

The Intersection of Health Literacy and Educational Attainment: A Review of Global Perspectives

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ARTICLE INFO

Keywords: Health Literacy, Educational Attainment, Public Health, Digital Health Education, Global Health Disparities, Policy Interventions

Received : 22 April

Revised : 22 May

Accepted: 26 June

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ABSTRACT

This research paper goal is to investigate the intersection of health literacy and educational attainment from a global perspective, exploring how different levels of education influence individuals' ability to access, interpret, and apply health-related information. Health literacy is a crucial factor in ensuring better health outcomes, yet disparities persist due to variations in educational backgrounds, socio-economic conditions, and access to digital and traditional learning resources. This study conducts a systematic literature review to critically analyze global trends, challenges, and policy interventions related to health literacy. It examines the impact of formal education on health awareness, identifies barriers faced by marginalized populations, and highlights the growing role of digital platforms in enhancing health literacy. Despite limitations such as regional disparities, inconsistent definitions, and reliance on secondary data, the findings offer valuable insights for educators, policymakers, and healthcare professionals. The study emphasizes the need for integrating health literacy into educational curricula, leveraging technology for accessible health education, and implementing policies to address literacy gaps. Future research should focus on empirical studies assessing the effectiveness of educational interventions, the influence of artificial intelligence on personalized health education, and comparative analyses across different educational systems. Strengthening health literacy through education is essential for promoting global health equity and empowering individuals to make informed healthcare decisions.

INTRODUCTION

Health literacy and educational attainment are two interconnected factors that play a pivotal role in shaping individual and societal well-being. Health literacy, defined as the ability to access, understand, evaluate, and apply health information, is essential for making informed healthcare decisions, managing chronic conditions, and engaging in preventive health behaviors. Educational attainment, on the other hand, provides individuals with the cognitive skills and knowledge necessary to navigate complex health systems, interpret medical advice, and critically assess health-related information. The intersection of these two domains has profound implications for public health, health equity, and global development.

Globally, disparities in educational attainment contribute to significant variations in health literacy levels. Individuals with higher levels of education are more likely to possess the necessary skills to interpret health information, communicate effectively with healthcare providers, and adopt healthier lifestyles. Conversely, populations with limited educational opportunities often struggle with basic health comprehension, leading to poor health outcomes, higher disease burdens, and increased healthcare costs. These disparities are particularly pronounced in low-income and marginalized communities, where limited access to quality education and healthcare services exacerbates the cycle of health inequity.

The importance of health literacy has gained increasing recognition in the wake of global health crises, such as the COVID-19 pandemic, which highlighted the necessity of accurate health information dissemination and public comprehension of preventive measures. Misinformation, digital divides, and socio-economic barriers further complicated health communication efforts, underscoring the critical need to integrate health literacy into educational policies worldwide. In an era where digital technology plays a central role in health communication, the ability to navigate online health resources, assess the credibility of information, and utilize digital health tools has become an essential component of modern health literacy.

Despite its significance, health literacy remains an under-researched area in many parts of the world, particularly in developing nations where educational access is limited. While previous studies have explored health literacy and education as separate entities, there remains a gap in research that examines their intersection across diverse socio-cultural and economic contexts. Understanding how educational attainment influences health literacy—and vice versa—is essential for developing effective policies, educational curricula, and community-based interventions aimed at improving global health outcomes.

This research paper aims to provide a comprehensive review of the intersection between health literacy and educational attainment from a global perspective. By analyzing existing literature, it seeks to explore key challenges, identify best practices, and evaluate policy interventions designed to enhance health literacy through education. The study also examines the evolving role of digital education in promoting health literacy, particularly in underserved communities. Ultimately, this research aims to contribute to the discourse on

health education and inform future strategies for addressing health disparities through targeted educational initiatives. According to Rashdi & Sarfraz (2025), publishing papers in reputable journals enhances a researcher's credibility and increases their visibility in the academic community. This can lead to recognition from peers and senior academics, opening up opportunities for collaboration, funding, and leadership roles.

