies focusing on evaluating HL in adults (n = 153; 67.1%), other age groups were also identified, including adolescents (n = 28; 12.3%) and elderly individuals (n = 27; 11.8%). Children constituted the minority (Bray et al., 2021; Tavares, Neves, et al., 2023) (n = 2; 0.9%), while some studies targeted more than one age group (n = 18; 7.9%). Summary details regarding the settings, target groups, and diseases addressed in the original research studies included in this review are presented in Table 3.

Most of the included studies employed a quantitative approach (n = 207, 90.1%), primarily using cross-sectional designs; the minority were experimental (Doi-Kanno et al., 2021; Ghisi et al., 2021;

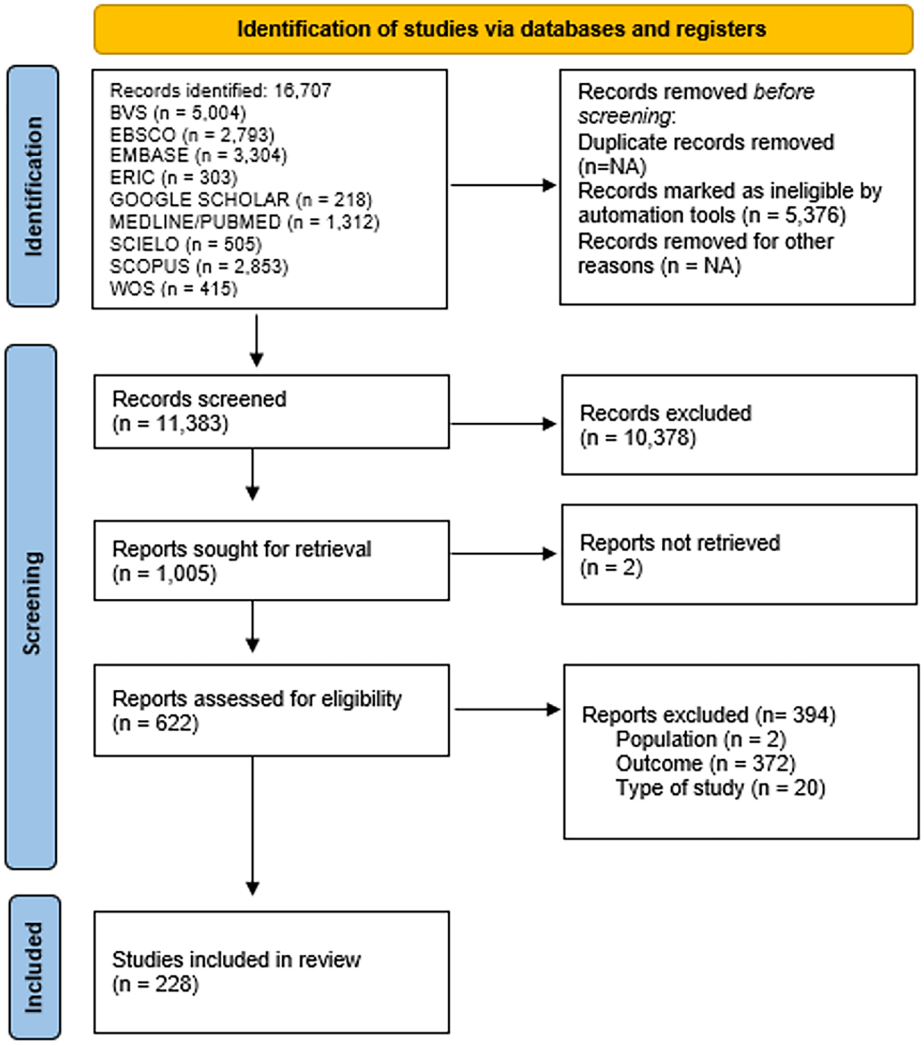

Figure 2. Flowchart of the selection process for the scoping review sample on health literacy evaluation in Latin America and the Caribbean (January 2009 to July 2023).

Junkes et al., 2015; Küchler et al., 2022; Lisboa et al., 2020; Lotto et al., 2020; Moura et al., 2019; Paes et al., 2022; Serbim et al., 2020; Serbim, Santos, et al., 2022; Stonbraker et al., 2020; Tavares, Farias, et al., 2023), and longitudinal studies (Flower et al., 2016; França et al., 2020; Hoffman et al., 2017; Karver et al., 2022; Martins et al., 2017; Pinhati et al., 2021) The remaining studies used a qualitative approach (n = 12, 5.2%) or a mixed-methods approach (n = 9, 3.9%) (Figure 4).

