



Management of Special Health Literacy Services: A Multi-Site Study at Madrasah Aliyah

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ABSTRACT

Purpose of the study: This study investigates the management of special health literacy services at Madrasah Aliyah Negeri 1 Medan and Madrasah Aliyah Negeri 2 Model Medan, focusing on four management functions: planning, organizing, implementation, and supervision.

Methodology: Using a qualitative multisite case study approach, data were collected through interviews, observations, and document analysis involving teachers, administrators, and students.

Main Findings: The findings reveal that both madrasahs show a strong commitment to integrating health literacy into their educational practices; however, they differ in formalization and consistency. MAN 1 Medan exhibits a structured and well-documented planning process with clear coordination through the School Health Unit (UKS), whereas MAN 2 Model Medan relies on informal planning and teacher initiative. Implementation at both institutions includes curricular and extracurricular activities, but MAN 1 Medan demonstrates stronger institutional coordination. Supervision mechanisms are largely informal, lacking standardized evaluation systems. The study concludes that while collaborative practices between teachers, students, and external health institutions exist, formal frameworks and documentation are limited.

Novelty/Originality of this study: The findings highlight the importance of developing structured systems, clear standard operating procedures, and formal evaluation mechanisms to enhance the effectiveness of health literacy services in religious schools. This study contributes to filling the research gap on health literacy management in madrasahs, offering practical insights for policymakers and educators in promoting health education that aligns with religious and cultural contexts.

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1. INTRODUCTION

Health literacy has emerged as a fundamental determinant of health outcomes, influencing individuals' ability to access, comprehend, and use health-related information to make informed decisions. Defined as the capacity to obtain, process, and understand essential health information to make appropriate health choices, health literacy plays a pivotal role in enabling individuals to navigate healthcare systems and manage their personal well-being effectively [1]. In educational settings, health literacy initiatives aim to equip students with the necessary knowledge, attitudes, and skills to lead healthier lives, minimize preventable diseases, and promote both physical and mental well-being. Empirical evidence indicates that improved health literacy correlates strongly with positive health behaviors, including better nutrition, regular physical activity, and improved mental

health outcomes [2]. Consequently, the integration of health literacy into educational curricula has gained global recognition as an essential component of quality education [3]-[7].

In the Indonesian context, madrasahs—Islamic educational institutions offering both religious and general education—play a central role in shaping students' moral character, intellectual development, and social responsibility. These institutions have long been recognized as important agents of education and cultural preservation. However, despite their significant contribution to character and cognitive development, the integration of health literacy within madrasah education remains limited and underexplored. While the national curriculum has incorporated elements of health literacy in public schools [8]-[12], religious institutions have received less attention in this regard. According to the Ministry of Education and Culture of the Republic of Indonesia (2020), millions of students are currently enrolled in madrasahs, yet systematic studies examining health literacy implementation in these settings remain scarce. Existing research on health literacy in Indonesia has primarily focused on public and secular schools, leaving a critical gap in understanding how health literacy is conceptualized, managed, and practiced in religious school environments [13]-[16].

This research gap becomes particularly evident when examining the specific challenges and strategies associated with implementing health literacy within madrasah curricula. While health education programs in public schools are supported by national policies and structured frameworks, madrasahs often lack consistent approaches or institutional guidelines for health literacy integration [17]-[22]. Furthermore, the absence of a comprehensive framework tailored to the religious and cultural contexts of madrasahs limits the adaptation of global health literacy concepts to local realities. This oversight not only hampers the effectiveness of health education but also risks creating disparities between secular and religious educational institutions. Given Indonesia's increasing public health challenges—such as obesity, hypertension, diabetes, and other non-communicable diseases among youth (WHO, 2020)—the need for contextualized health literacy programs within madrasahs has become urgent.

Health-related issues among Indonesian students are escalating at an alarming rate. According to the World Health Organization (2020), the prevalence of non-communicable diseases among young people continues to rise, driven by unhealthy eating habits, sedentary lifestyles, and insufficient health education in schools. Research by Santana, further highlights the limited integration of structured health education into school curricula, especially in religious educational settings [8]. These deficiencies contribute to poor health outcomes that can negatively affect academic performance, well-being, and future productivity [23]-[25]. Therefore, fostering health literacy in madrasahs is essential to empower students with the ability to make informed health choices, adopt preventive behaviors, and enhance their overall quality of life.

