Community Empowerment Through Utilization of Information Technology to Improve Management of Health Introspection at An-Nur Student Islamic Boarding School

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Abstract

Islamic boarding schools are places that are very vulnerable to disease transmission. The number of Islamic boarding schools that are adaptive to the progress of the times can change the behaviour of their people towards a better life, namely by using technology. An-Nur Islamic Boarding School is a modern Islamic boarding school that does not yet have an up-to-date recording and reporting system that is integrated with the primary health care system for monitoring health risks. The goal of this community service is to train student administrators to use web-based information technology to monitor health risks in Islamic boarding schools. The implementation method used is a participatory technology development and educational approach. The output targets to be achieved are increasing knowledge about monitoring health risks in Islamic boarding schools, skills in measuring nutritional status, and skills in utilizing health risk information technology. The results showed an increase in the average score of students' knowledge about the importance of surveillance-based health risk monitoring. Before being given education, the average knowledge score of students was only 69. And after being given education, the average knowledge score increased to 91. In addition, 80% of participants were able to measure nutritional status with the correct stages. And skills in using information technology to record health risk factors are also very good. Participants are very easy and fast at using health information technology. The use of information technology in monitoring health risks is expected to improve introspective health management in Islamic boarding schools. There needs to be more widespread socialization among other Islamic boarding schools and ongoing assistance related to the use of web-based information technology in monitoring health risks in Islamic boarding schools

Keywords: information system, website, monitoring health risk, boarding school

Abstrak

Pesantren merupakan tempat yang sangat rentan terhadap penularan penyakit. Banyaknya pesantren yang adaptif terhadap kemajuan zaman dapat mengubah perilaku masyarakatnya menuju kehidupan yang lebih baik, yaitu dengan menggunakan teknologi. Pondok Pesantren An-Nur merupakan pesantren modern yang belum memiliki sistem pencatatan dan pelaporan terkini yang terintegrasi dengan sistem pelayanan kesehatan primer untuk pemantauan risiko kesehatan. Tujuan dari pengabdian masyarakat ini adalah untuk melatih administrator siswa menggunakan teknologi informasi berbasis web untuk memantau risiko kesehatan di pesantren. Metode implementasi yang digunakan adalah pengembangan teknologi partisipatif dan pendekatan pendidikan. Target output yang ingin dicapai adalah peningkatan pengetahuan tentang pemantauan risiko kesehatan di pesantren, keterampilan dalam mengukur status gizi, dan keterampilan dalam memanfaatkan teknologi informasi risiko kesehatan. Hasil penelitian menunjukkan peningkatan skor rata-rata pengetahuan siswa tentang pentingnya pemantauan risiko kesehatan berbasis pengawasan. Sebelum diberikan pendidikan, nilai pengetahuan rata-rata siswa hanya 69. Dan setelah diberikan pendidikan, skor pengetahuan rata-rata meningkat menjadi 91. Selain itu, 80% peserta mampu mengukur status gizi dengan tahapan yang benar. Dan keterampilan dalam menggunakan teknologi informasi untuk mencatat faktor risiko kesehatan juga sangat baik. Peserta sangat mudah dan cepat dalam menggunakan teknologi informasi kesehatan. Pemanfaatan teknologi informasi dalam pemantauan risiko kesehatan diharapkan dapat meningkatkan manajemen kesehatan introspektif di pesantren.

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Perlu ada sosialisasi yang lebih luas di antara pesantren lainnya dan pendampingan berkelanjutan terkait pemanfaatan teknologi informasi berbasis web dalam memantau risiko kesehatan di pesantren
Kata kunci: sistem informasi, website, pemantauan risiko kesehatan, pesantren

INTRODUCTION

Islamic boarding schools are places that are very vulnerable to disease transmission because the people who participate in the activities gather together in large numbers and live in the same environment for quite a long time. Health in Islamic boarding schools is very important. This is said because health and hygiene are often underestimated by residents of Islamic boarding schools. If this does not get immediate attention, what is feared is the potential for various diseases to emerge in the Islamic boarding school environment, which can threaten the health of the boarding school residents. What's more, at this time, the transmission of COVID-19 is still a problem that threatens the health of the entire community, including the Islamic boarding school community. It is often found that the activities of the Poskestren (Islamic Boarding School Health Post) are more curative in nature, so when students are sick, they go to the Poskestren service for treatment. In fact, of the many poskestren activities, one of the most important aspects is conducting self-introduction surveys (SMD). The Self-Introduction Survey (SMD) is an activity carried out by Islamic boarding school residents in collaboration with the puskesmas to identify health conditions and problems in the Islamic boarding school environment, according to RI Minister of Health No. 1 of 2013.

