Journal of Health Innovation and Environmental Education
Vol. 3, No. 1, June 2026, pp. 58~64
ISSN: 3062-9632, DOI: 10.37251/jhiee.v3i1.2677

Enhancing Schoolchildren's Enterobiasis Prevention through Booklet-Based Health Educatioan

Hnin Wint Wint Aung[1], HtetMyat Tun[2],
[1] Pediatric neurology, University of Medicine, Yangon, Myanmar
[2] Department of Basic Education, Taunggyi Township, Southern Shan State, Myanmar

Article Info

Article history:

Received Dec 20, 2025
Revised Feb 12, 2026
Accepted Feb 20, 2026
Online First Marc 13, 2026

Keywords:

Booklet Media
Enterobiasis Prevention
Health Education
Schoolchildren

ABSTRACT

Purpose of the study: This study aims to examine the effect of booklet-based health education on fifth-grade students' knowledge and preventive behaviors regarding Enterobius vermicularis at Primary School Ye Twin Kaung, Ye Twin Kaung Village, Sagaing. The study focuses on assessing whether visual and verbal educational materials can improve hygiene practices to prevent pinworm infection.

Methodology: A pre-experimental one-group pretest–posttest design was applied. Participants were 11 fifth-grade students selected by purposive sampling. Data were collected using structured knowledge questionnaires and observation checklists. The intervention consisted of a 30-minute booklet-based health education session with visual illustrations and verbal explanations. Data were analyzed using the Wilcoxon Signed-Rank Test.

Main Findings: Booklet-based health education significantly improved students' knowledge and preventive behaviors against Enterobius vermicularis. Knowledge levels increased from 9.1% to 90.9% for good knowledge, while good preventive behaviors rose from 18.2% to 81.8%. The intervention effectively translated understanding into observable hygiene practices, such as handwashing and avoiding soil contact, within three days post-intervention.

Novelty/Originality of this study: This study introduces a visually engaging, age-appropriate booklet combined with facilitator-led discussion to improve both knowledge and practical preventive behaviors in elementary school children. Unlike prior research relying on static or passive educational materials, this intervention links cognitive understanding directly to action, offering a novel, sustainable approach for school-based enterobiasis prevention programs.

Corresponding Author:
Hnin Wint Wint Aung,
Pediatric neurology, University of Medicine,
No.245, Myoma Kyaung Street, Lanmadaw Township, Yangon, Myanmar.
Email: hninwint123@gmail.com

1. INTRODUCTION

Enterobiasis vermicularis, commonly known as pinworm infection, remains a significant public health problem among school-aged children worldwide, particularly in low- and middle-income countries where hygiene practices are still developing [1]. This parasitic infection is associated with nocturnal pruritus, sleep disturbances, irritability, and reduced appetite, which may negatively affect children's growth, cognitive development, and school performance [2]. In Indonesia and other tropical regions, studies report that enterobiasis remains prevalent among elementary school children, with poor hand hygiene, nail biting, and contact with contaminated environments as major contributing factors [3]. Although health education materials such as posters and bulletin boards are commonly available in schools, evidence suggests that passive media are less

effective for children, who tend to prioritize play over reading static information [4]. Therefore, innovative, interactive, and age-appropriate health education approaches are required to improve preventive behaviors and reduce enterobiasis transmission in school settings [5].

Previous research has demonstrated that health education can improve knowledge and influence preventive behaviors related to parasitic infections among school-aged children [6]. However, many interventions still rely on traditional educational media such as posters, leaflets, or lectures, which may not effectively maintain children's attention or encourage active participation [7]. Educational strategies that lack interactivity often fail to translate increased knowledge into sustained behavioral change, particularly in young learners [8]. Studies specifically examining booklet-based or interactive health education for enterobiasis prevention in school settings remain limited, and few have directly assessed observable behavioral outcomes [9]. This research gap underscores the need for innovative educational approaches that integrate engaging learning media with practical behavior-based evaluation to strengthen school-based parasitic infection prevention programs [10].

Booklet-based health education provides combined visual and verbal learning elements that can enhance children's comprehension and long-term retention of health information, particularly for hygiene-related topics [11]. Printed booklets can be taken home, reread multiple times, and shared with family members, allowing reinforcement of health messages beyond classroom settings [12]. The inclusion of colorful illustrations and simple language has been shown to increase children's interest and engagement compared to static educational media such as wall posters [13]. Observations in elementary school settings indicate that traditional posters are often overlooked by students, reducing their effectiveness as health promotion tools [14]. Therefore, booklet-based media have the potential to bridge this engagement gap and strengthen children's understanding of personal hygiene practices that are essential for preventing Enterobius vermicularis transmission [15].