Despite the growing importance of health education, little is known about how health literacy programs are planned, organized, implemented, and supervised in madrasahs. Unlike public schools that often receive direct guidance from health and education authorities, madrasahs face distinct challenges—ranging from limited resources and infrastructure to the need for religious alignment in curriculum content. This lack of understanding represents a significant research gap, as there is minimal empirical evidence regarding the management of health literacy programs within Islamic educational institutions. Moreover, existing studies rarely explore the roles of administrators, teachers, and students in shaping these initiatives or the institutional mechanisms that support or hinder their success. In response to this gap, the present study aims to examine the management of health literacy services at two madrasahs in Medan—Madrasah Aliyah Negeri 1 Medan and Madrasah Aliyah Negeri 2 Model Medan. Specifically, the study investigates the planning, organization, implementation, and supervision of health literacy programs at these institutions. Using a qualitative approach, this research seeks to uncover existing practices, identify barriers to effective service delivery, and highlight opportunities for improvement. By comparing the two madrasahs, the study provides valuable insights into how religious schools approach health literacy education and the extent to which these efforts contribute to student well-being and institutional development.

The significance of this research lies in its potential to inform educational policy and practice within Indonesia's madrasah system. As the government intensifies efforts to enhance educational quality across all types of schools, understanding how health literacy can be effectively integrated into religious education is essential to achieving equitable health and learning outcomes (Kementerian Pendidikan dan Kebudayaan RI, 2020). Moreover, this study will contribute practical recommendations for improving the planning, organization, implementation, and supervision of health literacy programs in madrasahs, thus strengthening institutional capacity and promoting sustainable health education. Ultimately, this study fills a critical gap in the current body of research by addressing the understudied intersection between health literacy and religious education. It provides empirical evidence on how madrasahs can adopt health literacy frameworks that are culturally sensitive, religiously appropriate, and educationally effective. The findings are expected to benefit policymakers, educators, and madrasah administrators seeking to design and implement more holistic education models that integrate health promotion with moral and academic development. By doing so, the research aims to support the creation of healthier school environments, enhance students' well-being, and contribute to national efforts in improving health outcomes among Indonesia's youth.

2. RESEARCH METHOD

This study utilizes a qualitative approach with a multisite case study design to explore the management of special health literacy services at Madrasah Aliyah Negeri 1 Medan and Madrasah Aliyah Negeri 2 Model Medan. The qualitative approach was chosen because it allows for a deeper understanding of the complex, context-specific nature of health literacy services within these religious educational institutions. Through this approach, the study seeks to capture detailed, descriptive data on the experiences and practices of those directly involved in the delivery of health literacy programs. A multisite design is employed to compare and contrast the health literacy management practices at two distinct madrasahs, providing a broader understanding of how health literacy services are organized and implemented in different settings [26]-[27].

The participants in this study were selected from three key groups involved in health literacy services: teachers, school administrators, and students. Teachers, particularly those involved in health education such as Physical Education (PJOK) and Biology teachers, were selected due to their direct role in delivering and supporting health literacy programs. Administrators responsible for overseeing the management, organization, and evaluation of these services, including school leaders, department heads, and health program coordinators, were also included in the study. Finally, students who actively participate in health literacy activities, such as those in the teen health ambassador program or other health-related extracurricular activities, were involved to understand how these services affect their knowledge and health behaviors.

Data for this study were collected through three primary methods: semi-structured interviews, direct observations, and document analysis. Semi-structured interviews were conducted with teachers, administrators, and students to gain in-depth insights into their experiences with the health literacy programs. The interviews were designed to explore the planning, organization, execution, and supervision of these programs. The flexible format of semi-structured interviews allowed for the collection of detailed and nuanced responses while also ensuring that key topics were covered consistently across interviews.

