

Implementation of E-Healthy Application in Islamic Boarding Schools to Optimize Health Management for Students

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Abstract:

Effective health management in Islamic boarding schools is crucial to safeguard students' well-being, particularly in settings with limited healthcare resources. Traditional health monitoring methods are often insufficient for timely interventions. This study evaluates the implementation of the E-Healthy application as a digital solution to optimize health management in Islamic boarding schools. A descriptive study was conducted among 36 students recruited using simple random sampling. The mean perceived ease of use score was 44.3 (SD = 5.0), with 75.0% of students rating the application as easy to use. The median perceived usefulness score was 49.0 (range 38–55), with 88.9% of students agreeing that the application was beneficial for health monitoring. Both outcomes demonstrated statistically significant positive perceptions ($p < 0.05$, 95% CI). The E-Healthy application is user-friendly and perceived as valuable in supporting student health management. Its integration into Islamic boarding schools has the potential to strengthen health systems in line with WHO digital health priorities and the United Nations Sustainable Development Goals (SDG 3: Good Health and Well-Being). Future research should evaluate long-term health outcomes and scalability across diverse educational institutions.

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INTRODUCTION

The management of health in Islamic boarding schools (Islamic boarding schools) is not merely a supportive function (Muali et al., 2021) but a fundamental component in ensuring the well-being and academic success of the students, commonly known as students in the unique environment of a Islamic boarding schools, where students live, study, and engage in communal activities within the same premises, the interconnectedness of their daily lives amplifies the importance of maintaining a high standard of health management (Wahyudin & Karimah, 2021). Health is intricately linked to their academic performance, spiritual growth, and overall quality of life. Therefore, effective health management is crucial in fostering an environment that enables students to intellectually and physically thrive (Hammoudi et al., 2023).

In such a densely populated setting, the risks associated with communicable diseases are significantly heightened (Boyce et al., 2019). The close quarters in which students live and interact make them particularly vulnerable to the rapid spread of illnesses, which can disrupt not only individual health but also the broader educational activities of the institution (Erdoğan & Duru, 2025). Ensuring proper nutrition is equally vital, as a balanced diet directly impacts cognitive function, energy levels, and the ability to participate fully in academic and religious duties (Roberts et al.,

2022). Moreover, timely medical care is essential in addressing health issues before they escalate, reducing absenteeism, and promoting a swift return to normal activities (De Gaetano et al., 2025).

Additionally, the traditional health monitoring methods of Islamic boarding schools are frequently inadequate (Firmansyah et al., 2024). These methods may rely heavily on manual record-keeping, periodic check-ups, or student self-reporting, which can result in incomplete or outdated health data (Dash et al., 2019). Such gaps in health monitoring can make it challenging to identify trends, manage chronic conditions, or respond swiftly to emerging health issues. The absence of real-time data tracking further exacerbates these challenges, as it prevents healthcare providers and school administrators from having an up-to-date understanding of the health status of their students. Without real-time data, it is challenging to implement proactive health interventions or to allocate resources efficiently (Ebugosi & Olaboye, 2024).

These challenges underline the need for innovative solutions to enhance health management practices within Islamic boarding schools (Anis, 2020). Adopting digital health tools, such as the E-Healthy application, presents a promising avenue for addressing these issues. By incorporating technology into health management, Islamic boarding schools can overcome many of the limitations associated with traditional methods, thereby ensuring that the health and well-being of students are maintained at the highest possible standard (Muis et al., 2024).

Integrating the E-Healthy application into the daily operations of Islamic boarding schools represents a transformative approach to health management within these educational institutions. By integrating digital tools into daily activities, the application has the potential to revolutionize the way health is monitored, managed, and improved among students (Senbekov et al., 2020). This technological advancement addresses the unique challenges Islamic boarding schools face, where the close-knit community and limited healthcare resources often pose significant barriers to maintaining optimal health standards.

