IMPLEMENTATION OF HEALTHY LEARNING INSTITUTIONS PROGRAM IN THE LAST MILE ELEMENTARY SCHOOLS, DEPED BOHOL

RALPH REY C. SUPREMO, CLINIO L. GALVISO
[1]Department of Education Division of Bohol, College of Allied Health Sciences, University of Bohol, Tagbilaran City, Philippines

Corresponding Author: ralph.rey.supremo@gmail.com

ABSTRACT

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The DOH and DepEd launched the Healthy Learning Institutions (HLI) Program in eight provinces and one city in the Philippines in 2022 as HLI pilot sites. This study examined 15 pilot last-mile elementary schools (LMES) in DepEd Bohol. These schools were divided into a control and two intervention groups. An extensive quantitative descriptive-correlational analysis examined the HLI Program pilot. The World Health Organization's Six Pillars of a Health-Promoting School (HPS)—Healthy School Policy, Physical School Environment, Social School Environment, Community Links, Health Skills and Education, and Access to Health Care—were used to evaluate HLI implementation and a survey was completed by 41 school staff. The study also examined the health literacy of 187 students in sexual reproductive health (SRH), mental health, and immunization from 10 LMES and how it relates to program implementation.

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Five of the six HPS pillars were highly implemented, while Access to Health Care was moderately implemented. Health literacy was strong in all three areas. There were no significant differences between school groups and pretest and posttest results, although SRH Literacy scores improved. Contrary to expectations, deploying the HLI program did not significantly impact health literacy. Findings inform an improvement plan to refine implementation.

INTRODUCTION

The health of children and adolescents is crucial for national development, particularly in Southeast Asia's low- and middle-income nations. Even if people think young people are tough, many nonetheless get sick and die from things that may have been avoided. In 2015, around 1.7 million adolescents perished, predominantly due to suicide, vehicular accidents, drowning, infectious diseases, and maternal factors among individuals aged 15 to 19 (WHO-SEARO, 2022). These difficulties are caused by people not knowing enough about health, not being able to get preventive treatment, and not having supporting places to go. Schools are one of the best places to promote health because they provide you a chance to have a good effect on children, families, and communities. Schools are particularly important for teaching kids healthy habits, attitudes, and skills that will last a lifetime (Lister-Sharp et al., 1999; Kolbe, 2019). Almost one billion kids go to school every day.

The World Health Organization's Health-Promoting Schools (HPS) framework shows how health and learning are connected by include health in school policies, settings, curricula, and community partnerships. Pender's Health Promotion Model describes health behaviors as results of personal traits, perceived benefits and barriers, self-confidence, and social influences (Pender, 1982; Petiprin, 2020). This model helps examine how better school environments and health education affect students' motivation and ability to make healthy choices. The concept of health literacy, grounded in Russell's Theory of Knowledge, emphasizes students' capacity to understand and apply health information, crucial for effective health promotion policies.

The study considers the Hawthorne Effect, recognizing that participants may alter their behavior when aware of being observed, which could influence the results. This acknowledgment helps contextualize findings and emphasizes the need for cautious interpretation of observed improvements in health literacy and behaviors.

REVIEW OF RELATED LITERATURE

School-Based Health Promotion and Health Literacy. Schools play a key role in improving public health by providing age-appropriate health education and supportive environments. In the Philippines, the DOH Health Promotion Bureau runs school-based health programs in line with Section

30 of the UHC Act, making health literacy a core skill (DOH, 2021; DepEd, 2021).

Health literacy programs help people find, understand, and use health information more effectively, leading to improved health behaviors and decisions (Sukys et al., 2019). Adding health literacy to the HPS framework is supported worldwide, including in the Moscow Declaration of the Fifth European Conference on Health Promoting Schools (Dadaczynski et al., 2020).

Health-Promoting Schools and Student Outcomes. Research shows that well-rounded school health programs improve both health and academic results. Kolbe (2019) listed 10 key components of effective programs, including nutrition services, mental health support, physical activity, family involvement, and community partnerships. Together, these help boost attendance, academic performance, and students' well-being.

Research in Indonesia found that school-based health promotion significantly improved critical health literacy, though the effects differed by behavior (Prihanto et al., 2021). Similarly, Schools for Health in Europe (SHE) emphasize that organizational change, rather than classroom lessons alone, is key to lasting health promotion (Okan et al., 2020).

