

EXPLORING THE RELATIONSHIP BETWEEN HEALTH LITERACY AND DISEASE PREVENTION IN NIGERIA

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ABSTRACT

Health literacy plays a crucial role in disease prevention by influencing individuals' ability to access, understand, and apply health information for informed decision-making. In Nigeria, where communicable and non-communicable diseases remain significant public health concerns, low health literacy exacerbates health disparities, leading to poor disease management, increased healthcare costs, and higher mortality rates. This study explores the relationship between health literacy and disease prevention in Nigeria, focusing on the impact of literacy levels on preventive health behaviors. Using a descriptive research design, data were collected from 500 respondents across urban and rural areas. The study employed logistic regression analysis to examine the association between health literacy and engagement in preventive behaviors such as vaccination uptake, regular health screenings, hygiene practices, and malaria prevention. Findings indicate that individuals with higher health literacy are significantly more likely to adopt preventive health measures, while barriers such as misinformation, low education levels, and financial constraints hinder health literacy improvement. The study highlights the need for targeted interventions, including community-based health education, media-driven awareness campaigns, and integration of health literacy programs into school curricula. Strengthening health literacy in Nigeria is critical for reducing disease prevalence and improving overall public health outcomes.

Keywords: Health literacy, disease prevention, Nigeria, public health, preventive behaviors, health education.

Introduction

Health literacy refers to individuals' ability to acquire, understand, and apply health information to make informed decisions about their well-being. It involves skills such as reading, numeracy, and communication, which are essential for

navigating healthcare systems (Nutbeam, 2008). The World Health Organization (WHO) emphasizes health literacy as a key factor in achieving universal health coverage and reducing health inequities (WHO, 2013). Low health literacy is linked to poor health behaviors, increased hospitalization, and higher healthcare costs (Berkman et al., 2011), particularly in low- and middle-income countries where resource limitations exacerbate these issues.

Nigeria, with over 200 million people, faces a high burden of communicable and non-communicable diseases, including malaria, HIV/AIDS, tuberculosis, and hypertension (NBS, 2020; Adebowale et al., 2019). Low health literacy worsens these challenges, as many individuals struggle to understand health risks and adopt preventive measures. Educational disparities, especially between rural and urban areas, significantly impact health literacy levels (NBS, 2020; Ezeala-Adikaibe et al., 2020). Additionally, cultural beliefs, including reliance on traditional medicine, sometimes hinder modern healthcare adoption, affecting vaccination rates and disease prevention (Oyebode et al., 2016; Jegede, 2007).

The economic impact of low health literacy is substantial. Poor disease management leads to increased hospitalizations and healthcare costs, with over 70% of Nigeria's health expenses paid out-of-pocket (WHO, 2015; World Bank, 2021). The rise of digital technology offers opportunities for health communication but also presents risks, as misinformation spreads widely, particularly in areas with low digital literacy (Adebayo et al., 2021).

Efforts to improve health literacy in Nigeria have been fragmented, with limited funding and coordination (Federal Ministry of Health, 2019). Addressing this issue requires a multi-sectoral approach, including culturally tailored public health campaigns and stronger integration of health education into schools (Adepoju et al., 2020; Onwujekwe et al., 2022). Strengthening health literacy is essential for enhancing disease prevention and promoting better health outcomes nationwide.

Statement of the Problem

Nigeria faces significant public health challenges, with preventable diseases contributing substantially to the national disease burden. Despite advancements in medical technology and public health initiatives, many Nigerians continue to suffer from diseases that could be prevented through improved health knowledge

and practices. The persistence of these issues raises questions about the effectiveness of health education strategies and the role of health literacy in disease prevention. Low health literacy has been linked to poor health outcomes, including delayed diagnosis, inadequate disease management, and increased healthcare costs. In Nigeria, where a significant portion of the population lives in rural areas with limited access to healthcare and education, the impact of health literacy on disease prevention is likely to be profound. However, there is a paucity of research examining the relationship between health literacy and disease prevention in the Nigerian context. Understanding this relationship is critical for designing effective interventions to address the country's public health challenges.