An overview by country of the research design procedures for evaluating HL, language, areas and levels of HL, is available in Supplemental Material 4. The research design procedures used in the included studies were primarily: Tools (n = 43; 68,2%); Structured Questionnaires (self-developed) (n = 13; 20.6%) and Semi-structured Questionnaires (focus groups; individual interviews), (n = 07; 11.2%). In total, 63 different tools, including structured and semi-structured questionnaires, were used to evaluate HL. Many of the identified research design procedures were used once or twice, with study-specific questions, but without clear explanation or reference to supporting validity evidence.

Among the tools identified, the most commonly used were Newest Vital Sign (NVS) (Hoffman et al., 2017; Rampersad & Mencia, 2019; Sampaio et al., 2014), Short Form of the Test of Functional Health Literacy in Adults (S-TOFHLA) (Almeida et al., 2019; Borges et al., 2022; Carthery-Goulart et al., 2009; Costa et al., 2023; Manola et al., 2020; Mora-Molina et al., 2018; Perez et al., 2021; Rivero-Méndez et al., 2010; Scortegagna et al., 2021; Sousa et al., 2019), Short Assessment of Health Literacy (SHALPA) (Nutbeam & Lloyd, 2021; Penaloza et al., 2019; Rosas-Chavez et al., 2019; Serbim et al., 2020; Tavares, Farias, et al., 2023), and Short Assessment of Health Literacy for Spanish-speaking

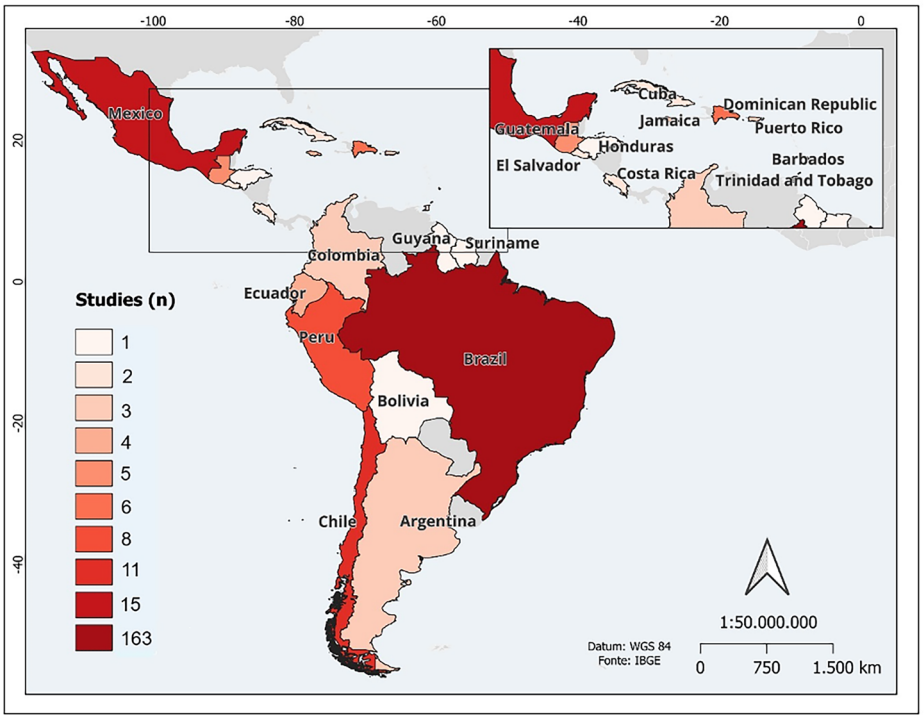

Figure 3. Heat map of Latin America and the Caribbean and the number of included studies.

