

Risk Factors of Scabies In Students Of Aulia Cendikia Islamic Boarding School, Palembang

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Abstract.

Scabies is a skin disease caused by infestation and sensitization of *Sarcoptes scabiei* var. *hominis*. Scabies can infect everyone at all ages, races, genders and social economic levels. This disease is usually found in places such as dormitories, orphanages, prisons, islamic boarding schools that lack personal hygiene. Observational analytic research with cross sectional design has been carried out at boarding school Aulia Cendikia in Palembang from June to December 2017. There were 199 samples of students of Aulia Cendikia boarding school in Palembang city that met the inclusion criteria. In this study, there were no age differences between students with or without scabies ($p = 0.374$; $p > 0.05$). This study showed that the number of people per room was the factor that most contributed to the incidence of scabies (PR = 2.746, $p = 0.002$) followed by personal hygiene (PR = 2.333, $p = 0.007$) and gender (PR = 2.068, $p = 0.019$). Number of people in the room, personal hygiene and gender are risk factors for scabies at the Aulia Cendikia islamic boarding school in Palembang.

1. Introduction

Scabies is a skin disease caused by infestation and sensitization of *Sarcoptes scabiei* var. *hominis*. *Sarcoptes scabiei* includes phylum Arthropoda, Arachnida class, order Acarina, family Sarcoptidae. The typical clinical symptoms of scabies in the form of intense itching accompanied by polymorphic eruptions in the form of erythem, papules, nodules, pustules, are very contagious which are commonly found globally throughout the world.^{1,2}

Locations of scabies lesion predilection include finger splits, flexor arms and wrists, extensor elbows, periumbilical areas, buttocks, ankles, legs, genitalia and periareola in women. In contrast to adults, the distribution of children can attack the entire body, where babies less than 1 year old can attack the head and feet, anterior axillary folds.³

The prevalence of scabies is more than 20% in developing countries, especially in children with a prevalence of 5-10%. Research in Iraq found the prevalence of scabies in primary school children in the range of 4.4%, other studies in Nigeria in elementary school children and in Kuwait visiting pediatric dermatology clinics, the prevalence of scabies in a row of 4.8% and 3%. The highest incidence is in tropical countries with a range of more than 25%, with risk factors particularly related to low occupancy,

sanitation and hygiene and low socio-economic density.^{4,5}

This study aims to examine the risk factors for scabies at the Aulia Cendikia Islamic boarding school in Palembang, because of the tendency of scabies in densely populated areas with high direct or indirect contact. Where the risk factors to be studied include age, gender, number of people per room and personal hygiene.

1. Methods

This research is an observational analytic study with cross sectional design. The study was conducted at the Aulia Cendikia islamic boarding school in Palembang from June to December 2017.

The research subjects were students of Aulia Cendikia islamic boarding school in Palembang. There were 199 samples of students of Aulia Cendikia islamic boarding school in Palembang who met the inclusion criteria.

The relationship between gender, number of people per room and personal hygiene of scabies were analyzed by Chi Square test. The most influential risk factors for the incidence of scabies were analyzed by Logistic Regression test. Data analysis using SPSS version 22.0.

2. Results

3.1 Relationship Between Gender, Number of People and Personal Hygiene With Scabies

3.1.1 Gender

From 199 students there were 107 students (53.8%) male gender where 53 male students (63.1%) suffered from scabies and 92 students

(46.2%) were female where 31 female students (36, 9%) suffer from scabies. In table 1 it can be seen the relationship between sex and scabies which shows that there is a relationship between gender and scabies where students with male gender risk 1.9 times suffering from scabies compared to female students (PR = 1.931 (CI95% 1.087 - 3.432; p = 0.035).

Table 1. Relationship between gender and scabies.

| Characteristic | Scabies | | Total | PR (CI95%) | p value* |
|----------------|---------|-----|-------|--|--------------|
| | Yes | No | | | |
| Gender | | | | | |
| • Male | 53 | 54 | 107 | 1,931 (1,087 – 3,432) | 0,035 |
| • Female | 31 | 61 | 92 | | |
| Total | 84 | 115 | 199 | | |

Chi Square Test, p = 0,05

3.2 Number of People

In addition, there were 64 out of 130 (49.2%) students with the number more than 2 people per room suffering from scabies. In addition, there were 20 of 69 (29%) students with a total of ≤ 2 people per room suffering from scabies. The results showed a relationship between the

number of people per room and scabies where students with the number more than 2 people per room had 2.4 times the risk of suffering from scabies compared to students with a total of ≤ 2 people per room (PR = 2.376 (CI95% 1.274 - 4.432 ; p = 0.009) (table 2).

