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Review Article

The role of health literacy in enhancing preventive healthcare: A comprehensive review of challenges, interventions, and future directions

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Abstract
Health literacy is a fundamental aspect of healthcare, influencing an individual's ability to understand, access, and apply health information to make informed decisions. In preventive healthcare, higher health literacy is crucial for promoting healthy behaviors and improving overall health outcomes. This review explores the multidimensional nature of health literacy, examining its role in disease prevention and its impact on access to preventive services. While individuals with greater health literacy are more likely to engage in preventive behaviors, low health literacy is associated with poor health outcomes, decreased utilization of preventive measures, and increased healthcare costs. The challenges of promoting health literacy are multifaceted, including barriers related to the complexity of health information, cultural and socioeconomic disparities, and inadequate tools for measuring health literacy in specific populations. This review also highlights key interventions and programs designed to enhance health literacy, such as community-based initiatives, educational strategies, and digital health tools.

Introduction

Health literacy is characterized as an individual's ability to acquire, process, and comprehend basic health information and services required for making appropriate health-related decisions. Within preventive healthcare, health literacy is crucial for empowering individuals to embrace behaviors that prevent illness, manage chronic conditions, and improve overall health outcomes.[1] Preventive care involves strategies aimed at preventing disease development (primary prevention), detecting illnesses at early stages (secondary prevention), and mitigating the impact of ongoing diseases (tertiary prevention).[2,3]

Poor health literacy has been linked to unfavorable health outcomes, reduced adherence to preventive measures, and heightened healthcare costs.[4] The increasing focus on preventive healthcare emphasizes health literacy's role as a critical factor in health behavior and access to services. This review explores the influence of health literacy in enhancing preventive healthcare, focusing on current interventions and identifying future research opportunities.

Conceptual framework of health literacy

Health literacy is a complex concept that includes various dimensions, definitions, and models. It is generally understood as the combination of knowledge, motivation, and abilities needed to access, comprehend, assess, and apply health information to make informed decisions regarding health and disease prevention.[1] This definition highlights the importance of not only acquiring information but also effectively utilizing it to maintain or enhance quality of life over time.[5]

Several frameworks have been established to clarify health literacy's components and its impact. For instance, Sørensen et al conducted a systematic review that combined different definitions and models, identifying key factors that contribute to and result from health literacy.[1] They emphasized that health literacy is influenced by personal factors like education and socioeconomic background, as well as systemic aspects such as access to healthcare services and information.[1] This approach corresponds with the Organizational Health Literacy model, which suggests that health literacy should be addressed at the organizational level to improve the responsiveness of healthcare systems and foster community participation.[6]

Moreover, health literacy is increasingly seen as a multidimensional concept encompassing functional, interactive, and critical literacy.[7] Functional health literacy refers to basic reading and writing skills, while interactive

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health literacy involves more advanced abilities to engage with health information. Critical health literacy pertains to the capacity to critically assess information and make informed decisions.[7] This multidimensional perspective is essential for understanding how health literacy affects health outcomes, as individuals with higher health literacy are more likely to practice preventive health behaviors and follow treatment guidelines.[8]

Additionally, the operationalization of health literacy has been a key focus in research. Several tools have been created to measure health literacy in different populations and settings, including adolescents and older adults.[9,10] These tools often reflect health literacy's complexity by integrating cognitive, emotional, and social aspects, allowing for a more comprehensive evaluation of individuals' health literacy capacities.[11] For example, the Health Literacy Questionnaire (HLQ) was developed to capture a broad spectrum of health literacy skills, emphasizing the need for assessments tailored to specific contexts.[9]

In conclusion, health literacy's conceptual framework is defined by its multidimensional nature, systemic influences, and the need for context-specific measurement tools. As health literacy continues to evolve, it is crucial for researchers and practitioners to adopt a holistic approach that takes into account the wide range of factors affecting health literacy and its influence on health outcomes.