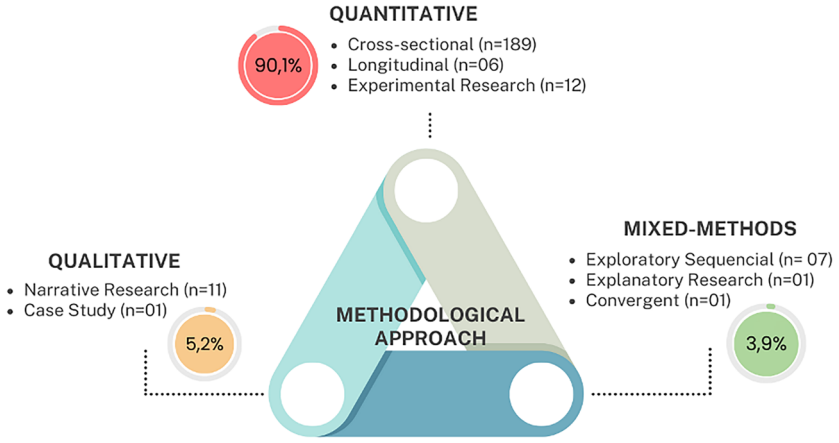

Figure 4. Representation of the identified methodological approaches and research designs for health literacy evaluation in Latin America and the Caribbean (January 2009 to July 2023).

Adults (SAHLSA-50) (Barasuol et al., 2017; Monsalves et al., 2016), respectively. These tools include shorter or revised versions that have been adapted and translated into Spanish and Brazilian Portuguese from an originally developed assessment instrument.

A total of 22 studies used multidimensional tools, such as the Health Literacy Scale (HLS) (Doi-Kanno et al., 2021; Inocêncio et al., 2022; Sánchez-Arenas et al., 2021; Silva-Junior et al., 2023; Tavares, Farias, et al., 2023) (various versions in Brazilian Portuguese and Spanish) and the Health Literacy Questionnaire to Brazilian Portuguese (HLQ-Br) (Jacinto et al., 2021; Moraes et al., 2021; Oliveira et al., 2022; Silva et al., 2020; Soares et al., 2021).

Some inconsistencies were observed in the use of the tools, particularly regarding changes in the scope of measurement, asynchronous administration, and variations in translation and adaptation across different countries. Among the structured and semi-structured questionnaires, it was noted that the researchers based their development on HL frameworks to address the study objectives. The semi-structured questionnaires examined various aspects of HL, primarily focusing on individuals'

Table 3. Settings, target groups, and diseases addressed in the studies included in this review.