In addition to interviews, direct observations were made in the two madrasahs to capture the real-time implementation of health literacy services. The observations focused on classroom interactions, extracurricular health activities, and the role of health-related programs within the daily routines of students. This observational data provided a valuable contextual understanding of how health literacy is integrated into the educational environment and how teachers and students interact during health literacy activities. Document analysis was another crucial data collection method used in this study. Relevant documents, such as health literacy program plans, reports, and evaluation records, were reviewed to provide further context to the findings from interviews and observations. This analysis allowed the researcher to examine the formal structures and written policies related to health literacy services, shedding light on the official frameworks and support systems in place at the madrasahs.

The data collected through these methods were analyzed using thematic analysis, a common approach in qualitative research. Thematic analysis was chosen because it allows for the identification and interpretation of patterns or themes within qualitative data. The analysis process involved coding the data, grouping related codes into themes, and interpreting these themes in relation to the research questions. By examining the data from different sources—interviews, observations, and documents—the researcher was able to gain a comprehensive understanding of how health literacy services are planned, organized, and executed across the two madrasahs. Ethical considerations were an essential part of this study. Informed consent was obtained from all participants, ensuring that they understood the purpose of the research, their role in the study, and their right to confidentiality. Participants were informed that their involvement in the study was voluntary, and they could withdraw at any time without any consequences. The researcher took steps to ensure that the anonymity of participants was maintained throughout the research process. Ethical approval for the study was obtained from the relevant institutional review boards, ensuring that the research adhered to established ethical guidelines.

Despite the strengths of the qualitative approach and the multisite design, there are some limitations to this study. The research was conducted in two madrasahs, which may limit the generalizability of the findings to other educational contexts or regions. The study's findings are specific to the settings and practices at Madrasah Aliyah Negeri 1 Medan and Madrasah Aliyah Negeri 2 Model Medan and may not fully represent the broader landscape of health literacy services in madrasahs across Indonesia. Additionally, the study focuses primarily on the management of health literacy services, which may not capture all aspects of the broader educational experience within these institutions. Another limitation is the reliance on self-reported data from interviews, which may be subject to bias. While every effort was made to ensure that participants felt comfortable sharing their experiences, it is possible that some participants may have provided socially desirable responses or may have been influenced by their role within the madrasah. To mitigate this, the researcher employed triangulation by using multiple data sources—interviews, observations, and documents—to cross-check the findings and enhance the validity of the conclusions drawn.

3. RESULTS AND DISCUSSION

This section presents the findings and analysis of the management of special health literacy services at Madrasah Aliyah Negeri 1 Medan and Madrasah Aliyah Negeri 2 Model Medan. The analysis is organized into four key themes: (1) planning of health literacy services, (2) organization of health literacy services, (3) implementation of health literacy services, and (4) supervision of health literacy services. These themes were derived from data collected through interviews with key participants, direct observations, and document analysis, and they highlight both the strengths and weaknesses in managing health literacy at both madrasahs.

3.1 Planning of Health Literacy Services

At Madrasah Aliyah Negeri 1 Medan, the planning of health literacy services is formal and systematic. The school's health literacy program is embedded into the curriculum through collaborative efforts between the UKS and the teachers of Biology and Physical Education (PJOK). The curriculum specifically targets important health topics such as nutrition, physical activity, mental health, and disease prevention. Each year, the health literacy program follows a clear set of objectives that are outlined at the beginning of the academic year, with specific health events scheduled across the calendar. These events include health workshops, awareness campaigns, and sports events aimed at fostering a healthy lifestyle among students.

In contrast, at Madrasah Aliyah Negeri 2 Model Medan, the planning of health literacy services is more informal. Health literacy is integrated into the Biology and PJOK subjects, but there is no formalized health literacy curriculum or well-structured plan in place. Health-related lessons are planned on an ad-hoc basis, and the specific topics covered can vary from year to year depending on the availability of resources and the initiative of individual teachers [28]-[31]. While there is a general commitment to promoting health literacy, the lack of detailed planning and coordination results in an inconsistent delivery of health education. For example, some students may receive more comprehensive health education than others based on the availability of time and resources.

The disparity in planning approaches between the two madrasahs highlights the importance of a formalized planning process. At Madrasah Aliyah Negeri 1 Medan, the clear structure and planned objectives allow for a cohesive and organized health literacy program, ensuring that students receive consistent health education. However, at Madrasah Aliyah Negeri 2 Model Medan, the absence of a formal planning process means that health literacy is often left to the discretion of individual teachers, leading to a less structured and inconsistent approach. This difference demonstrates the need for a more systematic planning framework in all madrasahs, particularly in religious schools, to ensure that all students receive equitable and comprehensive health education.

