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ORIGINAL RESEARCH

RELATIONSHIP BETWEEN PERCEPTION OF INDIVIDUAL SUSCEPTIBILITY AND BARRIERS TO TREATMENT ACTION IN SCABIES PATIENTS

Hubungan antara Persepsi Kerentanan Individu dan Hambatan dengan Tindakan Melakukan Pengobatan Pada Pasien Skabies

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ABSTRACT

Background: Scabies is found in crowded residential areas such as orphanages, dormitories, prisons, and Islamic boarding schools. In 2017, it was reported that scabies was among the 15 most common types of skin infections in Sumenep District, which reported 12,229 cases of scabies. **Purpose:** This study aims to analyze the relationship between the perception of individual susceptibility and barriers to treatment action in scabies patients at the Nasy'atul Muta'alimin Islamic Boarding School, Sumenep District, East Java. **Methods:** This research was an observational analytic study using a case-control design. The study population was patients with scabies in Nasy'atul Mutaalimin Islamic Boarding School, Sumenep District, East Java. The sample size was 70 people, consisting of 35 scabies patients who did not seek treatment as a case group and 35 scabies patients who did seek treatment as a control group. The sampling method used was simple random sampling. The two independent variables studied were the perception of individual susceptibility and barriers to treatment, while the dependent variable was treatment measures. The data analysis techniques employed were univariate and bivariate analysis. **Results:** This study shows that there are variables that have a relationship ($p < 0.05$) with the perception of individual susceptibility (OR = 99.00 95% CI 17.85 < OR < 548.86) and perceived barriers (OR = 29.00 95%, CI 7.968 < OR < 105.55). **Conclusion:** There is a relationship between the perception of individual susceptibility and barriers to treatment action in scabies patients.

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ABSTRAK

Latar belakang: *Skabies banyak ditemukan di hunian padat penduduk seperti panti asuhan, asrama, penjara, dan sekolah islam berasrama. Skabies termasuk 15 penyakit infeksi kulit tersering di Kabupaten Sumenep pada tahun 2017 yaitu sebanyak 12.229 kasus skabies.* ***Tujuan:*** *Penelitian ini bertujuan untuk menganalisis hubungan antara persepsi kerentanan individu dan hambatan dengan tindakan melakukan pengobatan pasien skabies di sekolah islam berasrama atau Pondok Pesantren Nasy'atul Muta'alimin, Kabupaten Sumenep, Jawa Timur.* ***Metode:*** *Penelitian ini merupakan penelitian observasional analitik dengan menggunakan desain studi case control. Populasi penelitian ini adalah pasien skabies di Pondok Pesantren Nasy'atul Muta'alimin, Kabupaten Sumenep, Jawa Timur. Sampel penelitian berjumlah 70 orang yang terdiri dari 35 pasien skabies yang tidak melakukan pengobatan sebagai kelompok kasus dan 35 pasien skabies yang melakukan pengobatan sebagai kelompok kontrol dengan metode pengambilan sampel yang digunakan adalah simple random sampling. Terdapat dua variabel yang diteliti meliputi persepsi kerentanan individu dan hambatan sebagai variabel independen dan tindakan melakukan pengobatan sebagai variabel dependen. Teknik analisis data yang digunakan yaitu univariat dan bivariat.* ***Hasil:*** *Penelitian ini menunjukkan terdapat variabel yang memiliki hubungan (nilai p < 0,05) adalah persepsi kerentanan individu (OR=99,00 95% CI 17,85<OR<548,86) dan persepsi hambatan (OR=29,00 95% CI 7,99<OR<105,55)* ***Kesimpulan:*** *Ada hubungan antara persepsi kerentanan individu dan hambatan dengan tindakan melakukan pengobatan pada pasien skabies.*