Mental Health, Sexual and Reproductive Health, and Immunization Literacy. Many adolescents around the world still have limited mental health literacy, especially in low-resource areas. Brooks et al. (2019) showed that school programs designed for local cultures improved mental health literacy and self-management skills among Indonesian adolescents. Tully et al. (2019) also highlighted the importance of parental and community awareness in meeting young people's mental health needs.

Sexual and reproductive health literacy is a key factor in adolescent pregnancy outcomes. Dongarwar and Salihu (2019) found that thorough sexuality education considerably lowered adolescent pregnancy rates in Latin America. Immunization literacy also affects vaccine acceptance, as shown by Zhou et al. (2019) and Fazel et al. (2021), who found strong links between parental literacy, socioeconomic status, and adolescent vaccination rates.

Review of Related Studies. International Review of Related Studies. Studies from around the world show a strong connection between school health environments, health literacy, and student outcomes. Sukys et al. (2019) found that academic success and school health programs were strong predictors of adolescent health literacy in Lithuania. Guo et al. (2020) also showed links among health literacy, self-confidence, and health behaviors among adolescents in China and Australia—particularly in health-promoting schools. Dadaczynski et al. (2020) reported that nearly one-third of school leaders exhibited limited health literacy, which negatively affected the implementation of health promotion initiatives. These findings underscore the importance of leadership capacity-building in school health programs.

Despite increasing international evidence, there are still few studies in the

Philippines that evaluate comprehensive health-promoting school programs, especially in last-mile areas. This lack of research supports the focus of this study on HLI implementation and health literacy outcomes in schools in geographically and economically disadvantaged settings.

The study examined the implementation of the Health Learning Institution program in Bohol's Last Mile Schools' pilot locations in 2022–2023 and students' health literacy. The findings inform an enhancement plan for expanding the service beyond trial sites.

RESEARCH METHODOLOGY

Research Design. This study employed a **quantitative descriptive–correlational research design** to examine the relationship between the level of implementation of the Healthy Learning Institutions (HLI) Program and students' health literacy outcomes. The design was appropriate for determining the extent of program implementation and assessing associations between institutional practices and learner health literacy without manipulating variables.

Environment. The study was conducted in **15 last-mile public elementary schools** in the Province of Bohol, Philippines, identified by the Department of Education (DepEd) as having limited access to resources and basic infrastructure. These schools included Abad Santos Elementary School (Mabini), Aurora Elementary School (Pilar), Biabas Elementary School (Guindulman), Bicahan Elementary School (Antequera), Cahayag Elementary School (Sierra Bullones), Cuya Elementary School (Ubay II), Genonocan Elementary School (Tubigon West), Kagawasan Elementary School (Sagbayan), Lapsaon Elementary School (Dimiao), Limokon Elementary School (Valencia), Lobgob Elementary School (Sevilla), Mocaboc Elementary School (Tubigon East), Monserrat Elementary School (Cortes), San Isidro Elementary School (Maribojoc), and Tuboran Elementary School (Bien Unido).

The schools were categorized into three groups based on the **HLI pilot implementation design** established by the Department of Health–Health Promotion Bureau (DOH-HPB) and the DepEd Bureau of Learner Support Services–School Health Division. Five schools (Abad Santos, Biabas, Cuya, Kagawasan, and San Isidro) served as the **baseline/control group**. Another five schools (Bicahan, Cahayag, Genonocan, Lapsaon, and Mocaboc) constituted the **technical assistance group**, while the remaining five schools (Aurora, Limokon, Lobgob, Monserrat, and Tuboran) received **both technical assistance and non-monetary resource support**, including instructional materials and small-value grants.

Respondents and Data Sources. Two sets of data were utilized. The first consisted of **primary data** gathered from **41 school personnel**, including 32 teachers (Grade 5 and Grade 6 advisers and school-in-charge personnel) and

nine non-teaching staff who were directly involved in HLI implementation. The second comprised **secondary data** on student health literacy derived from the DOH-HPB learner assessment records of **187 Grade 5 and Grade 6 pupils** from participating schools.

Only personnel who provided informed consent were included. Student data were limited to those whose parents or guardians granted consent and who completed both baseline and end-line assessments. Data from five schools were excluded from the learner analysis due to incomplete pre- or post-test records, ensuring data integrity.

