

Research Article

Peer Medicine Application Supervisor: A Breakthrough for the Elimination of Scabies in Islamic Boarding School

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Abstract.

The incidence of scabies, especially in Islamic boarding schools (Pesantren), remains a persistent problem in Bandung city. Previous studies have identified multiple contributing factors to scabies, making it difficult to eradicate. Despite efforts to introduce healthy and clean-living behaviors (PHBS) to treat and eliminate the disease, scabies continues to persist. This study aims to pilot an innovative approach called the Assigned Peer Medicine Application Supervisor (PMAS) to combat scabies in an Islamic Boarding School in Bandung city. The research involved all students, totaling 193 aged between 5 and 18 years old, consisting of 82 girls and 111 boys. The study was conducted in two stages - medical examinations for all students and the assignment of peer medicine application supervisors. The research took place from February to August 2022 in Bandung city. The results demonstrated that the peer medicine application supervisor approach was highly effective in reducing the cases of scabies in the pesantren. Scabies cases decreased significantly from 58% to 27%. In conclusion, the implementation of the peer medicine application supervisor successfully reduced scabies cases in the Islamic boarding school setting.

Keywords: Scabies elimination, peer medicine application supervisor, Islamic boarding school

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1. Introduction

Scabies is a skin disease caused by the mite *Sarcoptes scabiei hominis* variety.[1] This disease is a public health problem, especially in tropical and subtropical climates.[2] Scabies is estimated to affect around 150-200 million people globally, with an estimated annual incidence of 455 million.[3] According to the World Health Organization (WHO), globally, it is estimated that 300 million people are currently infected with scabies.[4] Based on the current literature, the prevalence of scabies ranges from 0.2% to 71%.

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According to WHO recommendations, in 2017, scabies and other ectoparasites were categorized as Neglected Tropical Diseases (NTDs).[4] In Indonesia, scabies is one of the Islamic Boarding Schools' most common skin diseases.[5] Scabies quickly spread in dense settlements. One area is at an Islamic boarding school where students live with other students in a room.[6] The incidence of scabies in several boarding schools in Indonesia in 2013-2016 ranged from 24.6% to 54.7%.[5] Studies showing an association between education levels and the incidence of scabies were by Triyani et al.[7] However, one study showed that there was no relationship between knowledge and the number of scabies.[8]

Behavioral change requires a continuous process which is a combination of teaching materials, facilities, and infrastructure.[9] It also needs guidance from competent parties in the health sector. It is necessary to carry out continuous health problem development for students and teachers at Islamic boarding schools.[10] This task usually has carried out by a health center in the local area. However, it has been discontinued due to the Covid-19 pandemic. Healthy and clean living behavior as one of the programs to eliminate diseases in the community has been disseminated throughout.[11] However, the result is still not satisfactory.[7]

Preliminary studies showed that scabies in 2022 at an Islamic boarding school is still high. This high number of cases is related to the insufficient knowledge of the Islamic boarding school community about Clean and Healthy Life Behavior (PHBS) which causes scabies.[12] This problem was caused by various factors, including the lack of health guidance for students in Islamic boarding schools by health workers from the health center, which was postponed as a result of Covid-19. In addition, some students who have received treatment cannot do it optimally because they need help understanding how to apply for the medicine.[13]

This study aims to produce qualifications for students who can become Peer Medicine Application Supervisors (PMAS) in the long term. Furthermore, this study try to enable students to understand and practice clean and healthy living behaviors for themselves and can help other students in treatment, especially for scabies. In addition, students can be involve actively in promotive, preventive, and curative activities for the disease.

