

## Female students' experience in preventing scabies

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### ABSTRACT

The purpose of this study was to examine the students' perceptions on the environmental health conditions related to the contagious skin disease of scabies and examine the implementation of clean and healthy behavior of the students. This research was done by adopting qualitative approach with phenomenological method. The qualitative data obtained were analyzed using thematic analysis with the help of the Maxqda 10 Program. The data were collected through purposive and snowball sampling techniques. The findings showed that the environmental sanitation of the *Pesantren* (Islamic boarding school) in some bedrooms are still not sufficiently ventilated and they needed clean water. The characteristics of *Pesantren* teaching which teaches students to live modestly, patiently, and *prihatin* (simple). The perceptions of *Pesantren* students about scabies that scabies was a normal thing to be experienced by students and that as long as the itching did not produce pus or blood it was not scabies. The healthy behavior of the students in this study were related with taking a bath, maintaining clean clothes, washing hands before eating of the students were still lacking. The efforts in improving the healthy living of the students was seen through the establishment of a health center in the *Pesantren* called *Poskestren* (*Pesantren* Health Services) but there were still limited facilities and the implementation of the administrators' programs to prevent scabies is also seen to be not optimal yet.

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## 1. INTRODUCTION

Scabies or often called in Indonesia as *Gudik* is a skin disease caused by the infestation and sensitization of *Sarcoptes scabiei* var., *hominis* sp., and their products [1]. The most common symptom of scabies is itching that gets worse at night. Scabies often occurs in people or groups with poor hygiene [2].

Human scabies with prevalence rates that vary depending on the clinical situation is still found in almost all countries in the world [3]. The prevalence rate that occurs worldwide is estimated at 200 million people are affected, with resource-poor tropical areas having a higher prevalence [4]. In some developing countries, the prevalence is reported to be 6-27% of the population and the highest cases occur in the group of school-age children and young adults. Scabies cases often occur in the group of school-age children with the highest prevalence found in children aged less than 15 years [3]. According to the Ministry of Health of the Republic of Indonesia, the prevalence of scabies in Indonesia in 2008 was, scabies was ranked 3rd of the

12 most common skin diseases [5]. Based on the health profile of Central Java Province, scabies had emerged as an extraordinary event that infected four sub-districts in Central Java in 2012 [6].

Places with a high population density are vulnerable for scabies transmission, especially Islamic boarding school or *Pesantren* and dormitories [6]. *Pesantren* is a joint educational institution between the system of dormitory and Islamic school that provides education and teaching of Islam without grouping students into classes. *Pesantrens* organize *madrassa* as a formal education inside the institution in which students learn mainly religious studies and provide *pondok* for the student's accommodation [7]. The common problem that is often faced by *Pesantrens* in Indonesia is students' health [8]. According to the study of Romadlon *et al.* based on 6-month patients records (August 2015-January 2016) in two community health centers in the district of Banyumas, Central Java, Indonesia, there are 11 *Pesantrens* with scabies cases, and the largest cases are found in three *Pesantren* namely *Pesantren Roudhotut Tholibin Sirau* with 42 students infected (35.3% of the total 119 students), *Pesantren Roudhotut Qur'an* with 150 students infected (25.9% of the total 580 students), and *Pesantren Nurochman* with 20 students infected (10.1% of the total 198 students) *Pesantren Roudhotut Tholibin Sirau*, *Pesantren Roudhotut Qur'an*, and *Pesantren Nurochman* [9]. Based on the research conducted by Kuspriyanto, the poor environmental sanitary of the *Pesantren* and the unhealthy behavior of the students contribute to the high prevalence of scabies among them in a *Pesantren* in Pasuruan, East Java [10]. Similar case was found by Tarigan *et al.* in a *Pesantren* in Pati, Central Java as reporting that the poor personal hygiene practices of the students such as unregular bathing, lack of handwashing, unaware of cloth cleanliness, uncleaned bedrooms, and the habit of sharing clothes and towels among them are the main causes of scabies transmission [11].

The research of Chowsidow in the United Kingdom and Baur *et al.* in India showed that women were more likely to be infected with scabies compared to men with a prevalence of 56%. [4], [12]. According to the researchers, several factors such as women's preference for staying indoor and their close contacts with others make them more vulnerable to scabies infection [13]. These data are in line with the results of Hapsari's study in 2014 in Indonesia, which showed that women tend to have a higher prevalence of scabies with 62.5% compared to men with a prevalence of 37.5% [14].