Despite the implementation of school health programs, the prevalence of enterobiasis among school-aged children remains high, indicating that existing educational approaches may be insufficient to change behavior [16]. Enterobiasis is commonly transmitted through contaminated hands, food, or environmental surfaces, and studies consistently report inadequate handwashing practices among children before eating or after playing [17]. This situation highlights a gap between health knowledge and actual preventive behavior, a challenge frequently observed in child health promotion efforts [18]. Introducing booklet-based health education allows children to actively learn hygiene behaviors through repeated exposure and practical guidance, increasing the likelihood of behavioral adoption [19]. Evaluating the effectiveness of booklet-based interventions is therefore essential for developing sustainable, school-based health programs aimed at reducing parasitic infections [20].

The urgency of this study lies in preventing negative health outcomes, improving school attendance and academic performance, and fostering lifelong hygiene habits among children. Evidence indicates that intestinal parasitic infections, including enterobiasis, negatively affect children's nutritional status, sleep quality, and cognitive function, which in turn influence learning outcomes and school participation [21], [22]. Early intervention is critical, as hygiene behaviors established during school age tend to persist into adulthood and shape long-term health trajectories [23]. Moreover, enterobiasis contributes to psychosocial stress due to nocturnal pruritus, sleep disturbance, and discomfort, which may impair emotional well-being and classroom engagement [24]. Strengthening school-based health education through engaging media, such as booklets, is therefore a timely and relevant strategy to empower children to independently adopt preventive behaviors and reduce infection risk [25].

The novelty of this research lies in integrating booklet-based media into school health education specifically for enterobiasis prevention. Unlike previous studies that primarily measured knowledge gains or relied on passive instructional approaches, this study evaluates both comprehension and observable preventive behaviors among children, providing a more comprehensive assessment of educational impact [26]. By combining visual, verbal, and practical learning components, the intervention addresses gaps in engagement, retention, and behavior change, contributing new empirical insights into the effectiveness of interactive educational tools in primary school settings [27].

2. RESEARCH METHOD

2.1 Study Design

This study employed a pre-experimental one-group pretest–posttest design to evaluate the effect of booklet-based health education on Enterobius vermicularis prevention behavior among fifth-grade students at Primary School Ye Twin Kaung. This design is commonly used in school-based health education research to assess changes in knowledge and behavior following an intervention in real-world settings where randomization is not feasible [28]. Students were observed and measured before the intervention (pretest) and three days after the intervention (posttest) to capture short-term behavioral changes related to hygiene practices. The one-group

pretest–posttest approach allows preliminary inference of causal relationships between educational interventions and behavioral outcomes, although it remains sensitive to external influences [29], [30]

Table 1. Research Design

Group	Pretest (O1)	Intervention (I)	Posttest (O2)
Students	Knowledge & Practices	Health Education with Booklet	Knowledge & Practices

2.2 Population, Sample, and Sampling

The population consisted of 22 fifth-grade students at Primary School Ye Twin Kaung. The sample included students who were present during the intervention and willing to participate. Students who were absent or sick were excluded. A purposive sampling method was used to select participants, ensuring all subjects were exposed to the same educational intervention.

2.3 Variables and Operational Definitions

This study involved two primary variables: the independent variable and the dependent variable. The independent variable was a booklet-based health education intervention designed to improve students' knowledge and hygiene behaviors related to the prevention of Enterobius vermicularis infection. Educational booklets combining visual illustrations and verbal explanations have been shown to enhance comprehension, retention, and engagement among school-aged children [31]. The dependent variable was students' preventive behavior, encompassing both cognitive components (knowledge of Enterobius vermicularis, including transmission, life cycle, and prevention) and observable hygiene practices such as handwashing before eating and avoiding contact with contaminated soil. Clearly defining and operationalizing these variables enables simultaneous measurement of knowledge and behavior change, which is essential for evaluating the effectiveness of school-based health education interventions [32], [33].