2. Method

It is an intervention study conducted in an Islamic Boarding School in Bandung City from February through August 2022. There were two stages in this study; The first stage was the medical examination for all, and the second stage was the assignment

of a peer medicine application supervisor. The medical analysis is conducted by an MD (Medical Doctor) for scabies and other diseases. Scabies was diagnosed based on positive signs of two of 4 cardinal signs. They are nocturnal pruritus or itching at night, scabies cases found in the community, visible tunnels in the skin, and the presence of the parasites.[3] All subjects were treated with the anti-scabies treatment, which is Medslab cream (Permethrin 5%) applied thinly throughout the body except for the face and should be left for 24 hours before bathing.[14]

The next stage was the Peer medicine application supervisor, which started with education for all participants. Medical students conducted the education. The method used was a discussion about the causes, modes of transmission, treatment, and prevention of the disease. They also trained on how to apply for medicine. The peer medicine application supervisor assignment was based on the students' recommendations. They were paired according to gender and age. The younger participants, especially those under ten, was assigned to older students. Their task is to ensure that the medicine provided is appropriately applied and thoroughly, especially on the body part which is difficult to access, such as the back of the body. They will also ensure that each student follows the washing rules only after 24 hours.

3. Results and Discussion

The first medical examination stage was conducted on 11th June 2022, and the second was on 28th August 2022. The students comprised 82 girls and 111 boys totaling 193 students aged 5 – 18. The distribution of respondents' characteristics can be seen in Table 1.

TABLE 1: Characteristics of Respondents.

	N	%
Gender		
Males	111	57,51%
Females	82	42,49%
Total	371	100%
Age		
< 10	11	5,70%
< 20	165	85,49%
> 20	7	3,63%
NA	10	5,18%
Total	193	100%

The table shows 111 males and 82 females, with 85% younger than 20 years old. The medical examination in table 2 shows the status of the diseases among students on the first examination

TABLE 2: Health status on first medical examination.

Status	Males		Females		Total	
	N	%	N	%	N	%
No disease	39	20,21%	41	21,24%	80	41%
Scabies	55	28,50%	25	12,95%	80	41%
Scabies + other diseases	17	8,81%	16	8,29%	33	17%
Total	111	57,51%	82	42,49%	193	100%

There were 80 students with no disease. In contrast, we found students with scabies and scabies with other diseases, where 80 students and 33, respectively. There was no significant difference in the number of both sexes.

TABLE 3: Health status on the second medical examination.

Status	Males		Females		Total	
	N	%	N	%	N	%
No disease	83	43,01%	59	30,57%	142	74%
Scabies	22	11,40%	8	4,15%	30	16%
Scabies + other diseases	6	3,11%	15	7,77%	21	11%
Total	111	57,51%	82	42,49%	193	100%

The table above shows students without any diseases were 142 students who are 74% of all the respondents. While cases of scabies were found only in 51 students, 21 of them also have other conditions. The other illnesses reported were the common cold, urticaria, upper respiratory tract infection, an oral and dental problem, and dyspepsia.

The number of scabies at the second examination decreased from 58% to 27% compared to the first screening. So it is quite satisfactory however the number is still high. It is because several very complex factors influence scabies cases. Previous studies found many factors affect scabies prevalence, and it was not the only treatment. One possibility is that compliance or how to use the medication given is inappropriate since it requires some skills to apply the cream to the whole body thinly.

The results showed that some students also have other diseases or illnesses, primarily infectious ones. Since they lived in a crowded situation, it was pretty easy the spread the diseases. We also consider the presence of other bacterial infections, which often happen as complications from regular scabies. For example, the presence of secondary infection caused by *S. aureus* bacteria required treatment for bacterial infections first

before using anti-scabies. The drug of choice consisting of 5% permethrin, also contributed to the cases' speedy recovery. Studies showed adequate levels of permethrin are retained better.

The Peer medicine application supervisor was effective in improving the adherence of students to using anti-scabies drugs. The education which is given to all of the students also contributes to the success of the program. However, we must ensure that the knowledge is continuously improved and monitored.

4. Conclusion

The peer medicine application supervisor was effective in improving the adherence to medication in Scabies cases. Therefore, it can be proposed to be applied in Islamic boarding schools.

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