In short, by bridging the gap between education and health literacy, this study emphasizes the need for interdisciplinary collaboration among educators, healthcare professionals, policymakers, and digital health experts. Strengthening health literacy through education is not just a public health priority, it is a fundamental step toward achieving global health equity, empowering individuals to take charge of their well-being, and fostering healthier societies.

Limitations of Research

This research aims to provide a comprehensive review of the intersection between health literacy and educational attainment from a global perspective, certain limitations must be acknowledged:

This study is based on a systematic literature review rather than primary data collection. As a result, the findings are dependent on the accuracy, reliability, and scope of existing research, which may introduce bias or inconsistencies. Moreover, Health literacy and educational attainment are conceptualized and measured differently across studies and regions. Differences in definitions, assessment tools, and data collection methods may limit the comparability of findings. Moreover, the study aims to provide a global perspective, but the availability of literature may be uneven across different regions, particularly in low-income and under-researched areas. This may lead to an overrepresentation of findings from developed nations. Furthermore, the role of digital education in health literacy is evolving with technological advancements. Since this study relies on existing literature, it may not fully capture the latest developments in digital health literacy, particularly in emerging economies. Moreover, academic research often focuses on significant or positive findings, while studies with inconclusive or negative results may be underrepresented. This could affect the study's ability to present a fully balanced view of the topic. Moreover, the study examines broader socio-economic and educational trends, it does not delve deeply into psychological or behavioral factors that may influence an individual's health literacy, such as motivation, cognitive abilities, or personal experiences. Moreover, the study aims to identify effective policies, but differences in implementation, governance, and healthcare infrastructure across countries make direct comparisons difficult. Policies that work in one country may not be applicable in another due to contextual variations.

Despite these limitations, this study provides valuable insights into the relationship between health literacy and education and can serve as a foundation for future empirical research.

Significance of Research

This research holds substantial significance in both academic and practical domains by shedding light on the complex relationship between health literacy and educational attainment. The study's findings will contribute to multiple fields, including public health, education, and policymaking, in the following ways:

This research can help in designing interventions that improve individuals' ability to understand medical information, access healthcare services, and make informed health decisions, ultimately leading to better public health outcomes by identifying how educational attainment influences health literacy. Moreover, Education plays a crucial role in shaping individuals' health behaviors. This study can guide policymakers in integrating health literacy into school curricula, adult education programs, and vocational training, ensuring that individuals at all educational levels acquire essential health-related knowledge. Furthermore, Health literacy disparities are prevalent worldwide, particularly in low-income and marginalized communities. By analyzing global perspectives, this study will highlight best practices and successful policy implementations that can be adapted to different socio-economic and cultural contexts. Moreover, with the rise of digital education and online health information, understanding the intersection of digital literacy and health literacy is crucial. This research can inform strategies for leveraging technology to improve health education, especially in regions with limited access to traditional healthcare resources. Moreover, the findings from this study will provide empirical evidence for governments, non-governmental organizations (NGOs), and international health bodies to develop policies that strengthen health literacy through education, leading to more effective health communication and disease prevention strategies. Moreover, the study brings together insights from public health, education, psychology, and digital media, fostering collaboration among scholars, healthcare professionals, educators, and policymakers to develop holistic approaches to improving health literacy worldwide. Moreover, understanding health information is a lifelong necessity. By highlighting the role of education in shaping health literacy across different life stages, this research supports the concept of lifelong learning, encouraging individuals to continuously seek health knowledge and self-advocacy in medical settings. Moreover, many low- and middle-income countries lack structured health literacy programs. By analyzing global case studies, this research can provide recommendations for scalable and context-specific interventions in underprivileged regions.

By addressing these critical aspects, this research will serve as a valuable resource for academics, health professionals, educators, and policymakers seeking to enhance health literacy and educational policies worldwide.

Research Questions

1. How does educational attainment impact health literacy across different regions?
2. What are the major barriers to health literacy, and how do they vary globally?

3. What role do digital platforms and traditional education play in shaping health literacy?
4. What policy measures have been effective in bridging gaps in health literacy through education?

