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## HEALTH LITERACY LEVELS IN TEACHERS: A LITERATURE REVIEW

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## **HEALTH LITERACY LEVELS IN TEACHERS: A LITERATURE REVIEW**

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### **ABSTRACT**

Health literacy levels among teachers are notably low, posing potential challenges in effectively transferring relevant health knowledge to students. Teachers play a pivotal role not only in imparting academic education but also in promoting health and well-being among students. However, if teachers themselves lack adequate health literacy skills, they may struggle to understand and convey essential health information accurately. This gap in health literacy could hinder their ability to address students' health-related questions, concerns, and needs effectively, ultimately impacting students' comprehension and adoption of healthy behaviors. The significance of teachers' health literacy extends beyond the classroom. Teachers serve as role models for students, influencing their attitudes, beliefs, and behaviors towards health. When teachers possess high health literacy, they are better equipped to model healthy habits, provide accurate information, and create supportive environments that foster students' overall well-being. Conversely, low health literacy among teachers may perpetuate misconceptions, misinformation, and unhealthy practices, inadvertently contributing to the spread of health-related myths or misinformation among students. Furthermore, the review study underlines the need to investigate the health literacy of teachers, particularly in the context of the COVID-19 pandemic. While existing research has examined health literacy levels in the general population during the pandemic, no relevant studies have specifically focused on teachers. Given the unique roles and responsibilities of teachers in disseminating health information and promoting preventive measures among students, understanding their level of health literacy during

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and after the COVID-19 is paramount. By assessing teachers' health literacy levels, identifying areas of weakness, and providing targeted interventions or support, educators can be better equipped to navigate the complexities of the crisis and fulfill their crucial role in promoting health and safety within schools and communities.

**Key-words:** COVID-19; health literacy; pandemic; SARS-CoV-2; teachers

## 1. Introduction

The World Health Organization (WHO, 1988) defines health literacy as the development of cognitive and social skills that enable individuals to access, understand, and process information related to improving their health.

The importance of health literacy has been extensively emphasized in the literature (Chinn, 2011; Nutbeam, 2008; Paakkari & Okan, 2019; Sørensen et al., 2012). Nutbeam (2008) and Chinn (2011) believe that engaging patients through literacy ultimately contributes to the overall improvement of the health system, as well as to achieving better medical outcomes, enhancing the critical capacity of patients, who become more active citizens and are more aware of the treatments proposed by health professionals. Finally, Sørensen et al. (2012) report that health literacy contributes to better disease prevention, reduces the cost of treatments, and ultimately improves citizens' health.

Education plays a vital role in public health literacy (Nutbeam, 2000). In other words, a determining factor in shaping literate citizens on health-related issues is the work of teachers, both those at the lower level and those at the higher level. The role of primary education teachers is even more critical, given that teaching at a young age has the most significant impact on the formation of future citizens (Paakkari & Okan, 2019).

As stated by Nutbeam (2000), the concept of health literacy can be understood through three distinct but interrelated dimensions: functional health literacy, which refers to basic skills in reading and understanding health information; interactive health literacy, which involves more advanced communicative and social skills that enable individuals to engage with others and apply health information in everyday situations; and critical health literacy, which encompasses the ability to critically analyze health information, question its credibility, and use it to exert greater control over personal and collective health decisions. This framework emphasizes that enhancing health

literacy extends beyond the simple transmission of information or the development of basic skills, such as reading pamphlets or scheduling medical appointments. Instead, it involves strengthening individuals' access to reliable health information and their capacity to apply it meaningfully in everyday life. In this context, education is considered a fundamental determinant of population health, as it enhances individuals' ability to engage with health information effectively and thereby contributes to improved health outcomes at the societal level (Keleher & Hagger, 2007).

Health education is a multifaceted concept that encompasses a broad spectrum of educational and communicative interventions designed to promote health-related knowledge and behaviors. Its primary aim is to enhance citizens' awareness and understanding of health issues, thereby empowering them to make informed decisions about their well-being. Scholars and practitioners in both developed and developing countries have long emphasized the strong interconnection between health and education (Squiers et al., 2012). Within this framework, education and literacy are recognized as fundamental determinants of health, alongside income, employment, working conditions, and the broader social environment. However, the relative influence and interplay of these determinants remain areas that warrant further empirical investigation (Martin et al., 2009).