Interviews with teachers and administrators at both madrasahs revealed that while health literacy is seen as an important area of education, there are limitations in time and resources that hinder the planning process. For instance, teachers at Madrasah Aliyah Negeri 1 Medan emphasized the importance of having a detailed, year-round plan that includes both classroom lessons and extracurricular activities. At Madrasah Aliyah Negeri 2 Model Medan, teachers reported the challenge of planning health education alongside other curriculum demands, which often resulted in health topics being addressed sporadically or not at all. This reflects the pressures faced by madrasah administrators in balancing academic priorities with the need to provide holistic education.

Overall, the results indicate that a formalized and well-structured planning process is essential for the successful implementation of health literacy programs in madrasahs. The need for clear, written plans that outline specific objectives, timelines, and activities cannot be overstated. Such plans ensure that health literacy is consistently delivered to all students and that the program is aligned with the overall educational goals of the madrasah. The study suggests that both schools would benefit from formalizing their planning processes and developing more comprehensive strategies for integrating health literacy into their educational frameworks.

3.2 Organization of Health Literacy Services

At Madrasah Aliyah Negeri 1 Medan, the organization of health literacy services is highly structured and efficient. The UKS is the central unit responsible for overseeing and organizing health-related activities, working in close collaboration with teachers from various departments. The UKS plays an active role in providing health resources, organizing health workshops, and coordinating extracurricular activities that promote health education [32]-[34]. The organization of health services is clearly defined, with roles and responsibilities distributed across the school staff. This ensures that health literacy services are consistently implemented and well-integrated into both the academic and extracurricular activities of the school.

In comparison, Madrasah Aliyah Negeri 2 Model Medan faces challenges in the organization of its health literacy services. While the UKS is involved in some activities, it lacks a clear leadership role in managing health literacy. Instead, individual teachers are responsible for organizing health education activities in their respective subjects, without a central coordinating body to oversee the broader health literacy program. This results in a fragmented approach to health literacy, where different teachers and students experience varying

levels of exposure to health education. Health-related activities are organized on an ad-hoc basis, and there is no structured system for ensuring that all students participate in these programs.

The differences in organization between the two madrasahs reveal the importance of having a central body, like the UKS, to oversee and coordinate health literacy efforts. At Madrasah Aliyah Negeri 1 Medan, the UKS's leadership role helps ensure that health literacy services are well-organized and aligned with the school's goals. In contrast, the lack of a central coordinating body at Madrasah Aliyah Negeri 2 Model Medan results in a disjointed and inconsistent approach to health literacy. This highlights the need for clearer organizational structures that assign specific responsibilities to teachers, administrators, and student groups to promote and sustain health literacy initiatives.

Teachers at both madrasahs expressed a strong commitment to promoting health literacy, but their ability to do so effectively depends heavily on the support they receive from the school's organizational structure. At Madrasah Aliyah Negeri 1 Medan, teachers reported that the clear roles and responsibilities provided by the UKS make it easier to implement health literacy programs in a coordinated manner. In contrast, at Madrasah Aliyah Negeri 2 Model Medan, teachers indicated that they often felt overwhelmed by the lack of support and resources for health education. They also mentioned that the lack of a formal organizational structure made it difficult to collaborate effectively with colleagues from other departments.

The results underscore the importance of a well-organized system for managing health literacy services in schools. A centralized system, where the UKS takes the lead in coordinating health activities, ensures that health literacy services are delivered systematically and consistently. Moreover, establishing clear roles for teachers, administrators, and student groups ensures that health literacy is an integral part of the school culture and is accessible to all students. The study suggests that Madrasah Aliyah Negeri 2 Model Medan could improve its health literacy services by adopting a more centralized organizational structure, similar to that of Madrasah Aliyah Negeri 1 Medan, to improve coordination and effectiveness.