Research Instruments. HLI implementation was measured using the **modified HLI School Self-Appraisal Checklist Questionnaire**, developed by the DOH-HPB and anchored on the **World Health Organization's Health-Promoting Schools Framework**. The instrument assessed indicators across six pillars: healthy school policy, physical environment, social environment, health skills and education, community links, and access to health services. Data were collected using **KoboToolbox**, and the instrument underwent pilot testing to establish validity and reliability.

Student health literacy data were obtained through documentary analysis of the **Healthy Learning Institutions Learner Assessment Questionnaire**, administered by the DOH-HPB during the first and second rounds of evaluation in the first quarter of 2023. Health literacy scores were categorized into **sexual and reproductive health, mental health, and immunization literacy** domains following official scoring protocols.

Data Collection and Analysis. Primary data were extracted from the online HLI implementation survey, while secondary learner data were encoded, tabulated, and processed according to domain-specific scoring standards. All analyses were conducted using **IBM SPSS Statistics**.

Descriptive statistics, including frequencies, percentages, and weighted means, were used to summarize respondent profiles and health literacy levels. Data normality was assessed using the **Kolmogorov–Smirnov** and **Shapiro–Wilk tests**. Depending on distribution, appropriate **parametric or non-parametric tests** were applied. Relationships between HLI implementation and student health literacy were examined using **Pearson's Chi-Square** and **Spearman's rank correlation**. Differences among school groups were analyzed using the Kruskal–Wallis H test, while independent-samples t-tests were used to compare health literacy outcomes across student groups.

RESULTS AND DISCUSSION

Profile of Respondents. Most respondents were aged 31–40 (31.71%) or 41–50 (29.27%), with few aged 61 or older **(4.88%)**. The majority (78.05%) were **non-teaching staff**, mainly school cluster heads, and **21.95%** were teaching staff. Respondents were almost evenly distributed among school groups, with **Group C** slightly higher (36.59%). Participation was highest in **Genonocan,**

Kagawasan, and Lobgob Elementary Schools (9.76%) and lowest in **Abad Santos Elementary School (2.44%)**. Most had 1–**5 years (39.02%)** or **6–10 years (34.15%)** of service, indicating relatively recent experience.

Level of Implementation of the Healthy Learning Institutions (HLI) Program

Healthy School Policy. Moving on to the **Healthy School Policy, it** was implemented at a high level (M = 3.46). The strongest areas were following **anti-bullying and child protection policies** and preventing substance use. Integrating health priorities into the **School Improvement Plan (SIP)** was rated a bit lower, but still high. This shows strong policy compliance, but there is a need to make health planning a more regular part of school governance.

Physical School Environment. The **Physical School Environment** was also rated high (M = 3.28). Schools did well with **WASH facilities**, **ventilation**, and **menstrual hygiene management**, showing the **WASH in Schools (WinS)** program is working. However, safe, **walkable access routes** received the lowest ratings. This means schools need to work with the local government to make the areas around schools safer for children.

Social School Environment. A **high level of implementation. All** indicators for the **Social School Environment were rated high. Schools were strong in build**ing respectful relationships and creating inclusive environments. Coordination with counseling and psychological services was the weakest area, though still rated high. This suggests schools could improve preventive mental health and social-emotional learning by working more closely with professionals.

Community engagement was strong, especially through **family communication** and partnerships with local groups promoting nutrition, physical activity, and healthy habits. However, school-based positive youth development programs were rated lower. This shows a need for more structured youth empowerment programs to improve students' well-being and behavior.

Health Skills and Education. All areas under **Health Skills and Education** were rated high, with a focus on **active, learner-centered, and culturally relevant teaching. S**exual and reproductive health topics were included but rated lower. This shows a need for more consistent, thorough teaching in these areas to improve adolescent health knowledge.

Access to Health Care. Access to Health Care showed a **moderate level of implementation**, reflecting systemic constraints such as limited availability of school-based health professionals. Schools demonstrated strength in **health data collection** (e.g., immunization and nutritional status) but had limited capacity to provide on-site health services, particularly mental health services. These findings highlight the need for strengthened school–health sector linkages to ensure equitable access to essential services.