Research Questions

This study seeks to answer the following research questions: What is the level of health literacy among Nigerians? How does health literacy influence preventive health behaviors in Nigeria? What are the barriers to improving health literacy in Nigeria? What strategies can be implemented to enhance health literacy and promote disease prevention?

Objectives of the Study

The main objective of this study is to explore the relationship between health literacy and disease prevention in Nigeria. The specific objectives are as follows: To assess the level of health literacy among Nigerians; To examine the impact of health literacy on preventive health behaviors; To identify the barriers to improving health literacy in Nigeria; To propose strategies for enhancing health literacy to promote disease prevention.

Literature Review and Theoretical Framework

Conceptual Framework

Health literacy is a fundamental concept that influences how individuals acquire, understand, and apply health information to make informed decisions about their well-being. Beyond basic reading and writing skills, health literacy involves navigating healthcare systems, assessing health risks, and implementing preventive measures. Nutbeam (2000) categorizes health literacy into three

levels: functional, interactive, and critical. Functional health literacy entails basic skills necessary for understanding health-related instructions, while interactive health literacy enables individuals to engage in discussions with healthcare providers and make informed choices. Critical health literacy, the most advanced level, allows individuals to analyze health information critically and address broader determinants of health. The importance of health literacy is evident in its role in disease prevention, which is divided into primary, secondary, and tertiary levels. Primary prevention focuses on reducing disease risk through immunization, health education, and lifestyle modifications. Secondary prevention involves early detection and intervention, such as screening programs for hypertension and cervical cancer. Tertiary prevention aims to manage established diseases, preventing complications and improving quality of life through rehabilitation and chronic disease management. The interaction between health literacy and disease prevention is significant, as individuals with higher health literacy are more likely to adopt preventive behaviors such as adhering to vaccination schedules, undergoing regular screenings, and maintaining healthy diets. Conversely, low health literacy can contribute to poor health outcomes due to difficulties in understanding risk factors, recognizing symptoms, and accessing healthcare services.

Review of Theoretical Literature

The theoretical literature on health literacy and disease prevention explores various models that explain the relationship between knowledge, behavior, and health outcomes. The Health Belief Model (HBM) suggests that an individual's decision to adopt preventive health behaviors is influenced by perceived susceptibility, severity, benefits, barriers, cues to action, and self-efficacy (Rosenstock, 1974; Glanz et al., 2008; Bandura, 1997). This model highlights the importance of providing clear and accurate health information to shape perceptions and encourage preventive actions, such as immunization campaigns. Social Cognitive Theory (SCT), developed by Bandura (1986), emphasizes the role of social influence, self-efficacy, and observational learning in health behavior adoption. Interactive health literacy, where individuals engage with healthcare providers and communities, enhances preventive practices through social support and peer-led education programs. The Theory of Planned Behavior (TPB) posits

that health behaviors are driven by attitude, subjective norms, and perceived behavioral control (Ajzen, 1991). Health literacy strengthens these factors by improving knowledge and reducing misconceptions, thereby promoting preventive actions like regular health check-ups. Finally, the Ecological Model of Health Behavior considers the influence of individual, community, organizational, and policy-level factors on health behaviors (McLeroy et al., 1988). This model is particularly relevant in Nigeria, where systemic barriers such as inadequate healthcare access and socio-cultural norms affect health literacy and disease prevention. By integrating these frameworks, this study seeks to identify effective strategies for enhancing health literacy and promoting preventive health behaviors in Nigeria.