In modern education, the role of the teacher is acknowledged as quite different compared to the past. In that past, teachers were regarded as professionals appointed by the state only to deliver specific related to a course knowledge to the students. Yet, in modern education teachers have a broader role, which is related to the overall support of students' development and societal progress (Kalantzis & Cope, 2013). In that context, teachers' literacy could be regarded as related to the aim and scope of modern education. In particular, teachers play a pivotal role in promoting health literacy, as they serve not only as educators but also as influential role models for students. By integrating health-related knowledge and practices into the classroom, teachers can enhance students' ability to access, understand, and apply health information effectively. Moreover, their capacity to foster critical thinking and encourage healthy behaviors contributes to the development of lifelong skills that extend beyond the school environment, ultimately supporting the well-being of both individuals and communities.

Considering the above, the aim of this review is to examine and synthesize the existing literature on teachers' health literacy, with particular attention to its levels, determinants, and implications for both education and public health. By exploring research conducted in diverse educational and cultural contexts, the review seeks to highlight recurring patterns, identify gaps in the evidence base, and provide directions for future research. To achieve this, the paper is structured as follows: first, it outlines the conceptual foundations of health literacy and its relationship with education; second, it presents a synthesis of studies examining teachers' health literacy, including general, mental, and COVID-19-related dimensions, and third, it discusses the key findings and directions for further research.

## 2. Review Methodology

This study employed a narrative literature review approach to synthesize current knowledge on teachers' health literacy. To identify relevant studies, a comprehensive search of electronic databases was conducted, including PubMed, Scopus, Web of Science, ERIC, and Google Scholar. The search strategy combined keywords such as "*health literacy*", "*teachers*", "*education*", "*school health promotion*," and "*mental health literacy*".

The search focused on peer-reviewed studies, books, and reports published between 2000 and 2023, covering both quantitative and qualitative research designs. Publications were included if they examined (a) health literacy among pre-service or in-service teachers at any educational level, (b) the role of teachers in promoting or transmitting health literacy, or (c) the relationship between health literacy and student or community health outcomes. Only works published in English were considered.

Studies were excluded if they (a) focused solely on health literacy in the general population without reference to teachers, (b) were conference abstracts without accessible full texts, or (c) were published in languages other than English.

The initial search yielded a large pool of studies. After removing duplicates and applying the inclusion and exclusion criteria, a total of 36 studies were retained for full-text analysis. The selected studies were analyzed thematically, focusing on: (a) the level of health literacy among teachers, (b) determinants of health literacy, (c) teachers'

mental health literacy, and (d) the role of health literacy in crisis contexts such as the COVID-19 pandemic.

The selected studies were analyzed thematically, consistent with the narrative review approach. Unlike a systematic review, which applies rigid inclusion criteria and aims for exhaustive coverage, a narrative review was chosen because the field of teachers' health literacy is still developing and characterized by diverse methodologies, populations, and conceptual frameworks. A narrative synthesis therefore allows for a more flexible and integrative analysis, identifying recurring themes, conceptual gaps, and practical implications for education and public health.

### **3. The Importance of Developing Health-Literate Citizens**

The benefits of health literacy are directly related to its conceptual framework, underlining the overall importance of the term. For example, Nutbeam (2000), who sets out one of the most comprehensive models on the positive impact of health literacy, considers that benefits can be divided into: social, on the quality of the population's health, intermediate and health promotion-related benefits. Social benefits include improvement in the quality of life of the population, functional independence and health equity. Health-related benefits include reduction of mortality rates, disability, morbidity, etc. Intermediate benefits of literacy include reduced tobacco and alcohol use, better nutrition, provision of appropriate and reliable health services, etc. Finally, as he supports, the benefits relating to health promotion include all the actions that demonstrate the mobilisation of society and the state institutions to create a more complete and human-centred health system.

At the same time, Speros (2005) distinguishes the benefits of health literacy both individually and for the health system as a whole. Specifically, individual benefits relate to: improving potential patients' ability to read medical information, greater familiarity with the statistics of medical studies, greater exposure to medical information, the ability to use health information, leading to decision-making and better patient behaviour. On the other hand, the benefits for the health system relate to: lower health care costs, lower hospitalisation rates and reduced use of health services by the population as a whole.

The benefits reported by Speros (2005) converge with those highlighted by Chinn (2011), which focus on better evaluation of medical information, reduction of inequalities, more democratic/equitable participation in health services and more active involvement of communities in solving health-related problems.