Categories	Description
Clinical settings	Hospitals (Carthery-Goulart et al., 2009; Hagger et al., 2018; Inocêncio et al., 2022; Jacinto et al., 2021; Konfino et al., 2009; Martins et al., 2017; Oliveira et al., 2023; Penaloza et al., 2019; Perez et al., 2021; Vílchez-Román et al., 2009; Vilella et al., 2016), outpatient clinics (Cardoso et al., 2021; Ghisi et al., 2021; Leite et al., 2020; Mora-Molina et al., 2018; Perez et al., 2021; Queiroz et al., 2020; Quimby-Worrell, 2019; Rivero-Méndez et al., 2010, 2015; Sampaio et al., 2013; Stonbraker et al., 2018, 2020), primary healthcare units (Borges et al., 2022; França et al., 2020; Küchler et al., 2022; Mialhe et al., 2022; Paskulin et al., 2012; Pimentel et al., 2022; Santos et al., 2022; Simch et al., 2020; Tavares, Neves, et al., 2023)
Non-clinical settings	Parishes (Neves et al., 2019; Radax et al., 2018), shopping centers (Sampaio et al., 2013), schools, museums (Johnco et al., 2019)
Non-communicable diseases	Cardiovascular diseases (Martins et al., 2017; Rampersad & Mencia, 2019; Tavares, Neves, et al., 2023), rheumatoid arthritis (Contreras-Yáñez et al., 2021; Oliveira et al., 2021), systemic arterial hypertension (Cardoso et al., 2019; Eleutério et al., 2018; Figueroa Saavedra et al., 2020; Mantwill et al., 2015; Moura et al., 2019; Rivadeneira, Salvador, et al., 2022), diabetes (Eleutério et al., 2018; Hagger et al., 2018; Moura et al., 2019; Paes et al., 2022; Sánchez-Rueda et al., 2022; Serbim, Santos, et al., 2022), chronic kidney disease (Moraes et al., 2017; Oliveira et al., 2022; Rocha & Figueiredo, 2019; Silva et al., 2019), lupus (Flower et al., 2016), mental disorders (Abel et al., 2017; Calderon et al., 2015; Fresán et al., 2013; Johnco et al., 2019; Moreira et al., 2022; Stonbraker et al., 2017)
Communicable diseases	People living with HIV (Karver et al., 2022; Perez et al., 2021; Rivero-Méndez et al., 2010, 2015; Silva et al., 2022; Stonbraker et al., 2017; 2018), tuberculosis (Penaloza et al., 2019), and COVID-19 (Assunção et al., 2023; Bray et al., 2021; Ghisi et al., 2022; González-Moreno, 2020; Krishnamurthy et al., 2021; Marzo et al., 2022; Moreira et al., 2022; Pimentel et al., 2022; Rivadeneira, Miranda-Velasco, et al., 2022; Rivadeneira, Salvador, et al., 2022; Sánchez-Arenas et al., 2021)
Target group	Professionals and workers, such as healthcare workers (Inocêncio et al., 2022; Krishnamurthy et al., 2021; Sampaio et al., 2014; Silva et al., 2020), rural laborers (García Domínguez et al., 2021; Nuñez et al., 2023), caregivers (Almeida et al., 2019; Barasuol et al., 2020; Bray et al., 2021; Cardoso et al., 2021; Jacinto et al., 2021; Johnco et al., 2019; Junkes et al., 2015; Montes et al., 2019; Queiroz et al., 2020; Simch et al., 2020; Soares et al., 2021; Velasco et al., 2022), parents/caregivers of children (Barasuol et al., 2020; Bray et al., 2021; Cardoso et al., 2021; Johnco et al., 2019; Leite et al., 2020; Lotto et al., 2020; Montes et al., 2019; Simch et al., 2020; Velasco et al., 2022), pregnant (França et al., 2020; Manola et al., 2020; Vilella et al., 2016; Wilson et al., 2012), teenage mothers (Stonbraker et al., 2020), students primarily in secondary or higher education (nursing, medicine and dentistry) (Espino La & Ramos, 2022; Espino La et al., 2018; Fresán et al., 2013; Lotto et al., 2023; Macedo et al., 2022; Quemelo et al., 2017; Rivadeneira, Miranda-Velasco, et al., 2022; Rivadeneira, Salvador, et al., 2022; Sandoval et al., 2023; Santos et al., 2022; Vargas-Huicochea et al., 2017), community health workers (Calderon et al., 2015), teachers (González-Moreno, 2020; Mávita-Corral, 2018; Rodrigues et al., 2017), administrative staff (González-Moreno, 2020; Mávita-Corral, 2018), as well as marginalized groups, such as sex workers (Karver et al., 2022), migrants (Doi-Kanno et al., 2021; García Domínguez et al., 2021), and Indigenous populations (Mora-Molina et al., 2018)

knowledge and perceptions of their health status and access to healthcare services (Dongarwar & Salihu, 2019; Espino La & Ramos, 2022; Mialhe et al., 2022; Neves et al., 2019; Paskulin et al., 2012; Serbim, Paskulin, et al., 2022; Wills et al., 2020).

Areas and levels of health literacy

Almost all studies addressed generic HL; however, we identified evaluations in other specific areas, such as oral health, nutrition, digital health, mental health, musculoskeletal health, medication, and sexual/reproductive HL (Table 4). More details are in Supplemental Material 4 by country.

Nutritional HL was assessed using instruments such as the NVS (Lima de Moura et al., 2020; Sampaio et al., 2014), Nutritional Literacy Scale (NLS) (H.D.C. Sampaio Ha de et al., 2013; H.A.C. Sampaio et al., 2014) and Nutrition Literacy Assessment Instrument for Brazilians (Nlit-Br) (Chaves et al., 2022a, 2022b; Sarkis et al., 2022), which focus on numeracy and reading skills among adults with chronic diseases and adolescents. Studies on mental HL in Brazil, Mexico, Jamaica, Chile, and El Salvador frequently employed vignettes to investigate knowledge of mental disorders among students and healthcare workers (Abel et al., 2017; Calderon et al., 2015; Fresán et al., 2013; Johnco et al., 2019; Moreira et al., 2022; Olivari & Guzmán-González, 2017; Sandoval et al., 2023; Trompeter et al., 2022; Vargas-Huicochea et al., 2017).

