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ADULT LITERACY AND HEALTH-PROMOTING BEHAVIORS IN RURAL COMMUNITIES IN CROSS RIVER STATE, NIGERIA

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Abstract
This study investigates the relationship between adult literacy and health-promoting behaviors in rural communities of Cross River State, Nigeria, where low literacy and poor health outcomes persist. Despite global evidence linking literacy to better health practices, rural Nigeria faces challenges like limited access to education and healthcare. Using a descriptive survey design, data were collected via questionnaires from 400 adults aged 18–60 across 10 rural communities in Ogoja and Obudu Local Government Areas. Findings show that 58% of participants had basic literacy skills, but only 42% engaged in consistent health-promoting behaviors like regular medical check-ups or balanced diets. Literacy levels significantly correlated with health practices ($r = 0.67$, $p < 0.05$), with higher literacy linked to better hygiene and preventive care. Barriers included inadequate health education (75%) and limited access to healthcare facilities (82%). Qualitative insights revealed cultural beliefs and economic constraints as additional hurdles. The study recommends integrating literacy programs with health education, leveraging community-based interventions, and improving healthcare infrastructure. These findings underscore the transformative potential of literacy in fostering health-promoting behaviors, offering a pathway to enhance rural well-being.

Keywords: Adult Literacy, Health-promoting Behaviors, Rural Communities, Health Education, Healthcare Access

Introduction
In rural communities, where access to education and healthcare is often limited, adult literacy serves as a cornerstone for empowering individuals to adopt health-promoting behaviors actions such as proper nutrition, regular exercise, and preventive healthcare that enhance well-being (Nutbeam, 2008). In Cross River State, Nigeria, rural populations face systemic challenges, including low literacy rates, inadequate healthcare infrastructure, and cultural practices that hinder health outcomes (Odeyemi & Bolarinwa, 2014). With an estimated 40% adult illiteracy rate in rural Nigeria (UNESCO, 2020), the link between literacy and health remains underexplored, yet critical, for addressing public health disparities.

Literacy equips individuals with the ability to access, understand, and act on health information, a concept known as health literacy (Nutbeam, 2000). Health-literate individuals are more likely to engage in preventive behaviors, such as vaccinations or hygiene practices, reducing the burden of communicable and non-communicable diseases (Berkman et al., 2011). In Nigeria, where diseases like malaria and hypertension are prevalent in rural areas (World Health Organization, 2023), literacy can bridge the gap between knowledge and action. However, rural Cross River State grapples with challenges like limited access to schools, poverty, and gender disparities, which exacerbate low literacy and poor health practices (Eneji et al., 2013).

Recent advancements in health promotion emphasize integrated approaches combining education and community engagement (Kickbusch et al., 2013). Programs like Nigeria's Adult Literacy Programme have shown promise in improving reading and writing skills, but their impact

on health behaviors remains understudied (Federal Ministry of Education, 2019). Globally, studies demonstrate that literacy interventions paired with health education increase behaviors like handwashing and dietary improvements (DeWalt & Hink, 2009). In Cross River, cultural beliefs, such as reliance on traditional medicine, further complicate health promotion efforts (Okeke & Okeibunor, 2010).

This study explores how adult literacy influences health-promoting behaviors in rural Cross River State, examining barriers and opportunities for intervention. By integrating primary data with current literature, it aims to inform policies that enhance health outcomes through education.

Literature Review

The interplay between adult literacy and health-promoting behaviors is well-documented globally but less so in Nigeria's rural contexts. Literacy, defined as the ability to read, write, and comprehend information, is a prerequisite for health literacy, which enables individuals to make informed health decisions (Nutbeam, 2000). Berkman et al. (2011) found that low literacy correlates with higher rates of chronic diseases due to poor understanding of medical instructions. Under this section, the following themes will be explored:

Global Evidence on Literacy and Health

Internationally, literacy programs have been linked to improved health outcomes. In Bangladesh, literacy interventions increased maternal health practices by 30% (Hahn & Truman, 2015). Similarly, in South Africa, community-based literacy programs improved HIV/AIDS awareness and preventive behaviors (Tones & Green, 2004). These studies highlight the role of literacy in empowering individuals to navigate health systems and adopt preventive measures.

Challenges in Rural Nigeria

In Nigeria, rural communities face unique challenges. UNESCO (2020) reports that 40% of rural adults are illiterate, with women disproportionately affected due to early marriage and limited schooling (Eneji et al., 2013). Health-promoting behaviors, such as regular medical check-ups or balanced diets, are low, with only 25% of rural Nigerians accessing preventive care (World Health Organization, 2023). Odeyemi and Bolarinwa (2014) attribute this to inadequate health education and poor healthcare access, particularly in Cross River State, where 70% of rural communities lack functional health centers (Cross River State Ministry of Health, 2023).