Based on the above study background, the researchers are interested in conducting further research on the students' behavior toward the environmental health at a *Pesantren* Karangsucu Purwokerto in regards to scabies. Hopefully, the results of this study could be a reference for health workers, *Pesantren* communities, and the public in realizing a healthier and more comfortable *Pesantren* life for the students.

## 2. RESEARCH METHOD

This study used a qualitative method with a phenomenological design. The informants of this study were selected through a purposive sampling method with a criteria-based selection technique, in other words, the informants were selected based on certain criteria and considerations, namely the main target is female students who have or have had scabies and have lived in the *Pesantren* for at least one year and target support from *Pesantren* leaders (*Kyai* or *Ustadz*) and female student management organizations at *Pesantren*. In addition to the purposive sampling method, the researchers also used the snowball method in determining the informants. This study was conducted at *Pesantren Al Hidayah*, Karangsucu, Purwokerto, Indonesia.

The data collection techniques used in this study include observation, structured interviews, and documentation. The data were collected from July to December 2019. The data were analyzed by using thematic analysis with the help of software Maxqda 10 to help coding, processing, and sorting out information in the research process. Thematic analysis is a method for identifying, analyzing, and reporting patterns (themes) contained in the data, and can further interpret various aspects of the research topic [15], [16]. The data were also validated by the data taken from several related parties, namely the leaders of *Pesantren Al-Hidayah* and other supporting parties such as public health centers and clinics.

Table 1 shows the informants of this study consisted of four female students of *Pesantren* as main informants, starting with FN as the first informants, then to three other informants consecutively initialized as TS, PFD, and Z. The four informants were in-depth interviewed.

Table 1. Characteristics of main informants

No	Initial	Age	From	Occupation	Parent's occupation
1.	FN	17 y.o.	Banjar, West Java	Undergraduate student	Farmer
2.	TS	19 y.o.	Kebumen, Central Java	Undergraduate student	Textile labor
3.	PFD	19 y.o.	Brebes, Central Java	Undergraduate student	Teacher
4.	Z	19 y.o.	Banyuasin, South Sumatera	Undergraduate student	Farmer

### 3. RESULTS AND DISCUSSION

The results of this research are obtained from interviews, observations, and documentation. This study intended to explore the condition of environmental sanitary of *Pesantren*, the characteristics of *Pesantren* teaching, the perceptions of *Pesantren* students about scabies, the healthy behavior of the students, and the efforts and obstacles in improving the healthy living of the students as shown in Table 2 (see in appendix).

#### 3.1. The condition of the environmental sanitary of *Pesantren*

*Pesantren* has its uniqueness and characteristics with other *Pesantren* [17]. Alike, *Pesantren* in this study has special characteristics viewed from its environment, the kiai's profile, and the students' characteristics. The environment and the special characteristics of this *Pesantren* contribute to the health levels of the students.

The Regulation of the Health Minister of the Republic of Indonesia No.173/Men.Kes/Per/VII/1977 stated that water supply must meet the quantity and quality standards, which are safe and hygienic, available in sufficient quantities, and affordable by most people. Referring to this regulation, there are obstacles in fulfilling the needs of clean water for the students at *Pesantren*, for example when the dry season comes the water-flow decreases, especially during the day, the water flow in very little quantity, sometimes they even do not flow. The study by Fahham suggests that sanitary that meets the health requirements is still a problem for most *Pesantren* in Indonesia [18]. Fahham's study showed two facts namely the condition of sanitary affects the health of the students, and the sanitary conditions between one *Pesantren* and the other are different [18].