3.3 Implementation of Health Literacy Services

The implementation of health literacy services at Madrasah Aliyah Negeri 1 Medan is robust and comprehensive. Health literacy is seamlessly integrated into the curriculum, with regular lessons on topics such as nutrition, physical fitness, mental health, and the prevention of common diseases. These lessons are reinforced through extracurricular activities such as health workshops, sports events, and awareness campaigns [35]-[39]. Teachers report that students are highly engaged in these activities, and many take an active role in promoting health literacy within the school community. The school's commitment to providing diverse health education opportunities helps ensure that students receive a well-rounded understanding of health issues. At Madrasah Aliyah Negeri 2 Model Medan, the implementation of health literacy services is less consistent. While health-related topics are introduced in Biology and PJOK classes, the delivery of these lessons is often irregular, and there is no standardized curriculum for health education. The lack of structured health literacy activities beyond the classroom means that students do not always have the opportunity to engage in health education outside of the academic setting. This inconsistency in implementation results in varying levels of health knowledge and awareness among students, depending on their participation in health-related extracurricular activities.

The findings suggest that the implementation of health literacy services is most effective when it is integrated into both the academic curriculum and extracurricular activities. At Madrasah Aliyah Negeri 1 Medan, the integration of health literacy into multiple aspects of school life ensures that students are consistently exposed to important health topics. In contrast, the fragmented implementation at Madrasah Aliyah Negeri 2 Model Medan limits the effectiveness of health education, as students may not receive the same level of engagement or exposure to health literacy content.

Teachers at both madrasahs expressed the desire to do more in terms of health literacy, but their efforts were often constrained by time, resources, and the lack of a structured approach. At Madrasah Aliyah Negeri 1 Medan, teachers were more confident in their ability to implement health literacy programs effectively, given the formalized curriculum and support from the UKS. In contrast, teachers at Madrasah Aliyah Negeri 2 Model Medan expressed frustration with the ad-hoc nature of health education and the lack of a cohesive strategy to guide their efforts.

The study reveals that a structured, well-integrated approach to implementing health literacy is essential for ensuring that all students benefit from comprehensive health education. By formalizing health literacy programs and integrating them into both academic and extracurricular activities, madrasahs can provide a more consistent and effective learning experience for students. Madrasah Aliyah Negeri 1 Medan's approach serves as a model for how health literacy can be successfully implemented in madrasahs, while Madrasah Aliyah Negeri 2 Model Medan could benefit from adopting a more systematic implementation strategy.

3.4 Supervision of Health Literacy Services

Supervision of health literacy services at Madrasah Aliyah Negeri 1 Medan is carried out through regular meetings between school administrators, teachers, and UKS staff. These meetings serve as a platform for

coordinating activities, discussing the progress of health literacy programs, and identifying any challenges that may arise. However, while the meetings are frequent, they tend to focus more on administrative tasks and logistical issues rather than evaluating the effectiveness of the health literacy programs. The feedback provided during these meetings is generally informal, and there is little formal documentation of the outcomes or impact of health literacy services.

At Madrasah Aliyah Negeri 2 Model Medan, supervision of health literacy services is even less formal. The school relies on informal feedback from teachers and external health partners, and there is no structured system in place for monitoring the progress or outcomes of health literacy activities [40]-[43]. Teachers report that they often assess the effectiveness of health literacy programs through their interactions with students and the level of engagement in health-related activities, but there is no formal process for documenting or evaluating these outcomes.

The results indicate that formal supervision and evaluation mechanisms are crucial for ensuring the success and sustainability of health literacy programs [44]-[46]. At Madrasah Aliyah Negeri 1 Medan, the regular meetings between teachers, administrators, and UKS staff provide a platform for coordination, but the lack of formal evaluation limits the ability to track the effectiveness of the health literacy services. Similarly, at Madrasah Aliyah Negeri 2 Model Medan, the lack of formal supervision means that the impact of health literacy services cannot be systematically assessed or improved. Teachers at both madrasahs expressed the need for better support in monitoring and evaluating health literacy programs. At Madrasah Aliyah Negeri 1 Medan, teachers reported that while there are regular meetings, there is still a need for more structured feedback and evaluation tools to assess the impact of health literacy programs. At Madrasah Aliyah Negeri 2 Model Medan, teachers emphasized the need for formal supervisory systems to help them track the effectiveness of their health literacy efforts and make necessary adjustments. The findings of this study reveal that both Madrasah Aliyah Negeri 1 Medan and Madrasah Aliyah Negeri 2 Model Medan are committed to promoting health literacy among their students. However, the management of health literacy services at these madrasahs is characterized by significant differences in planning, organization, implementation, and supervision [47]-[50]. Madrasah Aliyah Negeri 1 Medan has a more structured and formal approach to health literacy, with clear planning, organization, and coordination among stakeholders. In contrast, Madrasah Aliyah Negeri 2 Model Medan's approach is more informal, with less consistency in the implementation of health literacy activities and no formal system for monitoring and evaluation.