According to the Ministry of Health (2007), an introspective survey is an activity to identify, collect, and study health problems carried out by cadres and local community leaders under the guidance of health workers or nurses in the village. The purpose of having an introductory survey includes (1) data collection on health, environmental, and behavioural problems; (2) examining and analysing the most prominent health, environmental, and behavioural problems in society; (3) taking an inventory of community resources that can support efforts to overcome health problems; and (4) receiving support from community leaders and leaders in the implementation of community mobilisation and empowerment. Introspective surveys in Islamic boarding schools are important to conduct so that students become aware of the health problems they are facing. In addition, students can recognize, collect data, and study problems that exist in their own environment. It is hoped that the students will become interested in and be able to find out about health problems, and it is important to address them immediately. The results of the introspective survey can be the basis for compiling solutions to the problems encountered.

An-Nur Surabaya Student Islamic Boarding School is one of the Islamic boarding schools with a large number of students, namely around 200 female students and 100 male students. Socialization related to the self-introspective survey in the An-Nur Islamic boarding school environment has been carried out by the puskesmas, but the implementation has not been carried out routinely by the pesantren administrators. The Islamic boarding school also never regularly records or reports on the health condition of the students or the pesantren environment. So far, students independently seek self-medication if they are sick, and many prevention efforts have not been carried out. Pondok Pesantren An-Nur needs socialization, training, and assistance related to introspective survey activities that are easier for them to carry out. This is absolutely necessary as an effort to detect early health risks in Islamic boarding schools so that it can facilitate decision-making.

Islamic boarding schools, as part of the education sector, must participate in the digital transformation process. Islamic boarding schools can change people's behaviour towards a better life with the use of technology. In previous research, a web-based information system has been developed to monitor health risks in Islamic boarding schools that are directly integrated with the puzzling. This application is called Siskestren (Islamic Boarding School Health Survey Information System). This application has been tested at the Al-Jihad Islamic Boarding School in Surabaya, and it is hoped that it can be widely applied to other Islamic boarding schools. This application received a good reception and positive support from the health centre and boarding school administrators. This application is easy to use and is able to respond quickly to survey results so that it can immediately plan promotional and preventive actions (Handayani, 2021).

Community empowerment in Islamic boarding schools is an effort to help the Islamic boarding school community recognise problems, plan for them, and work to solve them by utilising local potential so that they can develop their capabilities (Ministry of Health, 2013). Community empowerment is included in community

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service activities through the stages of identifying problems, analysing the causes or inhibiting and supporting factors, and then preparing improvement plans (Prasetyowati et al., 2022). The application of the Siskestren programme at the An-Nur Islamic Boarding School has the potential to be implemented; moreover, the An-Nur Islamic Boarding School has adapted to current technological developments, as indicated by internet access. In addition, this pesantren is a student boarding school where they are very familiar with information technology. The purpose of this community service is to disseminate the results of information technology development that can facilitate the implementation of health risk monitoring in Islamic boarding schools.

GENERAL DESCRIPTION OF THE COMMUNITY, PROBLEMS AND TARGET SOLUTIONS

General description

The "An-Nur" Student Islamic Boarding School was built on waqf land owned by H. Moh. Noer and his daughter Nikmah Noer and is located in Wonocolo Alley, Modin 10 A Surabaya. This penitentiary consists of two buildings I was founded in 1994, while Building II was built in 1999. The entire cost of building this pesantren was purely the result of community self-help, most of which came from Jariyah H. Moh. Noer, Imam Ghazali Said, and his wife Nikmah Noer. Subsequently, they became the founders of this student Islamic boarding school. Since its inception until now, the number of students living and studying at the An-Nur Student Islamic Boarding School has fluctuated normally. This is due to the status of all the students of the An-Nur Student Islamic Boarding School, who are students who study at various universities in Surabaya so that at the end of each school year, students who have completed their studies at their respective universities automatically finish their studies at the Islamic Boarding School. Only about 10–15 per cent of students survive more than 4 years because they continue their studies in strata II (S2) or strata III (S3) programs. Furthermore, this Islamic boarding school for students accepts new students. Thus, there is an imbalance between the leaving students and the new enrolling students; there are far more new students. Consequently, this Islamic boarding school must accept a limited number of students according to the capacity of the available facilities. For this reason, a new hostel with a capacity of 15 rooms, a hall, and a mosque is currently being built.