Opportunities for Intervention

Recent studies suggest that integrating literacy with health education can yield significant results. A pilot program in Kano State combined literacy classes with health workshops, increasing hygiene practices by 20% (Akinola, 2021). Mobile health technologies, such as SMS-based health tips, have also shown promise in low-literacy settings (Lester et al., 2010). In Cross River, community radio and adult education centers offer platforms for scalable interventions (Eneji et al., 2013). However, cultural beliefs, such as reliance on herbal remedies, often undermine modern health practices, necessitating culturally sensitive approaches (Okeke & Okeibunor, 2010).

The Nigerian government's National Policy on Education (2014) advocates for adult literacy programs, but implementation is hindered by funding and logistical constraints (Federal Ministry of Education, 2019). This study builds on these insights, examining how literacy can drive health-promoting behaviors in rural Cross River State.

Theoretical Framework: Health Belief Model (Hbm)

The Health Belief Model (HBM), developed by Rosenstock (1966) and refined by Becker (1974), provides a robust theoretical framework for understanding the relationship between adult literacy and health-promoting behaviors in rural communities of Cross River State, Nigeria. The HBM posits that individuals' health-related actions are influenced by their perceptions of health risks and benefits, shaped by six key constructs: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy (Janz & Becker, 1984). In the context of this study, the HBM explains how literacy influences the adoption of health-promoting behaviors, such as hygiene practices, balanced diets, and medical check-ups, by shaping individuals' ability to perceive health risks and act on health information.

Application to the Study

- Perceived Susceptibility and Severity: Literacy equips individuals to comprehend health risks (e.g., contracting malaria) and their consequences (e.g., severe illness). In rural Cross River State, where 42% of participants were illiterate, low literacy limits awareness of disease risks, reducing engagement in preventive behaviors like handwashing or vaccinations (Nutbeam, 2000). Literate individuals, with better access to health information, are more likely to perceive themselves as susceptible to health threats and understand their severity, as evidenced by the study's finding that 65% of literate participants practiced regular handwashing compared to 30% of illiterate participants.
- Perceived Benefits: The HBM suggests that individuals adopt health behaviors when they believe the benefits outweigh the costs. Literacy enhances understanding of benefits, such as improved health from balanced diets. The study's correlation ($r = 0.67$, $p < 0.05$) between literacy and health behaviors supports this, as literate participants were more likely to engage in preventive care (50%) than illiterate ones (20%).
- Perceived Barriers: The study identified barriers like inadequate health education (75%) and limited healthcare access (82%). The HBM posits that literacy reduces cognitive barriers by enabling individuals to navigate health systems and understand medical advice (Berkman et al., 2011). Illiterate participants faced greater barriers, relying on cultural practices like traditional remedies, as noted in qualitative findings.
- Cues to Action: Literacy serves as a cue to action by enabling individuals to access health campaigns (e.g., radio messages or posters). The study's qualitative data highlighted a desire for community-based health education, aligning with HBM's emphasis on external triggers like educational programs (Eneji et al., 2013).
- Self-Efficacy: Literacy fosters confidence in performing health behaviors, such as reading medication labels or scheduling check-ups. The HBM suggests that higher self-efficacy, linked to literacy, encourages consistent health practices, as seen in the study's finding that literate participants were more likely to exercise (45%) than illiterate ones (15%).

Relevance of HBM to the Study

The HBM is particularly relevant to rural Cross River State, where low literacy and cultural beliefs hinder health-promoting behaviors. By framing literacy as a tool to enhance perceived susceptibility, benefits, and self-efficacy while reducing barriers, the HBM guides interventions like integrated literacy-health programs. For instance, combining literacy classes with health workshops, as recommended, can strengthen cues to action and self-efficacy, addressing the 60% of participants influenced by cultural beliefs. The HBM thus provides a lens to design targeted, culturally sensitive interventions to improve health outcomes in resource-constrained settings.

Methodology

Research Design

A descriptive survey design was employed to explore the relationship between adult literacy and health-promoting behaviors in rural Cross River State. This design facilitated the collection of both quantitative and qualitative data to capture participants' literacy levels, health practices, and barriers.

Population and Sample

The study targeted adults aged 18–60 in rural communities of Ogoja and Obudu Local Government Areas, selected for their high illiteracy rates and limited healthcare access (Cross River State Ministry of Health, 2023). Using cluster sampling, 10 communities were randomly selected, and 40 adults per community were purposively chosen, yielding a sample of 400 participants. The demographic profile is presented in Table 1.

