INTERNATIONAL JOURNAL OF HEALTH PROFESSIONS
Volume 10, Issue 1, 2023, Pages 161–172, ISSN 2296-990X, DOI: 10.2478/ijhp-2023-0012

sciendo

Health literacy and the role of therapeutic professionals: A scoping review

Gesundheitskompetenz und die Rolle der Therapieberufe: Ein scoping Review

Hanna Elisabeth Schwendemann[1]*, Holm Thieme[1]

[1]*IU Internationale Hochschule GmbH, 834535 Bad Reichenhall, GERMANY*
** hanna.schwendemann@iu.org*

Received 17 April 2023, accepted 23 October 2023

Abstract

Background and aim: Health literacy (HL) describes people's knowledge, motivation, and competences to access, understand, appraise, and apply health information. Limited health literacy can clearly negatively impact health outcomes and therapeutic professionals are potentially important contact persons for patients and their relatives to address health literacy.
The aim of this scoping review is to summarize the current literature regarding HL in the selected therapeutic professions (occupational therapy, physical therapy, and speech and language therapy).
Methods (incl. inclusion criteria): We conducted an electronic database search in PubMed and CINAHL (EBSCO) up to September 2022. Two authors independently selected studies using the following inclusion criteria: (1) addressing the topic HL and (2) explicitly integrating therapeutic professionals. After extracting relevant information, the included articles were qualitatively analyzed using a narrative synthesis.
Results: We identified 39 research and non-research articles. The content analysis revealed the following 5 themes: (1) HL–related knowledge and skills, (2) Education and training regarding HL, (3) assessment of HL of their clients, (4) Preparation and communication of health-related information, and (5) HL in organizations.
Discussion: Most therapeutic professionals were familiar with the term HL, but a lack of deep understanding is described. However, therapeutic professionals are aware of the importance of addressing the needs of clients with low HL. An integration of HL-related issues in professional training and further research regarding concepts to screen and address HL in therapeutic practice are needed.

Abstract

Hintergrund und Ziel: Health Literacy (HL) auch Gesundheitskompetenz (GK) beschreibt das Wissen, die Motivation und die Fähigkeiten von Menschen, Gesundheitsinformationen zu suchen, sie zu verstehen, zu bewerten und anzuwenden. Eingeschränkte GK kann sich negativ auf den Gesundheitsstatus auswirken. Therapeut:innen sind wichtige Ansprechpartner für Patient:innen und ihre Angehörigen, um sich mit Gesundheitskompetenz zu befassen.
Ziel dieses Scoping Reviews ist es, die aktuelle Literatur zu GK in den therapeutischen Berufen (Ergotherapie, Physiotherapie, Logopädie) zusammenzufassen.
Methode: Bis September 2022 wurde eine elektronische Datenbankrecherche in PubMed und CINAHL (EBSCO) durchgeführt. Zwei Autoren wählten unabhängig voneinander Studien anhand der folgenden Einschlusskriterien aus: (1) Auseinandersetzung mit dem Thema GK und (2) explizite Einbeziehung von therapeutischen Fachkräften. Nach der Extraktion relevanter Informationen wurden die eingeschlossenen Artikel mittels einer thematischen Inhaltsanalyse qualitativ analysiert.
Ergebnisse: Wir identifizierten 39 Forschungs- und Nicht-Forschungsartikel. Die Inhaltsanalyse teilt sich in die folgenden 5 Themen auf: (1) GK-bezogene Kenntnisse und Fähigkeiten, (2) Aus- und Weiterbildung in Bezug auf GK, (3) Bewertung der Kompetenz der Klient:innen, (4) Aufbereitung und Vermittlung gesundheitsbezogener Informationen und (5) GK in Organisationen.
Diskussion: Insgesamt haben wir einen Mangel an breitem Wissen über das Konzept von GK festgestellt. Jedoch sind sich Therapeut:innen bewusst, wie wichtig es ist, auf die Bedürfnisse von Klient:innen mit niedriger GK einzugehen. Eine Integration von GK-bezogenen Themen in die Berufsausbildung und weitere Forschung zu Konzepten zur Identifikation und Schulung von GK in der therapeutischen Praxis sind erforderlich.

Keywords

therapeutic professions – health literacy – occupational therapy – physical therapy – speech and language therapy

Keywords

Therapie – Gesundheitskompetenz – Ergotherapie – Physiotherapie – Logopädie

Open Access. © 2023 Hanna Elisabeth Schwendemann, Holm Thieme, published by Sciendo. BY-NC-ND This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 License.

INTRODUCTION

Health literacy (HL) is defined as follows: "*Health literacy is linked to literacy and entails people's knowledge, motivation, and competences to access, understand, appraise, and apply health information to make judgments and decisions in everyday life concerning health care, disease prevention, and health promotion to maintain or improve quality of life during the life course*" (Sørensen et al., 2012, S. 3). Furthermore, Brach et al. (2012) take organizations into account and enlarge the definition, describing the responsibility of organizations to make it easier for people to navigate, understand, and use information and services to care for their health. In this context, health care professionals are considered. They are main contact persons and sources of information on health and disease issues, providing their own professional health literacy. They could therefore make a decisive contribution to improving the health literacy of the population (Schaeffer, Haarmann, Griese, 2023).

HL entails the capacity of clients to meet the complex demands of health in a modern society. An individual with adequate HL has the ability to take responsibility for one's own health, the health of people they care for, and community health (Sørensen et al., 2012). Low HL is associated with less knowledge about health care, disease prevention, and health promotion. It is linked to a higher number of hospitalizations and visits to the doctor as well as a more frequent use of medical or emergency services, resulting in higher health costs (Schaeffer et al., 2020; Sørensen et al., 2012).

Overall, more than 60% of Germans and half of adult European citizens show limited HL (Hurrelmann et al., 2020; Sørensen et al., 2015). Furthermore, patients, especially vulnerable groups, show low levels of HL: that is, 66% of older adults and 73% of chronically ill persons (Schaeffer et al., 2020; Schaeffer et al., 2021). Vulnerable groups show lower efficacy in self-managed care, poorer skills in interpreting health information, poorer control of medical conditions, and increased need for emergency care (Karuranga et al., 2017).

Nutbeam (2000) describes health education and communication as key factors to promote HL. Furthermore, Pleasant et al. (2016) explain HL as an "*interaction between individuals and health professionals.*" Especially physicians and nurses are mentioned in the context of professional HL in Germany. Studies have shown that communication with patients and their relatives and also the transfer of information are in need of improvement, because there are, on the one hand, linguistic or communicative problems and, on the other hand, structural difficulties and shortage of time to implement HL in daily practice (Schaeffer, Haarmann, Griese, 2023). Therapeutic professionals, especially occupational therapists (OT), physical therapists (PT), and speech and language therapists (SLT), are therefore important contact persons for patients and their relatives to address HL (Weishaar et al., 2018a; Weishaar et al., 2018b). This cooperation requires a variety of competences, knowledge, skills, and abilities on both sides. So far, little is known about the role of therapeutic professionals in this context.

Therapeutic professions in Germany can play a key role in promoting HL due to their presence in several health care sectors and their central position in the health care of their patients (Weishaar et al., 2018a; Weishaar et al., 2018b). They also have longer contact times (ranging between 30–90 min) with patients and their relatives than, for example, physicians, with an average consultation time of 7 minutes in Germany (GBA, 2023; Irving et al., 2017). Through social closeness and emotional attachment, therapeutic professionals can communicate, inform, and discuss issues with patients in a number of settings and therefore increase empowerment, decision-making processes, and self-efficacy (Kolpatzik et al., 2018; Schaeffer & Gille, 2020; Weiland & Büscher, 2021).