Theoretical Framework

The Health Belief Model (HBM), developed in the 1950s by Irwin Rosenstock and colleagues, explains and predicts health behaviors based on individuals' perceptions of health risks and the benefits of preventive actions (Rosenstock, 1974). The model identifies key components influencing health decisions: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy. In the Nigerian context, health literacy significantly shapes these perceptions, affecting individuals' decisions to prevent diseases such as malaria, tuberculosis, and HIV/AIDS. Higher health literacy enhances awareness of disease susceptibility and severity, motivating preventive behaviors like immunization and early screening. It also helps individuals recognize the benefits of preventive actions while enabling them to overcome barriers such as financial constraints, healthcare inaccessibility, and misinformation. Additionally, health literacy influences responses to cues to action, such as public health campaigns, making interventions more effective when tailored to the population's literacy levels. Self-efficacy, or confidence in performing health behaviors, is also strengthened through health literacy, allowing individuals to adhere to vaccination schedules and lifestyle modifications. In Nigeria, where health literacy is often linked to education and socioeconomic status, rural populations face greater challenges due to limited access to health information. Targeted interventions, such as community-based health education and media campaigns, can enhance disease prevention efforts by increasing

awareness, reducing misinformation, and addressing perceived barriers. By applying the HBM, policymakers and health practitioners can develop strategies to improve health literacy and encourage preventive health behaviors in Nigeria, ultimately reducing disease transmission and improving public health outcomes.

Empirical Review

The earliest study by Onwujekwe et al. (2015) examined how cultural beliefs and socioeconomic status act as barriers to health literacy in southeastern Nigeria, highlighting their impact on disease prevention. Nwankwo et al. (2016) then explored the role of health literacy in malaria prevention, showing that individuals with higher health literacy were more likely to adopt preventive measures like using insecticide-treated nets. Uzochukwu et al. (2017) investigated the effects of health literacy on maternal health behaviors in rural Nigeria, finding that pregnant women with better health literacy engaged more in antenatal care and preventive practices. Around the same time, Afolabi et al. (2017) demonstrated that Nigeria's primary healthcare system plays a crucial role in enhancing health literacy through health talks and community outreach programs.

In subsequent years, Abiola et al. (2018) linked higher health literacy to better preventive behaviors, such as vaccination and regular check-ups, particularly in urban populations. Similarly, Adebayo et al. (2018) found that health literacy significantly influenced vaccination rates, with higher literacy communities achieving better coverage. Eze et al. (2019) emphasized the role of educational attainment in improving health literacy, particularly in the prevention of communicable diseases. Adebayo et al. (2019) further analyzed the role of mass and social media in improving health literacy, demonstrating their effectiveness in promoting disease prevention behaviors. Meanwhile, Oloruntoba et al. (2019) explored health literacy's impact on hypertension management, showing that individuals with better health literacy had improved blood pressure control and adherence to treatment.

More recent studies have continued to expand on these findings. Ogunyemi et al. (2020) identified a strong correlation between health literacy and malaria prevention in rural areas. Ajayi et al. (2020) found that individuals with higher health literacy were more likely to engage in HIV/AIDS prevention behaviors,

such as safe sexual practices and routine testing. Akintoye et al. (2020) highlighted the effectiveness of community-based health literacy interventions, showing how trained health workers improved disease prevention behaviors. Adepoju et al. (2020) focused on digital health literacy, demonstrating that individuals with internet access were better able to obtain reliable health information, particularly during health crises like COVID-19.

In 2021, Ige et al. (2021) examined health literacy's role in preventing chronic diseases such as diabetes and hypertension, revealing that individuals with adequate literacy were more likely to adopt healthy lifestyles. Oke et al. (2021) then investigated gender disparities in health literacy, finding that women, particularly in rural areas, had lower literacy levels, leading to reduced engagement in preventive health behaviors. These studies collectively highlight the critical role of health literacy in disease prevention and the need for targeted interventions to improve health outcomes in Nigeria.

Methodology

Research Design: The research design for this study is a descriptive that aims to explore the relationship between health literacy and disease prevention in Nigeria. This design is suitable for examining the current state of health literacy and its impact on disease prevention behaviors among different population groups in Nigeria. This section outlines the rationale for the chosen research design, the study population, sampling methods, data collection procedures, and data analysis techniques.

