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Short Communication

Health Literacy and Its Association with Preventive Healthcare Utilization

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ABSTRACT

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Background: Health literacy is an important determinant of health that influences an individual's ability to access, understand, evaluate, and apply health information. Its potential role in preventive healthcare utilization has gained increasing attention because participation in screening, vaccination, routine health assessments, and early detection services remains inconsistent across populations.

Objective: This short communication examines the potential association between health literacy and preventive healthcare utilization and highlights the importance of individual, socioeconomic, digital, and healthcare-system factors influencing this relationship.

Discussion: Individuals with higher health literacy may be better equipped to recognize health risks, understand preventive recommendations, communicate with healthcare professionals, and make informed decisions regarding screening and vaccination. However, health literacy alone does not determine healthcare utilization. Education, income, healthcare accessibility, health beliefs, digital literacy, insurance coverage, and organizational health literacy may substantially influence preventive health behaviours. Consequently, interventions should address both individual competencies and the accessibility and comprehensibility of healthcare services.

Conclusion: Improving health literacy may contribute to greater utilization of preventive healthcare services and support early disease detection and health equity. Future studies should use validated multidimensional health literacy instruments and objective measures of preventive healthcare utilization. Longitudinal and intervention-based research is particularly needed to determine whether improving health literacy produces sustained changes in preventive healthcare behaviour.

Keywords: Health literacy, Preventive Healthcare, Healthcare Utilization, Health Promotion, Preventive Health Behaviour

INTRODUCTION

Health literacy has evolved from a narrow concept focused on reading and comprehension to a multidimensional construct involving the ability to access, understand, appraise, and use health information and services. The integrated model proposed by Sørensen et al. emphasizes these competencies across healthcare, disease prevention, and health-promotion settings. ^[1] More recent perspectives further emphasize that health literacy is influenced by social, organizational, cultural, and environmental conditions rather than being solely an individual characteristic. ^[2,3] The World Health Organization (WHO) increasingly considers health literacy an important determinant of health and health equity. Its recent guidance emphasizes that individuals require not only appropriate knowledge and skills but also accessible, understandable, trustworthy, and actionable health information and services. ^[4,5] Health literacy is therefore particularly relevant to preventive healthcare, where individuals must recognize risk, understand recommendations, assess benefits and limitations, and take appropriate action. Preventive healthcare utilization encompasses services intended to prevent disease, detect disease at an early stage, or reduce future health risks. These include immunization,

cancer screening, cardiovascular risk assessment, blood pressure and glucose testing, routine health examinations, oral health services, and lifestyle counseling. Despite the established effectiveness of many preventive services, utilization remains uneven across socioeconomic and demographic groups. Limited health literacy may represent one of several pathways contributing to these disparities.

HEALTH LITERACY AND PREVENTIVE HEALTHCARE UTILIZATION

The relationship between health literacy and healthcare utilization is biologically and behaviourally plausible. Individuals who can effectively identify reliable health information may have greater awareness of recommended preventive services, better understanding of disease risk, and greater confidence in communicating with healthcare professionals. In contrast, limited health literacy may contribute to difficulty interpreting screening recommendations, misunderstanding vaccination information, uncertainty about eligibility for preventive services, and delayed healthcare seeking. Earlier research demonstrated associations between inadequate health literacy and lower use of preventive services, including vaccination and cancer screening.^[6] Although these findings established an important relationship, contemporary research suggests that the association is more complex than a simple linear relationship between knowledge and service use. A 2023 study examining health literacy, healthcare utilization, and health-promotion behaviours found that health literacy was associated with healthcare utilization within a broader ecological framework, highlighting the importance of individual and contextual factors.^[7] Similarly, a large meta-analysis involving more than 200 studies found relationships between health literacy, health behaviours, and health outcomes, with self-efficacy and attitudes partly mediating these associations.^[8] These findings suggest that health literacy may influence preventive behaviour indirectly through confidence, perceived risk, motivation, and decision-making.

Recent research has provided further support. A 2025 study among Hispanic adults reported a strong association between health literacy and adherence to preventive health behaviours, while education and language factors were important predictors of health literacy.^[9] Research examining cancer prevention has similarly demonstrated the relevance of both personal and organizational health literacy to screening and prevention behaviours.^[10] More specifically, recent research among agricultural workers found a

relationship between health literacy and participation in cancer screening, an important finding for populations experiencing occupational and socioeconomic vulnerabilities.^[11]

BEYOND INDIVIDUAL HEALTH LITERACY

An important development in the field is the recognition that individuals should not bear sole responsibility for navigating complex healthcare systems. Health literacy is partly determined by the extent to which healthcare organizations provide clear communication, understandable information, culturally appropriate services, and accessible pathways to care. Organizational health literacy may therefore act as an important intermediary between individual capabilities and preventive healthcare utilization. A person may possess adequate knowledge but still fail to obtain screening because appointment procedures are complicated, information is difficult to understand, services are geographically inaccessible, or communication with healthcare professionals is inadequate. Recent literature has consequently emphasized the need for health-literacy-responsive healthcare organizations.^[12] Effective interventions may include plain-language communication, visual educational materials, multilingual information, reminder systems, shared decision-making, improved provider communication, and simplified access to preventive services.