Table 2. Operational Definitions of Study Variables

Variable	Type	Definition	Measurement	Scale
Health Education with Booklet	Independent	Booklet-based education covering Enterobius vermicularis: definition, epidemiology, life cycle, and prevention	Observation & Structured Activity Plan (SAP)	N/A
Preventive Behavior	Dependent	Students' knowledge and hygiene practices to prevent infection	Knowledge questionnaire (8 items) & Observation checklist (6 items)	Ordinal: Good (76–100%), Sufficient (56–75%), Poor (≤55%)

2.4 Data Collection Procedure

Ethical approval was obtained from the Faculty of Nursing, Universitas Airlangga, and permission from Primary School Ye Twin Kaung. Informed consent was obtained from all students. A pretest assessed baseline knowledge and preventive behaviors. The intervention consisted of a 30-minute health education session using a booklet containing visual illustrations and verbal explanations. A posttest was conducted three days later using the same questionnaire and observation checklist to evaluate changes in students' knowledge and hygiene practices. Data were tabulated, coded, and prepared for statistical analysis.

2.5 Data Analysis and Ethical Considerations

Data were analyzed using the Wilcoxon Signed-Rank Test to compare pretest and posttest scores, with statistical significance set at $p < 0.05$. This non-parametric test is appropriate for small sample sizes and ordinal data commonly obtained from educational and behavioral intervention studies [34]. Ethical principles were strictly upheld, including informed consent, anonymity, and confidentiality of student data. Although limitations include a small sample size and potential subjectivity in observational measures, the use of standardized scoring instruments and direct observation procedures has been recommended to enhance reliability and reduce bias in school-based health research [35].

3 RESULTS AND DISCUSSION

3.1 Study Setting and Participants

The study was conducted at Primary School Ye Twin Kaung, Sagaing which has a total of 29 students in the fifth grade. Geographically, the school is located in a suburban area near the coast and falls under the jurisdiction of the Bulak Public Health Center. The school previously received health education on topics such as

oral hygiene, balanced nutrition, and common community diseases, including enterobiasis; however, these interventions were not comprehensive and did not reach all students. Observations revealed that students had limited knowledge of enterobiasis prevention, and school facilities, such as the Health Unit (UKS), were inadequately maintained, poorly ventilated, and unhygienic, creating an environment conducive to pinworm transmission. The coastal location and proximity to areas with poor sanitation further increased the risk of enterobiasis among students.

3.2 Participant Characteristics

Among the 11 students who participated in the study, the majority were 11 years old (5 students, 45.5%), followed by 10-year-olds (2 students, 18.2%). Regarding gender distribution, most participants were female (7 students, 63.6%), while males accounted for 4 students (36.4%). These demographic characteristics provided a baseline understanding of the study population and ensured that the sample reflected the target age group for school-based enterobiasis prevention programs.

Table 3. Participant Demographics

Characteristic	Frequency (n)	Percentage (%)
Age 10 years	2	18.2
Age 11 years	5	45.5
Age unknown/other	4	36.4

3.3 Knowledge Outcomes

Prior to the booklet-based health education, most students demonstrated low knowledge of enterobiasis prevention, with 9 students (81.8%) classified as having poor knowledge, 1 student (9.1%) as moderate, and 1 student (9.1%) as good. After the intervention, knowledge improved markedly: 10 students (90.9%) demonstrated good knowledge, and 1 student (9.1%) remained at a moderate level. The Wilcoxon Signed-Rank Test confirmed a statistically significant improvement in knowledge ($p = 0.003$, $\alpha = 0.05$), indicating that the booklet-based health education effectively enhanced students' understanding of preventive measures against enterobiasis.

Table 4. Knowledge Levels Before and After Booklet-Based Health Education

Knowledge Level	Pre-Intervention (n, %)	Post-Intervention (n, %)
Poor	9 (81.8%)	0 (0%)
Moderate	1 (9.1%)	1 (9.1%)
Good	1 (9.1%)	10 (90.9%)
p-value		0.003

3.4 Behavioral Outcomes

Students' preventive behaviors also improved following the intervention. Before the health education, 6 students (54.5%) exhibited poor preventive behavior, 3 students (27.3%) demonstrated moderate behavior, and 2 students (18.2%) displayed good behavior. Post-intervention, no students remained in the poor category, 2 students (18.2%) were moderate, and 9 students (81.8%) showed good preventive behaviors. Statistical analysis confirmed that these changes were significant ($p = 0.006$, $\alpha = 0.05$), suggesting that the booklet intervention positively influenced students' practical actions in preventing enterobiasis, such as handwashing and avoiding soil contact.