The sanitary condition of the *Pesantren* environmental is related to the density of the female students' occupancy. The bedrooms in *Pesantren* have different ventilation and lighting. Most bedrooms are well ventilated, but some bedroom's ventilation/windows are blocked by hanging clothes (clothes being dried), some bedrooms do not even have ventilation/windows. The data obtained from the observations and interviews conducted by the researchers showed that the bedroom average occupation in *Pesantren* is  $\pm 1.9$  m<sup>2</sup>/student. Referring the Decree of the Minister of Settlement and Regional Infrastructure Number 403/KPTS/2002 concerning General Guidelines for Healthy Simple Houses (*Rumah Sederhana Sehat*) that the minimum area required for one person to live is nine square meters (m<sup>2</sup>), therefore the density in *Pesantren* does not meet the standards. This fact is not only found in this *Pesantren*. Kuspriyanto's study states that the bedrooms provided by a *Pesantren* in Pasuruan Regency are still not enough with an average density of 1.51 m<sup>2</sup>/student per room [10]. Another report was revealed by Astuti as stating that the density at *Pesantren* Assalafi Al Fithrah Surabaya is  $\pm 1.3$  m<sup>2</sup>/student, there are 35-45 students living in a rooms of 60 m<sup>2</sup> [19].

#### 3.2. Teaching characteristics of *Pesantren*

Some of the regulations of *Pesantren* are the obligation of Monday and Thursday fastings, the prohibition from carrying cell phones, the permit for going home is given once in a month, the visiting hours for parents, the prohibition from leaving the *Pesantren* on Sundays except for urgent matters, the schedule of persons in charge of daily cleaning, and weekly *ro'an* (general cleaning) to clean the *Pesantren's* environment. These regulations are formulated to teach simplicity, patience, and discipline to the students so that they could cultivate good morals (*akhlaqul karimah*).

The other characteristics of this *Pesantren* which affect the health of the students are the education and teaching system of the *Pesantren*. The discussion on the teaching characteristics of *Pesantren* is divided into two sub-themes, namely (1) the character education applied by the *Pesantren* and (2) the discipline habituation imposed to the students. Some characteristics of *Pesantren* are submission of the students to *Kyai*, modesty, discipline, and dare to suffer to achieve a goal [17]. These life values are part of the education received by the students in this *Pesantren*. It has several rules and unique teaching patterns to educate and provide good teaching for its students, including fasting on Monday and Thursday, which teaches students to live modestly, patiently, and *prihatin* (simple). Fasting is a means of educating human's *iradah* (will power) so that he/she has a strong will and can be patient in facing temptations, fasting also educates him/her to be tolerant and sensitive to the suffering of others, with the hope that his/her souls are called to help others [20].

The life value teachings at *Pesantren* are also conveyed through experiences, one of which is *Ro'an* which teaches the students to help each other and cooperate. Some of the goals of *Ro'an* are first, to train the students not to be *bakhil* (stingy) by donating energy and wealth for *Pesantren*, a blissful life will be granted to them both during the study at the *Pesantren* and after graduation when they have to mingle with their community. Second, to cultivate the symbiosis of mutualism relationship between the students and the *Pesantren* [21].

### 3.3. The perceptions of *Pesantren* students about scabies

The researchers' diagnosis that the diseases suffered by the informants were scabies is based on the characteristics of scabies that are found in these diseases, supported by the diagnosis of the medical staff of IAIN Purwokerto clinic, and further strengthened by the diagnosis of a dermatologist who stated that the diseases suffered by the informants who came to him for treatment were scabies. The informants described the perceptions about scabies among the students in *Pesantren*. The informants stated that scabies or *Gudik* is a normal thing to be experienced by *santri*.

*"that (scabies) is a normal thing, before I get enrolled in Pesantren I know that many santri have that (scabies)." (Informant FN, student, December 15, 2019)*

The number of mites and the treatment of scabies determines the severity of the scabies disease itself. The number of mites will increase and the symptoms will become more severe if the diagnosis and treatment are delayed [22], [23]. The informants perceived that as long as the itching does not produce pus or blood it is not scabies, in other words, the informants would seek treatment when scabies they experience become severe and disturbing. With such a perception, the informants themselves are sources of infection to the surrounding environment. This is in line with the study of Aminah *et al.* which stated that scabies cases are highly influenced by personal levels of knowledge about scabies [24]. Ramdan *et al.* also mentioned that there are diseases that commonly happen at *Pesantren* Modern Assalamah, namely itching and ulcer. The lack of knowledge of the students related to environmental and personal health, the lack of awareness of preventing and understanding the symptoms of the disease, and the density of the *Pesantren* cause the students to have unhealthy behavior [25].