INTRODUCTION

Scabies is a contagious skin disease caused by the hominis variety *Sarcoptes scabiei* mite (Thomas, Coates, Engelman, Chosidow, & Chang, 2020). The disease causes itching and rashes to appear in various areas of the body (Engelman & Steer, 2018). Ways in which the disease is transmitted include physical contact with an infected person or sharing items such as towels, clothes or beds with a scabies patient (Affandi, 2019). Commonly reported symptoms of scabies are intense itching at night and when sweating, the appearance of acne-like red spots or bumps, inflamed and hot skin in the area, soreness, and sometimes pus discharge (Putri, Furqon, & Perdana, 2018). Children, the elderly and the poor are the groups that are most susceptible to scabies. Countries with a tropical climate and high population density are among the factors causing a high incidence of scabies (Handari & Yamin, 2018). Poverty, poor nutritional status, homelessness, and inadequate hygiene are also causes of the high prevalence of this disease (Micali, Lacarrubba, Verzì, Chosidow, & Schwartz, 2016).

Scabies remains both underestimated and neglected; as it is considered not to be life-threatening, handling it is not a priority, even though scabies can reduce the patients' quality of life (Mading & Indriaty, 2015). Such quality-of-life effects occur when the itching sensations that occur when sweating and at night indirectly interfere with survival (such as by interrupting sleep). If these symptoms are not dealt with and last for a long time, they can decrease work efficiency and effectiveness, resulting in decreased quality of life in the community (Hannan & Hidayat, 2015).

According to a report from the World Health Organization (2020), the worldwide incidence of scabies estimated 200 million people worldwide suffer from scabies at any one time. In 2017, scabies was declared a disease included in the category of Neglected Tropical Diseases (NTDs) (Wulan, Kurniati, Larasati, & Jausal, 2019).

The prevalence of scabies in developing countries is higher than in developed countries. Scabies can affect all races and age groups, although it is more common from childhood up to adolescence; in some developing countries, the prevalence is around 6–27% of the general population (Sungkar, 2016).

Indonesia is a country with a tropical climate; as a result, scabies is still common in Indonesia. Scabies in Indonesia is one of the most common skin infections in Public Health Care (PHC) or Puskesmas settings. Indonesia has seen a substantial decrease in prevalence from 2008 (5.60–12.96%) through 2009 (4.90–12.95%) to 2013 (3.90–6.00%) (Ridwan, Sahrudin, & Ibrahim, 2017). Despite this decrease in prevalence, however, scabies remains a contagious disease problem in Indonesia, and it cannot be said that Indonesia is free from this disease (Wulandari, 2018).

Scabies is often found in densely populated residential areas such as orphanages, dormitories, prisons, and Islamic boarding schools (Parman, Hamdani, Rachman, & Pratama, 2017). The prevalence of scabies in Islamic boarding schools in the East Java region is still relatively high: for example, it stands at 43% in Surabaya (36.30% in Ngemplak Demak boarding school), and has reached 66.70% in Islamic boarding schools in Pasuruan District and 73.30% in Islamic boarding schools in Lamongan. These results indicate that the incidence of scabies in Islamic boarding schools remains high (Naftassa & Putri, 2018).

In 2018, the Central Bureau of Statistics in Sumenep District wrote that infectious skin diseases, specifically scabies, were among the fifteen most common diseases in Sumenep District in 2017, when there were 12,229 cases recorded. A 2015 study conducted at the Miftahul Ihsan Bluto Sumenep Islamic boarding school found that 67.50% of respondents were suffering from scabies (Hannan & Hidayat, 2015).

Based on the preliminary survey, Sumenep District has quite a number of Islamic boarding schools that are spread across almost all sub-districts from urban to rural areas. One of the villages with the most Islamic boarding schools is Gapura Timur Village; however, not all of them have Pos Kesehatan Pesantren (Poskestren) or Islamic boarding school health post facilities. One of the Islamic boarding schools that does have a poskestren is the Nasya'atul Mutaalimin Islamic Boarding School in Gapura Timur Village. Based on a report by the Nasya'atul Mutaalimin Poskestren, scabies was the disease with the lowest reported number of cases, at 13 female students (santriwati) and five male students (santri). These results are not comparable with the preliminary survey that has been conducted. During the preliminary survey, information was obtained that almost all of the Nasya'atul Muta'alimin Islamic boarding school students had suffered from scabies.