Knowledge about competences that therapists need to counsel patients and clients appropriately is scarce. However, there are some indications that health care professionals show limited understanding of HL (Karuranga et al., 2017). A recent study in Germany shows that though physicians and nurses rate their HL abilities positively, data for German therapeutic professionals are not available (Schaeffer, Haarmann, Griese, 2023).

AIMS AND SCOPE

The aim of this scoping review is to summarize the current knowledge presented in the literature regarding HL in selected therapeutic health professionals (OT, PT, SLT).

The following three research questions will be considered:

- What do therapeutic professionals know or associate with the term *health literacy*?
- Which methods do therapeutic professionals use to assess the HL of their clients?
- What opportunities does the work of therapeutic professionals present to promote HL in their clients?

The following figure illustrates the relationships between the research questions. The focus of this study is on how the HL of the therapy professions is defined, how it is trained, and what skills and possibilities therapeutic professionals have to prepare and communicate health-related information in such a way that it is target-group oriented and serves to promote clients' HL (see Figure 1).

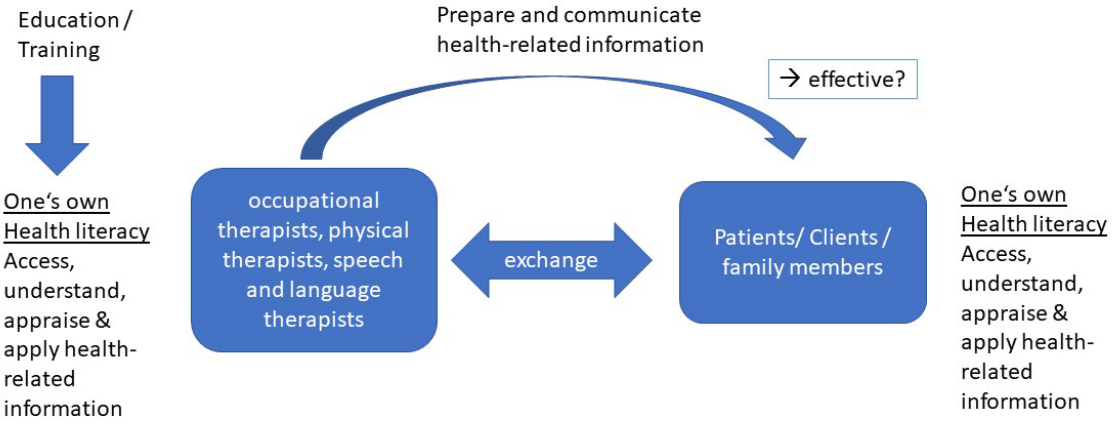


Figure 1: Relationships between the research questions.

Table 1: Search strategies.

database	Search terms
PubMed	(physical therap* [MESH] OR occupational therap* [MESH] OR speech and language therap* [MESH] OR health care professionals [MESH] OR allied health care [MESH]) AND (health literacy [MESH])
CINAHL	(physical therap* OR occupational therap* OR speech and language therap* OR health care professionals OR allied health care) AND health literacy

METHODS

This scoping review was conducted using the reporting guideline of the PRISMA-ScR Statement (Tricco et al., 2018) and the defined stages of Peters et al. (2015). These stages are as follows: (1) Defining and aligning the objectives and questions, (2) Developing and aligning the inclusion criteria with the objectives and questions, (3) Describing the planned approach to evidence searching and selection, (4) Searching for the evidence, (5) Selecting the evidence, (6) Extracting the evidence, (7) Charting the evidence, (8) Summarizing the evidence, (9) Consulting information scientists, librarians, and other experts.

The research questions were developed deductively, based on research regarding health-literate organizations and the national action plan on HL in Germany (Schaeffer, Hurrelmann, Bauer, & Kolpatzik, 2018; Trezona et al., 2017). Often the role of health care professionals is stated. As both researchers are therapeutic professionals (HS is OT, HT is PT) we assume that therapeutic professionals in Germany can play a key role in addressing HL of, for instance, chronically ill persons. At the beginning of the research process, we documented these questions and the study plan internally, regarding the internal study funding process.

We conducted an electronic database search in PubMed and CINAHL (EBSCO) up to September 2022. Search strategies are shown in Table 1. No further filters or restrictions were applied. Furthermore, article reference lists were screened for relevant references and known articles were included whether detected by the electronic search or not. After removing duplicates, titles were independently screened by two authors (HS and HT) for eligibility. Based on abstracts and full texts, two authors (HS and HT) independently checked the remaining references for inclusion in the review. The following inclusion criteria were used: (1) addressing the topic HL and (2) integrating the study population of therapists (OT, PT, and/or SLT). A minimum of 20% of the therapeutic health professionals integrated in the study was required or, if no professionals were included, therapeutic professionals needed to be addressed explicitly. Any discrepancies after screening articles and checking abstracts/ full texts for inclusion were solved by discussion between the two reviewers.

Data were extracted by one of the two reviewers by using extraction sheets. A random sample of 20% of the data extraction sheets were checked by the co-reviewer (Seidler et al., 2021). Data extraction sheets contain the following elements: author, title, date of publication, country, overall theme, method of data conduction and analysis, number, and profession/ diagnosis of participants (professionals and clients), main results, main conclusions.

The included articles were then qualitatively analyzed using a narrative synthesis. Therefore, categories

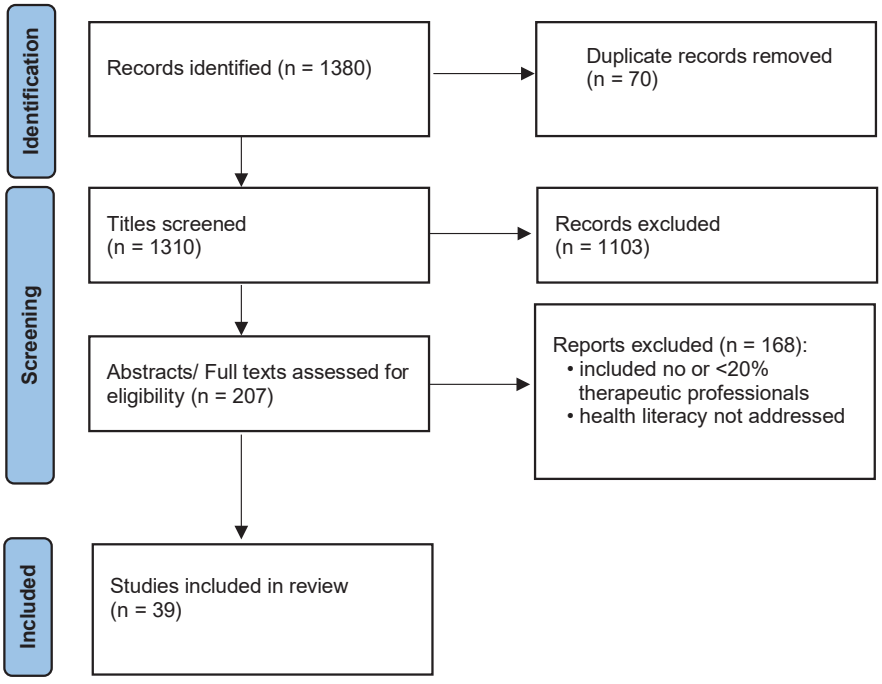


Figure 2: PRISMA flow chart.

were deductively derived from Figure 1 and based on the research questions. During the extraction, further categories were inductively developed and added.