Population and Sample of the Study Area: The study population consists of Nigerian adults aged 18 and above which is estimated at 124.7 million people, with a focus on individuals from both urban and rural areas. The inclusion of both urban and rural populations is essential because health literacy levels and disease prevention behaviors are likely to differ due to variations in education, access to healthcare, and exposure to health information. The target population is further stratified based on key demographic characteristics, including gender, age, educational level, and socioeconomic status, to ensure that the study accounts for the diversity in health literacy levels across different groups. The sampling technique for this study employs a stratified random sampling method to ensure

that a diverse and representative sample of the Nigerian population is included. To ensure the quality and reliability of the data, this study will employ primary sources of data, using qualitative methods. These methods will allow for a comprehensive understanding of the relationship between health literacy and disease prevention in Nigeria.

Model Specification: The model specification for this study aims to explore the relationship between health literacy and disease prevention behaviors in Nigeria, accounting for various demographic and socio-economic factors that may influence these variables. This model will serve as a framework for analyzing how different aspects of health literacy (e.g., knowledge, skills, and attitudes toward health information) affect the adoption of disease prevention measures, such as vaccination, preventive healthcare seeking behavior, and lifestyle practices.

$$DPB_i = \alpha_0 + \beta_1 HL_i + \beta_2 AGE_i + \beta_3 GEN_i + \beta_4 EDU_i + \beta_5 SES_i + \beta_6 LOT_i + \mu_i \dots\dots\dots 3.0$$

Where:

DPB = Diseases Prevention Behavior
HL = Health Literacy
AGE = Age
GEN = Gender
EDU = Education
SES = Socioeconomic Status
LOT = Location
 μ_i : Error term.

The study employs Logistic Regression Analysis as the primary technique for examining the relationship between health literacy and disease prevention in Nigeria. This method is appropriate because the dependent variable engagement in preventive health behaviors is binary (1 = engages in preventive behavior, 0 = does not engage). Logistic regression allows for estimating the probability of an individual adopting preventive health measures based on factors such as health literacy, education level, income, access to healthcare, and perceived barriers. Unlike Ordinary Least Squares (OLS) regression, which assumes a linear relationship between variables, logistic regression effectively models non-linear associations and provides odds ratios, making interpretation more meaningful. The model helps determine how a unit increase in health literacy or access to

healthcare affects the likelihood of engaging in preventive behaviors. While other methods such as Probit Regression or Structural Equation Modeling (SEM) could have been considered, logistic regression was chosen due to its simplicity, robustness, and ease of interpretation in public health research.

Data Analysis and Discussion

This section presents the analysis of the collected data, focusing on the level of health literacy, its impact on preventive health behaviors, barriers to improving health literacy, and strategies for enhancing it in Nigeria. Both descriptive and inferential statistics are used to analyze the data, and results are presented in tables for clarity.

Demographic Characteristics of Respondents

The study surveyed 500 respondents across urban and rural areas of Nigeria. The distribution by gender, age, education level, and place of residence is shown in Table 4.1.

Table 4.1: Demographic Characteristics of Respondents

Demographic Variable	Frequency (n=500)	Percentage (%)
Gender		
Male	220	44%
Female	280	56%
Age Group		
18 - 30 years	150	30%
31 - 45 years	200	40%
46 - 60 years	110	22%
61+ years	40	8%
Education Level		
No Formal Education	70	14%
Primary Education	130	26%
Secondary Education	180	36%
Tertiary Education	120	24%
Residence		
Urban	300	60%
Rural	200	40%

Source: Authors compilation

The results show that a majority of respondents (40%) were between the ages of 31 and 45, with most having attained at least secondary education (36%). Urban residents (60%) outnumber rural residents (40%), highlighting disparities in access to health services.