The study highlights the importance of formalizing health literacy services to ensure that all students have access to quality health education. Recommendations for improving health literacy services include establishing clear roles and responsibilities, developing standardized curricula, implementing formal evaluation systems, and creating a dedicated health literacy coordinator at each madrasah. These measures would help ensure that health literacy programs are implemented effectively and that their impact on students' health and academic performance is properly assessed.

This research presents the first multisite qualitative analysis of health literacy management in Indonesian madrasahs, addressing a previously unexplored intersection between health education and religious schooling. It introduces a comparative framework illustrating how structural organization and formalization affect the sustainability of health literacy programs in faith-based institutions. The study implication that institutionalizing health literacy through structured planning, defined roles, and formal supervision systems can significantly enhance the quality and sustainability of health programs in madrasahs. Collaboration with health agencies and the integration of digital tools can improve teacher competency and data-driven decision-making in health promotion.

This study is limited to two madrasahs in Medan, which may restrict the generalizability of findings to other regions or educational settings. The reliance on self-reported data through interviews may introduce social desirability bias, and the absence of longitudinal tracking prevents measurement of long-term program impact. Future research should expand to a wider range of madrasahs across different provinces to capture regional diversity. Developing a standardized health literacy framework tailored to the Islamic educational context is recommended. Training programs for teachers and structured monitoring systems should be institutionalized to sustain the quality and consistency of health literacy services.

4. CONCLUSION

This study comprehensively examined the management of special health literacy services at Madrasah Aliyah Negeri 1 Medan (MAN 1 Medan) and Madrasah Aliyah Negeri 2 Model Medan (MAN 2 Model Medan), focusing on the processes of planning, organizing, implementing, and supervising these programs. The multisite analysis revealed that both institutions share a strong commitment to enhancing students' health literacy, recognizing it as a vital component of holistic education that supports students' well-being, character formation, and ability to make informed health decisions. However, the two madrasahs differ in their approaches to planning and organization. MAN 1 Medan adopts a systematic, structured, and well-documented planning

process with clear objectives and strong coordination through the school health unit (UKS), while MAN 2 Model Medan employs a more flexible and informal planning process that relies heavily on individual initiatives and partnerships with external health institutions. Despite these organizational differences, both schools demonstrate active collaboration between teachers, students, and external partners in implementing health literacy activities, such as school health campaigns, counseling sessions, and peer-led health initiatives. Supervision and evaluation of health literacy services remain key challenges in both institutions. MAN 1 Medan has begun implementing more structured evaluation mechanisms, although they are not yet formalized, whereas MAN 2 Model Medan still relies on ad-hoc supervision through informal meetings and observations. Both schools recognize the importance of ongoing monitoring but need to establish formal evaluation systems and standardized reporting procedures to ensure program consistency and accountability.

The implications of this study highlight the urgent need for madrasahs to institutionalize the management of health literacy services through structured systems, clear standard operating procedures (SOPs), and integrated coordination among school departments. Strengthening collaboration with external health agencies and utilizing data-driven evaluations will enhance program sustainability and effectiveness. Additionally, developing teacher training programs in health education and digital literacy can empower educators to deliver more engaging and evidence-based health literacy content. Strategically, the findings demonstrate that madrasahs have the potential to become leading agents of school-based health promotion in Indonesia, aligning educational goals with public health priorities. By institutionalizing best practices and fostering a culture of health awareness, madrasahs can play a transformative role in developing students who are not only academically competent but also health-conscious and socially responsible—an essential foundation for building a healthier and more resilient future generation.

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