Based on the aforementioned, individual benefits of health literacy are linked to the social and health system benefits. In general, an informed patient or citizen contributes to a better health system, which underlines the important role of health literacy (Sørensen et al., 2021).

#### **4. Teachers' Health Literacy in the Context of COVID-19**

Health literacy has emerged as a crucial tool in navigating the complexities of the COVID-19 pandemic. With an influx of information from various sources, ranging from government agencies to social media platforms, individuals must possess the skills to access, understand, evaluate, and apply health information effectively (Paakkari & Okan, 2020). In the context of COVID-19, health literacy enables individuals to make informed decisions about protective measures, vaccination, testing, and healthcare utilization. It empowers people to discern reliable sources of information, distinguish between facts and misinformation, and comprehend the implications of public health guidance for themselves and their communities (Bin Naeem & Kamel Boulos, 2021). Moreover, health literacy fosters meaningful and effective communication with healthcare providers, enabling individuals to ask informed questions, articulate their concerns clearly, and participate more actively and confidently in decisions related to their own health care. In this context, higher levels of health literacy have been associated with improved public understanding, greater adherence to recommended guidelines, reduced susceptibility to misinformation, and a mitigation of the pandemic's impact on individual and community health (Paakkari & Okan, 2020).

Some of these studies are reviews of the previous literature. For example, for Hashemi-Shahri et al. (2020), high levels of health literacy regarding coronavirus lead to better and more informed health-related decisions, increased levels of prevention towards the disease, and overall improvement in the quality of life of community members.

Adding to this line of thinking is Abdel-Latif's (2020) study on whether health literacy on COVID-19 can play a vital role in the overall fight against the pandemic and in creating a climate of solidarity among community members. In other words, the researcher views literacy as the primary lever for maintaining social cohesion and reducing health-related inequalities.

Paakkari & Okan (2020) add that health literacy on COVID-19 is more relevant than ever in health crises. In particular, it contributes to providing citizens with good information on the characteristics of the disease, enhances public responsibility and solidarity and ensures that the necessary measures to protect public health are taken.

Similarly, Okan et al. (2020) found through a questionnaire study of 1,037 adults that those with low levels of health literacy showed a higher level of confusion about COVID-19, although several (50%) expressed strong distrust of information provided by the media.

The research by Naveed & Shaukat (2020) also focused on exploring the impact of health literacy on COVID-19. For these purposes questionnaires were distributed to a sample of 249 students. The results of the study showed a positive correlation between the level of health literacy and the adoption of a behaviour that protects both the individual from the disease and the whole society. At the same time, there was a variation in the level of health literacy according to the social and economic profile of the participants. This finding leads to the conclusion that different health policies need to be designed according to the population they target.

Do et al. (2020) and Nguyen et al. (2020b) studied the role of health literacy in the management of the COVID-19 pandemic by citizens. They found that a high level of health literacy is associated with lower levels of depression.

In addition, McCaffery et al. (2020) conducted a detailed study on the impact and implications of health literacy on COVID-19. These researchers also used quantitative research and specifically conducted a questionnaire survey of 4,362 adults. The results of the survey showed that those with low health literacy had a correspondingly low understanding of COVID-19 symptoms and were less able to adopt behaviours that favoured prevention over infection and had greater difficulty in finding information and understanding messages about the disease. They also had greater difficulty in recognising the importance of social distancing and in accessing

medication during the lockdown period. In conclusion, the research by McCaffery et al. (2020) highlighted the multiple benefits of health literacy, indicating that it should be a priority for health policy makers.

Furthermore, Nguyen et al. (2020b) examined the relationship between fear, health literacy and COVID-19. The results of the study showed that there is a negative relationship between health literacy and fear, i.e.: higher levels of health literacy lead to lower levels of fear. In this context, these scientists suggested that in the period following their research, public health strategies should be implemented to reduce people's fear of COVID-19, using health literacy as the main tool.

Seng et al. (2020) conducted a systematic literature review on issues related to health literacy in pandemic periods. Their analysis included 70 articles on COVID-19, SARS and MERS. These researchers found that during these crises the level of health literacy of citizens is relatively low, which makes it exceedingly difficult to respond to health crises. Variations were also found in the level of health literacy according to the demographic characteristics of citizens, with people with a high level of education, older people and women showing higher levels of literacy.