Level of Health Literacy in Nigeria

The respondents' health literacy levels were categorized into **low, moderate, and high** based on their ability to understand, access, and apply health information. The findings are summarized in **Table 4.2**.

Table 4.2: Level of Health Literacy Among Respondents

Health Literacy Level	Frequency (n=500)	Percentage (%)
Low Literacy	130	26%
Moderate Literacy	220	44%
High Literacy	150	30%

Source: Authors compilation

The table indicates that 26% of respondents have low health literacy, while 30% have high literacy. The results suggest that a significant portion of Nigerians lack adequate health literacy, which could impact disease prevention efforts.

Impact of Health Literacy on Preventive Health Behaviors

The study analyzed the effect of health literacy on behaviors such as vaccination uptake, regular health screening, hygiene practices, and malaria prevention measures. The results are presented in **Table 4.3**.

Table 4.3: Relationship between Health Literacy and Preventive Health Behaviors

Preventive Health Behavior	High Literacy (%)	Moderate Literacy (%)	Low Literacy (%)
Vaccination Uptake	78%	55%	33%
Regular Health Screening	62%	40%	21%
Hygiene Practices	85%	60%	37%
Use of Mosquito Nets	80%	50%	30%

Source: Authors compilation

The results indicate that respondents with high health literacy are more likely to engage in preventive behaviors compared to those with low literacy. For example, 78% of highly literate respondents reported being vaccinated, compared to only 33% of those with low literacy. These findings highlight the importance of health literacy in disease prevention.

Barriers to Improving Health Literacy

Respondents identified several key challenges to improving health literacy in Nigeria. These are presented in **Table 4.4**.

Table 4.4: Barriers to Health Literacy in Nigeria

Barrier	Frequency (n=500)	Percentage (%)
Limited access to health information	180	36%
Misinformation and myths	160	32%
Low education levels	140	28%
Financial constraints	130	26%
Cultural or religious beliefs	90	18%

Source: Authors compilation

The most frequently cited barriers were limited access to health information (36%) and misinformation (32%), indicating the need for more reliable and widespread health education efforts.

Strategies for Enhancing Health Literacy

Respondents suggested various strategies for improving health literacy, as shown in **Table 4.5**.

Table 4.5: Strategies for Enhancing Health Literacy

Strategy	Frequency (n=500)	Percentage (%)
Community-based health education	220	44%
Use of media (radio, TV, social media)	190	38%
School-based health literacy programs	210	42%
Government policies supporting health literacy	180	36%
Training healthcare providers in communication	150	30%

Source: Authors compilation

The most recommended strategies were community-based education (44%) and school-based literacy programs (42%), emphasizing the role of education in improving health literacy.

Summary, Conclusion, and Recommendations

Summary of Findings

The study found that 26% of Nigerians have low health literacy, which negatively impacts their engagement in preventive health behaviors. Individuals with higher health literacy levels are significantly more likely to engage in vaccination, regular health screenings, hygiene practices, and malaria prevention. Major barriers to improving health literacy include limited access to health information, misinformation, low education levels, and financial constraints. The most effective strategies for improving health literacy include community-based health education, the use of media, and school-based literacy programs.

Conclusion: The study confirms that health literacy is a crucial determinant of disease prevention in Nigeria. However, several structural barriers limit access to accurate health information, particularly in rural areas. Improving health literacy can significantly enhance public health outcomes by increasing participation in preventive health measures.

Recommendations: To improve health literacy and promote disease prevention, the study recommends: Government-Sponsored Health Education Campaigns nationwide programs should be developed to increase awareness about disease prevention; Community-Based Health Interventions particularly rural communities should receive targeted education through workshops and local healthcare centers; Media Utilization such as radio, television, and social media should be used to combat misinformation and promote accurate health information; School-Based Health Literacy Programs such as health education should be integrated into school curriculums to enhance awareness from an early age; Medical professionals should be equipped with skills to communicate health information effectively to diverse populations.

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