OVERVIEW OF HEALTH LITERACY LEVELS

Sexual and Reproductive Health Literacy. Assessment data from 187 Grade 5 and 6 students in ten last-mile elementary schools indicated improvements in sexual and reproductive health literacy from pretest to posttest. Pretest literacy was moderate (M = 2.30) and increased to a high level at posttest (M = 2.39). Students demonstrated the greatest knowledge in the areas of the reproductive system and pregnancy or conception, while their understanding of sexually transmitted illnesses and broader sexual and reproductive health concepts remained moderate. This improvement underscores the importance of school-based health education, especially when content is developmentally appropriate and culturally relevant. These findings support previous research indicating that increased sexual and reproductive health literacy can reduce adolescent risk behaviors and adverse health outcomes, such as teenage pregnancy (Dongarwar & Salihu, 2019).

However, the persistent moderate literacy in sexually transmitted disease awareness and broader sexual health perspectives indicates a need for more comprehensive and sustained sexuality education. Addressing gaps in program consistency, cultural alignment, and educator preparedness through enhanced curriculum integration, increased teacher capacity, and greater parental engagement is recommended to further improve learner outcomes in these areas.

Mental Health Literacy. The results indicate that pupils possess a high overall level of mental health literacy. Analysis showed that five of eight tested domains demonstrated high literacy in both pretest and posttest, while three remained moderate. Knowledge of seeking professional help, including medical consultation, received the highest scores in both assessments (M = 2.95; 2.92). Awareness of appropriate actions during a mental health concern and medication-related information improved slightly in the posttest. However, the understanding of general mental health and well-being remained moderate throughout.

These findings emphasize the importance of early mental health literacy, as interventions for children are critical to preventing long-term mental health problems, which contribute considerably to lifetime morbidity (Tully et al., 2019). Moderate literacy in some communities may reflect persistent stigma and misunderstandings that impede help-seeking among children and caregivers. Previous study has shown that, while people may discriminate between mental health illnesses and everyday challenges, recognition does not always result in acceptance or a perceived need for treatment (Pescosolido et al., 2008). Reducing stigma, particularly in rural regions, is critical for improving access to care and general well-being (Heflinger et al. 2014).

Immunization Literacy. Immunization literacy remained high in both pretest and posttest evaluations (M = 2.58), indicating that pupils have a strong foundation of knowledge. This likely reflects positive community attitudes toward

vaccination and ongoing public health messaging. Research shows that health literacy is essential for vaccine uptake, especially when parental attitudes and previous vaccination behaviors are positive (Zhou et al., 2019; Wong et al., 2022). In contrast to high-income settings, where younger children are often more hesitant to receive vaccines (Fazel et al., 2021), pupils in these last-mile schools demonstrated strong immunization literacy despite socioeconomic challenges. This suggests that school-based health education, supported by community involvement, can help overcome structural barriers and enhance vaccine knowledge among younger students.

Overall Health Literacy. Table 2 shows the pre- and posttest results for students' health literacy in three topic areas. Overall, the results show a high level of health literacy in both assessments, with a significant improvement in posttest scores. The composite mean increased from 2.43 (SD = 0.10) in the pretest to 2.47 (SD = 0.10) in the posttest, indicating that learning improved after program implementation.

Immunization literacy consistently ranked first across both the pretest (M = 2.58) and posttest (M = 2.58), indicating strong baseline knowledge and sustained understanding. Mental health literacy followed, maintaining in the high range across evaluations, but sexual and reproductive health literacy increased from moderate (M = 2.30) to high (M = 2.39). The relatively lower mean results for sexual and reproductive health can be attributed to the complexity and sensitivity of the ideas tested, which often necessitate progressive and age-appropriate training. The high overall literacy levels may be explained by the institutionalization of health education policies within the basic education curriculum, particularly the integration of Comprehensive Sexuality Education (DepEd Order No. 031, s. 2018) and school-based mental health promotion programs (DepEd Order No. 028, s. 2018; DepEd Memorandum No. 083, s. 2019). These policies appear to have strengthened students' foundational knowledge across key health domains.

Notably, the strong health literacy outcomes among students in last-mile schools contrast with previous studies reporting lower literacy levels among rural learners (Sukys et al., 2019; Aljassim & Ostini, 2020). This finding suggests that targeted, school-based health interventions can effectively mitigate geographic and socioeconomic disparities in health literacy.