Overview of preventive health care

Preventive health care adopts a proactive stance toward preventing diseases and maintaining health through measures like screenings, vaccinations, and health education. It is vital for reducing the incidence of chronic diseases and improving public health outcomes overall. Preventive healthcare can be divided into three primary types: primary prevention (preventing disease onset), secondary prevention (early detection and intervention), and tertiary prevention (reducing the impact of ongoing illnesses or injuries by limiting complications and improving quality of life).[2,3]

Studies emphasize preventive care's importance in improving health outcomes and lowering healthcare costs. For example, individuals who regularly participate in preventive services, such as vaccinations and check-ups, tend to have better health outcomes and lower healthcare costs over time.[12,13] This is particularly relevant for chronic diseases, where preventive actions can slow disease progression and lower related healthcare expenses.[14] Moreover, integrating preventive services into primary care has been shown to increase access and use, especially in underserved populations.[15,16]

Accessibility to preventive healthcare services is a major determinant of their usage. Studies suggest that barriers like lack of insurance, low socioeconomic status, and geographical challenges can significantly hinder access to preventive services.[16,17] For example, people without a regular source of care are less likely to receive preventive services, which can lead to fragmented care and poorer health outcomes.[16] Therefore, addressing these barriers is essential for ensuring equitable access to preventive care.

On a broader scale, preventive healthcare has significant implications for public health systems. By prioritizing prevention, healthcare systems can reduce the burden of disease, improve population health, and lower overall healthcare costs.[13,18] The transition toward preventive care is increasingly recognized as essential for enhancing health outcomes and ensuring healthcare systems' long-term sustainability.[19,20]

In summary, preventive healthcare is a crucial part of modern healthcare, stressing the importance of proactive disease prevention and health promotion. Evidence supports its effectiveness in improving health outcomes and reducing costs, highlighting the need for expanded access and utilization of preventive services across different populations.

Health literacy as a predictor of preventive health behaviors

Health literacy is increasingly recognized as a key predictor of preventive health behaviors across diverse populations and healthcare settings. It encompasses the abilities needed to obtain, comprehend, evaluate, and apply health information, which, in turn, influences individuals' health-related choices and actions.[4,21] Health literacy encompasses multiple dimensions impacting healthcare access and preventive behaviors (Table 1). A review by Sørensen et al found that higher health literacy is correlated with better health outcomes, largely due to increased knowledge, positive attitudes, and self-efficacy, all of which are essential for engaging in preventive behaviors.[4]

In the context of COVID-19, recent research has examined health literacy's role in encouraging preventive behaviors. For instance, Sánchez-Arenas et al found that individuals with higher health literacy were more likely to follow COVID-19 preventive guidelines due to their ability to effectively use diverse information sources.[21] Likewise, studies conducted in China showed that both disease awareness and eHealth literacy significantly predicted preventive behaviors during the pandemic, indicating that individuals with better health literacy were more proactive in adopting health measures.[22] These findings were further supported by research in Indonesia, which revealed that higher health literacy was directly linked to greater compliance with COVID-19 preventive behaviors.[23]

Beyond infectious diseases, health literacy has also been shown to shape preventive behaviors in other health contexts. For example, a study on pregnant women found that health literacy was a stronger determinant of behaviors preventing urinary tract infections than socio-demographic factors and self-efficacy.[24] Similarly,

Table 1. Key dimensions, impacts, and barriers associated with health literacy as it relates to preventive healthcare

Aspect	Description	Key findings	Examples/Interventions
Health literacy dimensions	Functional, interactive, and critical literacy levels	Critical literacy linked to better self-management	HealthLit4Kids program in schools
Impact on preventive behaviors	Literacy correlates with health behaviors	High literacy increases adherence to prevention	COVID-19 myth-busting campaigns for low-literacy groups
Access to preventive services	Literacy aids healthcare navigation and access	Higher literacy enables preventive service use	My Health Record with simplified instructions
Health literacy interventions	Digital and educational programs	Improved literacy increases preventive health actions	ACHIEVE program for older adults
Barriers to health literacy	Socioeconomic and language obstacles	Low literacy reduces engagement in preventive services	Multilingual materials and cultural liaisons
Cost implications	Literacy impacts healthcare costs	Low literacy linked to higher avoidable healthcare use	Community health workers to reduce readmissions