RESULTS

Results of search

A total of 1380 records were identified through our search. After removing duplicates, 1310 titles were screened for potential inclusion. After 1103 records were removed based on screening titles, 207 abstracts and/or full texts were checked for inclusion. After excluding 168 records, a total of 39 articles were included in the review. A PRISMA flow chart of the search and inclusion process is shown in Figure 2.

Included articles were published between 2006 and 2022 and derived from 14 countries (USA [17], Australia [3], Germany [4], Ireland [5], Netherlands [3], UK [2], Canada [1], Denmark [1], Italy [2], Malaysia [1], New Zealand [1], Poland [1], Portugal [1], Spain [1]). There were 8 non-research articles, which generally discussed HL for therapeutic professionals (including position papers, unsystematic literature overviews, editorials). Of the 31 research articles 2 were systematic (scoping) reviews, 15 quantitative research studies, 6 qualitative research studies, and 8 mixed methods studies. Most of the articles were related to mixed populations of health care practitioners including therapists (n=17), followed by OT only (n=14), and PT only (n=8). In only 2 studies SLT were included in mixed professional populations.

Type of articles, year of publication, country, methods of data acquisition, details of participants, thematic contents, and results are summarized in Appendix 1 and 2 in the Supplementary File 1.

Narrative synthesis results

The content analysis revealed the following 5 themes: (1) HL related knowledge and skills, (2) education and training regarding HL, (3) assessment of HL in clients, (4) prepare and communicate health-related information, and (5) HL in organizations.

HL-related knowledge and skills

We identified seven studies addressing results on the HL of therapeutic professionals. Four stated that 60% to 80% of the therapeutic professionals were familiar with the term HL itself (Billek-Sawhney et al., 2012; Galati et al., 2018; Rajah et al., 2018; Wirner et al., 2022). Galati et al. (2018) showed that 64% of the OTs agreed that they understand the difference between HL and literacy and those who were familiar with the term could quickly grapple with the idea of HL and what it meant in their work (Salter et al., 2014). However, fewer therapists had knowledge of the deeper construct of HL (Brown, 2016). For OTs, a qualitative study described that there is a lack

of comprehensive understanding of HL (LeQuieu, 2016). Furthermore, OTs with low knowledge about HL were less likely to determine if health-related information they present to their clients is accessible and comprehensible (Attard et al., 2021).

Simon et al. (2021) presented results of therapeutic and medical students, showing that 70% have low levels of HL. Additionally, health care professional students in medicine or dietetics scored higher in HL than PT students (Chawłowska et al., 2022). In Spain health science students (including OT and PT) showed sufficient HL levels, with 30% showing low levels of HL. Students that had low literacy levels were 7% in OT and 32% in PT (Rueda-Medina et al., 2020). Simon et al. (2021) described that the different elements of HL – finding, judging and applying health information – are challenging for those therapeutic professionals with low levels of HL. Chawłowska et al. (2022) highlighted that especially the ability to apply knowledge gained during their studies to everyday life was challenging and must be supported.

HL Education and Training

Overall, 12 studies reported issues regarding the topic of education and training. First, the current integration of HL in the vocational training of therapeutic professionals was analyzed. Galati et al. (2018) examined OT practitioners (n=80) in the USA and described that half of them learned about HL in school, but also that 36% had no education on this topic. Furthermore, 14% received education in one or more places (Galati et al., 2018). 61% of German PTs (n=419) thought it is important to learn about HL in school (Wirner et al., 2022). Overall, 88% of PTs in Germany wanted to learn more about HL, especially methods to build up HL in their clients (Wirner et al., 2022). There was a need to train therapeutic professionals in identifying HL needs and to evaluate these trainings (Koenig & Provident, 2019; LeQuieu, 2016). OTs highlighted a lack of strategies for treating patients identified as having low literacy (Brown, 2016).

Secondly, we summarized the current practices and important contents in the education of therapeutic professionals in HL advanced training. A review of Kaper et al. (2018) described the main themes that should be addressed in HL interventions: raising the awareness of HL, addressing patient-centered communication, applying HL adapted communication, and using educational techniques. Overall, eight studies provided training programs for therapeutic professionals. The content of the trainings is listed for each article in Appendix 3 provided in Supplementary File 2. The results of the included studies showed, in all cases, that training leads to a broader understanding of HL as a concept in therapeutic professionals. Especially the identification of HL needs, the use of less jargon, raising self-efficacy, and the awareness of adaptations in patient interaction were influenced (Attard et al., 2021; Bird et al., 2022; Finlay et al., 2019; Kaper et al., 2018; Kaper et al., 2019; Koenig & Provident, 2019; Lubasch et al., 2021; Miller-Scott, 2014; Muscat et al., 2021; Toibin et al., 2017).

Educational programs should feature general information about HL, techniques to modify therapy for patients with low HL, and giving practical examples (Brown, 2016). They should focus on identifying the needs of patients with low HL and include strategies to promote communication between therapeutic professionals and patients (see Appendix 4 in Supplementary File 2 for recommended contents of trainings; Attard et al., 2021; Brown et al., 2012; Kaper et al., 2018; Levasseur & Carrier, 2012; Pizur-Barnekow et al., 2017; Toibin et al., 2017). In addition, it is recommended that assessment of future PTs' abilities to promote health education and teach self-management strategies take place in PT education programs. HL training that encompasses recognition of "red flags," administration of screening tests, and incorporation of intervention strategies, including how to create patient education materials, will enhance holistic management of patients, including older adults and those with multiple chronic conditions (Ennis et al., 2012).

Armstrong-Heimsoth et al. (2019) claimed it is necessary to teach OTs how to identify, gain access to, and apply reliable online health information for use with clients. Furthermore, it is essential that there are train-the-trainer approaches in which OTs learn skills on how to best educate their clients on how to find reliable health care information independently. For example, a 1-hour training on "how to find health-related information online" is effective in promoting clients' participation in health management and self-efficacy as health care consumers (Armstrong-Heimsoth et al., 2019).

Assessment of HL of their clients

Four studies reported that the therapeutic professionals did not use any standardized screening instrument to identify patient HL levels. Some used their own definitions of HL (Billek-Sawhney et al., 2012; Brooks et al., 2020; Brown et al., 2012; Rajah et al., 2018). PTs and OTs had difficulties in identifying patients with low HL (Koenig, 2018; Koenig & Provident, 2019; Murugesu et al., 2022). Salter et al. (2014) described that professionals (and patients) agreed that the best way to identify patient HL needs was by spending enough time talking to patients. It is presented that therapeutic professionals rated patient HL levels higher than did patients themselves (Rajah et al., 2018; Voigt-Barbarowicz et al., 2022). LeQuieu (2016) stated that OTs did not intentionally address HL in their practice. There are also efforts to integrate HL as

an addition to existing models in, for example, OT (Smith & Hudson, 2012).

One study reported a systematic approach to implementing an HL assessment in practice. Jensen et al. (2021) in Denmark used focus groups to test the Conversational Health Literacy Assessment Tool (CHAT). CHAT seemed to be a feasible and efficient tool for assessing HL needs among individuals with different socio-demographic characteristics and diagnoses. They stated that the implementation was easy when health care providers were familiar with the concept of HL. Koenig (2018) stated that therapists should focus on the individuals instead of using assessments.