Table 1

Demographic Profile of Participants

Variable	Category	Frequency	Percentage (%)
Gender	Male	190	47.5
	Female	210	52.5
Age	18–30 years	150	37.5
	31–45 years	180	45.0
	46–60 years	70	17.5
Literacy Level	Illiterate	168	42.0
	Basic Literacy	232	58.0
Occupation	Farming	220	55.0
	Trading	120	30.0
	Others	60	15.0

Data Collection

Primary data were collected using a structured questionnaire, the "Adult Literacy and Health Behavior Questionnaire" (ALHBQ), adapted from Nutbeam's (2000) health literacy framework and the Health-Promoting Lifestyle Profile II (Walker et al., 1987). The ALHBQ included sections on literacy levels, health behaviors (e.g., hygiene, nutrition, medical check-ups), and barriers to health practices. A 4-point Likert scale (1 = Never, 4 = Always) assessed health behaviors, while open-ended questions captured qualitative insights. The instrument's reliability was established using Cronbach's Alpha ($\alpha = 0.79$). Data collection occurred over six weeks in February–March 2025, with informed consent and ethical approval from the Cross River State Ministry of Health.

Data Analysis

Quantitative data were analyzed using descriptive statistics (frequencies, percentages, means) and Pearson's correlation to assess the relationship between literacy and health behaviors. Qualitative responses were thematically analyzed to identify barriers and facilitators. SPSS version 25 was used for data processing.

Results

Literacy Levels and Health Behaviors

Of the 400 participants, 58% had basic literacy skills (reading and writing simple sentences), while 42% were illiterate. Only 42% engaged in consistent health-promoting behaviors ($M = 2.35$, $SD = 0.71$). Literacy levels significantly correlated with health behaviors ($r = 0.67$, $p < 0.05$), with literate participants more likely to practice hygiene (65%) and seek preventive care (50%) compared to illiterate participants (30% and 20%, respectively).

Table 2

Health-Promoting Behaviors by Literacy Level

Behavior	Literate (%)	Illiterate (%)
Regular Handwashing	65	30
Balanced Diet	55	25
Medical Check-ups	50	20
Exercise	45	15

Barriers to Health-Promoting Behaviors

Major barriers included inadequate health education (75%), limited access to healthcare facilities (82%), and economic constraints (68%). Cultural beliefs, such as reliance on traditional healers, were cited by 60% of participants.

Table 3
Barriers to Health-Promoting Behaviors

Barrier	Frequency	Percentage (%)
Inadequate Health Education	300	75.0
Limited Healthcare Access	328	82.0
Economic Constraints	272	68.0
Cultural Beliefs	240	60.0

Qualitative Findings
Thematic analysis revealed three themes: (1) limited awareness of health practices due to low literacy, (2) reliance on traditional remedies over modern healthcare, and (3) desire for community-based health education. One participant noted, "I can't read health posters, so I rely on what elders say." Another expressed, "If we had classes to learn reading and health together, it would help."

Discussion
The significant correlation between literacy and health-promoting behaviors ($r = 0.67$, $p < 0.05$) aligns with global findings that literacy enhances health literacy and preventive practices (Berkman et al., 2011). The low engagement in health behaviors (42%) reflects the challenges of rural Cross River State, where infrastructure deficits and cultural beliefs hinder progress (Okeke & Okeibunor, 2010). The higher prevalence of health practices among literate participants underscores literacy's role in empowering individuals to navigate health systems (Nutbeam, 2000).

Barriers like inadequate health education and limited healthcare access mirror findings by Odeyemi and Bolarinwa (2014). The qualitative insights highlight the need for culturally sensitive interventions, as reliance on traditional remedies remains prevalent. Community-based programs, as demonstrated in Kano (Akinola, 2021), offer a model for integrating literacy and health education. The findings suggest that scalable interventions, such as radio-based health campaigns and adult education centers, could address these gaps (Eneji et al., 2013).

Conclusion
This study confirms that adult literacy is a critical determinant of health-promoting behaviors in rural Cross River State. While literacy enhances engagement in practices like hygiene and preventive care, systemic barriers—limited healthcare access, inadequate education, and cultural beliefs persist. Integrating literacy programs with health education and improving infrastructure can empower rural communities, reducing health disparities and fostering sustainable well-being.

Recommendations

- Integrated Literacy Programs: Develop community-based programs combining literacy and health education to promote behaviors like hygiene and preventive care.
- Healthcare Infrastructure: Invest in rural health centers to improve access to medical services.
- Community Engagement: Use local platforms like radio and community centers to deliver culturally sensitive health education.
- Policy Support: Strengthen implementation of the National Policy on Education (2014) to fund adult literacy initiatives.
- Mobile Health Interventions: Leverage SMS-based health campaigns to reach low-literacy populations.

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