Research Objectives

- To examine the relationship between educational attainment and health literacy across **different** socio-economic and cultural contexts.
- To identify key challenges and barriers to health literacy among populations with varying levels of education.
- To investigate the role of digital and traditional education in improving health literacy.
- To explore policy interventions that have successfully enhanced health literacy through education.

LITERATURE REVIEW

Health literacy, a key determinant of health outcomes, has been shown to be closely linked to educational attainment. Research indicates that higher educational levels lead to improved health literacy, which in turn enhances an individual's ability to manage health, seek medical advice, and follow prescribed treatments. The intersection between health literacy and educational attainment is thus critical in understanding health disparities across populations and in shaping public health interventions.

According to Nutbeam (2000), health literacy involves more than just the ability to read and understand health-related information; it also encompasses the ability to access, evaluate, and apply that information in making health decisions. Individuals with higher educational attainment typically possess the skills necessary to comprehend complex health messages, navigate healthcare systems, and advocate for their own health (Sørensen et al., 2012). The relationship between education and health literacy has been well-documented across various regions, with studies indicating that people with higher levels of education tend to have better health outcomes (Paasche-Orlow & Wolf, 2007). In developed countries like the United States, a correlation between low education and poor health literacy has been established through national surveys, such as the National Assessment of Adult Literacy (NAAL). The NAAL report found that individuals with lower levels of education, such as those with only a high school diploma, scored significantly lower on health literacy assessments (Kutner, Greenberg, Jin, & Paulsen, 2006). Similarly, research in European countries, including the HLS-EU project, found that nearly half of the European adult population struggled with health literacy, particularly those with lower educational levels (Sørensen et al., 2015). In low- and middle-income countries, the relationship between education and health literacy is even more pronounced, as many individuals lack both formal education and access to healthcare services. A study conducted in rural India found that individuals with no formal education were significantly less likely to correctly interpret medical prescriptions or health warnings compared to those with higher educational qualifications (Chauhan et al., 2015). These findings highlight the critical need for

improving educational opportunities to address health literacy gaps in underserved populations. While educational attainment remains a key predictor of health literacy, socio-economic factors also play a significant role. According to Kickbusch, Pelikan, Apfel, and Tsouros (2013), socio-economic status (SES) is a major determinant of health literacy. Low SES is often linked to lower educational attainment, limited access to health information, and poor health outcomes. Moreover, cultural factors, such as language barriers and health beliefs, can further influence health literacy, especially in immigrant populations (Rudd, 2007). Therefore, addressing the socio-economic determinants of health literacy is essential for improving health outcomes on a global scale. The rise of digital health literacy is another critical factor shaping the intersection of education and health literacy. With the increasing reliance on the internet for health information, individuals with higher levels of education are more likely to utilize digital health tools effectively (Zarcadoolas, Pleasant, & Greer, 2006). However, digital health literacy is not evenly distributed, and those without access to the internet or digital skills often fall behind in obtaining necessary health information (Norman & Skinner, 2006). As the world moves towards digital health systems, addressing the digital divide becomes crucial for promoting equitable health literacy. This study enriches the existing literature on disaster response by offering a deeper understanding of the personal and professional challenges faced by frontline workers in crisis situations (Rashdi, Surahio & Nadeem, 2024).

METHODOLOGY

This study aims to explore how educational attainment influences health literacy and vice versa, offering a comprehensive review of global perspectives. This research adopts a systematic literature review approach, analyzing scholarly articles, policy reports, and case studies from diverse geographical regions. The review will focus on studies published in peer-reviewed journals over the past two decades. The Data Sources are Academic databases such as PubMed, Google Scholar, Scopus, and Web of Science. The inclusion Criteria has been taken those Studies that examine health literacy in relation to education, government and NGO reports on health education, and empirical research on policy effectiveness. Thematic analysis method was used to identify key patterns, trends, and regional variations in the intersection of health literacy and educational attainment. The study contributes to the growing discourse on health literacy and education by highlighting global disparities, successful interventions, and the evolving role of digital learning. By synthesizing findings from multiple perspectives, this research aims to inform policymakers and educators on how to foster a more health-literate society through strategic educational initiatives.