Oral HL assessments utilized tools including the Rapid Estimate of Adult Literacy in Dentistry (BREALD-30) (Junkes et al., 2015; Lisboa et al., 2020; Tavares, Neves, et al., 2023; Velasco et al., 2022) and Health Literacy in Dentistry (HeLD-14) (Oliveira Júnior & Mialhe, 2022; Pimentel et al., 2022; Soares et al., 2022) in Brazil, Mexico, and Chile, targeting adolescents, parents, and dental

Table 4. Health literacy addressed areas in the included studies.

Addressed area	Number of studies (n, %)
Generic HL	(132, 57.9%)
Specific HL	(86, 37.8%)
Oral health, musculoskeletal health (Rampersad & Mencia, 2019)	
Mental health (Abel et al., 2017; Calderon et al., 2015; Fresán et al., 2013; Johnco et al., 2019; Moreira et al., 2022; Olivari & Guzmán-González, 2017; Sandoval et al., 2023; Trompeter et al., 2022; Vargas-Huicochea et al., 2017)	
Nutrition (Eleutério et al., 2018; Ghisi et al., 2021; H.D.C. Sampaio et al., 2013; H.A.C. Sampaio et al., 2014)	
Digital literacy (Barros et al., 2022; Lotto et al., 2020, 2023; Macedo et al., 2022; Marzo et al., 2022; Mialhe et al., 2022; Oliveira et al., 2023; Rivadeneira, Miranda-Velasco, et al., 2022; Rivadeneira, Salvador, et al., 2022; Santos et al., 2022; Stonbraker et al., 2017)	
Sexual or reproductive health literacy (Dongarwar & Salihu, 2019; Espino La et al., 2018; Espino La & Ramos, 2022)	
eHealth Literacy, medication literacy (Pantuzza et al., 2022)	
Specific disease	
Diabetes (Cardoso et al., 2019; Crespo et al., 2020; Eleutério et al., 2018; Martins et al., 2020; Moura et al., 2019; Sousa et al., 2019)	(7, 3.1%)
HIV (Karver et al., 2022)	(1, 0.4%)
Specific population	
Elderly (Paskulin et al., 2012)	(1, 0.4%)
Parental (Simch et al., 2020)	(1, 0.4%)

patients. Digital HL was evaluated employing the electronic Health Literacy Scale (eHEALS) and Digital Health Literacy Instrument (DHLI) in Brazil, Peru, and Ecuador, addressing functional, interactive, and critical HL levels (Baek et al., 2021; Lotto et al., 2023; Macedo et al., 2022; Marzo et al., 2022; Mialhe et al., 2022; Oliveira et al., 2023; Rivadeneira, Miranda-Velasco, et al., 2022; Rivadeneira, Salvador, et al., 2022; Sánchez-Rueda et al., 2022; Santos et al., 2022). HL studies in the context of diabetes concentrated on medication adherence (Cardoso et al., 2019; Crespo et al., 2020), nutrition (Crespo et al., 2020), and self-care (Moura et al., 2019). In the Dominican Republic, HL research pertaining to HIV explored understanding of viral load and treatment (Karver et al., 2022).

In Brazil, studies on HL assessed maternal health knowledge and self-care practices among older adults. One investigation evaluated generic HL among migrants (Doi-Kanno et al., 2021) and Indigenous peoples (Mora-Molina et al., 2018), while another specifically assessed oral HL among migrants (García Domínguez et al., 2021).

Functional HL emerged as the most frequently evaluated, identified in 167 studies, whereas 55 studies examined all three levels (functional, interactive, and critical). Nineteen studies concentrated exclusively on interactive HL, with several other studies assessing both functional and interactive levels.

Discussion

This review provides a comprehensive overview of HL evaluation in Latin America and the Caribbean, highlighting a growing body of research, with Brazil leading in studies. Although various methodological approaches were identified, qualitative methods remain less common. The areas of HL, age groups, and specific diseases studied reflect the region's cultural and ethnic diversity, necessitating tailored approaches to assess HL and design interventions for distinct populations.