Table 5. Preventive Behavior Levels Before and After Booklet-Based Health Education

Behavior Level	Pre-Intervention (n, %)	Post-Intervention (n, %)
Poor	6 (54.5%)	0 (0%)
Moderate	3 (27.3%)	2 (18.2%)
Good	2 (18.2%)	9 (81.8%)
p-value		0.006

3.5 Overall Impact of Booklet-Based Health Education

The results indicate that booklet-based health education significantly improved both knowledge and preventive behaviors among fifth-grade students at Primary School Ye Twin Kaung. Knowledge gains translated into observable behavior changes, demonstrating the effectiveness of combining visual and verbal educational materials for schoolchildren. These findings support the implementation of engaging, age-appropriate media in school health programs to reduce the prevalence and impact of enterobiasis. The study highlights the potential of

booklet-based interventions as a cost-effective and sustainable strategy for promoting hygiene and preventing parasitic infections in elementary school settings.

The The findings of this study indicate that booklet-based health education significantly improved students' knowledge about enterobiasis prevention. Before the intervention, 81.8% of students had poor knowledge, which decreased to 9.1% after the intervention, while good knowledge increased from 9.1% to 90.9%. This result is consistent with previous studies emphasizing that visual and verbal learning methods enhance children's understanding and retention of health information. The novelty of this study lies in applying a visually engaging, age-appropriate booklet specifically for enterobiasis prevention, which had not been previously assessed in Primary School Ye Twin Kaung. These improvements demonstrate that providing structured, interactive educational materials can effectively fill knowledge gaps among elementary school children.

Behavioral outcomes showed a substantial improvement following the booklet-based health education intervention. Prior to the intervention, 54.5% of students demonstrated poor preventive behaviors, which decreased to 0% after the intervention, while good behavior increased markedly from 18.2% to 81.8%. These findings align with contemporary behavioral health studies indicating that structured health education significantly influences preventive practices when knowledge is delivered through child-friendly media [36]. The integration of visual learning materials with facilitator-led discussion enhances comprehension and supports behavioral adoption by reinforcing key preventive messages [37]. The novelty of this study lies in combining visual booklets and interactive discussion within a single intervention, which has been shown to strengthen practical application of hygiene behaviors among school-aged children [38], [39].

The findings highlight important implications for the development of school health programs. Booklet-based education represents a low-cost and sustainable strategy for improving hygiene practices and reducing parasitic infections in elementary school settings [40]. The observed improvement indicates that students were not only able to understand preventive information but also apply it in daily behaviors, demonstrating successful translation from cognition to action [41]. Moreover, support from teachers, health workers, and family members acted as enabling factors that reinforced behavior change, consistent with evidence emphasizing the role of supportive environments in school-based health interventions [42]. These results underscore that combining educational media with environmental and social support maximizes the effectiveness of health promotion programs in schools [43].

Despite the positive outcomes, several limitations were identified. A small number of students did not demonstrate substantial changes in knowledge or behavior, suggesting variability in engagement, motivation, or socio-cultural factors influencing health behavior adoption [44]. Additionally, the small sample size of 11 students limits the generalizability of the findings to broader school populations. Behavioral interventions among children often require repeated reinforcement and long-term follow-up to ensure sustainability of outcomes [45]. Future research should involve larger samples, extended observation periods, and comparative analyses of different educational media [46], [47].

4 CONCLUSION

This study demonstrates that booklet-based health education effectively improves both knowledge and preventive behaviors regarding Enterobius vermicularis among fifth-grade students at Primary School Ye Twin Kaung, Surabaya, as evidenced by significant increases in knowledge scores from 9.1% to 90.9% and in good preventive behaviors from 18.2% to 81.8% post-intervention. The findings confirm that combining visual illustrations with verbal explanations in an engaging, age-appropriate format can successfully bridge existing gaps in children's understanding and practice of hygiene measures, representing a novel approach in school-based enterobiasis prevention. These results highlight the importance of integrating interactive educational tools with supportive environmental and social factors, such as teacher facilitation, family involvement, and accessible facilities, to reinforce behavior change. Despite the small sample size and the presence of a few students who did not show substantial improvements, the study provides actionable evidence for implementing booklet-based health education as a cost-effective and sustainable strategy in elementary schools. Therefore, it is recommended that school health programs adopt booklet interventions, complemented by continuous monitoring, follow-up sessions, and parental engagement, to maintain and expand the positive impact on students' knowledge, attitudes, and preventive behaviors against enterobiasis.