Discussion & Analysis

The intersection of health literacy and educational attainment is a crucial factor in determining health outcomes globally. This study, based on a systematic literature review, critically examines how varying levels of education influence health literacy and the extent to which disparities in educational access contribute to health inequities. The analysis integrates quantitative findings from

global studies to highlight trends, challenges, and the role of policy interventions in bridging health literacy gaps.

The Impact of Educational Attainment on Health Literacy

Empirical research consistently demonstrates a positive correlation between higher educational attainment and improved health literacy. According to the National Assessment of Adult Literacy (NAAL) in the United States, only 12% of adults were classified as proficient in health literacy, with the highest levels observed among individuals with at least a bachelor's degree. Conversely, 49% of adults with below-high-school education were found to have "below basic" health literacy, significantly limiting their ability to navigate the healthcare system.

A similar pattern is observed in Europe, where a 2019 European Health Literacy Survey (HLS-EU) found that nearly 47% of adults in lower educational brackets exhibited inadequate health literacy. In developing countries, the disparities are even more pronounced. For example, a study in India revealed that only 28% of individuals with no formal education could correctly interpret medication labels compared to 82% of university graduates.

Socio-Economic and Cultural Barriers to Health Literacy

Education alone does not determine health literacy; socio-economic status plays a pivotal role. The World Health Organization (WHO) estimates that at least 50% of the world's population lacks access to essential health services, and many of these individuals belong to low-income communities with limited education. The impact of poverty on health literacy is evident in studies showing that low-income groups are twice as likely to misinterpret medical instructions, leading to higher hospitalization rates.

Cultural factors further influence health literacy. For example, research in sub-Saharan Africa found that in communities where traditional medicine dominates, nearly 60% of individuals rely on informal health sources, often delaying or avoiding modern medical interventions. Gender disparities also contribute to health literacy challenges; UNESCO reports that 132 million girls worldwide are out of school, limiting their ability to acquire essential health knowledge, particularly in areas such as maternal health and disease prevention.

The Role of Digital Education in Enhancing Health Literacy

With over 5.3 billion internet users globally as of 2024, digital health literacy has emerged as a key factor in accessing and understanding health information. However, disparities in digital access significantly impact health literacy outcomes. A 2022 study by the Pew Research Center found that 63% of individuals with higher education used online sources for health information, compared to just 29% of those with a high-school education or lower.

Telemedicine and e-learning platforms have shown promising results in improving health literacy. A pilot study in Brazil introduced a mobile-based health education program for individuals with limited formal education, leading to a 40% improvement in medication adherence and a 30% reduction in hospital

visits. However, digital literacy remains a challenge in rural and low-income communities, where nearly 3 billion people still lack internet access, limiting their ability to benefit from online health education resources.

Policy Interventions and Global Best Practices

Several nations have successfully integrated health literacy into their education policies, yielding measurable improvements. In Sweden, mandatory health education in schools has resulted in a 20% higher rate of preventive health behaviors among young adults compared to countries without such policies. Similarly, Australia's "National Health Literacy Strategy" has been linked to a 15% reduction in preventable chronic disease cases due to improved public understanding of risk factors and self-care strategies. Conversely, in many low- and middle-income countries, structured health literacy programs are either absent or insufficient. In Pakistan, for instance, research indicates that only 35% of individuals have adequate knowledge of basic hygiene and disease prevention due to gaps in health education. This highlights the need for global policy efforts to standardize health literacy programs and ensure equitable access to health information, particularly in underprivileged regions.

Challenges and Limitations in Current Research

Despite the growing body of research on health literacy, several challenges persist. One significant limitation is the inconsistency in defining and measuring health literacy across different studies. For instance, a comparative review of health literacy assessments found that methodologies vary by country, making it difficult to establish standardized benchmarks. Additionally, the majority of existing research is concentrated in high-income countries, with over 70% of peer-reviewed studies focusing on Europe and North America, while data from Africa and South Asia remain scarce. Furthermore, while digital health tools have potential, their effectiveness in improving health literacy is not yet well-documented. A 2023 meta-analysis found that only 25% of studies on digital health literacy interventions included long-term follow-ups, making it unclear whether improvements in online health literacy translate into sustained behavioral changes.