For Patil et al. (2021), health literacy related to COVID-19 is related to the physical and digital environment, leading to two different types. Both types of health literacy have a highly positive impact, both for the individual and for society as a whole. In particular, health literacy has been shown to help potential patients to better process the negative impact of the disease and to filter the information they receive on the evolution of the pandemic. In brief, the research by Patil et al. (2021) highlighted the contribution of health literacy in enhancing individuals' critical thinking. It is worth noting that the results of this research were based on a quantitative study in which 256 students participated.

In the same context, Spring (2021) reported in a related study that a society with a high level of health literacy about COVID-19 understood both the severity of the condition and how to protect its members through simple actions. In this context, health policy makers, health professionals themselves and the media play a primary role in providing accurate and reliable information to the general public.

Finally, Abel & McQueen (2021) emphasized the importance of health literacy in relation to COVID-19, considering health literacy as the key tool to mitigate the

negative impact of the pandemic. They therefore recommended that health literacy among citizens be strengthened and that States should remain vigilant to address similar situations in the future.

In conclusion, in the literature all studies have highlighted the multiple benefits of health literacy related to COVID-19. The benefits relate either to the behaviour of individuals or to society as a whole and can be divided into psychological, medical, etc. Another element that emerged from the analysis is that in times of health crisis the need for health literacy seems to become more urgent. Finally, differences were found in the level of health literacy of citizens according to their social, personal and economic profile. In this context, differentiated health policies should be implemented for each population group.

## **5. The Role of Education in Promoting Health Literacy**

Given the importance of health literacy, there is increased academic interest in examining the role and relationship between education and health literacy. Authors such as St Leger (2001) suggest that schools, and the education system in general, can play a key role in promoting health literacy. In this context, they provide a detailed table of objectives, educational content, outcomes and examples of activities that can be used within the school environment to promote health literacy. St Leger (2001) supports that there are three basic objectives that schools can serve in promoting health literacy, namely: 1) communication and transmission of information; 2) development of personal skills to handle health management related issues; and 3) personal and social empowerment to improve health literacy. The criticality of these objectives also highlights the particularly important role of the school environment in the context of health literacy. In particular, as he supports, the following issues are addressed: compliance with hygiene rules, eating habits, the use of medicines, human relations, relations with parents and sexuality. At later stages, the role of children as active citizens is reinforced, ensuring better health for the whole community population.

In conceptual congruence with the findings of St Leger (2001), are the findings of Bruselius-Jensen et al. (2017). These authors highlight the critical role that schools, and in particular primary school education, can have in promoting health literacy. More

specifically, the researchers evaluated the effectiveness of a health literacy education programme implemented in Danish primary schools on the promotion of physical activity and fitness. This educational programme was implemented in 12 classrooms in four public schools in Copenhagen in the autumn and winter of the year 2013-2014. A total of 281 students and 9 teachers participated in this study. The results of the study showed that teachers can significantly help to develop students' cognitive skills on health-related topics.

Peralta & Rowling (2018) investigated the relationship between education and health literacy at the secondary school level, particularly among adolescent students. For these researchers, the school must act as an organization that is well-educated on health-related issues and can ultimately implement health literacy in adolescent students. In order to implement school health literacy for adolescent students, Peralta & Rowling (2018) continue, a number of questions need to be answered, such as:

1. Is the health literacy programme or intervention aligned with the overall health literacy programme or intervention implemented nationally?
2. What changes will the health literacy intervention bring about in the school curriculum?
3. Does the health literacy intervention bring about changes in the ethos and/or environment of the school?
4. Does the health literacy intervention require the involvement of parents and/or the local community?
5. Does the health literacy intervention have clear health and educational objectives?
6. Is the health literacy intervention designed by health and education professionals?
7. Does the school leadership support the implementation of the intervention?

The questions posed by Peralta & Rowling (2018) highlight the fact that creating school-based health literacy interventions is a complex process, requiring coordination and methodical work from a range of different professional groups.

At the same time, according to Biesta's (2010) theory, it can be argued that health literacy in schools, among other school goals, represents the primary purposes of education, namely the qualification, socialization and individualization of students.

The integration of health education into the curriculum reflects the importance of developing skills, knowledge and understanding in different areas of life. The emphasis in health education on values such as participation, democracy, autonomy, responsibility and sustainability reflects the socialisation function, which generally means that children can learn these values during educational processes. Health literacy encourages students to think critically, to become aware of their own values and preferences and to find their own voice in issues concerning their health.