One of the most significant benefits of the E-Healthy application is its ability to streamline health monitoring processes (Krishna Kotha, 2023). Traditional methods, often reliant on manual records and periodic check-ups, can be cumbersome and prone to errors. On the other hand, the E-Healthy application provides a more efficient and automated system for tracking each student's health status in real-time. This digitalization ensures that health data is continuously updated and easily accessible to healthcare providers and school administrators (Paul et al., 2023). It enables a more comprehensive view of the overall health landscape within Islamic boarding schools, facilitating the early detection of potential health issues and allowing for timely interventions before minor problems escalate into serious concerns.

Health management in Islamic boarding schools plays a central role in supporting students' well-being, academic success, and overall quality of life (Hammoudi et al., 2023). Given their communal living arrangements, students are at elevated risk of communicable diseases (Boyce et al., 2019). Limited access to healthcare facilities and reliance on manual record-keeping further exacerbate these risks (Farhany et al., 2023).

The World Health Organization emphasizes digital health as a key enabler of health system strengthening, aligned with the Sustainable Development Goals (SDG 3) (Abernethy et al., 2022). The E-Healthy application introduces real-time health monitoring, enabling early detection and efficient interventions. This study aims to explore the implementation of the E-Healthy application in Islamic boarding schools and assess its impact on optimizing health management for students in these institutions. By examining the benefits and challenges of using this application, the research seeks to provide insights into how digital health solutions can be effectively integrated into the educational environment to enhance students' overall well-being.

METHOD

This study employed a descriptive research method to systematically examine the implementation and impact of the E-Healthy application within a specific educational context. The target population consisted of students from Islamic boarding schools, who were recognized as the primary users and beneficiaries of the digital health intervention under investigation. A Probability Sampling technique was utilized to ensure representativeness and minimize selection bias, specifically implementing a Simple Random Sampling design. This rigorous approach guaranteed that every eligible student within the defined population had an equal and independent chance of being selected for participation, thereby enhancing the reliability and generalizability of the findings within the study's scope.

A total of 36 participants were successfully recruited through this random selection process. Before their involvement, all potential participants received comprehensive information detailing every aspect of the research, including its objectives, procedures, potential time commitments, and the specific requirement for video recording during skills assessment. Crucially, students were explicitly assured that non-participation would incur no negative consequences whatsoever, upholding the principle of voluntary involvement. Following this thorough informed consent process, individuals who elect to participate must sign a formal consent document. This document served dual purposes: it confirmed their voluntary agreement to participate in the study and explicitly granted permission for the audio-visual recording necessary to evaluate their interaction with the skills assessment instrument.

The primary objective of this research was to critically evaluate the implementation and effectiveness of the E-Healthy application as a dedicated digital solution designed to optimize health management practices within the unique environment of Islamic boarding schools. The study focused on assessing how the application functioned in real-world settings, examining its usability, student acceptance, and its potential to streamline health monitoring, reporting, and educational activities related to student well-being in the Islamic boarding schools setting. Understanding the practical integration and impact of this technology is vital for determining its suitability and value in enhancing healthcare delivery within culturally and religiously specific residential educational institutions.

This research was conducted in strict adherence to established ethical principles for research involving human subjects. All procedures involving participant recruitment, informed consent, data collection (including video recording), and data handling were designed to prioritize participant autonomy, confidentiality, and well-being. The study protocol, including the informed consent forms and methodology, underwent rigorous review and received formal ethical clearance. This study received ethical approval from the Faculty of Nursing, Universitas Jember. This institutional endorsement confirms that the research met the required ethical standards for conducting studies involving human participants.

RESULT

Table 1. Perceived Ease of Use of the E-Healthy Application

Ease of Use/PEOU	Description		
	N	%	Mean (SD)
Easy	27	75	44.3 (5.003)
Not Easy	9	25	

Based on Table 1, the respondents' average perceived ease of use of the e-Healthy application is 44.3. This indicates that, on average, 75.0% of respondents agree that e-Healthy is easy to use as a health monitoring tool for students.