Problem

According to the outcomes of conversations and agreements between the proposal team and the partners, the following issues are of priority to the partners and need to be fixed: Islamic boarding school managers lack the knowledge and skills necessary to regularly assess pupils' health hazards. At the An-Nur Student Islamic Boarding School, there are no resources for health information or instruments to enable health self-introduction surveys. The An-Nur Student Islamic Boarding School has never undertaken a health self-awareness survey. At the An-Nur Student Islamic Boarding School, there is no current, integrated reporting and recording system that can accommodate quick information and accurate data for recording health risk monitoring.

Target solution

The solution offered is to introduce students to health problems and to introduce the use of an introductory survey application that has been made to be more effective and efficient in monitoring, especially by the Jemursari Health Center

METHOD

This community service activity was carried out in August–September 2022 at the An-Nur Student Islamic Boarding School, Jemur Wonosari Village, Wonocolo District, Surabaya City. The method that will be applied in this community service activity is participatory technology development and educational
The management of the An-Nur Student Islamic Boarding School students, totalling up to 15 people, was the goal of the community service participants. The target plays a role in formulating problems that need to be resolved and participates as a participant who receives socialisation and training from the service team. The management of the An-Nur Islamic Boarding School also plays a role as a user of a web-based information technology product called Siskestren, which can be used to record and report health risks to students and the Islamic boarding school environment. The stages of implementation are:

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Planning Stage: The proposing team and partners agree on priority partner problems that need solutions. The proposing team plans the activities to be carried out, maps out their respective tasks and prepares tools or instruments to be used in community service activities. Then the proposing team shows up and discusses the activity plan to be carried out with target partners.

Socialization: Provide socialisation on the importance of monitoring health risks in Islamic boarding schools. The method used is offline lectures and discussions using health protocols.

Provide counselling on the potential transmission and prevention of TB disease in Islamic boarding schools. The methods used are lectures by presenters from the Puskesmas and offline discussions using health protocols.

Provide counselling on adolescent nutrition. The methods used are lectures and offline discussions using health protocols.

Training: Providing training on individual health monitoring surveys for students, namely measuring the nutritional status of students. The method used is a demonstration and hands-on practice using nutritional status measurement tools and health protocols.

Provide partners with training on how to use Siskestren, a web-based information technology product.

Evaluation: Evaluation of the results of the activity is carried out by assessing the initial and final understanding after participating in the activity. Then evaluate the ability to use the Siskestren application with direct observation. In order to ensure the program's long-term viability on the ground, partners will receive assistance every six months.

RESULTS AND DISCUSSION

Increasing knowledge of Santri in relation to the importance of monitoring health risks through self-introduction survey (SMD) activities

One of the activities carried out in this community service is the socialisation of the importance of monitoring health risks in Islamic boarding schools through SMD. Prior to being socialized, the students were not aware of the importance of monitoring health risks in the Islamic boarding school environment. So far, students independently seek self-medication if they are sick, and many prevention efforts have not been carried out

Table 1. The average results of the pre-test and post-test scores

Test	Average
Score of pre-test	69
Score of post-test	91
Number of respondents	**15**

Before being given socialization or counselling, the average value of knowledge from students was only 69. However, after being given socialization there was an increase in the average value of students to 91.

One of the activities in SMD is measuring nutritional status. Each Husada santri is expected to be able to determine health status independently, by having skills in performing anthropometric measurements. So students who participate in this community service activity need to be equipped with skills in measuring nutritional status. In this service activity, demonstrations and direct practice were carried out in measuring body weight, height and measuring upper arm circumference in female students.