### 3.4. The healthy behaviors of the students of *Pesantren*

One of activities to keep the *Pesantren's* environment healthy is waste management. Waste piles come from the students' bedrooms; they are scheduled to throw them by turns to the temporary waste bin. The wastes then are picked by dump trucks every two or three days.

The students' healthy behaviors on the personal hygiene sub-theme in this study were related to bathing habits, habits in maintaining clean clothes, habits in how to dress up, habits to wash hands before eating, habits to dry personal belongings, and the fulfillment of their nutrition. In maintaining their daily personal hygiene, the students used to bath twice a day, in the morning and evening. The informants conveyed obstacles that were often experienced for bathing, including queues, which were very commonly found in *Pesantrens*, and the water supply that sometimes flowed very little during the dry season. These conditions are described in the interview excerpt:

*"I usually take a bath twice, but usually depends on the water supply, sometimes the water doesn't fill up the tubs, so one bucket, I think is enough." (Informant FN, student, December 15, 2019)*

The results of this study related to personal hygiene showed that the informants used to take a bath twice a day in the morning and evening. Some informants expressed the obstacles they experienced to take a bath, including queues that had become a tradition of *Pesantren* apparently and small flowing water during the dry season. Bathing twice is very important to prevent scabies, because when bathing, mites that are on the surface of the skin will be washed away by water [26], [23]. The results of Akmal's study mentioned that the increased cases of infectious skin disease scabies have a relationship with the levels of personal hygiene awareness [27].

Based on the interviews and observations, the informants had the habit of putting the laundry into a bucket first and leave them for some times before washing them. Besides, their way of dressing was also of concern to the researchers; the informants are accustomed to wearing double-layered clothing even in hot weather which can make the informants more at risk of experiencing scabies.

The informants' poor personal hygiene like the habit of piling up and leaving dirty clothes in a bucket for a long time, rarely ironing clothes, putting clean clothes close to dirty clothes, and drying clothes not under direct sunlight allows transmission of scabies. In preventing scabies transmission according to Sungkar heat from electric irons and sunlight can kill mites that cause scabies if exposed in sufficient time [24]. Hence, not ironing the clothes will let the mites that might stay in the informant's clothing alive, which in turn causes the process of scabies pathogenesis.

The next personal hygiene that comes to the researchers' concern is the habit of washing hands. The interview results showed that most informants were not accustomed to wash their hands in running water and using soap, there were even some who rarely washed their hands before eating. This condition is illustrated in the following interview excerpts:

*"I rarely wash my hands, (hehe)." (Informant Z, student, 23 December 2019)*

Of the four main informants who had had or were having scabies, three stated that they got infected with scabies from the contacts with their roommates. Some habits of the students that cause scabies transmission are the habit of sharing one another's personal belongings such as veils, jackets, and towels, the habit of sleeping together in one bed, and intense physical contact.

In addition to the personal hygiene factors, scabies can also be transmitted directly or indirectly. The movement of larvae, eggs, nymphs, or mites of *S. scabies* from the skin of patients to other people's skin either directly or indirectly can cause scabies transmission [23]. The habit of some students at *Pesantren* to sleep together in one mattress can cause direct scabies transmission, meanwhile their habit to share their personal belongings can cause indirect transmission. The study of Ma'rufi *et al.* stated that the students' behavior such as sharing personal belongings and sleeping together in one bed will result in a greater likelihood of being exposed to scabies. Some students stated that these habits are not forms of bad behavior, they are forms of friendship among them [28].

### 3.5. The efforts and obstacles in improving the healthy living of the students

Various efforts have been carried out by *Ibu Nyai*, *Ndalem*, the administrators, and the students in improving the health level of the students, especially in the context of preventing scabies. For example, *Ibu Nyai* and the administrators formulated a set of regulations in keeping the cleanliness of the environment, also schedules in every unit of the entire *Pesantren* area. Besides, messages of keeping healthy and clean living have also been conveyed to the students through religious teachings, *Ibu Nyai* and the figures of *Pesantren* often give appeals and direction to the students to always maintain the cleanliness and tidiness of the *Pesantren's* environment in their teaching sessions.