The Health Belief Model (HBM) theory can explain disease prevention behavior and individual responses to disease. There are six components of HBM: the perception of the individual's susceptibility to contracting a disease, the perception of the severity or seriousness of the disease, the perception of self-efficacy or belief in one's own ability, triggers to act, the perception of benefits and the perception of barriers (Widayati, 2019).

The perception of individual susceptibility is one of the perceptions that triggers a person to engage in healthy living behavior. When someone feels that they are at low risk of contracting a disease or are not susceptible, it tends to result in unhealthy behavior (Banerji & Canadian Paediatric Society, First Nations, Inuit and Métis Health Committee 2015), moreover, perceptions of barriers are aspects that prevent someone from taking health action. including costs, side effects, inconvenience, time costs, etc (Widayati, 2019).

This study examines behavior around the act of seeking treatment using individual susceptibility perception factors, and barriers from the theory of the Health Belief Model (HBM) to determine individual perceptions of treatment behavior in patients with scabies at the Nasya'atul Muta'alimin Islamic Boarding School, Sumenep District.

METHODS

The present research is an analytic observational study using a case-control design that was carried out in February–March 2019 at the Nasya'atul Muta'alimin Islamic Boarding School, Sumenep District. The study population was divided into two, specifically into the case population and the control population. Students who were scabies patients and did not receive treatment were included in the case population, while students with scabies who did receive treatment were included in the control population. The inclusion criteria for this study are students at the Madrasah Tsanawiyah (MTs) and at the Madrasah Aliyah (MA) of the Nasy'atul Mutaalimin Islamic Boarding School who live there permanently and are willing to be research

subjects; exclusion criteria are students of Nasy'atul Mutaalimin who do not live there permanently and/or are not willing to become research subjects.

The sample in this study was a proportion of respondents from the population who met the study exclusion criteria and were not excluded, and who were then selected based on a simple random sampling technique. As this study used a case-control method, the sample was also divided into two groups, namely the case group sample and the control group sample. The total sample size was 70 people, divided into 35 in the case group and 35 in the control group. Respondents who sought treatment were included in the control group, while respondents who did not undergo treatment were included in the case group. The sample size of this study was obtained from calculations based on the following formula (Lemeshow et al., 1990):

$$n = Z_{1-\alpha/2} \frac{(\sqrt{2P_2(1-P_2)} + Z_{1-\beta}\sqrt{P_1(1-P_1) + P_2(1-P_2)})^2}{(P_1-P_2)^2}$$

The sample size calculation in this study used an odds ratio (OR) of 5.09 obtained from research conducted by Prabowo, Mutiara, and Sukohar (2018). There are two types of variables included in this study. The independent variables include perceptions of individual susceptibility and barriers, which are components of the Health Belief Model (HBM) theory, while the dependent variable is the action of taking medication or treatment.

The variable of individual susceptibility perception is divided into two categories, namely not susceptible and susceptible. Individuals who perceive themselves as susceptible are those who perceive scabies as a serious disease for which they are at risk, while those who perceive themselves as not susceptible are those who do not perceive scabies as a serious disease. Questions pertaining to the variable of susceptibility perception include "scabies is a serious disease", "failure to seek treatment can worsen the patient's condition", "patients who do not seek treatment will take longer to recover", "patients who do not regularly take treatment will worsen their condition", and "scabies patients who do not seek medical treatment will affect the accuracy of recovery statistics".

Variables of barriers are categorized into experiencing barriers and not experiencing barriers. The perception of barriers in this study illustrates some of the constraints felt by the research subjects. Questions related to this variable address feeling afraid of taking treatment because there will be pain, having no time to take treatment, feeling afraid that treatment will be expensive, feeling that taking treatment for scabies will reduce the blessing of knowledge received in Islamic boarding schools, and feeling fear of treatment because your friends may perceive you poorly if you are diagnosed with scabies.