Figure1 Practice of Anthropometric Measurements by Students

Based on the evaluation results, there were 80% of the santri participants were able to skillfully measure nutritional status in the correct and appropriate stages. And the rest found that some participants still did not show measurement steps in accordance with the provisions. This can be improved by correcting the measurement steps that are still wrong so that they are accustomed and skilled so that the measurement data obtained is valid. Student Islamic Boarding School Skills in Applying System Information Technology

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After socialization, counselling and training on monitoring the health risks of the students, the students are taught to record the results of the SMD into a web-based information technology called Siskestren.
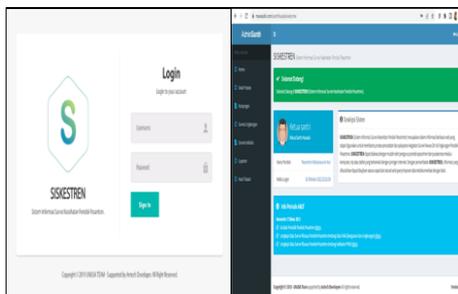

Figure 2 Front view of the siskestren application

The results of the evaluation of training activities using the Siskestren application show that this application has met the functional needs of users because it greatly facilitates the implementation of health surveys in Islamic boarding schools and is able to respond quickly to results so that puskesmas can immediately plan further actions. This is in accordance with the Regulation of the Minister of Health of the Republic of Indonesia Number 1 of 2013 concerning Guidelines for the Implementation and Development of Islamic Boarding School Health Posts, which states that the results of a good self-introduction survey (SMD) are able to provide an inventory of informational data about health problems and the potential possessed by residents of Islamic boarding schools and the community surrounding them. After the various necessary pieces of information have been collected, the next step is to formulate the problem and detail the various potentials it has. The availability of complete and accurate data and information is very helpful in determining activities that are feasible to develop in the implementation of Poskestren (Ministry of Health, 2013).

Based on my observations, Santri Husada can easily access and fill out health surveys in their Islamic boarding schools because the Siskestren application can also be accessed using a smartphone. The features provided are also easily understood by Santri Husada. This is in line with Alparisi (2015), who states that the results of the implementation and testing stages produce a computerised student data management information system with several features that can solve problems in searching student data and generating reports so as to obtain fast and accurate results. However, further assistance is needed for the continuation of health risk monitoring and recording activities in Islamic boarding schools

Table 1 Frequency Distribution of Santri's Nutritional Status Self-Introspective Survey Results (SMD)

Nutritional Status	f	%
Thin	10	27.03
Normal	17	45.95
Fat	10	27.03
Amount	**37**	**100.00**

The results of anthropometric measurements show that the nutritional status of the 37 students, most of the students have abnormal nutritional status as many as 20 (54.05%) students, namely fat and thin.

Table 2 Frequency Distribution of Anemia Symptoms in Santri

Iron Nutrition Anemia (AGB)	Results	n	%
The inner eyelids, tongue and lips look pale	Yes	8	21.62
	No	29	78.38
Easily tired, exhausted, lethargic	Yes	13	35.14
	No	24	64.86
Easy to fall asleep	Yes	21	56.76
	No	16	43.24

The table above shows the distribution of iron deficiency anaemia symptoms that occur among students at the An-Nur Islamic boarding school. Some of the symptoms found in the students included the inner eyelids, tongue & lips looking pale in 8 people, easily tired, tired and lethargic in 13 people and easily sleepy in 21 people.

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Table 3 Frequency Distribution of Anemia Symptoms in Santri

TB Screening	Results	n	%
Moderate/never had a cough that lasted a long time (more than 3 weeks)	Yes	10	27.03
	No	27	72.97
Currently/have had TB	Yes	1	2.70
	No	36	97.30
Have had contact with someone close to you who has TB	Yes	4	10.81
	No	33	89.19
Have had contact with someone close to you who has TB	No	1	2.70
	Yes	36	97.30

According to the data above, there were 10 (27.03%) students who had cough symptoms that lasted more than 3 weeks; 1 (2.70%) student who was or had been sick with TB; and as many as 20 (2.70%) and 10.20%) students who had close contact with TB patients. For students who have one or more symptoms of TB, they are considered indicated or suspected of TB, namely 36 (97.30%) students. These results are then reported to the health centre to be followed up on by conducting a sputum examination to determine whether there is TB or not.