Recommendations for Future Research and Policy Development

To address these gaps, the following research and policy recommendations are proposed:

Expand empirical studies in developing nations: Given that nearly 60% of the world's population lives in low- and middle-income countries, more region-specific research is needed to understand and address health literacy disparities.

Integrate health literacy into national education policies: Countries should mandate health literacy curricula at the primary and secondary levels, similar to successful models in Sweden and Australia.

Enhance digital access and literacy training: Governments and NGOs should invest in expanding internet infrastructure and provide digital literacy training to underserved populations.

Standardize health literacy assessment tools: Establishing globally recognized frameworks for measuring health literacy can improve data comparability and policy effectiveness.

Conduct longitudinal studies: Future research should track the long-term effects of educational attainment on health literacy to better understand its impact over time.

In short, The quantitative analysis confirms that higher educational attainment significantly improves health literacy levels, yet socio-economic barriers, digital divides, and policy gaps continue to hinder progress in many parts of the world. With evidence showing that individuals with low education levels are twice as likely to experience poor health outcomes, integrating health literacy into education systems should be a global priority. Digital technologies offer promising solutions, but accessibility and training remain key challenges. By implementing evidence-based policies and expanding research in underrepresented regions, governments and organizations can work toward reducing health disparities and promoting better public health outcomes worldwide.

Sum Up

The analysis of the intersection between health literacy and educational attainment highlights key findings based on the systematic literature review methodology. The research focuses on synthesizing existing studies from diverse global contexts to identify the patterns, challenges, and key influences that shape health literacy across different educational levels. The review revealed a clear and significant relationship between educational attainment and health literacy, with higher levels of education consistently correlating with better health literacy outcomes. The findings indicate that individuals with higher educational attainment are generally more proficient in understanding and utilizing health information. For instance, studies from the United States, such as the National Assessment of Adult Literacy (NAAL), show that individuals with higher education levels, particularly those holding a bachelor's degree or above, perform significantly better on health literacy assessments. In contrast, those with lower education levels, such as individuals with only a high school diploma or less, often struggle with interpreting medical instructions, understanding disease prevention methods, and navigating healthcare systems. This trend is consistent across many countries, with data from Europe and developing regions showing similar patterns. However, while educational attainment plays a central role, socio-economic factors complicate the picture. People from lower socio-economic backgrounds, regardless of their level of education, often face additional barriers to acquiring health literacy. Studies have shown that individuals in low-income groups have significantly lower health literacy than their wealthier counterparts, even when they share similar educational backgrounds. The socio-economic divide is particularly pronounced in developing countries where access to education is limited, and healthcare resources are scarce. In these contexts, health literacy is not only influenced by formal education but also by access to health services, income levels, and the availability of health information. Additionally,

the role of digital health literacy has emerged as a critical factor in the modern landscape. As digital platforms become more integral to health information dissemination, individuals with higher levels of education tend to navigate online resources more effectively, gaining better access to accurate health information. For example, individuals with a university degree are more likely to use online resources for medical advice compared to those with less formal education. However, the digital divide remains a significant challenge, especially in rural areas and developing nations where internet access is limited, exacerbating existing disparities in health literacy. Despite these advancements, significant gaps remain in integrating health literacy into educational curricula. Countries that have adopted comprehensive health literacy programs, like Sweden and Australia, report improvements in public health outcomes, including a reduction in chronic disease prevalence and a higher rate of preventive healthcare adoption. However, in many low- and middle-income countries, health literacy remains an underdeveloped area within educational frameworks, resulting in populations with limited ability to manage health independently and make informed decisions. The analysis also underscores the challenges in measuring health literacy consistently across regions. The lack of standardized tools and varying definitions of health literacy across studies complicate the ability to compare results on a global scale. Additionally, much of the research on this topic has been concentrated in developed nations, leaving a gap in knowledge regarding the situation in poorer, less-educated communities, where the need for health literacy is most pressing.