The efforts to prevent scabies as explained above encountered various obstacles both external and internal. Among the external obstacles is the lack of education and promotion about scabies presented to the students by *Puskemas* (Public Medical Centers). Meanwhile, the internal obstacles in scabies prevention are, among others, the system of checking sick students carried out by the administrators need to be improved, administrators tend to pay more attention to students who suffer from illnesses that are claimed to be more serious, scabies is seen as an ordinary disease. The implementation of the administrators' programs to prevent scabies is also seen to be not optimal yet. Besides, the activities of students in preventing the spread of scabies and maintaining environmental health need to be more improved.

The principals, administrators, and students of *Pesantren* have made various efforts to maintain environmental health in preventing scabies. According to Widyarini and Rohmah in 2014 the charisma of a *Pesantren* principal has special meanings for students and those who will sign up for the *Pesantren*. *Ibu Nyai* Nadhiroh as the principal of *Pesantren* for females has high charisma for her enthusiasm in educating the students [29]. Khotimah also expressed in her study that *Ibu Nyai* is a charismatic figure of a female leader [30].

The role of leaders in eradicating scabies is seen through the establishment of a health center in the *Pesantren* called *Poskestren* (*Pos Kesehatan Pesantren*). Wahyudin and Arifin stated that the *Poskestren* in this *Pesantren* is expected to be able to empower the students in maintaining personal and environmental health [31]. However, there were internal and external obstacles in maintaining the health of the *Pesantren* environment, one of which was the carelessness of the students to maintaining healthy living, in line with the case revealed by Ramdan in *Pesantren Assalamah* where the majority of the students are still being careless to maintain a healthy life and prevent the emergence of diseases that can harm them [25].

## 4. CONCLUSION

The students perceived that maintaining environmental health is very important to keep anyone from contracting diseases including scabies. However, on the other hand, the students also perceived that it has become normal for them to experience scabies and have an untidy environment. *Pesantrens* are commonly perceived as being overcrowded so that the informants found it difficult to maintain the cleanliness and tidiness of the *Pesantren's* environment. The personal hygiene behavior of the female students such as taking a bath, washing hand, drying clothes, and the fulfillment of their nutrition still need to be improved.

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## APPENDIX

Table 2. Steps of thematic analysis framework

Codes	Issue discussed	Basic/initial theme	Organizing/ Developed theme	Global/final theme
<i>Pesantren's</i> water sources	clean water is supplied from wellbores	<i>Pesantren's</i> water sources	Organizing/ Developed theme students' clean water needs	Global/final theme the condition of environmental sanitary of <i>Pesantren</i>
Water's characteristics	sometimes, the water flows in small quantity, sometimes it even stops flowing at the daylight especially in the dry season	the <i>Pesantren's</i> water characteristics		
Students' drinking water	all students drink from gallon water	students' drinking water sources		
Population density	the occupant density in each of the students' bedrooms	the density in bedrooms	the condition of students' bedrooms	
Bedroom ventilation	bedroom ventilation	the condition of bedroom ventilation		
Bedroom condition	the bedroom lighting			
<i>Tirakat</i> (penance) activity	students are obliged to do Monday and Thursday fasting as good nurturing activities	religious teaching for the students	<i>Pesantren's</i> character education	the characteristics of <i>Pesantren</i> teaching
Modesty	the teaching to live a modest and patient life	the cultivation of <i>akhlakul karimah</i>		
Mutual assistance	life full with tolerance and mutual assistance among the students			
Regulation	<i>takzir</i> (punishment) in the forms of cleaning the environment	<i>Pesantren's</i> regulation	discipline instilment to the students	
Defining scabies	<i>Gudik</i> or scabies is a common disease infecting <i>santri</i> ( <i>Pesantren</i> students) <i>santri</i> got infected with scabies due to the habit of sharing personal belongings which is a common practice among <i>santri</i>	the perception that scabies is a common disease for <i>santri</i>	perceptions on scabies	the perceptions of <i>Pesantren</i> students about scabies
The environmental health	informants infected with the disease see that the environmental health is very important	the view on maintaining the environmental health	the perception of environmental health	
The cleanliness	the cleanliness of bathrooms is determined by			

*Female students' experience in preventing scabies in Pesantren (Fithri Iradaty)*