Differences in HL estimation in patients and therapeutic professionals may lead to communication problems (Voigt-Barbarowicz et al., 2022). Barriers in identifying HL levels included embarrassment and stigma, "gauging" (but not directly asking about) patients' understanding and need for information (Salter et al., 2014). When communicating with culturally and linguistically diverse women there were communication difficulties, cultural differences, and inadequate comprehension (Hughson et al., 2018). Half of the PTs knew that low patient HL is linked to overutilization of the health care system and poor health status (Billek-Sawhney et al., 2012). They reported that clients had poor compliance (Finlay et al., 2019; Murugesu et al., 2022) and, for example, 20% of clients missed their appointments because of problems understanding why to go to, for example, PT (Hughson et al., 2018). Individuals who lack HL may feel neither comfortable nor capable of engaging in a discussion, and they probably feel overwhelmed by the information (LeDoux & Mann, 2019; Murugesu et al., 2022).

Preparing and communicating health-related information

Professionals who were familiar with HL found HL to be very relevant when working with clients (Wirner et al., 2022). Some of the health care providers felt frustrated when they got to know the concept of HL and a tool to identify HL needs, as they did not have the opportunities and strategies to meet the needs of their clients (Jensen et al., 2021). The main identified barriers were lack of time to spend with a client with low HL and difficulties in providing the information needed (Finlay et al., 2019; Hughson et al., 2018; Murugesu et al., 2022; Rajah et al., 2018; Wirner et al., 2022). Communication with clients with low HL and communication problems took twice as long because the information must, for example, be translated. Therefore, the conversation time window was halved (Brooks et al., 2020; Hughson et al., 2018).

In the following we present the results regarding communication with clients with low HL and the design of health-related information materials.

Therapeutic professionals can play a key role in enhancing HL, for example, when ensuring that clients understand their diagnoses and treatments or using communication strategies at a level where clients can understand the information (Koenig, 2018; Smith & Gutman, 2011). Eight articles mentioned strategies to improve communication with clients with low levels of HL. Appendix 5 in Supplementary File 2 lists these strategies. Key elements of communication strategies are: client-centered communication through using less medical jargon, understanding that head nodding does not always indicate comprehension, scheduling enough time to discuss information, and providing information in the client's native language. Furthermore, the use of, for example, teach-back methods or "ask me three" to ensure understanding was recommended. Even case-based simulation and examples may be supportive to enable understanding of the information (Denysiuk, 2016; Ennis et al., 2012; Galati et al., 2018; Koenig, 2018; LeDoux & Mann, 2019; Levasseur & Carrier, 2012; Miller-Scott, 2014; Smith & Gutman, 2011; Toibin et al., 2017).

We identified two studies that described the current communication practices illustrating very different perspectives. Galati et al. (2018) described that over 80% of American therapeutic professionals interviewed did review information with their clients verbally, and almost all used simple terms instead of jargon. In contrast, Murugesu et al. (2022) found that nearly 40% of the health care professionals they interviewed didn't react to low HL levels in communication with their clients and furthermore didn't use special information materials. This was due to a lack of knowledge about HL-oriented information materials. Galati et al. (2018) showed that 76% of therapeutic professionals used handouts with pictures and 82% illustrated these by using examples. 33% used teach-back methods to evaluate if clients understood what they had been told.

Studies reported different challenges in preparing adequate information materials: for example, heeding adequate reading levels[1], using clear communication and no jargon.

In theory, a majority of therapists knew that patient materials should be provided at 5th grade (very easy) reading level (Billek-Sawhney et al., 2012), but creating patient materials with the appropriate reading

[1]When preparing health-care information material the appropriate readability should be provided. This is also described as using easy or plain language, i.e., Centers for Disease Control and Prevention (2023); Netzwerk Leichte Sprache (2022).To assess readability of written materials the Flesch formula is mostly used. Its calculation is based on two variables: the average sentence length and word length. An online calculator uses grade levels to interpret the scores. Very easy texts are estimated to be at US Grade 5 (11-year old pupils). Fairly difficult texts are estimated to be at US Grade 10-12, see Jindal & MacDermid (2017).

level was challenging (Doyle et al., 2013). Galati et al. (2018) described that 51% of therapeutic professionals assessed the readability of client materials. Some prepared information materials in easy language and used illustrative pictures (Brooks et al., 2020). When designing home programs, 70% of the PTs took patients who are illiterate into consideration (Billek-Sawhney et al., 2012). In physical rehabilitation the patient materials Dignan und Hunter (2015) screened were designed using Flesch Scale reading level 16 (difficult) instead of reading level 5 (very easy). Brown (2016) examined the patient education forms in OT practice and noted that 90% were written at a level above the 8th grade Flesch Scale (standard reading difficulty). Written information materials were handouts for home education, precautions, or educational material (Galati et al., 2018). Therapeutic professionals were keen to provide healthcare information at the appropriate reading level but there were challenges when evaluating if patients understand the materials. For example, they noted that patients might not be willing to answer questions on whether they can read the materials (Salter et al., 2014).

Appendix 6 in Supplementary File 2 shows the list of the key elements to consider when designing patient materials. They should be written in an adequate reading level (5th grade; very easy), avoiding medical jargon, using plain language and integrating pictograms, diagrams, and examples (Billek-Sawhney et al., 2012; Brooks et al., 2020; Denysiuk, 2016; Doyle et al., 2013; Ennis et al., 2012; Galati et al., 2018; Miller-Scott, 2014; Smith & Gutman, 2011). Written materials can be revised using plain language, and staff can be trained in oral plain language using case-based simulations (Smith & Gutman, 2011). Furthermore, therapists should ensure that the assessment of health information is easy for clients (Ennis et al., 2012). Therapists could help to ensure that information fits to patients' HL levels, cultural characteristics, and verbal, cognitive, and social skills (Pizur-Barnekow et al., 2017; Pizur-Barnekow & Darragh, 2011; Sørensen et al., 2012).

HL in organizations

Integrating HL into practice should focus on clients and their HL needs. To enhance patients' disease knowledge, their ability to self-manage, and adherence to health care recommendations, awareness of the importance of HL may be integrated into clinical practice by the whole healthcare rehabilitation team (Voigt-Barbarowicz et al., 2022) and health organizations. Furthermore, not only do the clients have to be addressed but also their carers. OTs who work with children with chronic pain reported that 15% of their HL activities were related to the children themselves and 57% interacted with parents or carers (Brown et al., 2012). Integrating HL skills training into routine practice of OT is critical to health care professionals engaged with clients in improving health management (Armstrong-Heimsoth et al., 2019). For example, in a Portuguese school setting, a physiotherapy training to learn about back care was implemented and positively evaluated. Children gained practical and theoretical knowledge after the training (Minghelli, 2020).

HL is not an individual attribute or skill but rather a result of interaction between patients and the healthcare system (Salter et al., 2014). The key role of organizations in supporting HL was stated. Governance and responsibility for HL means: interpersonal and intra-organizational communication, continuity of care, information management, and responsibility for HL (Salter et al., 2014). A systematic approach to address factors on an organizational level is needed, providing culturally appropriate patient care, resources that are accessible to vulnerable groups, communication with patients in ways they understand and are comfortable with, maximizing HL, and knowledge about the health system (Hughson et al., 2018).

Enablers to promote HL in persons with cultural and linguistic problems are bilingual or bicultural HCPs, and persons who have a high awareness of cultural and linguistic factors and are motivated to bridge the gap (Hughson et al., 2018). Major barriers to supporting HL were organizational issues. The existing systems do not adequately accommodate the needs of patients (Hughson et al., 2018). Therapeutic professionals can participate in the creation of an HL-sensitive environment (Pizur-Barnekow et al., 2017; Smith & Gutman, 2011).