The data used in this study are only primary data, which are obtained from respondents through filling out questionnaires. This research has passed the ethical tests conducted by the ethics committee of the Faculty of Public Health Universitas Airlangga number 48/EA/KEPK/2019. Data analysis in this study is univariate analysis, which is used to get a description of the distribution of each variable under study. The results are presented in tabular form and subject to bivariate analysis using the chi-square test to determine whether a relationship exists between the independent variables, namely the variable perception of individual susceptibility and barriers to treatment action (Lemeshow, Hosmer, Klar, & Lwanga, 1990).

RESULTS

Based on the results in Table 1, this study first determined that the majority of respondents in both the case group and in the control group were male, namely 40 respondents (57.10%). Of the group that suffered from scabies but did not receive treatment, 23 out of 35 respondents or 65.70% were male, while of the respondents who did receive treatment, 18 respondents or 51.40% were female. This study also shows that of the group that did receive treatment, the majority of respondents (23 respondents; 65.70%) are in the age group ≤ 17 years; this was also true for the group that did not receive treatment, the majority of whom (27 respondents; 77.10%) were aged ≤ 17 years.

Based on the results in Table 2, analysis of the individual susceptibility perception variable shows that of the group who did not receive treatment, 85.70% or 30 out of 35 respondents did not perceive scabies as a serious disease in terms of the risk they experienced; for their part, the group that did receive treatment were mostly (33 out of 25 respondents; 94.30%) people who perceived scabies as a serious disease that they were at risk of experiencing. In terms of the individual susceptibility perception variable, the results of statistical analysis that have been tested

with the *chi-square test* are a *p value* less than α (0.01 < 0.05). with an OR (odds ratio) value of 99.00 (95% CI = 17.85–548.86). This means that respondents who do not perceive scabies as a serious disease that they may contract experience a far greater risk of scabies than respondents who perceive scabies as a serious disease.

In terms of the barrier variable, it can be seen that in the group that did not receive treatment, most of the respondents experienced barriers to seeking treatment (as many as 30 respondents, or 85.70%), while in the group that did receive treatment, most respondents (29 people, or 82.60%) did not experience as many barriers.

Based on the results of statistical analysis conducted using the *chi-square test* between the perceived barrier and the act of treating scabies patients, the *p value* is less than α (0.01 < 0.05) with an OR value of 29.00 with 95% CI = 7.99–105.55. This means that respondents who experience barriers to seeking treatment are 29 times more at risk of not receiving treatment than respondents who do not experience such barriers.

DISCUSSION

Respondent Characteristics

In table 1, the results of this study indicate that the majority of scabies sufferers are male. These results are in line with previous research showing that the health behavior of male respondents is poor compared to female respondents, although some women still engage in poor health behavior (Rahman, Prabamurti, & Riyanti, 2016).

Respondent age was divided into two categories, ≤ 17 years and > 17 years, based on research conducted by Imartha, Wulan, & Saftarina (2017). The majority of scabies sufferers, regardless of whether or not they received treatment, were ≤ 17 years of age. This study involved respondents who were students in Islamic boarding schools, with the level of education of MTs (Madrasah Tsanawiyah) and MAs (Madrasah Aliyah); the overall age ranges did not differ significantly between respondents. This shows that age is not a factor that has an influence on the formation of treatment behavior in this study. These results are consistent with previous research stating that maturity in thinking regarding treatment action is not based on the age of the individual. Research by Rahman, Prabamurti, & Riyanti (2016) also shows that someone who is included in the adult age category does not necessarily take action to seek out health services, just as someone who is included in the younger age category does not necessarily perform poor health behavior.

Relationship between Perceptions of Individual Susceptibility and Actions of Taking Treatment

From Table 2, results of the study indicate a significant relationship between perceived susceptibility and treatment of scabies patients. Most respondents who did not perceive scabies as a serious disease that posed a risk to them did not take treatment (as many as 30 respondents, or 85.70%), while only five respondents (14.30%) perceived scabies as a serious disease that posed a risk to them personally but opted not to seek treatment (Rahman, Prabamurti, & Riyanti, 2016).