Relationship Between Respondent Profile, Level of Implementation, and Health Literacy. Inferential analyses were conducted using posttest health literacy scores in sexual and reproductive health, mental health, and immunization, given the observed improvements across all domains. Individual respondent factors, such as age, sex, designation or position, and years of service, had no significant impact on HLI program implementation or student health literacy outcomes, as indicated in Table 3. These findings show that program implementation and learner outcomes were unaffected by staff demographics or tenure, indicating that program delivery is consistent and equitable.

In contrast, institutional and contextual variables showed substantial relationships. Both the school of assignment and the district of assignment had a significant relationship with levels of implementation and all domains of health literacy, implying that school- and district-level conditions—such as leadership, resources, local partnerships, and implementation readiness—are critical in shaping program effectiveness.

Table 3. *Relationship Between Respondent Profile, HLI Program Implementation, and Students' Health Literacy Levels*

Variables	p-value	Interpretation	Decision on H_0
Age and Level of Implementation	.530	Not Significant	Fail to Reject
Age and Sexual & Reproductive Health Literacy	.635	Not Significant	Fail to Reject
Age and Mental Health Literacy	.888	Not Significant	Fail to Reject
Age and Immunization Literacy	.473	Not Significant	Fail to Reject
Sex and Level of Implementation	.466	Not Significant	Fail to Reject
Sex and Sexual & Reproductive Health Literacy	.209	Not Significant	Fail to Reject
Sex and Mental Health Literacy	.694	Not Significant	Fail to Reject
Sex and Immunization Literacy	.579	Not Significant	Fail to Reject
Designation/Position and Level of Implementation	.534	Not Significant	Fail to Reject
Designation/Position and Sexual & Reproductive Health Literacy	.622	Not Significant	Fail to Reject
Designation/Position and Mental Health Literacy	.617	Not Significant	Fail to Reject
Designation/Position and Immunization Literacy	.504	Not Significant	Fail to Reject
School Group and Level of Implementation	.276	Not Significant	Fail to Reject
School Group and Sexual & Reproductive Health Literacy	.166	Not Significant	Fail to Reject
School Group and Mental Health Literacy	.390	Not Significant	Fail to Reject
School Group and Immunization Literacy	.005	**Significant**	**Reject**
School of Assignment and Level of Implementation	.013	**Significant**	**Reject**
School of Assignment and Sexual & Reproductive Health Literacy	.003	**Significant**	**Reject**
School of Assignment and Mental Health Literacy	.003	**Significant**	**Reject**
School of Assignment and Immunization Literacy	.003	**Significant**	**Reject**

Variables	p-value	Interpretation	Decision on H_0
District of Assignment and Level of Implementation	.013	**Significant**	**Reject**
District of Assignment and Sexual & Reproductive Health Literacy	.003	**Significant**	**Reject**
District of Assignment and Mental Health Literacy	.003	**Significant**	**Reject**
District of Assignment and Immunization Literacy	.003	**Significant**	**Reject**
Years in Service and Level of Implementation	.839	Not Significant	Fail to Reject
Years in Service and Sexual & Reproductive Health Literacy	.310	Not Significant	Fail to Reject
Years in Service and Mental Health Literacy	.320	Not Significant	Fail to Reject
Years in Service and Immunization Literacy	.604	Not Significant	Fail to Reject

Note. Significance level set at $\alpha = .05$.

Furthermore, school group categorization was strongly associated with immunization literacy, suggesting that disparities in intervention exposure or support mechanisms may have differential impacts across specific health domains.

These findings show that system-level characteristics, rather than individual staff profiles, have a larger role in determining the HLI Program's performance and influence on student health literacy. This underscores the importance of building institutional capacity, localized support, and contextual responsiveness to scale health-promoting school activities, especially in last-mile contexts.

When the data was subjected to chi-square test, it identified a significant association between school group and students' immunization literacy in the posttest ($p = .005$), leading to rejection of the null hypothesis. Table 4 indicates that Group C schools, which received both technical and financial support, consistently achieved high literacy levels, with all students assessed at a high level. Group B schools showed a mix of moderate and high literacy, while Group A schools had fewer students with high literacy.