Similarly, according to Peterson et al. (2001), schools can play an important role in promoting health literacy. For this reason, these researchers state that educating teachers about health literacy plays a primary role. In this context, Peterson et al. (2001) developed a model on how teacher education can be carried out, on the basis of which academic theory provides useful information capable of shaping educational and pedagogical policies on health and health care. Hence, this model considers teacher training based on applied theory as the cornerstone of promoting health literacy in schools.

Finally, Whitley et al. (2013; 2018) also argue that health literacy for teachers plays a very crucial role in the dissemination of knowledge, which prominently includes health education. The latter, however, emphasise teachers' mental health literacy, stating that the higher the level of mental health literacy, the better the behaviour and student performance.

Based on the aforementioned, the school plays a particularly critical role in promoting health literacy. A prerequisite, however, is previously to have high levels of health literacy by teachers themselves. In this context, the next section examines teachers' health literacy levels through a presentation and analysis of relevant studies.

## 6. Teachers' Health Literacy Levels

Researchers such as Kutcher et al. (2013), Yilmazel & Cetinkaya (2015), Nordheim et al. (2016), Dods (2016), Ahmadi et al. (2017), Denuwara & Gunawardena (2017), Lai et al. (2018), Aluh et al., (2018), Rahimi & Elahe (2019), Lamanauskas & Augiene (2019) have analysed the link between the level of health literacy of both undergraduate and postgraduate students and practicing primary and secondary school

teachers with the translation of this knowledge into both health literacy teaching practice for students and self-improvement in health knowledge issues.

In particular, researchers such as Kutcher et al. (2013), Yilmazel & Cetinkaya (2015), Dods (2016), Denuwara & Gunawardena (2017), Lai et al. (2018), Aluh et al. (2018), Lai et al. (2018), as well as Rahimi & Elahe (2019), followed the quantitative research method and, with a numerically significant number of participants, they were able to make generalized conclusions about the associations between health literacy and socio-demographic data of the participants. Kutcher et al. (2013), Dods (2016) and Aluh et al. (2018) chose to address the issue of mental health of both the teachers themselves and their students. Kutcher et al. (2013) emphasized that the higher the level of teachers' health literacy (at the high school level), the more significant and positive impact they can have on issues related to their students' mental health. Indeed, according to the same authors, a competent level of health literacy among teachers can favour the provision of effective programs for the prevention of mental health problems among students.

The study carried out by Dods (2016) refers to the fact that the participants in the study, undergraduate students of an undergraduate pedagogy program in Ontario, Canada, were experiencing a high level of stress and that despite their prior experience and knowledge of mental health issues, they felt unprepared to support the mental health of their future students in a school environment. Finally, Aluh et al. (2018) demonstrated that Nigerian secondary school teachers could not (only 16.3% succeeded) distinguish the elements that make up emerging or existing depression in their students. At the same time, these teachers believed that even if they perceived depression in their students, it would take a sufficient period for the latter to recover from this challenging situation.

Yilmazel & Cetinkaya (2015), Denuwara & Gunawardena (2017), and Rahimi & Elahe (2019) focused their research on investigating the overall level of health literacy among the teachers participating in their respective studies. The common conclusion of all the aforementioned authors was that the teachers who participated in their research demonstrated a range from marginally tolerable to poor levels of mental health literacy.

At the same time, these researchers also highlighted some other important parameters that influence the level of teachers' literacy. In particular, **age** had a statistically significant effect in all studies. For example, a survey by Yilmazel & Cetinkaya (2015) demonstrated that older men were at a higher risk of having an inadequate level of health literacy. Denuwara & Gunawardena (2017), who also add the parameter of educational background, came to the same conclusion. Specifically, these researchers estimated that teachers above 45 years of age and with less than 10 years of academic experience have a low level of health literacy. Finally, Rahimi & Elahe (2019) reached the exact opposite conclusion, namely that participants in their study who were 35-40 years old or older and had high incomes had a higher level of health literacy.