DISCUSSION

The aim of this scoping review was to summarize the current knowledge presented in the literature regarding HL in selected therapeutic professions (OT, PT, and SLT). Overall, we could not identify any study which addressed this issue in a single SLT group. This is astonishing because communication and information are key elements in care, especially for these therapeutic professionals.

In the following we discuss the results considering the three research questions.

First, we wanted to describe the knowledge and associations of therapeutic professionals concerning HL. Seven of the 39 studies described results of knowledge regarding HL. Most of the therapeutic professionals, who were integrated in the examinations, were familiar with the term HL (Billek-Sawhney et al., 2012; Galati et al., 2018; Rajah et al., 2018; Wirner et al., 2022), but a lack of deep understanding is described (Brown, 2016; LeQuieu,

2016). Results regarding HL levels in therapeutic students show large differences. 30% of Spanish students and up to 70% of German students showed low levels of HL. Both studies used the HLS-EU Questionnaire; in Germany the short form with 16 items and in Spain the long version with 47 items was used. Adult European citizens had a general 46% low level of HL (Germany 46%, Spain 58%, and Poland 45% [HLS-EU Q47]) (Sørensen et al., 2015). More recent data for German adults show that the low levels increased to 64% (Hurrelmann et al., 2020). And especially younger people between the ages of 18 and 29 are experiencing difficulties in dealing with health information (Schaeffer et al., 2021).

Secondly, we describe results in methods and skills of therapeutic professionals in assessing the HL of their clients. Four studies told that therapeutic professionals do not use standardized screening instruments to identify clients with low levels of HL (Billek-Sawhney et al., 2012; Brooks et al., 2020; Brown et al., 2012; Rajah et al., 2018). Just one study provided a systematic approach to using an assessment (Jensen et al., 2021). Furthermore, some therapeutic professionals see no need for a systematic approach. They use their own definitions of HL and assume that they are identifying the needs of their clients, if they spent enough time with them (Koenig, 2018; Salter et al., 2014). But it is presented that therapeutic professionals have difficulties in identifying clients with low levels of HL and furthermore they sometimes overestimate the HL levels (Koenig, 2018; Koenig & Provident, 2019; Murugesu et al., 2022; Rajah et al., 2018; Voigt-Barbarowicz et al., 2022). This leads in the long run to communication problems and overall problems in using the health care system (Billek-Sawhney et al., 2012; Voigt-Barbarowicz et al., 2022). Clients have poor compliance and miss appointments because of misunderstanding (Hughson et al., 2018; Murugesu et al., 2022).

The third research question addressed the opportunities of therapeutic professionals to promote HL in their clients. In general, the literature highlighted that therapists have an important role in advocating HL related issues. This key role includes, for example, strategies to ensure that the client understands his diagnoses and treatments, using communication strategies and preparing health-related information material (Koenig, 2018; Mackey et al., 2019; Smith & Gutman, 2011). Furthermore, it is important to ensure that all health-related materials and communications with patients are tailored in a way that is easy to administer and at a level where everybody can benefit. Studies showed the awareness of therapeutic professionals on this topic (Galati et al., 2018; Rajah et al., 2018). Therapeutic professionals who were familiar with the term HL or who get to know the HL concept, feel frustrated as they did not have opportunities to meet the needs of their clients (Jensen et al., 2021). The main barriers they presented were lack of time and difficulties in providing the adequate informational materials (Hughson et al., 2018; Murugesu et al., 2022; Rajah et al., 2018; Wirner et al., 2022).

STRENGTHS AND LIMITATIONS

This scoping review has some limitations. We included literature retrieved from only two electronic databases. Further studies may have been overlooked or relevant databases may not have been included. In addition, the publication bias could be taken into account, that is, only studies that presented relevant results could be listed here because others were not published. However, most of the relevant research articles can be presumed to be integrated in these carefully selected electronic resources. For this scoping review, there was an internal review document created, but it was not registered. Additionally, since we aimed to give an overview of the current literature, we did not evaluate the methodological quality of included research studies. Therefore, a gradation of implications for research and practice is not possible. The Scoping Review was created using the PRISMA-ScR reporting guideline (Tricco et al., 2018) and the defined stages of Peters et al. (2015). Furthermore, Peter's stage 9 is not quite fulfilled: we didn't consult librarians or information scientists in the process of conducting the scoping review. But we received internal research funding that required an expert review. In addition, we presented the intention of the scoping review at a conference for PT (Schwendemann & Thieme, 2022). The analyzed studies were mainly conducted in North America, Europe, and Australia. Therefore, little is known about these issues in other parts of the world. Due to our inclusion criteria, we excluded articles where therapeutic professionals were not explicitly addressed or included. We excluded some studies which only stated that HCPs were included without providing their individual professions, but PTs, OTs, or SLTs could possibly be included in these articles.

CONCLUSION

The objective of the scoping review was to clarify the role of therapeutic professionals in context of HL. The reviewed studies describe a central role of therapists in this context, based on theoretical considerations. A practical discussion is currently only taking place in exemplary discussions of studies.

The American associations of all three therapeutic professionals provide ideas and guidelines to promote understanding of HL and strategies to be implemented in therapeutic practice (APTA, 2019; ASHA, 2023; Pizur-Barnekow et al., 2017). Furthermore the key role

of PT and OT in enhancing HL is stated in almost all integrated articles, for example, OTs are stakeholders in conversations regarding HL interventions and HL must become a central part of the OT plan of care (Bryant et al., 2022). PTs are urged to collaborate with other health and non-health disciplines, including policymakers, educators, communications experts, and instructional designers, to promote HL awareness, competencies, and commitment within the profession and beyond (Griech & Skrzat, 2020; Hamel, 2006).

Implications for research

There is a lack of a systematic approach to address HL in practice, as there were no instruments systematically used to screen clients for HL. Additionally, there is some evidence that therapeutic professionals are critically facing screening instruments. They are facing challenges of clients with low HL in practice and wish to improve their ability to address these. Therefore, it is necessary to identify relevant short screening instruments that are easy to administer in daily practice. Furthermore, studies are needed to evaluate the usefulness and practicability of screening instruments. Empirical studies about HL in the therapeutic professions themselves are missing. Therefore, more research should generally focus on the different aspects of HL in the therapeutic professions. Since key elements for creating training programs and adapting practice already exist, the implementation of training programs should be accompanied by evaluation studies.

Implications for practice

Studies reported that therapeutic professionals are familiar with the term HL, but they identified a lack of broad knowledge. One study of the USA tells, that 50% of the therapeutic professionals learned about HL in school. For Germany the PTs express this desire (Galati et al., 2018; Wirner et al., 2022).They are aware of the importance of addressing the needs of clients with low HL and of gaining knowledge and skills regarding HL. There is some evidence, that training in HL related knowledge and skills are positively evaluated. We found no description of a systematic approach in inclusion of HL in the professional training of therapeutic professionals. Most learn about the concept in advanced training courses. However, ideas and projects where systematic training is implemented in practice do exist and all evaluations of these trainings present positive results. They should therefore be widely implemented to improve the practice of HL screening and communication and further evaluated regarding their impact. We could identify key elements that should be addressed in trainings on HL of therapeutic professionals. Interventions to enhance clear communication are needed and especially their implementation in practice should be integrated in a multidisciplinary and organization specific way. Preparing and communicating with clients with low HL is throughout the literature a challenge for therapeutic professionals and organizations. Policies and guidelines to encourage HL practices should be implemented (Mackey et al., 2019; Murugesu et al., 2022; Rajah et al., 2018). On the one hand, the curricula of all therapeutic professionals should integrate HL as an important educational theme in the vocational training and academic studies of therapeutic professionals (Ennis et al., 2012; Rueda-Medina et al., 2020; Wirner et al., 2022). On the other hand, there is a need for formal training on HL beyond institutional education to acquire knowledge about HL and furthermore keep professionals up-to-date (Galati et al., 2018; Hamel, 2006). Especially therapeutic professionals have a key role in facilitating HL due to the strong therapeutic alliance between therapists and clients and their profession's unparalleled assessment and intervention of the person, environment, and occupation (Perez et al., 2020; Smith & Gutman, 2011). More efforts should focus on revising the existing educational curricula, professional laws, and HL adapted practice in therapeutic professionals. To create health literate organizations, it is necessary to enhance clients' abilities to gain access to, understand, and use health related information, therapeutic professionals in particular can play a key role. Systematic approaches by therapeutic professionals to measure client HL and instruments to adapt information and communication to low HL should be conducted and implemented in organizations.