Aslantekin-Özcoban and Gün found that individuals with higher health literacy were more likely to engage in effective pregnancy prevention behaviors, underscoring its importance in reproductive health.[25]

The significance of health literacy extends to chronic disease management as well. Research by Aaby et al demonstrated that health literacy is associated with better self-reported health and health behaviors among people with cardiovascular disease, suggesting that enhancing health literacy could improve the management of chronic conditions.[26] Additionally, Wongcharoen and colleagues' study identified a positive link between health literacy and preventive actions related to emerging infectious diseases, reinforcing the idea that health literacy is critical for promoting health-seeking behaviors.[27]

In summary, evidence consistently shows that health literacy is a major predictor of preventive health behaviors in various health contexts. By equipping individuals with the skills needed to navigate health information, health literacy promotes proactive health management and adherence to preventive measures, contributing to better overall health outcomes.

Health literacy and access to preventive health services

Health literacy plays a key role in accessing preventive healthcare, as it involves the abilities required for individuals to gather, comprehend, and effectively use health information. These skills are essential for navigating the complexities of the healthcare system, making informed health decisions, and ultimately achieving better health outcomes.

Research shows that individuals with higher health literacy are more likely to engage in preventive services, such as screenings and vaccinations, which are crucial for the early detection and management of diseases.[4,28] A systematic review by Sørensen et al highlighted that health literacy influences individuals' abilities to navigate healthcare, their self-efficacy, and their health-related behaviors—all of which are vital for accessing preventive services.[4] For example, individuals with high health literacy are better equipped to understand health information and apply it to their decisions, leading to increased utilization of preventive care.[29,30]

In Japan, a study revealed a significant relationship between health literacy and the use of preventive dental care, suggesting that individuals with higher literacy levels are more likely to proactively seek out necessary health services.[30] Furthermore, health literacy is linked to self-efficacy, defined as an individual's confidence in their ability to carry out behaviors that lead to specific outcomes. Research by Chen et al demonstrated that higher health literacy correlates with greater self-efficacy, resulting in higher utilization of preventive care services among older adults.[29] This finding highlights the importance of health literacy in empowering individuals to take control of their health and engage in preventive actions.

Conversely, low health literacy can be a barrier to accessing preventive healthcare. Individuals with inadequate health literacy often struggle to understand health-related information, leading to missed opportunities for preventive care.[31,32] For example, individuals with limited health literacy are more likely to rely on emergency care rather than seeking preventive services, as they may perceive emergency departments to be more accessible or less intimidating than primary care settings.[31] This increased reliance on emergency services leads to higher healthcare costs and poorer health outcomes, underscoring the need for interventions that aim to enhance health literacy.[33]

In summary, health literacy is a vital determinant of access to preventive health services. It not only affects an individual's ability to navigate the healthcare system but also their engagement in health-promoting behaviors. Enhancing health literacy can improve health outcomes by increasing the utilization of preventive services, thus reducing the disease burden and improving public health.

Health literacy interventions and programs

Health literacy has become an essential element in efforts to improve health outcomes across different populations. Recent initiatives have focused on increasing health literacy through educational strategies, community outreach, and the incorporation of technology. These programs aim to empower individuals to navigate the healthcare system effectively, make informed health decisions, and ultimately improve health outcomes.

One notable example is the HealthLit4Kids initiative, which adopts a community-focused approach to boost health literacy among children. This program emphasizes equal access to health literacy resources, ensuring that children from diverse backgrounds benefit from health education and health promotion programs.[34] Such initiatives are especially critical in addressing health literacy disparities across socioeconomic groups, thereby promoting equitable health outcomes.

In addition to child-focused programs, interventions targeting specific populations have also shown success. For example, the ACHIEVE program in rural Pennsylvania engages communities to improve health literacy among underserved youth, highlighting the importance of addressing health literacy in rural areas where access to health information is limited.[35] Similarly, a mixed-methods study on health literacy programs for parents of children with cancer illustrates the importance of empowering caregivers through targeted education, allowing them to make informed decisions about their children's health.[36]

Furthermore, integrating technology into health literacy programs has gained momentum, particularly in response to the challenges posed by the COVID-19 pandemic. A scoping review emphasized the difficulties vulnerable populations face in accessing digital health information, stressing the need for tailored digital health literacy interventions to address these gaps.[37] Programs incorporating digital tools can enhance the reach and effectiveness of health literacy initiatives, making health information more accessible to a broader range of individuals.