Table 4. *School Group and Immunization Literacy Level in the Posttest*

School Group	Moderate	High	Total
Group A (Baseline/Control)	0	7	7
Group B (Technical Assistance)	3	3	6
Group C (Technical + Financial Support)	0	12	12
Total	**3**	**22**	**25**

X^2 test of independence, p = .005 (X = .05)

These results suggest that combining technical assistance with resources leads to more consistent improvements in immunization literacy. Group C schools used financial and material support to improve learning materials, worked with local health units, and implemented school-based immunization and health programs more effectively. The findings also show that schools with greater support are better prepared for and more receptive to immunization campaigns. This pattern aligns with the Pygmalion Effect, which suggests that higher expectations and increased investment in students and schools lead to better outcomes. When schools receive more funding and are expected to deliver stronger health programs, both teachers and students tend to be more engaged and achieve better results (Boser et al., 2014).

Overall, our findings demonstrate that adequate funding and support are essential for the effectiveness of school-based health literacy programs, particularly in resource-limited areas.

The research found a significant association between the School of Assignment and the way the HLI program was carried out (χ^2, p = .013), indicating that the null hypothesis was rejected. This means that HLI implementation varies across schools. Table 5 shows that Aurora, Lapsaon, Lobgob, and Monserrat Elementary Schools had the highest rates, suggesting they are more consistent and better able to promote health.

These results suggest that differences in HLI implementation are due to variations in leadership, support, and relationships across schools. This shows why integrated approaches, such as those in the WSCC framework, are important for student health and academic success. Schools should review their practices and partner with the community to improve HLI implementation across the district.

The study found a significant relationship between the School of Assignment and Sexual and Reproductive Health (SRH) literacy (χ^2 = 8.03, p = .003), thereby rejecting the null hypothesis. This indicates that School-specific factors influence SRH literacy levels, highlighting the need for targeted interventions in schools like Aurora, Lapsaon, Lobgob, and Tuboran Elementary Schools, which had the lowest rates. Addressing these disparities can guide policymakers and educators in implementing effective strategies to improve student health outcomes.

These findings suggest that school-level factors, including ongoing health education programs, teacher training, community involvement, and access to health services, can impact students' literacy in sexual and reproductive health. Recognizing these areas allows educators and policymakers to develop targeted initiatives tailored to each school's unique context, thereby enhancing the effectiveness of health promotion efforts.

The findings are consistent with prior studies suggesting that health literacy influences reproductive health. For example, Arifah et al. (2022) found that young individuals with greater reproductive health knowledge were more likely to use services, particularly female pupils, who were more receptive to seeking health advice. These results support the need to integrate SRH literacy into existing school health policies and programs to improve students' health service utilization.

Together, these findings support the idea that building school-based SRH literacy can help teens understand reproductive health and make better health choices**, encouraging stakeholders to see the potential for meaningful improvements in student health outcomes**.

Table 7 shows that nine of the ten documentary-eligible last-mile elementary schools have strong student mental health literacy. This did not go well for Lobgob Elementary School. The Chi-Square p-value of 0.003 rejects the null hypothesis that the school assignment does not affect mental health literacy. Lobgob Elementary School could increase mental health literacy. The study of the effects of school-based mental health literacy programs on information acquisition, attitude change, and help-seeking is still in its early stages (Wei et al., 2013). Teachers and mental health professionals are interested in boosting teen mental health literacy. School is the best venue for improving mental health literacy among youth (McLuckie et al., 2014).

School of Assignment and Immunization Literacy had a significant Chi-Square p-value of 0.003. This rejects the null hypothesis and shows a strong link between the School of Assignment and Immunization Health Literacy. Table 8 shows that nine of ten schools have high immunization literacy. Bicahan Elementary School has the largest development space in immunization literacy, as its students have a modest level of literacy. Immunization awareness may need to be raised. Maule Nielsen et al. (2019) found that the realization that immunizations were necessary motivated people. Uncertainty, side effects (including infertility), vaccine supply, and the quality of free immunization were obstacles. According to Wang et al. (2018), vaccine literacy may affect vaccination outcomes. Results may suggest that higher literacy reduces vaccine aversion by mitigating the adverse effects of misinformation about vaccination.

The significant results for school, assignment, and level of implementation, and for health literacy levels, apply to the district of assignment and level of implementation, since they have the same computed values. Since no district has more than one school in the research, each of the 10 schools that qualified for documentary analysis belongs to a separate district.

Variance among School Groups in the Level of Implementation and Health Literacy. The Kruskal–Wallis test results indicate no statistically significant differences in the level of Healthy Learning Institutions (HLI) program implementation across school groups (p = .932). Similarly, one-way ANOVA results revealed no significant variation in students' health literacy levels across school groups in both the pretest (p = .461) and posttest (p = .319). These findings suggest that, despite differences in the type of support received by schools, implementation intensity and learner health literacy outcomes were broadly comparable across groups.