Despite the use of diverse research design procedures, most HL evaluations rely on translated, primarily functional tools adapted from other countries, following the trend of global practices (Sawyers et al., 2022; Tavousi et al., 2022). These tools are often unidimensional, reflecting a preference for simple, quick assessments (O'Brien, 2019; Sawyers et al., 2022). However, this reliance limits the capacity to capture the complexity of HL, as noted by the WHO, which discourages single-score evaluations (Marques & Lemos, 2017; Okan et al., 2018). Combining multiple research designs could enable more comprehensive assessments that address the nuanced and subjective aspects of HL, ultimately supporting the development of more effective and context-sensitive interventions (Nguyen et al., 2017; Quaglio et al., 2017).

The concentration of studies in tertiary care settings illustrates the clinical focus of currently available tools, a trend also observed globally (Assunção et al., 2022; Tavousi et al., 2022). Nonetheless, several studies have explored HL in primary care contexts, aligning with the understanding that HL is developed in all environments where individuals interact with health-related information and where

their behaviors may be influenced (World Health Organization, 2022). Still, the predominance of cross-sectional studies contrasts with the perspective of HL as a dynamic process and evolving process. This contrast highlights the need for longitudinal and interventional research capable of tracking HL changes over time, evaluating tool responsiveness (Guo et al., 2018), and examining the influence of social determinants across populations (Mantwill et al., 2015).

Regarding specific topics, research in areas such as oral health, digital health, nutrition, and mental health provides insights into individuals' health-related abilities to navigate complex health information. However, transmissible diseases - despite their high prevalence and mortality in the region - remain underexplored (Bergonzoli et al., 2016). In addition, less than 15% of studies addressed HL in adolescents and children. This is a significant oversight, considering that early life is a critical period for developing the knowledge, skills, and behaviors (Nguyen et al., 2017), that contribute to becoming a health-literate adult.

A key finding of this review is the limited attention given to vulnerable populations, particularly Indigenous and migrant communities (Paim, , 2019). This lack of focus results in significant gaps in understanding how culturally diverse groups access, understand, and use health services (Arias-Murcia et al., 2021). In 2020, Latin America and the Caribbean accounted for 5% of global migrants (McAuliffe & Triandafyllidou, 2021), many of whom face systemic barriers to health information, care, and services - particularly due to linguistic and cultural differences with healthcare providers (Ventura et al., 2021). Research from Bolivia, Colombia, Mexico, and Guatemala emphasizes the necessity of culturally sensitive services for Indigenous populations (Campero et al., 2014; López-Entrambasaguas et al., 2015; Taylor et al., 2015), a need similarly documented in studies from Australia, New Zealand, and Canada. (Choudhry et al., 2019; Lambert et al., 2014).

Finally, digital HL emerges as a growing area of concern. Studies involving students and older adults with diabetes show that the latter group, which is significantly affected by limited HL, faces pronounced challenges in accessing and using digital health tools. Although digital health services offer potential for improving care and self-management, disparities in access and digital literacy persist - mirroring the broader barriers seen in general HL (Campero et al., 2014; Smith and Magnani 2019).

Strengths and limitations

Our study has some strengths. To the best of our knowledge, this is the first review to comprehensively and substantially address the evaluation of health literacy in Latin America and the Caribbean. Another strength of this review is the wide range of terms used, which made it possible to identify sensitive aspects of the complexity of health literacy assessment in these regions. However, there are also potential limitations for this study. Despite conducting an extensive search carried out in multiple databases, with no time or language restrictions, the selection of the geographical definition of Latin America and the Caribbean determined which countries were included in the search strategy. Additionally, only primary research was included and the manual search of the reference lists of the included articles was not conducted.

Conclusions

This review highlights a critical overreliance on translated instruments that prioritize functional health literacy, often at the expense of capturing its full, multidimensional scope. Such an approach falls short in addressing the complex needs of vulnerable populations, including Indigenous peoples and migrants. The scarcity of longitudinal and experimental studies further signals the urgent need for more diverse research methodologies and culturally responsive tools. In a region marked by dynamic migration and deep social inequalities, strengthening organizational responsiveness and preparing health professionals to support diverse communities is essential. Health literacy must be reframed - not as an individual burden, but as a collective responsibility that calls for systemic adaptation to real-world contexts. Advancing health literacy research and practice in Latin America and the Caribbean offers a vital opportunity to build more equitable health systems and to promote community-driven, culturally relevant public health strategies. This review sets the stage for developing inclusive and responsive health literacy frameworks across the region.

Author contributions

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