FUNDING / Acknowledgements

This work was internally supported by the IU International University.

Ethical approval, registration

This scoping review was not registered.

Conflicts of interest

The authors declare that they have no conflicts of interest.

References

APTA. (2019). Health Literacy. https://www.apta.org/apta-and-you/leadership-and-governance/policies/health-literacy

Armstrong-Heimsoth, A., Johnson, M. L., Carpenter, M., Thomas, T. & Sinnappan, A. (2019). Health Management: Occupational Therapy's Key Role in Educating Clients About Reliable Online Health Information. *The Open Journal of Occupational Therapy*, *7*(4), 1–12. https://doi.org/10.15453/2168-6408.1595

ASHA. (2023). Health Literacy. https://www.asha.org/slp/healthliteracy/

Attard, E., Musallam, A., Vaas, K., Chaney, T., Fortuna, J. K. & Williams, B. (2021). Health Literacy in Occupational Therapy Research: A Scoping Review. *The Open Journal of Occupational Therapy*, *9*(4), 1–18. https://doi.org/10.15453/2168-6408.1832

Billek-Sawhney, B., Reicherter, E., Yatta, B. & Duranko, S. (2012). Health Literacy: Physical Therapists' Perspectives. *Internet Journal of Allied Health Sciences and Practice. Vorab-Onlinepublikation.* https://doi.org/10.46743/1540-580X/2012.1394

Bird, M.-L., Elmer, S., Osborne, R. H , Flittner, A. & O'Brien, J. (2022). Training physiotherapists to be responsive to their clients' health literacy needs. *Physiotherapy theory and practice*, *38*(10), 1398–1406. https://doi.org/10.1080/09593985.2020.1850956

Brooks, C., Ballinger, C., Nutbeam, D., Mander, C. & Adams, J. (2020). Nursing and allied health professionals' views about using health literacy screening tools and a universal precautions approach to communication with older adults: a qualitative study. *Disability and rehabilitation*, *42*(13), 1819–1825. https://doi.org/10.1080/09638288.2018.1538392

Brown, C., Swedlove, F., Berry, R. & Turlapati, L. (2012). Occupational therapists' health literacy interventions for children with disordered sleep and/or pain. *New Zealand Journal of Occupational Therapy*, *59*(2), 9–17.

Brown, F. K. (2016). Integrating health literacy into occupational therapy. School of Occupational Therapy, Health Sciences, Denton, Texas. https://twu-ir.tdl.org/bitstream/handle/11274/8752/2016FKayBrown.pdf

Bryant, A. M., Gee, B. M. & Gitlow, L. (2022). Health Literacy and Occupational Therapy: A Discussion on Assessing and Addressing Limited Health Literacy. *The Open Journal of Occupational Therapy*, *10*(4), 1–5. https://doi.org/10.15453/2168-6408.1996

Centers for Disease Control and Prevention. (2023). Plain Language Materials & Resources. https://www.cdc.gov/healthliteracy/developmaterials/plainlanguage.html

Chawłowska, E., Staszewski, R., Zawiejska, A., Giernaś, B. & Domaradzki, J. (2022). Actions Speak Louder Than Words: Health Behaviours and the Literacy of Future Healthcare Professionals. *Healthcare* (Basel, Switzerland), 10(9). https://doi.org/10.3390/healthcare10091723

Denysiuk, E. (2016). Gesundheitsinformationen (er)kennen und nutzen. *Ergotherapie und Rehabilitation*, *55*(11), 30–34.

Dignan, M. & Hunter, E. (2015). Assessing and Adapting Patient Educational Materials: Addressing Low Health Literacy in an Inpatient Rehabilitation Setting. *The American journal of occupational therapy: official publication of the American Occupational Therapy Association*, *69*(Supplement_1), 140-142. https://doi.org/10.5014/ajot.2015.69S1-RP204A

Doyle, F., Doherty, S., Morgan, K., McBride, O. & Hickey, A. (2013). Understanding communication of health information: a lesson in health literacy for junior medical and physiotherapy students. *Journal of health psychology*, *18*(4), 497–506. https://doi.org/10.1177/1359105312446771

Ennis, K., Hawthorne, K. & Frownfelter, D. (2012). How physical therapists can strategically effect health outcomes for older adults with limited health literacy. *Journal of geriatric physical therapy*, *35*(3), 148–154. https://doi.org/10.1519/JPT.0b013e31823ae6d1

Finlay, S., Meggetto, E., Robinson, A. & Davis, C. (2019). Health literacy education for rural health professionals: shifting perspectives. *Australian health review : a publication of the Australian Hospital Association*, *43*(4), 404–407. https://doi.org/10.1071/AH18019

Galati, C., Adams, R., Graham, K., Reynolds, K. & Zametin, J. (2018). Health Literacy and Written Communication in Skilled Nursing/Subacute Facilities. *OTJR : occupation, participation and health*, *38*(2), 131–138. https://doi.org/10.1177/1539449217723896

GBA. (2023). Richtlinie des Gemeinsamen Bundesausschusses - Richtlinie über die Verordnung von Heilmitteln in der vertragsärztlichen Versorgung: (Heilmittel-Richtlinie/HeilM-RL). https://www.g-ba.de/downloads/62-492-3109/HeilM-RL_2023-01-19_iK-2023-04-12.pdf

Griech, S. F. & Skrzat, J. M. (2020). Roles for Physical Therapists to Address Health Literacy as a Social Determinant of Cardiovascular Disease: A Clinical Perspective. *Cardiopulmonary Physical Therapy Journal*, *31*(1), 29–34. https://doi.org/10.1097/CPT.0000000000000132

Hamel, P. C. (2006). Communication and health literacy: a changing focus in physical therapist education, Boston Univerity.