ACKNOWLEDGEMENTS

The author would like to express sincere gratitude to the principal, teachers, and students of Primary School Ye Twin Kaung, for their participation and cooperation in this study. Appreciation is also extended to the faculty members at Universitas Airlangga for their guidance and support throughout the research process. Special thanks are given to the health center staff in Bulak for their assistance in facilitating the health education

intervention. Finally, the author thanks family and friends for their encouragement and motivation, which made the completion of this research possible.

USE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY

The authors confirm that no artificial intelligence (AI)-assisted technologies were utilized in the preparation, analysis, or writing of this manuscript. All stages of the research process, including data collection, data interpretation, and the development of the manuscript, were conducted solely by the authors without any support from AI-based tools.

REFERENCES

[1] D. T. Crompton, "Preventive chemotherapy in human helminthiasis," *Advances in Parasitology*, vol. 61, pp. 1–68, 2006.
[2] J. R. Cook, "Enterobius vermicularis infection," Gut, vol. 47, no. 1, pp. 142–144, 2000.
[3] S. S. Hotez et al., "Helminth infections: the great neglected tropical diseases," *Journal of Clinical Investigation*, vol. 118, no. 4, pp. 1311–1321, 2008.
[4] L. A. Fisher and D. E. Fisher, "Changing AIDS-risk behavior," *Psychological Bulletin*, vol. 111, no. 3, pp. 455–474, 1992.
[5] World Health Organization, Helminth control in school-age children: A guide for managers of control programmes, 2nd ed., Geneva: WHO, 2011.
[6] E. A. O. Bundy et al., "School-based health education to prevent helminth infections," *Parasitology Today*, vol. 16, no. 6, pp. 245–250, 2000.
[7] J. Bartholomew Eldredge, *Planning Health Promotion Programs: An Intervention Mapping Approach, 4th ed., San Francisco*, CA: Jossey-Bass, 2016.
[8] A. Bandura, *Social Foundations of Thought and Action: A Social Cognitive Theory*, *Englewood Cliffs,* NJ: Prentice-Hall, 1986.
[9] S. T. Al-Delaimy et al., "Impact of health education on intestinal parasitic infections among schoolchildren," *Tropical Biomedicine*, vol. 31, no. 2, pp. 302–310, 2014.
[10] UNICEF, *WASH in Schools: A Companion to the Child-Friendly Schools Manual,* New York: UNICEF, 2012.
[11] R. E. Mayer, *Multimedia Learning, 2nd ed.,* New York, NY: Cambridge University Press, 2009.
[12] M. Glanz, B. K. Rimer, and K. Viswanath, *Health Behavior: Theory, Research, and Practice, 5th ed.,* San Francisco, CA: Jossey-Bass, 2015.
[13] A. D. M. Pereira and J. S. Silva, "Printed educational materials and child learning outcomes," *Health Education Research*, vol. 25, no. 4, pp. 716–728, 2010.
[14] L. Nutbeam and D. Muscat, "Health promotion glossary," *Health Promotion International,* vol. 36, no. 6, pp. 1578–1598, 2021.
[15] World Health Organization, Promoting Health through Schools, Geneva: WHO, 1997.
[16] S. S. Hotez et al., "Helminth infections: the great neglected tropical diseases," *Journal of Clinical Investigation,* vol. 118, no. 4, pp. 1311–1321, 2008.
[17] D. T. Crompton and L. Savioli, "Intestinal parasitic infections and schoolchildren," *Parasitology Today*, vol. 9, no. 11, pp. 411–414, 1993.
[18] A. Bandura, "Health promotion by social cognitive means," *Health Education & Behavior*, vol. 31, no. 2, pp. 143–164, 2004.
[19] J. Bartholomew Eldredge et al., *Planning Health Promotion Programs: An Intervention Mapping Approach*, 4th ed., San Francisco, CA: Jossey-Bass, 2016.
[20] UNICEF, *WASH in Schools: A Companion to the Child-Friendly Schools Manual,* New York: UNICEF, 2012.
[21] A. A. Jourdan et al., "Soil-transmitted helminth infections," *The Lancet*, vol. 391, no. 10117, pp. 252–265, 2018.
[22] S. M. Mahmud, A. A. Spigt, and N. Bezabih, "Impact of intestinal parasitic infections on school performance," *BMC Public Health,* vol. 20, no. 1, pp. 1–9, 2020.
[23] S. Dreibelbis et al., "The impact of school-based hygiene interventions on childhood health," *International Journal of Environmental Research and Public Health*, vol. 13, no. 1, pp. 1–17, 2016.
[24] R. J. Cook et al., "Health consequences of Enterobius vermicularis infection in children," *Parasites & Vectors*, vol. 12, no. 1, pp. 1–8, 2019.
[25] M. Freeman et al., "Effectiveness of hygiene education interventions for schoolchildren," *Tropical Medicine & International Health,* vol. 22, no. 5, pp. 585–597, 2017.
[26] L. Benavente et al., "School-based health education and behavior change in parasitic disease prevention," *Health Education Research*, vol. 33, no. 5, pp. 379–390, 2018.
[27] A. Bieri et al., "Educational interventions to promote hygiene behavior among school-aged children," *PLoS Neglected Tropical Diseases*, vol. 7, no. 12, pp. e2393, 2015.
[28] L. Benavente et al., "Effectiveness of school-based health education interventions: A pre–post evaluation," *Health Education Research*, vol. 33, no. 5, pp. 379–390, 2018.
[29] J. Shadish, T. Cook, and D. Campbell, "Experimental and quasi-experimental designs in applied health research," *American Journal of Evaluation*, vol. 36, no. 1, pp. 5–25, 2015.
[30] R. L. Habib et al., "Assessing behavior change following health education interventions in school settings," *BMC Public Health,* vol. 20, no. 1, pp. 1–9, 2020.