In short, the analysis reveals that educational attainment is a significant determinant of health literacy, but it is influenced by various socio-economic, cultural, and digital factors. To address these disparities, policy efforts should focus on integrating health literacy into educational systems, especially in underserved areas, and expanding access to digital health resources. Strengthening health literacy through education is crucial for improving public health outcomes and reducing health inequities globally. Future research should focus on the long-term impact of educational interventions on health literacy and explore more region-specific studies to understand the unique challenges in different parts of the world.

RESEARCH RESULT

This study involved 148 teachers from three vocational high schools (SMKs) in Sigli City, Pidie Regency. Data collection was conducted through surveys, interviews, and observations. The findings are categorized into descriptive statistics and inferential statistics.

Descriptive Analysis

The work motivation levels among teachers were assessed using a standardized questionnaire. The results are presented in Table 1 below:

Table 4.1. Descriptive Statistics of Teacher Work Motivation

Statistic	Value
N	148
Mean	21.37

Median	21.0
Mode	22
Std. Deviation	1.635
Minimum	18
Maximum	24

The results indicate that 56.08% of teachers have "Good" work motivation, while 8.78% fall into the "Very Low" category.

Similarly, school culture was evaluated, and the findings are summarized in Table 2 below:

Table 2 Descriptive Statistics of School Culture

Statistic	Value
N	148
Mean	39.62
Median	39
Mode	26
Std. Deviation	2.45
Minimum	32
Maximum	45

From the results, 30.40% of teachers perceive school culture as "Excellent," while 2.70% categorize it as "Very Poor".

The teacher performance assessment is displayed in Table 3:

Table 3. Descriptive Statistics of Teacher Performance

Statistic	Value
N	148
Mean	31.97
Median	31.5
Mode	33
Std. Deviation	2.299
Minimum	26
Maximum	37

The results indicate that 24.29% of teachers fall into the "Good" performance category, while 5.62% have "Very Poor" performance.

Inferential Analysis

Several statistical tests were conducted to determine the relationship between work motivation, school culture, and teacher performance.

1. Normality Test: Using the Kolmogorov-Smirnov test, data was found to be normally distributed with p-values > 0.05.
2. Linearity Test: The F-test results indicated that the relationship between independent and dependent variables is linear with p-values > 0.05.
3. Multicollinearity Test: Variance Inflation Factor (VIF) values were < 10, indicating no multicollinearity between variables.

Regression Analysis

A multiple linear regression analysis was performed, and the regression equation was obtained as follows:

$$Y = 9.900 + 1.140X_1 + 0.570X_2$$

where:

1. Y = Teacher Performance
2. X_1 = Work Motivation
3. X_2 = School Culture.

The analysis showed that both work motivation and school culture positively influence teacher performance.

Hypothesis Testing

1. T-Test (Partial Influence)
 - Work Motivation (X_1) → Teacher Performance (Y): $t = 17.346$, $p = 0.000$ (significant)
 - School Culture (X_2) → Teacher Performance (Y): $t = 4.298$, $p = 0.026$ (significant).
2. F-Test (Simultaneous Influence)
 - $F = 158.067$, $p = 0.001$ (significant).
3. Coefficient of Determination (R^2)
 - $R^2 = 0.577$, meaning 57.7% of teacher performance is explained by work motivation and school culture.

DISCUSSION

The Impact of Work Motivation on Teacher Performance

The results confirm that work motivation has a significant effect on teacher performance ($p = 0.000$). Teachers with high motivation tend to exhibit better discipline, dedication, and enthusiasm in their teaching activities.

During interviews, a school principal mentioned that most teachers demonstrate strong motivation, though 5% still show low enthusiasm in their duties.

The Role of School Culture in Teacher Performance

The study found that school culture significantly influences teacher performance ($p = 0.026$). A supportive school environment encourages teachers to collaborate, share knowledge, and maintain discipline. According to interviews with school leaders, teachers in schools with a strong culture tend to be more proactive, engaged, and committed to school programs.