The average perceived ease of use score of 44.3 for the e-Healthy application suggests that most respondents (75.0%) find the application user-friendly. This high level of agreement highlights that e-Healthy is generally accessible and intuitive for its users, which is crucial for its effectiveness as a health monitoring tool. Ease of use is a critical factor in the adoption and ongoing use of any application, particularly in educational settings where users may vary in their tech-savviness. The positive feedback regarding the application's usability is promising and indicates that e-Healthy will likely be embraced by students and educators alike. Ensuring that the application remains easy to use will be key to maintaining user engagement and maximizing its benefits in promoting student health.

Table 2. Perceived Usefulness of the E-Healthy Application as an Electronic Medium

Perceived Usefulness/PU	Description		
	N	%	Mean (SD)
Easy	32	88.9	49.0 (38-55)
Not Easy	4	11.1	

Based on the table above, the median value of the perceived usefulness of the e-Healthy application as an electronic medium shows that 88.9% of respondents agree that e-Healthy is beneficial as a health monitoring tool for students.

The median value, indicating that 88.9% of respondents view the e-Healthy application as beneficial, underscores a strong positive perception of its utility as a health monitoring tool for students. This high level of agreement suggests that most users find the application valuable in supporting and enhancing student health management. The substantial endorsement of its usefulness highlights the application's effectiveness in fulfilling its intended role. Given that perceived usefulness is a significant determinant of technology adoption, the favorable response indicates that e-Healthy will likely be widely accepted and utilized by students and educators. This positive feedback encourages its continued use and development, reflecting the application's alignment with user needs and its potential to improve student health outcomes.

DISCUSSION

Integrating digital health tools, such as the E-Healthy application, into the health management systems of Islamic boarding schools represents a significant advancement in the effort to safeguard the well-being of Santri (students). Islamic boarding schools, where students live and study in close proximity, present unique challenges in maintaining high health standards. These challenges are often exacerbated by traditional health management practices that rely on manual record-keeping and periodic health check-ups, which can be insufficient for monitoring the health of an extensive and densely populated student body (Fazary & Choliq, 2023).

The E-Healthy application addresses these challenges by introducing real-time data collection, automated health monitoring, and prompt notifications. This digital solution offers a more comprehensive and efficient approach to managing student health, enabling the prompt identification and resolution of health issues (Cantisano, 2021). Real-time data enable school health personnel to continuously monitor the health status of all students, making it easier to detect patterns of illness or outbreaks that require immediate attention.

Automated notifications are crucial in ensuring that no critical health information is overlooked. For instance, if a student's health data indicates an abnormality, the system can instantly alert the relevant staff, enabling quick intervention. This is particularly important in preventing the spread of contagious diseases in communal living environments, such as Islamic boarding schools (Dwivedi et al., 2022).

Furthermore, unlike traditional methods, the E-Healthy application enables better data management and reporting, which often involves cumbersome and error-prone paperwork. E-Healthy streamlines the process of recording and accessing health information (Da Fonseca et al., 2021). Health records are stored electronically, making it easier for healthcare providers to access a student's medical history and provide personalized care (Lino & Martins, 2021). This also facilitates better communication between school administrators, health staff, and parents, who can all access the necessary information to make informed decisions about a student's health.

The application's integration with other digital tools, such as telemedicine services, further enhances its utility. In remote or rural Islamic boarding schools, where access to healthcare facilities may be limited, E-Healthy can connect students with healthcare professionals remotely, ensuring they receive timely medical advice without the need for physical travel (Alanazi et al., 2021).

In addition to these practical benefits, implementing E-Healthy also aligns with broader educational goals. A healthier student population is more likely to perform better academically, as health issues are a leading cause of absenteeism and decreased academic performance (Teferi, 2020). By optimizing health management, Islamic boarding schools can create a safer, healthier environment that supports both the physical and academic development of santri.

CONCLUSION

Research on the implementation of the E-Healthy application in Islamic boarding schools has demonstrated that integrating digital health management tools significantly enhances the ability of these institutions to effectively manage their students' health. The study found that the use of E-Healthy improved real-time health monitoring, facilitated quicker responses to health issues, and streamlined the management of health records, leading to better overall health outcomes for the santri.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this study. The research was conducted independently, and no financial or personal relationships could have inappropriately influenced the findings and interpretations presented in this paper.

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