Codes	Issue discussed	Basic/initial theme	Organizing/ Developed theme	Global/final theme
of bathrooms The density of the place not maintaining the tidiness The santri's close ties The unique life of santri	the habit of the users The <i>Pesantren</i> is overcrowded  the untidiness of bedrooms is something acceptable among <i>santri</i> santri's social life upholds togetherness and mutual assistance santri are taught to have patience and modesty	   the perception of the characteristics of <i>Pesantren</i> life	   The perception of <i>Pesantren's</i> teaching	
Cleaning the <i>Pesantren's</i> area Cleaning the bathroom Postponing waste disposal Waste disposal	every Sunday, all students hold weekly cleaning in the <i>Pesantren</i> area cleaning bathrooms is done once a week  some students like to postpone disposing of the bedroom wastes some students like to litter (throwing wastes, not in waste bins) most bedrooms are equipped with a waste bin in front of them	the habit of cleaning the <i>Pesantren's</i> area  waste management	students' behaviors related to environmental health	the healthy behaviors of the students of <i>Pesantren</i>
Bedroom cleaning Bathing habit	bedroom cleaning is done every day by students by taking turns the habit of bathing twice a day is hampered by queuing and water flow problems, sometimes the water flows very little and sometimes it even does not flow if the water tank is empty	the habit of bedroom cleaning the habit of bathing twice a day of the informants and its obstacles	the <i>personal</i> <i>hygiene</i> of the students who had or are having scabies	
The habit of storing laundry	laundry is piled up in a bucket before being washed the habit of sharing buckets for washing	the informants' habit in maintaining their cloth cleanliness		
The habit of ironing clothes The habit of drying clothes Wearing double- layered clothes Hand washing	some students who had or are having scabies do not like to iron their clothes regularly drying clothes under shades  some students like to wear double-layered clothes even in the hot daylight weather the informants feel it is enough to wash hands only with water, without soap some informants rarely wash their hands before a meal	the habit of wearing double-layered clothes the handwashing habit of the informants before a meal		
The habit of drying mattresses The habit of towel drying students' meal	the lack of mattress drying habit of the students, they do it very rarely The informants rarely dry their towels  the students are entitled for meal from the <i>Pesantren</i> twice a day	the informants' habit in drying their personal belongings  the healthy life pattern of the students		
Sport	sport is done once a week on Sundays			
Rest time	the resting time for sleeping is around 5 hours in a day and night			
Scabies transmission	the informants were infected with scabies by roommates who had them earlier	the informants are infected by their roommates	scabies infestation	
Sharing clothes	the informants like to borrow clothes from their roommates	students like to share their personal belongings		
Physical contacts: sleeping on the same mattress	the habit of the students who like to sleep together on one mattress	sharing mattress habit		
Social interaction: Sundays <i>Ro'an</i> (general cleaning)	on Sundays, the students like to spend times together in the bedroom or around <i>Pesantren's</i> area <i>Ro'an</i> is the activity of cleaning the whole <i>Pesantren</i> area every Sunday	the physical contacts on Sundays are more intense efforts of the students to avoid scabies and to maintain the cleanliness of the <i>Pesantren</i> area	efforts to avoid scabies and to maintain the cleanliness of the <i>Pesantren</i> area	the efforts and obstacles in improving the healthy living of the students
Figure's roles	<i>ndalem</i> ( <i>Kyai</i> and the family) has been reminding the students to always maintain the environmental health	the role and efforts of the figures in instilling the habit of maintaining environmental health to avoid scabies		

Codes	Issue discussed	Basic/initial theme	Organizing/ Developed theme	Global/final theme
Medical centers	founding a medical center as an effort to improve students' healthy living medical services have been going on despite the lack of facility (the building is still on the process)	the efforts in improving the healthy living of the students		
Socialization from <i>Puskesmas</i> (public medical center)	the socialization from <i>Puskesmas</i> is on the more serious disease like Dengue Fever <i>Puskesmas</i> does not hold socialization on scabies	the socialization from <i>Puskesmas</i> does not concern scabies	external obstacles in scabies prevention	
The lack of attention by the <i>Pesantren</i> administrators	the lack of awareness of the administrators that there are still students who have scabies	the checking procedure of the administrators is not affective	internal obstacles in scabies prevention	
Administrator's program: health	the administrators put more emphasis on patients with serious illness for medication itching is considered normal for both administrators and students	the implementation of the health management program to prevent scabies has not been optimally performed		