Hughson, J.-A., Marshall, F., Daly, J. O., Woodward-Kron, R., Hajek, J. & Story, D. (2018). Health professionals' views on health literacy issues for culturally and linguistically diverse women in maternity care: barriers, enablers and the need for an integrated approach. *Australian health review : a publication of the Australian Hospital Association*, *42*(1), 10–20. https://doi.org/10.1071/AH17067

Hurrelmann, K. , Klinger, J. & Schaeffer, D. (2020). Gesundheitskompetenz der Bevölkerung in Deutschland: Vergleich der Erhebungen 2014 und 2020. https://www.uni-bielefeld.de/fakultaeten/erziehungswissenschaft/izgk/aktuelles/HLS-GER-1-2020.pdf

Irving, G., Neves, A. L., Dambha-Miller, H., Oishi, A., Tagashira, H., Verho, A. & Holden, J. (2017). International variations in primary care physician consultation time: a systematic review of 67 countries. *BMJ open*, *7*(10), e017902. https://doi.org/10.1136/bmjopen-2017-017902

Jensen, N. H., Aaby, A., Ryom, K. & Maindal, H. T. (2021). A CHAT about health literacy - a qualitative feasibility study of the Conversational Health Literacy Assessment Tool (CHAT) in a Danish municipal healthcare centre. *Scandinavian journal of caring sciences*, *35*(4), 1250–1258. https://doi.org/10.1111/scs.12943

Jindal, P. & MacDermid, J. C. (2017). Assessing reading levels of health information: uses and limitations of Flesch formula. *Education for health*, *30*(1), 84–88. https://doi.org/10.4103/1357-6283.210517

Kaper, M. S., Sixsmith, J., Koot, J. A. R., Meijering, L. B., van Twillert, S., Giammarchi, C., Bevilacqua, R., Barry, M. M., Doyle, P., Reijneveld, S. A. & Winter, A. F. de (2018). Developing and pilot testing a comprehensive health literacy communication training for health professionals in three European countries. *Patient education and counseling*, *101*(1), 152–158. https://doi.org/10.1016/j.pec.2017.07.017

Kaper, M. S., Winter, A. F. de, Bevilacqua, R., Giammarchi, C., McCusker, A., Sixsmith, J., Koot, J. A. R. & Reijneveld, S. A. (2019). Positive Outcomes of a Comprehensive Health Literacy Communication Training for Health Professionals in Three European Countries: A Multi-centre Pre-post Intervention Study. *International journal of environmental research and public health*, *16*(20). https://doi.org/10.3390/ijerph16203923

Karuranga, S., Sørensen, K., Coleman, C. & Mahmud, A. J. (2017). Health Literacy Competencies for European Health Care Personnel. *Health literacy research and practice*, *1*(4), e247-e256. https://doi.org/10.3928/24748307-20171005-01

Koenig, V. E. (2018). Health Literacy: Pure and Simple. *Annals of Physiotherapy & Occupational Therapy*, *1*(2). https://doi.org/10.23880/aphot-16000109

Koenig, V. E. & Provident, I. M. (2019). Workshop series for occupational therapists using the US Agency for Healthcare Research and Quality's Health Literacy Universal Precautions Toolkit and other supported tools. *Health Education Journal*, *78*(4), 451–463. https://doi.org/10.1177/0017896918820067

Kolpatzik, K., Schaeffer, D & Vogt, D. (2018). Förderung der Gesundheitskompetenz – eine Aufgabe der Pflege. *GGW*, *18*(2), 7–14.

LeDoux, J. & Mann, C. (2019). Addressing Limitations in Health Literacy: Greater Understanding Promotes Autonomy and Self-Determination. *Professional case management*, *24*(4), 219–221. https://doi.org/10.1097/NCM.0000000000000376

LeQuieu, E. D. (2016). The Influence of Health Literacy on Occupational Therapy Practice.

Levasseur, M. & Carrier, A. (2012). Integrating health literacy into occupational therapy: findings from a scoping review. *Scandinavian journal of occupational therapy*, *19*(4), 305–314. https://doi.org/10.3109/11038128.2011.588724

Lubasch, J. S., Voigt-Barbarowicz, M., Lippke, S., Wilde, R. L. de, Griesinger, F., Lazovic, D., Ocampo Villegas, P. C., Roeper, J., Salzmann, D., Seeber, G. H., Torres-de-la-Roche, L.-A., Weyhe, D., Ansmann, L. & Brütt, A. L. (2021). Improving professional health literacy in hospitals: study protocol of a participatory codesign and implementation study. *BMJ open*, *11*(8), e045835. https://doi.org/10.1136/bmjopen-2020-045835

Mackey, L. M., Blake, C., Casey, M.-B., Power, C. K., Victory, R., Hearty, C. & Fullen, B. M. (2019). The impact of health literacy on health outcomes in individuals with chronic pain: a cross-sectional study. *Physiotherapy*, *105*(3), 346–353. https://doi.org/10.1016/j.physio.2018.11.006

Miller-Scott, C. (2014). An Evidence-Based Health Literacy Training Program for Occupational Therapy Professionals: Program Development and Evaluation. Nova Southeastern University.

Minghelli, B. (2020). School physiotherapy programme: Improving literacy regarding postures adopted at home and in school in adolescents living in the south of Portugal. *Work* (Reading, Mass.), 67(1), 95–102. https://doi.org/10.3233/WOR-203255

Murugesu, L., Heijmans, M., Rademakers, J. & Fransen, M. P. (2022). Challenges and solutions in communication with patients with low health literacy: Perspectives of healthcare providers. *PloS one*, *17*(5), e0267782. https://doi.org/10.1371/journal.pone.0267782

Muscat, D. M., Ceprnja, D., Hobbs, K., Gibson, J.-A., Blumenthal, C., Milad, R., Burns, C., Lau, T. & Flood, V. (2021). Development and evaluation of a health literacy training program for allied health professionals: A pre-post study assessing impact and implementation outcomes. *Health promotion journal of Australia : official journal of Australian Association of Health Promotion Professionals*, *32* Suppl 1, 88–97. https://doi.org/10.1002/hpja.350

Netzwerk Leichte Sprache. (2022). Das ist Leichte Sprache. https://www.leichte-sprache.org/leichte-sprache/das-ist-leichte-sprache/

Nutbeam, D. (2000). Health Literacy as public health goal: a challenge fpr contemporary health education and communication strategies into the 21st century. *Health Promotion International*, *15*(3), 259–267.

Perez, S., Bolanos, J. & Wong, M. (2020). Consideration of Health Literacy and Acculturation in a Non-Native English-Speaking Patient: A Case Report. *Orthopaedic Physical Therapy Practice*, *32*(3), 184–188.

Peters, M. D., Godfrey, C. M., McInerney, K. H., Parker, D. & Baldini Soares, C. (2015). Guidance for conducting systematic scoping reviews. I*nt J Evid Based Healthc*, *13*(3), 141–146.

Pizur-Barnekow, K. & Darragh, A. (2011). AOTA's Societal Statement on Health Literacy. *The American journal of occupational therapy: Official publication of the American Occupational Therapy Association*, *65*(6_Supplement), S78-S79. https://doi.org/10.5014/ajot.2011.65S78

Pizur-Barnekow, K., Darragh, A. & Miller, C. (2017). AOTA's Societal Statement on Health Literacy. *The American journal of occupational therapy : official publication of the American Occupational Therapy Association*, *71*(Supplement_2), 7112410065p1-7112410065p2. https://doi.org/10.5014/ajot.2017.716S14

Pleasant, A., Rudd, R. E., O'Leary, C., Paasche-Orlow, M. K., Allen, M. P., Alvarado-Little, W., Myers, L., Parson, K. & Rosen, S. (2016). Considerations for a New Definition of Health Literacy. *NAM Perspectives*, *6*(4). https://doi.org/10.31478/201604a

Rajah, R., Ahmad Hassali, M. A., Jou, L. C. & Murugiah, M. K. (2018). The perspective of healthcare providers and patients on health literacy: a systematic review of the quantitative and qualitative studies. *Perspectives in public health*, *138*(2), 122–132. https://doi.org/10.1177/1757913917733775

Rueda-Medina, B., Gómez-Urquiza, J. L., Tapia-Haro, R., Casas-Barragán, A., Aguilar-Ferrándiz, M. E. & Correa-Rodríguez, M. (2020). Assessing health science students' health literacy and its

association with health behaviours. *Health & social care in the community*, *28*(6), 2134–2139. https://doi.org/10.1111/hsc.13024

Salter, C., Brainard, J., McDaid, L. & Loke, Y. (2014). Challenges and opportunities: what can we learn from patients living with chronic musculoskeletal conditions, health professionals and carers about the concept of health literacy using qualitative methods of inquiry? *PloS one*, *9*(11), e112041. https://doi.org/10.1371/journal.pone.0112041

Schaeffer, D., Ewers, M., Horn, A, Büker, C., Gille, S., Wagner, F. & Weskamm, A. (2020). Kurzinformation für Pflegefachpersonen. Herausgegeben von Deutscher Berufsverband für Pflegeberufe (DBfK) und Nationaler Aktionsplan Gesundheitskompetenz (NAP). DBfK / NAP.