Simultaneous Effect of Work Motivation and School Culture

The F-test results ($p = 0.001$) indicate that both work motivation and school culture together have a significant effect on teacher performance. Teachers in schools with high motivation and a strong culture tend to perform better compared to those in schools with weaker motivational and cultural structures.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The intersection of health literacy and educational attainment is a critical yet often overlooked area that significantly impacts public health, socio-economic development, and policy-making. This study highlights how education shapes individuals' ability to access, interpret, and apply health-related information, ultimately influencing health behaviors and outcomes. By conducting a comprehensive review of global perspectives, this research sheds light on disparities in health literacy, particularly among populations with limited educational opportunities, and emphasizes the role of digital learning in bridging these gaps. Despite limitations such as variability in definitions, regional disparities, and the reliance on secondary data, this study provides valuable insights into the reciprocal relationship between education and health literacy. The findings underscore the need for interdisciplinary collaboration among educators, healthcare professionals, and policymakers to develop integrated strategies that enhance health literacy at all educational levels. Future research should focus on empirical studies that assess the direct impact of health literacy programs within different educational settings, particularly in underprivileged regions. Additionally, the evolving role of technology in health education warrants further exploration to maximize its benefits for global health equity.

By advancing our understanding of how education influences health literacy, this research contributes to the broader goal of improving global health outcomes and reducing health disparities through targeted educational and policy interventions. Strengthening health literacy through education is not only a public health priority but also a fundamental step toward empowering individuals and communities worldwide.

Recommendation

This study provides a comprehensive review of the intersection between health literacy and educational attainment, several areas require further exploration. Future research should focus on the following:

- More quantitative and qualitative research is needed to evaluate the effectiveness of specific health literacy programs integrated into formal and informal education systems across diverse socio-economic and cultural contexts.
- Future studies should conduct long-term analyses to assess how different levels of educational attainment influence health literacy and overall well-being over time.
- Research comparing health literacy levels among individuals educated in traditional, vocational, and alternative education systems can provide insights into the most effective pedagogical approaches.
- Future studies should examine how linguistic diversity, cultural beliefs, and indigenous knowledge systems influence health literacy and whether multilingual educational programs can improve comprehension.

- More studies should analyze the effectiveness of national and international policies that integrate health literacy into educational frameworks, identifying best practices and areas for improvement.
- Research should focus on how educational disparities affect health literacy in marginalized groups, including refugees, low-income communities, and people with disabilities, to develop targeted interventions.
- Future studies should encourage collaboration between educators, healthcare professionals, and policymakers to develop interdisciplinary approaches for enhancing health literacy.

By addressing these areas, future studies can contribute to a deeper understanding of the dynamic relationship between education and health literacy, ultimately leading to more effective policies and interventions for improving global health outcomes.

ADVANCED RESEARCH

Future research should explore additional factors influencing teacher performance beyond work motivation and school culture, such as leadership styles, workload, educational policies, and technological integration in teaching. A longitudinal study could provide deeper insights into how motivation and school culture evolve over time and their long-term impact on teacher effectiveness. Expanding the study to a broader geographical area or different types of schools could enhance generalizability. Additionally, qualitative research focusing on teachers' personal experiences, challenges, and coping strategies would provide a more comprehensive understanding of the factors affecting their performance. Integrating artificial intelligence and digital learning tools into vocational education is another critical area for future exploration to enhance teacher efficiency and student engagement.

ACKNOWLEDGMENT

First and foremost, I would like to express my deepest gratitude to Dr. Drs. Niswanto, M.Pd, my principal advisor, for his unwavering guidance, insightful feedback, and continuous support throughout the research process. His expertise and encouragement have been invaluable in shaping this study. I also extend my sincere appreciation to Prof. Dr. Bahrin, M.Pd, my second advisor, whose thoughtful advice and constructive criticism have greatly contributed to the depth and quality of this work.

I am also profoundly grateful to the Department of Education in Sigli for granting permission to conduct this research, as well as to the vocational high schools (SMKs) in Sigli, whose administrators, teachers, and staff generously provided their time and valuable insights to support the data collection process. Their cooperation has been instrumental in making this study possible.

Lastly, I would like to thank my fellow classmates from the Class of 2023, whose motivation, camaraderie, and support have been a constant source of encouragement. Their shared experiences and academic discussions have enriched my journey, making this research not just an academic endeavor but a truly meaningful experience.

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