Table 9. *Variance among School Groups in the Level of Implementation and Health Literacy*

Variables	p-value	Interpretation	Decision on H_0
School Group and Level of Implementation	0.932	Not Significant	Fail to Reject
School Group and Health Literacy (Pretest)	0.461	Not Significant	Fail to Reject
School Group and Health Literacy (Posttest)	0.319	Not Significant	Fail to Reject

This pattern may reflect the effectiveness of standardized program frameworks, shared policy guidance, and centralized technical protocols that promote consistency in implementation across diverse school contexts. It also suggests that baseline institutional capacities and community contexts may exert a stronger influence on outcomes than group assignment alone.

The results contrast with earlier findings that reported significant school-level effects on student health behaviors and outcomes (e.g., West et al., 2004; Sun & Stewart, 2007). Such discrepancies may be attributed to differences in study design, outcome measures, school maturity in program implementation, and contextual factors such as scale, duration of intervention, and intensity of exposure. In the present study, the absence of significant between-group variance implies that **HLI implementation may function as an equalizing mechanism**, helping to minimize disparities in health literacy outcomes across last-mile schools.

Overall, these findings underscore the importance of **program fidelity and system-wide support** in achieving comparable implementation and learning outcomes, while highlighting the need for further longitudinal and mixed-methods research to examine potential delayed or indirect school-level effects.

The HLI 2022 pilot implementation scorecard shows that Cuya Elementary School (Group A) of Ubay II District and Monserrat Elementary School (Group C) of Cortes District are the strongest implementers among

the 15 Last Mile Elementary Schools for meeting all five criteria: (1) conducting both pretest and posttest, (2) implementing the HLI programs well, and (3) achieving high health literacy in all three areas. The foregoing findings demonstrate that there was no statistically significant change in implementation and health literacy between school groups. No significant link was found between HLI program implementation and health literacy in the three topic areas or areas of concentration in the last-mile primary schools.

REFERENCES CITED

Brooks, H. L., Irmansyah, I., Lovell, K., Savitri, I., & Brooks, H. (2019). Improving mental health literacy among young people aged 11–15 years in Java, Indonesia: Co-development and feasibility testing of a culturally appropriate, user-centred resource. *Pilot and Feasibility Studies, 5*(1), 1–12. https://doi.org/10.1186/s40814-019-0458-4

Dadaczynski, K., Jensen, B. B., Viig, N. G., Sormunen, M., von Seelen, J., Kuchma, V., & Vilaça, T. (2020). Health, well-being and education: Building a sustainable future. *Health Education, 120*(1), 11–19. https://doi.org/10.1108/HE-12-2019-0058

Department of Education (Philippines). (2018, July 13). Policy guidelines on the implementation of the Comprehensive Sexuality Education (DepEd Order No. 31, s. 2018). https://www.deped.gov.ph/2018/07/13/do-31-s-2018-policy-guidelines-on-the-implementation-of-the-comprehensive-sexuality-education/

Department of Education (Philippines). (2019, July 17). School Mental Health Program: Support to DepEd Order No. 28, s. 2018 (DepEd Memorandum No. 083, s. 2019). https://www.deped.gov.ph/wp-content/uploads/2019/07/DM_s2019_083.pdf

Department of Education. (2021). *Policy guidelines on the implementation of health-promoting schools and healthy learning institutions*. Department of Education, Philippines. https://www.deped.gov.ph

Department of Health. (2021). *Philippine Health Promotion Framework Strategy 2022–2030*. Health Promotion Bureau, Department of Health. https://doh.gov.ph/sites/default/files/publications/Health-Promotion-Framework-Strategy.pdf

Dongarwar, D., & Salihu, H. M. (2019). Influence of sexual and reproductive health literacy on adolescent pregnancy in low- and middle-income countries. *Journal of Pediatric and Adolescent Gynecology, 32*(5), 478–484. https://doi.org/10.1016/j.jpag.2019.05.002

Fazel, M., Puntis, S., White, S. R., Townsend, A., Mansfield, K. L., Viner, R., Herring, J., & Pollard, A. J. (2021). Willingness of children and adolescents to have a COVID-19 vaccination: Results of a large whole-schools survey in England. *EClinicalMedicine, 40*, 101144. https://doi.org/10.1016/j.eclinm.2021.101144