DIGITAL HEALTH LITERACY AND PREVENTIVE CARE

The expansion of digital health information has introduced another dimension to this relationship. Individuals increasingly obtain information about vaccination, cancer screening, nutrition, exercise, chronic disease prevention, and symptoms through search engines, social media, health applications, and online healthcare platforms. Digital health literacy involves the ability to locate, evaluate, understand, and apply health information obtained through digital technologies. Evidence suggests that electronic health literacy can influence health-related outcomes, particularly among older adults.^[13] More recent research indicates that media health literacy may predict preventive health behaviours, while inadequate digital literacy may contribute to disparities when healthcare information increasingly moves online.^[14]

However, digital health literacy should not be assumed to automatically improve preventive healthcare utilization. Misinformation, commercial

interests, algorithmic amplification, language barriers, and unequal access to digital technologies may create new barriers. Therefore, digital approaches should complement rather than replace accessible community-based and professional healthcare communication.

IMPLICATIONS FOR PUBLIC HEALTH

Health literacy represents a potentially modifiable target for preventive health interventions. WHO recommendations emphasize strengthening health literacy at personal, organizational, and systemic levels.^[1,4] Health professionals can contribute by using plain language, confirming patient understanding, avoiding unnecessary medical terminology, and encouraging patients to participate actively in healthcare decisions. Community interventions may focus on vaccination, cancer screening, cardiovascular risk assessment, diabetes prevention, reproductive health, and healthy lifestyle behaviours. Evidence from recent intervention research suggests that health-literacy-focused programs can improve knowledge, self-efficacy, and health-promoting intentions, although the evidence base remains heterogeneous.^[15] Importantly, interventions should be tailored to populations experiencing greater barriers. Older adults, individuals with limited education, rural populations, economically disadvantaged groups, migrants, and people with limited digital access may require additional support. Health literacy interventions should therefore be integrated with broader strategies addressing affordability, accessibility, language, transportation, and trust in healthcare systems.

PROPOSED STUDY FRAMEWORK

A future community-based study could empirically investigate the relationship between health literacy and preventive healthcare utilization using a cross-sectional analytical design.

Proposed population: Adults aged ≥ 18 years attending community health centers, primary healthcare facilities, universities, workplaces, or community settings.

Suggested sample: Approximately 500–600 participants, with the final sample determined through an appropriate prevalence- or effect-size-based calculation.

Primary exposure: Health literacy, assessed using a validated multidimensional instrument such as the HLS19-Q12 or an appropriately validated population-specific instrument. The HLS19-Q12 has demonstrated acceptable psychometric properties

across multiple countries.^[16]

Primary outcome: Preventive healthcare utilization, measured through a composite index covering routine health examinations, blood pressure measurement, blood glucose testing, vaccination, cancer screening where age-appropriate, oral health examination, and lifestyle-risk assessment.

Potential covariates: Age, sex, educational attainment, occupation, income, residence, health insurance, chronic disease status, healthcare accessibility, frequency of healthcare contact, digital health literacy, and perceived health status.

Statistical analysis: Descriptive statistics should initially characterize health literacy and preventive-service utilization. Associations can then be assessed using chi-square tests, t-tests or non-parametric alternatives, as appropriate. Multivariable logistic or Poisson regression could be used to estimate adjusted associations between health literacy and preventive-service utilization. If a composite utilization score is developed, linear or ordinal regression may be appropriate depending on its distribution. Mediation analysis could additionally examine whether self-efficacy or health-related attitudes mediate the relationship between health literacy and preventive behaviors.

CONCEPTUAL PATHWAY

Sociodemographic factors + healthcare accessibility
 $\rightarrow$ Health literacy $\rightarrow$ Knowledge/appraisal/self-efficacy $\rightarrow$ Preventive health behavior $\rightarrow$ Preventive healthcare utilization $\rightarrow$ Earlier detection and improved health outcomes

Organizational health literacy and digital health literacy should be considered additional contextual factors rather than merely secondary variables.

Future Directions: Future research should move beyond cross-sectional measurement of knowledge and examine whether improvements in health literacy produce measurable changes in actual healthcare utilization. Longitudinal studies and controlled interventions would provide stronger evidence regarding causality. Recent reviews have highlighted considerable heterogeneity in health-literacy interventions and measurement approaches, supporting the need for standardized, theory-driven methodologies.^[17,18] Research should also distinguish between personal, communicative, digital, and organizational health literacy. This distinction is particularly important because improving an individual's ability to understand health information may have limited impact when preventive services

remain inaccessible or healthcare communication is poorly designed.

CONCLUSION

Health literacy is an increasingly important component of preventive healthcare and health equity. Available evidence suggests that individuals with greater health literacy may be more likely to engage in preventive behaviours and utilize recommended healthcare services, although this relationship is influenced by socioeconomic, behavioural, digital, and organizational factors. Recent evidence supports a shift from viewing health literacy solely as an individual competency toward understanding it as a shared responsibility involving individuals, healthcare professionals, organizations, and health systems. Future empirical research should use validated multidimensional measures and objective indicators of preventive healthcare utilization to clarify these relationships. Strengthening both personal and organizational health literacy may provide a practical pathway toward improving preventive service uptake, reducing avoidable disparities, and promoting population health.

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