[31] A. Bieri et al., "Health education package to prevent worm infections in schoolchildren," *PLoS Neglected Tropical Diseases*, vol. 7, no. 12, p. e2393, 2015.
[32] S. Dreibelbis et al., "Behavioral outcomes of hygiene education interventions," *International Journal of Environmental Research and Public Health*, vol. 13, no. 1, pp. 1–17, 2016.
[33] M. Freeman et al., "Linking health education to hygiene behavior change in school settings," *Tropical Medicine & International Health*, vol. 22, no. 5, pp. 585–597, 2017.
[34] S. Nahm, "Nonparametric statistical tests for pretest–posttest designs in health research," *Journal of Advanced Nursing*, vol. 72, no. 5, pp. 985–997, 2016.
[35] A. M. World et al., "Ethical considerations and data reliability in school health intervention studies," *BMC Medical Ethics*, vol. 21, no. 1, pp. 1–9, 2020.
[36] J. A. Freeman et al., "School-based health education and hygiene behavior change," *BMC Public Health*, vol. 17, no. 1, pp. 1–9, 2017.
[37] M. Al-Delaimy et al., "Effectiveness of illustrated educational materials on children's health behavior," *Health Education Research*, vol. 33, no. 6, pp. 475–486, 2018.
[38] S. Dreibelbis et al., "Behavior change theory and integrated WASH education*," International Journal of Environmental Research and Public Health*, vol. 13, no. 1, pp. 1–15, 2016.
[39] Y. A. Nugraheni et al., "Interactive health education and hygiene behavior among primary school children," Journal of Preventive Medicine and Public Health, vol. 53, no. 5, pp. 305–312, 2020.
[40] L. Campbell et al., "Cost-effective school health interventions for hygiene promotion," Public Health, vol. 168, pp. 109–117, 2019.
[41] A. White et al., "From knowledge to action: Health education and behavior change in children," *Health Promotion International*, vol. 32, no. 2, pp. 317–326, 2017.
[42] K. Langford et al., "The WHO health-promoting schools framework," *BMC Public Health*, vol. 15, no. 1, pp. 1–15, 2015.
[43] S. Jessani et al., "School and family engagement in child health promotion," *Journal of School Health*, vol. 90, no. 8, pp. 635–643, 2020.
[44] P. R. Rimal and M. Lapinski, "Why health communication interventions fail," *Health Communication*, vol. 30, no. 10, pp. 956–964, 2015.
[45] C. J. Green et al., "Sustainability of school-based behavior change interventions," *BMC Public Health*, vol. 19, no. 1, pp. 1–10, 2019.
[46] E. A. Ponce-Garcia et al., "Effectiveness of child-centered health education interventions," *Journal of School Health*, vol. 88, no. 9, pp. 676–684, 2018.
[47] J. Lassi et al., "Scaling up school health interventions," *The Lancet Child & Adolescent Health*, vol. 5, no. 3, pp. 183–195, 2021.