Guo, S., Armstrong, R., Waters, E., Sathish, T., Alif, S. M., & Yu, X. (2020). Adolescent health literacy in Beijing and Melbourne: A cross-cultural comparison. *International Journal of Environmental Research and Public Health, 17*(4), 1242. https://doi.org/10.3390/ijerph17041242

Heflinger, C. A., Hinshaw, S. P., & Stiffman, A. R. (2014). Stigma in child and adolescent mental health services research: Understanding professional and public perspectives. *Administration and Policy in Mental Health and Mental Health Services Research, 41*(1), 61–70. https://doi.org/10.1007/s10488-012-0443-2

Kolbe, L. J. (2019). School health as a strategy to improve both public health and education. *Annual Review of Public Health, 40*, 443–463. https://doi.org/10.1146/annurev-publhealth-040218-043727

Lister-Sharp, D., Chapman, S., Stewart-Brown, S., & Sowden, A. (1999). Health promoting schools and health promotion in schools: Two systematic reviews. *Health Technology Assessment, 3*(22), 1–207. https://doi.org/10.3310/hta3220

Mauvais-Jarvis, F., Klein, S. L., & Levin, E. R. (2019). Sex differences in immune responses and vaccine outcomes. *Nature Reviews Immunology, 20*, 1–14. https://doi.org/10.1038/s41577-019-0216-5

McCambridge, J., Witton, J., & Elbourne, D. R. (2014). Systematic review of the Hawthorne effect: New concepts are needed to study research participation effects. *Journal of Clinical Epidemiology, 67*(3), 267–277. https://doi.org/10.1016/j.jclinepi.2013.08.015

McLuckie, A., Kutcher, S., Wei, Y., & Weaver, C. (2014). Sustained improvements in students' mental health literacy with use of a mental health curriculum in Canadian schools. *BMC Psychiatry, 14*, 379. https://doi.org/10.1186/s12888-014-0379-4

Okan, O., Bauer, U., Levin-Zamir, D., Pinheiro, P., & Sørensen, K. (2020). International handbook of health literacy: Research, practice and policy across the lifespan. *Policy Press*. https://doi.org/10.1332/policypress/9781447344513.001.0001

Pescosolido, B. A., Jensen, P. S., Martin, J. K., Perry, B. L., Olafsdottir, S., & Fettes, D. (2008). Public knowledge and assessment of child mental health problems: Findings from the National Stigma Study–Children. *Journal of the American Academy of Child & Adolescent Psychiatry, 47*(3), 339–349. https://doi.org/10.1097/CHI.0b013e318160e3a0

Prihanto, J. B., Suparmi, S., & Sudargo, T. (2021). Health literacy and health behaviors among Indonesian adolescents: Evidence from a school-based health promotion program. *International Journal of Environmental Research and Public Health, 18*(15), 8121. https://doi.org/10.3390/ijerph18158121

Russell, B. (1926). *Our knowledge of the external world as a field for scientific method in philosophy* (2nd ed.). George Allen & Unwin.

Sukys, S., Trinkuniene, L., & Tilindiene, I. (2019). Subjective health literacy among school-aged children: Evidence from Lithuania. *Health Education Research, 34*(1), 1–13. https://doi.org/10.1093/her/cyy055

Wang, Y., McKee, M., Torbica, A., & Stuckler, D. (2018). Systematic literature review on the spread of health-related misinformation on social media. *Social Science & Medicine, 240*, 112552. https://doi.org/10.1016/j.socscimed.2019.112552

Wei, Y., Hayden, J. A., Kutcher, S., Zygmunt, A., & McGrath, P. (2013). The effectiveness of school mental health literacy programs to address knowledge, attitudes and help-seeking among youth. *Early Intervention in Psychiatry, 7*(2), 109–121. https://doi.org/10.1111/eip.12010

World Health Organization, Regional Office for South-East Asia. (2022). *Adolescent health in the South-East Asia Region: Factsheet*. World Health Organization.https://www.who.int/southeastasia/health-topics/adolescent-health

Zhou, Y., Zhang, J., Wu, J., & Chen, Y. (2019). Parental perceptions of HPV vaccination in central China. *Human Vaccines & Immunotherapeutics, 15*(9), 2147–2155. https://doi.org/10.1080/21645515.2019.1600985