CONCLUSIONS AND SUGGESTIONS

Empowerment of the Islamic boarding school community through Siskestren information technology can be useful for improving health self-awareness management at the An-Nur Student Islamic Boarding School. The results of SMD socialization and training using Siskestren information technology show that there is an increase in the knowledge and skills of the students in monitoring the health risks of the students, as well as in applying the recording of health risks through information technology which is very easy, fast and accurate. As a follow-up to this activity, it is necessary to strengthen the caregiver's commitment to want to routinely carry out SMD and keep records on the Siskestren. In addition, the puskesmas and the health office can also provide further guidance and assistance related to the implementation of SMD in Islamic boarding schools.
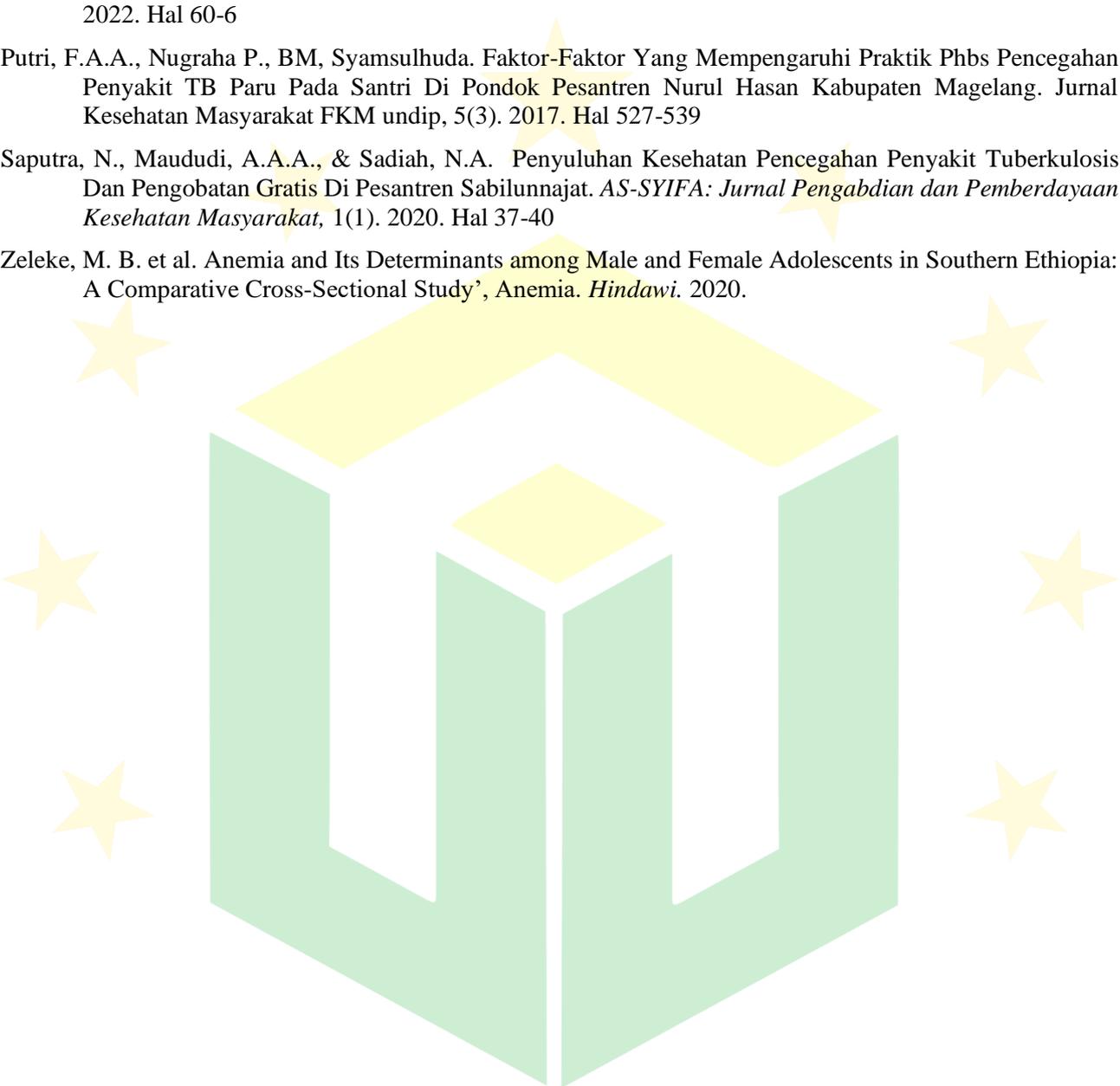
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