Schaeffer, D, Berens, E.-M., Gille, S., Griese, L., Klinger, J, Sombre, S. de, Vogt, D. & Hurrelmann, K. (2021). Gesundheitskompetenz der Bevölkerung in Deutschland vor und während der Corona Pandemie: Ergebnisse des HLS-GER 2. https://doi.org/10.4119/unibi/2950305

Schaeffer, D & Gille, S (2020). Förderung der Gesundheitskompetenz – eine Zukunftsaufgabe. *PADUA*, *15*(1), 1. https://doi.org/10.1024/1861-6186/a000527

Schaeffer, D., Haarmann, A., Griese, L. (2023). Professionelle Gesundheitskompetenz ausgewählter Gesundheitsprofessionen in Deutschland. Ergebnisse des HLS-PROF-GER.

Schaeffer, D., Hurrelmann, K., Bauer, U. & Kolpatzik, K. (Hrsg.). (2018). Nationaler Aktionsplan Gesundheitskompetenz: Die Gesundheits kompetenz in Deutschland stärken. KomPart. https://www.nap-gesundheitskompetenz.de/app/download/7775446063/Nationaler%20Aktionsplan%20Gesundheitskompetenz.pdf?t=1581875179

Schwendemann, H. & Thieme, H. (2022, 1. Oktober). Welche Rolle nehmen Therapieberufe im Bereich der Gesundheitskompetenz ein? FH Furtwangen. 6. FSPT Freiburg, Freiburg.

Seidler, A., Nußbaumer-Streit, B., Apfelbacher, C. & Zeeb, H. (2021). Rapid Reviews in Zeiten von COVID-19 – Erfahrungen im Zuge des Kompetenznetzes Public Health zu COVID-19 und Vorschlag eines standardisierten Vorgehens [Rapid Reviews in the Time of COVID-19 - Experiences of the Competence Network Public Health COVID-19 and Proposal for a Standardized Procedure]. *Gesundheitswesen (Bundesverband der Arzte des Offentlichen Gesundheitsdienstes (Germany)*, *83*(3), 173–179. https://doi.org/10.1055/a-1380-0926

Simon, A., Ebinger, M. & Holoch, E. (2021). Die Gesundheitskompetenz von angehenden Ärzt*innen Pflegenden, Hebammen, Therapeut*innen und Gesundheitsmanager*innen in Deutschland – Explorative Pilotstudie [Health Literacy Among German Health Professionals-To-Be - Exploratory Pilot Study]. Gesundheitswesen (Bundesverband der Arzte des Offentlichen Gesundheitsdienstes (Germany). Vorab-Onlinepublikation. https://doi.org/10.1055/a-1657-9627

Smith, D. L. & Gutman, S. A. (2011). Health literacy in occupational therapy practice and research. *The American journal of occupational therapy : official publication of the American Occupational Therapy Association*, *65*(4), 367–369. https://doi.org/10.5014/ajot.2011.002139

Sørensen, K., Pelikan, J. M., Röthlin, F., Ganahl, K., Slonska, Z., Doyle, G., Fullam, J., Kondilis, B., Agrafiotis, D., Uiters, E., Falcon, M., Mensing, M., Tchamov, K., van den Broucke, S. & Brand, H. (2015). Health literacy in Europe: comparative results of the European health literacy survey (HLS-EU). *European journal of public health*, *25*(6), 1053–1058. https://doi.org/10.1093/eurpub/ckv043

Sørensen, K., van den Broucke, S., Fullam, J., Doyle, G., Pelikan, J., Slonska, Z. & Brand, H. (2012). Health literacy and public health: a systematic review and integration of definitions and models. *BMC public health*, *12*, 80. https://doi.org/10.1186/1471-2458-12-80

Toibin, M., Pender, M. & Cusack, T. (2017). The effect of a healthcare communication intervention — ask me 3; on health literacy and participation in patients attending physiotherapy. *European Journal of Physiotherapy*, *19*(sup1), 12–14. https://doi.org/10.1080/21679169.2017.1381318

Trezona, A., Dodson, S., Osborne, R. H., Trezona, A., Dodson, S. & Osborne, R. H. (2017). Development of the organisational health literacy responsiveness (Org HLR) framework in vollaboration with health and social service professuibals // Development of the organisational health literacy responsiveness (Org-HLR) framework in collaboration with health and social services professionals. *BMC Health Service Research*, *17*(1), 513–525. https://doi.org/10.1186/s12913-017-2465-z

Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., Moher, D., Peters, M. D. J., Horsley, T., Weeks, L., Hempel, S., Akl, E. A., Chang, C., McGowan, J., Stewart, L., Hartling, L., Aldcroft, A., Wilson, M. G., Garritty, C., . . . Straus, S. E. (2018). PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Annals of internal medicine*, *169*(7), 467–473. https://doi.org/10.7326/M18-0850

Voigt-Barbarowicz, M., Dietz, G., Renken, N., Schmöger, R. & Brütt, A. L. (2022). Patients' Health Literacy in Rehabilitation: Comparison between the Estimation of Patients and Health Care Professionals. *International journal of environmental research and public health*, *19*(6). https://doi.org/10.3390/ijerph19063522

Weiland, R. & Büscher, A. (2021). Förderung von Gesundheitskompetenz als Aufgabe der Gesundheitsprofessionen? Prävention und Gesundheitsförderung. Vorab-Onlinepublikation. https://doi.org/10.1007/s11553-021-00874-5

Weishaar, H., Berens, E.-M., Vogt, D., Gille, S., Horn, A., Schmidt-Kaehler, S. & Schaeffer, D. (2018b). Physiotherapeuten als wichtige Berater – Mangelware Gesundheitskompetenz. *Physiopraxis*, *16*(01), 12–14. https://doi.org/10.1055/s-0043-120166

Weishaar, H., Berens, E. M., Vogt, D., Gille, S., Horn, A., Schmidt-Kaehler, S. & Schaeffer, D. (2018a). Ergos haben Schlüsselrolle: Gesundheitskompetenz. *Ergopraxis*(1), 8–10.

Wirner, C., Pott, C., Kirschneck, M. & Coenen, M. (2022). Bundesweite Bestandsaufnahme zum Konstrukt Gesundheitskompetenz aus der Perspektive der Profession Physiotherapie [Nationwide Inventory of the Health Literacy Construct from the Perspective of the Profession Physiotherapy]. *Gesundheitswesen (Bundesverband der Arzte des Offentlichen Gesundheitsdienstes, Germany)*, *84*(1), 60–63. https://doi.org/10.1055/a-1144-2948