There is also evidence suggesting that improving health literacy is closely linked to better self-management of chronic conditions, such as diabetes. A study found that providing self-management support can lead to improved diabetes outcomes without worsening health disparities, indicating that enhancing health literacy can promote better self-care.[38] Additionally, research has demonstrated a positive relationship between health literacy and medication adherence, further underscoring its importance in fostering healthier behaviors.[39]

Moreover, developing measurement tools to assess health literacy in children and adolescents is crucial for evaluating the effectiveness of health literacy initiatives. A systematic review identified several generic tools for measuring health literacy in young populations, which can be used to monitor and improve health literacy over time.[40] This emphasis on measurement is vital for understanding the impact of health literacy interventions and making improvements where necessary.

In conclusion, health literacy interventions and programs utilize a variety of approaches to empower individuals from different backgrounds. Whether through community-based initiatives, technological integration, or chronic disease management, these programs play a critical role in addressing health disparities and promoting improved health outcomes. Continued research and the development of effective health literacy initiatives will be essential in creating a more health-literate society.

Challenges in promoting health literacy for prevention

Promoting health literacy for disease prevention is essential, but there are several challenges that impede progress in this area. One significant challenge is the association between low health literacy and poor health outcomes. Studies have shown that individuals with limited health literacy are less informed about their health conditions, are less likely to use preventive services, and experience higher rates of hospitalization.[41,42] This relationship emphasizes the need for targeted health literacy interventions, especially in vulnerable groups like the elderly and those living in rural areas with limited access to healthcare.[43,44]

Another challenge is the complexity of health information. Many individuals find it difficult to understand medical materials, leading to confusion and poor health management.[45] Health literacy encompasses not only reading and comprehension but also the ability to navigate healthcare systems effectively.[46] The multifaceted nature of health literacy makes it difficult to develop educational programs that can meet the needs of diverse populations with varying levels of health literacy.[47]

Cultural and contextual factors also play a significant role in influencing health literacy. Different communities have unique health beliefs and practices that affect their engagement with health information.[48] For instance, cultural views on health and illness in rural areas may affect individuals' willingness to seek preventive care.[43] Furthermore, a lack of culturally tailored health literacy resources can exacerbate health disparities, as individuals may not relate to generic health messages.[42]

Additionally, there are inadequate tools for measuring health literacy in certain contexts, such as chronic disease prevention.[28,47] Current assessment instruments often fail to capture the specific aspects of health literacy relevant to particular diseases or populations, limiting the effectiveness of interventions.[42] This gap underscores the need for ongoing research to develop and validate tools that can accurately assess health literacy in diverse contexts.[46,47]

In conclusion, promoting health literacy for prevention is met with challenges such as the link between low health literacy and adverse outcomes, the complexity of health information, cultural and contextual influences, and a lack of appropriate measurement tools. Addressing these challenges requires a comprehensive approach, including tailored education, culturally relevant resources, and effective assessment tools.

Future directions and research gaps

There is a growing demand for research to investigate

the long-term effects of health literacy interventions on preventive health outcomes. While current programs have demonstrated short-term success, understanding how these initiatives can foster sustained behavioral change is crucial for shaping future policies.

The growing use of digital health tools, such as mobile apps and telemedicine, presents new opportunities for improving health literacy. Future research should examine how these technologies can be utilized to enhance health literacy and promote preventive healthcare, especially among populations with limited access to digital resources.

Conclusion

Health literacy is integral to promoting preventive healthcare by empowering individuals to make informed choices, follow medical advice, and adopt preventive behaviors. Despite challenges like cultural and socioeconomic disparities, interventions aimed at improving health literacy have shown promise. Continued research is needed to address gaps in understanding the long-term effects of health literacy on preventive care and to explore innovative approaches for enhancing access to health information.

Competing Interests

The author declares that she has no competing interests.

Ethical Approval

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