Overall, 14.30% of respondents who perceived themselves to be susceptible were students who still did not receive treatment. This occurred because, while these students may have felt susceptible or perceived scabies as a serious disease that posed a risk to them, their understanding of the importance of treatment was still lacking. Some male students who did not perceive that not getting treatment could worsen their condition, meaning that there were respondents who felt susceptible but did not seek treatment. These results are in accordance with previous research conducted by Samosir & Sunarti (2019) which showed that there were more respondents with poor treatment-seeking behavior (54.40%) compared to respondents with good treatment-seeking behavior (45.60%). An OR value of 3.19 was obtained, which means that respondents with poor treatment-seeking behavior had a risk of getting scabies 3.19 times greater than those with good treatment-seeking behavior. Respondents who did not seek treatment failed to do so because they did not feel susceptible. This means that the more the respondent feels susceptible, the greater their concern for disease, meaning that the respondent looks for ways to prevent disease from appearing (Samosir & Sunarti, 2019).

In current study, the student group of scabies patients who did not receive treatment felt that they were not susceptible because most of the group (68.57%) did not agree with the statement "scabies patients who do not seek treatment will take a long time to recover". Many male students in particular felt that they did not need to seek treatment because they believed the disease would heal by itself without treatment.

Table 1.
Respondent Characteristics Distribution by Age and Gender

Variable	Did not take medication or treatment		Did take medication or treatment		Total	
	n	%	n	%	n	%
Age (Year)						
≤ 17	27	77.10	23	65.70	50	71.40
> 17	8	22.90	12	34.30	20	28.60
Gender						
Male	23	65.70	17	48.60	40	57.10
Female	12	34.30	18	51.40	30	42.90
Total	35	100.00	35	100.00	70	100.00

Table 2.
Relationship between Perception of Individual Susceptibility and Barriers to Treatment Action in Scabies Patients

Variable	Did not take medication or treatment		Did take medication or treatment		OR	95%Cl	*p value*
	n	%	n	%			
Individual Susceptibility							
Not Susceptible	30	85.70	2	5.70	99.00	17.85–548.86	0.01
Susceptible	5	14.30	33	94.30			
Barriers							
Faced Barriers	30	85.70	6	17.40	29.00	7.99–105.55	0.01
Did not Faced Barriers	5	14.30	29	82.60			
Total	35	100.00	35	100.00			

Relationship Between Perception of Barriers and Actions of Receiving Treatment

The results of the study in table 2 indicate that there is a significant relationship between the perceived barrier variable and the treatment of scabies patients. The results of the research on this variable differ from those of the research conducted by Attamimy & Qomaruddin (2018), which shows that there is no relationship between the perceived barrier variable and the efforts taken to prevent disease. This can occur because the respondent's behavior is influenced not only by the perception of barriers, but also by perceptions of susceptibility, severity and benefits, as well as variables from other health belief models (HBM) that support respondents in taking action to seek treatment.

Based on the results of observations, most of the scabies patients who did not receive treatment because they experienced barriers agreed with the statement that respondents were afraid of the negative stigma from friends if they were diagnosed with scabies. The existence of ostracism or stigma from friends in the neighborhood caused the students who were suffering from scabies to choose not to receive treatment and hope that they would recover by themselves.

CONCLUSION

This study shows that the majority of patients with scabies are male, and that the majority of students aged ≤ 17 years either do or do not receive treatment. There is a relationship between the variables of perception of individual susceptibility and the variable of perception of barriers to the act of receiving treatment in patients with scabies at Islamic Boarding School Nasy'atul Mutaalimin, Gapura Timur Village and Sumenep District.

CONFLICT OF INTEREST

All researchers stated that there was no conflict of interest during this study.

AUTHOR CONTRIBUTIONS

E.R. performed data analysis, drafted and wrote the article. D.P.D. conducted research and data analysis. M.A.I provided input and oversaw the research.

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