Table 2. Relationship between number of people per room and scabies.

| Characteristic | Scabies | | Total | PR (CI95%) | p value* |
|-------------------------|---------|-----|-------|--|--------------|
| | Yes | No | | | |
| Number of People | | | | | |
| • > 2 People | 64 | 66 | 130 | 2,376 (1,274 – 4,432) | 0,009 |
| • ≤ 2 People | 20 | 49 | 69 | | |
| Total | 84 | 115 | 199 | | |

Chi Square Test, p = 0,05

3.3 Personal Hygiene

Other variables assessed were personal hygiene, there were 58 out of 114 (50.9%) students with poor personal hygiene suffering from scabies. In addition, 26 out of 85 (30.6%) students with good personal hygiene suffered from scabies. There was a relationship between

personal hygiene and scabies in which students with personal hygiene were less at risk 2.35 times suffering from scabies compared to students with good personal hygiene (PR = 2.350 (CI95% 1.303 - 4.238; p = 0.006) (table 3).

Table 3. Relationship between personal hygiene and scabies.

| Characteristic | Scabies | | Total | PR (CI95%) | p value* |
|-------------------------|-----------|------------|------------|--|--------------|
| | Yes | No | | | |
| Personal Hygiene | | | | | |
| • Poorly | 58 | 56 | 114 | 2,350 (1,303 – 4,238) | 0,006 |
| • Good | 26 | 59 | 85 | | |
| Total | 84 | 115 | 199 | | |

Chi Square Test, p = 0,05

3.2 Risk Factors of Scabies

The most important risk factor for the occurrence of scabies is at the Aulia Cendikia islamic boarding school where students with a number of people more than 2 per room 2.7 times are significantly more at risk of suffering from scabies than students with a number of people ≤ 2 per room (PR = 2.746; p = 0.002) followed by personal hygiene where students

with poor personal hygiene 2.3 times more at risk of significantly suffering from scabies compared with students with good personal hygiene (PR = 2.333; p = 0.007). In addition, gender is also a risk factor for scabies where students with male gender risk 2 times suffering from scabies compared to female students (PR = 2.068; p = 0.035).

Table 4. Risk factors of scabies.

| Variable | Unadjusted* | | Adjusted** | |
|---------------------------|--------------|--------------|------------|---------|
| | PR | p value | PR | p value |
| Number of People per Room | 2.376 | 0.009 | 2.746 | 0.002 |
| Personal Hygiene | 2.350 | 0.006 | 2.333 | 0.007 |
| Gender | 1.931 | 0.035 | 2.068 | 0.019 |

* *Chi Square Test, p = 0,05*

***Logistic Regression Test, p = 0,05*

3. Discussion

Scabies is a skin disease caused by infestation and sensitization of *Sarcoptes scabiei* var. *hominis*.¹ Scabies can infect everyone at all ages, races, genders and social economic levels. The prevalence of scabies is more than 20% in developing countries, especially in children with a prevalence of 5-10%. In this study the average age of students suffering from scabies was 12.7 ± 0.769 years but not statistically different from students without scabies. This is likely because research subjects are students whose ages range from 12-14 years. Some certain infectious diseases show that young age has a high risk. Younger respondents are more at risk of developing scabies. The level of vulnerability and experience of the disease is usually experienced by those who are of high age.⁶

In this study male students had 2 times the risk of suffering from scabies compared to female students. This result is in line with the research conducted by Chairiya et al. Which shows that most of the santri who suffer from scabies are male.⁷ Likewise, the research conducted by Andayani et al. Found more

male scabies than women. This happens probably because female students maintain their personal hygiene more than male students.⁸

In addition to gender, in this study the results of poor personal hygiene are risk factors for scabies. The results of students with poor personal hygiene 2.3 times more at risk of significantly suffering from scabies compared to students with good personal hygiene. This result is in line with the research conducted by Ma'rufi (2005) in Rohmawati (2010) that there were 63% of students who had poor personal hygiene with the prevalence of scabies at 73.70%. Personal hygiene includes the habit of washing hands, using the same towel, frequency of bathing, frequency of changing clothes, frequency of changing bed linen, and the habit of direct contact with scabies, other habits such as using bar soap together.⁹

Scabies can be experienced by men and women of all ages, ethnic groups, and socio-economic levels.^{10,11} There were no significant differences between women and men with the incidence of scabies. Serological surveys in indigenous people in Malaysia by

Normaznah et al, showed no significant difference between sex differences with the incidence of scabies.¹²

In this study also obtained the results of students with a number of people > 2 per room 2.7 times significantly more at risk of suffering from scabies than students with a number of people ≤ 2 per room. The number of people per room is a risk factor that most plays a role in the incidence of scabies in boarding school X. The results of this study are in line with the Sukiman study in 2017 which shows the results there is a relationship between residential density and the incidence of scabies. The more the number of students per room, the more likely the spread of scabies.¹³

4. Conclusion

Number of people in the room, personal hygiene and gender are risk factors for scabies at the Aulia Cendikiaislamic boarding school in Palembang.

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