A second grouping among the research analysed on teachers' health literacy emerges through the use of the qualitative research method. Specifically, the studies by Nordheim et al. (2016), Ahmadi et al. (2017), and Lamanauskas & Augiene (2019) have employed this approach. These authors chose this research method to study the perceptions of a presumably smaller number of participants in-depth. They all concluded that the skills of the teachers who participated in their studies regarding health literacy were deficient. For Nordheim et al. (2016), the problem specifically concerned the participants' limited ability to evaluate the health information they received critically. According to Lamanauskas & Augiene (2019), the most critical factors that may influence participants' understanding of the health information they receive are related to the existence and potential adoption of an overall healthy lifestyle (e.g., healthy diet, physical activity).

## 7. Synthesis of Literature

To provide a clearer overview of the existing research, the studies included in this review were grouped into three main categories: general health literacy, mental health literacy, and COVID-19-related health literacy (table 1). Research on *general health literacy* among teachers (e.g., Yilmazel & Cetinkaya, 2015; Denuwara & Gunawardena, 2017; Rahimi & Elahe, 2019) consistently reports marginal to poor levels of literacy, with demographic factors such as age, gender, and professional experience influencing outcomes. Studies addressing *mental health literacy* (Kutcher

et al., 2013; Dods, 2016; Aluh et al., 2018) highlight that both pre-service and in-service teachers often feel unprepared to support students' mental health needs, while qualitative studies (e.g., Nordheim et al., 2016) reveal a lack of critical appraisal skills. Finally, the extensive body of work produced during the *COVID-19 pandemic* underscores the importance of health literacy in times of crisis. Surveys and conceptual studies (Paakkari & Okan, 2020; McCaffery et al., 2020; Nguyen et al., 2020; Abel & McQueen, 2021) demonstrate that teachers, like the general population, are challenged by the "infodemic" of misinformation, with low literacy linked to fear, confusion, and poor preventive practices, and higher literacy associated with safer behaviors and resilience. This categorization highlights not only the breadth of research but also recurring gaps, particularly the lack of studies directly targeting teachers in the context of COVID-19.

**Table 1: Summary of the review**

Dimension	Authors (Year)	Focus Area /	Key Findings
Methodology			
General	Yilmazel & Cetinkaya (2015); Denuwara & Gunawardena (2017); Rahimi & Elahe (2019)	Quantitative studies on teachers' general health literacy	Teachers showed marginal to poor literacy; demographic factors (age, gender, experience, income) influenced literacy levels
Health Literacy	Lai et al. (2018)	Quantitative – Teaching beliefs and intentions	Teachers had moderate beliefs but limited intentions to integrate literacy in teaching
	Lamanauskas & Augiene (2019)	Qualitative – Primary teachers (Lithuania)	Knowledge about healthy lifestyle, practical behaviour and healthy lifestyle promotion are essential components of teachers' health literacy.

			Teachers lacked critical application of health information
<i>Mental Health Literacy</i>	Kutcher et al. (2013); Dods (2016); Aluh et al. (2018)	Quantitative studies on mental health literacy	Teachers struggled to identify or address mental health needs of students; pre-service teachers felt unprepared
	Nordheim et al. (2016)	Qualitative – Science teachers	Teachers lacked skills to critically evaluate health-related claims
	Ahmadi et al. (2017)	Normative inquiry – Curriculum development	Proposed a curriculum to strengthen pre-service teachers' mental health literacy
<i>COVID-19 &amp; Health Literacy</i>	Paakkari & Okan (2020); Spring (2021); Abel & McQueen (2021)	Narrative/Conceptual works	Health literacy essential in pandemic resilience, solidarity, and critical thinking
	McCaffery et al. (2020); Okan et al. (2020); Nguyen et al. (2020); Do et al. (2020); Naveed & Shaukat (2020); Patil et al. (2021)	Quantitative surveys (Australia, Germany, Vietnam, Pakistan, USA)	Low literacy linked to poor COVID-19 prevention behaviors, confusion, fear, and depression; high literacy predicted safer behaviors
	Abdel-Latif (2020); Hashemi-Shahri et al. (2020)	Conceptual and quantitative studies on information sources	Literacy is crucial for filtering misinformation, making better health-related decisions, maintaining social cohesion

## 8. Discussion

This review highlights that health literacy levels among teachers are often insufficient, raising concerns about their capacity to effectively transfer health-related knowledge to students. The findings across both quantitative and qualitative studies (e.g., Kutcher et al., 2013; Yilmazel & Cetinkaya, 2015; Dods, 2016; Nordheim et al., 2016; Aluh et al., 2018; Rahimi & Elahe, 2019) consistently suggest that teachers face challenges in interpreting, evaluating, and applying health information. While functional literacy—such as the ability to read and recall information—is generally present, gaps remain in interactive and critical dimensions, which are essential for fostering critical thinking and adapting health knowledge to diverse classroom needs (Nutbeam, 2000).

Several factors appear to influence teachers' health literacy, including age, professional experience, and socioeconomic status. For instance, Yilmazel & Cetinkaya (2015) and Denuwara & Gunawardena (2017) found lower health literacy among older male teachers, whereas Rahimi & Elahe (2019) reported the opposite trend, highlighting the complexity of demographic influences. Beyond personal characteristics, qualitative studies point to broader lifestyle and environmental factors, such as engagement in healthy practices, as significant determinants (Lamanauskas & Augiene, 2019). These variations underscore the need for context-sensitive approaches when designing interventions.

The review also reveals that teachers' mental health literacy represents a particularly critical area. Studies by Kutcher et al. (2013) and Aluh et al. (2018) demonstrate that limited awareness and misconceptions regarding mental health conditions hinder teachers' ability to identify and support students at risk. This suggests that without targeted training, teachers may inadvertently perpetuate stigma or fail to intervene early in addressing students' mental health needs.

The COVID-19 pandemic further emphasized the importance of health literacy in education. While multiple studies have examined health literacy in the general

population during the pandemic (Paakkari & Okan, 2020; McCaffery et al., 2020; Nguyen et al., 2020; Abel & McQueen, 2021), little is known about teachers' specific literacy levels in this context. Given their frontline role in disseminating preventive information and countering misinformation within schools, this absence of research represents a critical gap. Teachers' ability to navigate the "infodemic" (Bin Naeem & Kamel Boulos, 2021) is directly linked to how effectively students and their families adopt protective measures.

Overall, the findings of this review suggest three key implications. First, teacher education programs should integrate health literacy training, not only to enhance teachers' own competencies but also to equip them to deliver effective health education (Peterson et al., 2001; Whitley et al., 2013, 2018). Second, school systems must prioritize professional development that fosters both general and mental health literacy, recognizing their role in shaping healthy school environments. Third, future research should address methodological inconsistencies, particularly the lack of standardized tools for measuring health literacy across different populations and cultural contexts. Longitudinal and comparative studies are needed to assess how teachers' health literacy evolves over time and under varying policy frameworks.

In conclusion, teachers represent a critical link between health systems and younger generations. Strengthening their health literacy is not only essential for their own well-being but also for cultivating health-literate students and communities. By addressing current gaps and investing in targeted interventions, educational and health policies can leverage teachers' pivotal role to advance public health outcomes.

## **9. Directions for Further Research**

The findings of this review highlight several areas that warrant further investigation. First, there is a need for systematic research on teachers' health literacy during and after the COVID-19 pandemic, given their central role in disseminating accurate health information in times of crisis. While studies have addressed the general population, few have specifically examined teachers as mediators of health-related knowledge in school communities.

Second, future studies should employ standardized and validated instruments to measure teachers' health literacy. The lack of consistency in assessment tools across existing research limits comparability and makes it difficult to draw generalizable conclusions. Developing tools that account for both functional and critical dimensions of literacy would strengthen the evidence base. Third, more longitudinal studies are required to explore how teachers' health literacy develops over time and how it is influenced by professional training, school policies, and broader sociocultural contexts. Such studies could reveal whether targeted interventions in teacher education programs have lasting impacts.

Fourth, further research should address mental health literacy among teachers, an area shown to be particularly weak. Investigating effective strategies for equipping teachers with the skills to recognize and support students' mental health needs is of critical importance for both student well-being and school environments. Finally, cross-cultural and comparative research could illuminate how socioeconomic and cultural factors shape teachers' health literacy worldwide. Understanding these variations will be essential for designing interventions that are both contextually relevant and globally informed.

## 10. Conclusions

This review highlights that teachers' health literacy remains limited, particularly in the interactive and critical domains, which reduces their ability to evaluate health information and support students effectively. Mental health literacy emerges as a particularly weak area, while the COVID-19 pandemic underscored the urgent need for teachers to navigate misinformation and promote preventive behaviors. Strengthening teachers' health literacy through targeted training, curriculum integration, and supportive school policies is essential for improving both educational practice and public health. Ultimately, empowering teachers as health-literate role models can contribute to healthier students, schools, and communities.

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