PERSONAL RELATIONSHIP HYGIENE WITH THE RINGWORM EVENTS IN PUJON DISTRICT MALANG REGENCY

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Abstract. Ringworm is a mycosis caused by a parasitic type of fungus that can attack all animals and also humans. The purpose of this case study is to find out the relationship of personal hygiene that is suspected to have played a role in the spread of ringworm in the District of Pujon, Malang Regency. Research conducted in April to June 2017. Design research is quantitative descriptive, namely in Cross Sectional, with the primary data source that are reinforced by secondary data, and using the research instrument in the form of a questionnaire, interviews, observations (observation), and documents (medical record data). Further data were analyzed by Chi Square. The population in this research is the whole skin pain sufferers’ patients visiting outpatient clinic Cooperative SAE Pujon as much as 138 people. The results of the study prove that the prevalence of Ringworm in Pujon District Malang Regency is 34 people (24.6%) out of 138 people. Based on the results of statistical tests show that the Ringworm incident has a relationship with personal hygiene (P = 0.03). It is recommended to do counseling by health workers about the importance of personal hygiene knowledge and its application in daily life and the role of veterinarians who continuously motivate and monitor the implementation of Good Farming Practices to farmers.

Keywords: Ringworm, Personal Hygiene, Good Farming Practices

1. Preliminary

Personal hygiene maintenance efforts really determine a person's health status, so consciously take the initiative to maintain health and prevent an illness. Personal hygiene referred to by [1] is covering oral hygiene, teeth, eyes, ears, hair, nails, skin and clothes hygiene.

In the integumentary system, besides functioning as an excretory organ and maintaining body temperature, it also plays an important role as a protective organ underneath. Therefore, health needs to be maintained from damage that can trigger the entry of microorganisms such as bacteria, viruses,
fungi or other parasites. One type of parasite that most often attacks both human and animal skin is fungus, and this disease is known as dermatophytosis or ringworm [2].

Ringworm or dermatophytosis is a fungal infection in the superficial skin layer or in other body tissues that contain keratin (hair, nails, hair, etc.). The types of fungi that are often found both in humans and animals are Microsporum sp, and Trichopyton sp. Two types of fungi in certain situations can be transmitted from animals to humans or vice versa, so that this type of fungal disease is zoonotic [3].

According to Mortimer (1955) a case of zoonosis of Ringworm disease was first reported in cattle to humans in 1820. Most animals that are attacked are dogs, pigs, sheep, cats, horses, goats, cows and others, but the main thing is dogs, cats, cows [4]. These three animals are important problems for humans because of their zoonotic nature. Trichopyton spp and Microsporum sp, are 2 types of fungi that are the main causes of ringworms in animals. In Indonesia, which were prominent attacked were dogs, cats and cows.

The most important of clinical symptom in cattle is on the surface of infected skin and fur found lesions in the form of circles such as rings in various sizes and whitish, which in an intensive state can be accompanied by inflammatory crusts and hair loss. Besides these lesions can also be found in the head, neck, chest and shoulders. In cattle symptoms of itching are not found, and in severe animals the body is very thin and there is no appetite [5].

The symptoms of ringworm in humans can cause purulent inflammation spots that occur on the hairless skin. Hairless patches are usually crusted with many pustules which can cause permanent alopecia. Transmission to humans can occur directly or indirectly. Direct transmission occurs by touching animals. Ringworm spores are durable in cages and in the wild. Indirect transmission occurs if there are spores in a cage or where a diseased animal was used.

From various epidemiological data showing that skin disease due to ringworm (superficial dermatomycosis) is a skin disease that is often found in all walks of life, both in rural and urban areas, not only in developing countries but also in developed countries. Although this disease is not fatal, but because it is chronic and residif, and not a few who are resistant to antifungal drugs, the disease can cause disruption of comfort and reduce the quality of life for sufferers.

Factors contributing to Ringworm are a hot climate, lack of personal hygiene of the community, the existence of sources of transmission around it, the use of antibiotic drugs, steroids and cytostatics are increasing, the presence of chronic diseases and other systemic diseases.

Based on this, the researcher wanted to find out more about the relationship of personal hygiene with the ringworm incident in Pujon Subdistrict, Malang Regency.

2. Research Methods
This study uses a cross sectional study method to determine the influence of personal hygiene with the ringworm incident in the outpatient clinic of SAE Cooperative Pujon Malang Regency. The population in this study were all patients with skin disease who visited the outpatient clinic of the Cooperative SAE Pujon as many as 138 people.

The sample in research were Ringworm patients who were at the outpatient clinic of the Cooperative SAE Pujon for the period of January - March 2017 who met the inclusion criteria and did not include the exclusion criteria.

The inclusion criteria for the study sample were Ringworm patients who underwent outpatient care at the SAE Pujon Cooperative outpatient period from January to March 2017 and had complete medical record records: medical record number, patient identity, date of examination, clinical diagnosis of dermatophytosis. Whereas the exclusion criteria are Ringworm patients who undergo outpatient care with incomplete medical records of the required or unclear variables.

The sampling technique uses the Purposive Random Sampling technique in which all populations obtained from the medical record section and fulfilling the inclusion criteria will be sampled at the outpatient clinic of the SAE Cooperative Pujon Malang Regency. The dependent variable of this study
is *Ringworm*. While the independent variable is personal hygiene. Both variables were measured using a questionnaire and observation. This research was carried out at the SAE Pujon Cooperative outpatient clinic in Malang district. The time of the study was conducted in April to June 2017.

Data processing steps are checking the completeness and clarity of data, coding each variable data, entering data in the SPSS16.0 (Statistical Program for Social Science) program [6], and checking again to ensure that the data has been clean from mistakes. Data analysis was performed using Univariate and Bivariate analysis techniques. In bivariate analysis, the relationship between two variables is searched by using the *Chi-square* formula.

### 3. Result

#### 3.1. Respondent Characteristics

**Table 1. Distribution of Ringworm Patients by Age Group**

| No | Age (years) | Frequency (n) | Percentage (%) |
|----|-------------|---------------|----------------|
| 1  | 10          | 1             | 0.72           |
| 2  | 15          | 5             | 3.62           |
| 3  | 25          | 7             | 5.10           |
| 4  | 30          | 11            | 8.0            |
| 5  | 35          | 19            | 13.80          |
| 6  | 40          | 25            | 18.12          |
| 7  | 45          | 37            | 26.81          |
| 8  | 50          | 28            | 20.30          |
| 9  | 55          | 3             | 2.20           |
| 10 | 60          | 2             | 1.45           |
| **Total** | 138 | | 100       |

Based on table 1, it can be seen that the age of most Ringworm patients in the outpatient clinic of SAE Pujon Cooperative is 45 years (26.81%).

**Table 2. Distribution of Ringworm Patients by Sex**

| No | Sex          | Frequency (n) | Percentage (%) |
|----|--------------|---------------|----------------|
| 1  | Man          | 83            | 60.14          |
| 2  | Women        | 55            | 39.86          |
| **Total** | 138 | | 100       |

Based on table 2 it is known that the most Ringworm patients in the outpatient clinic of the SAE Cooperative in Pujon are 83 men (60.14%).

**Table 3. Distribution of Ringworm Patient Education Levels**

| No | Level of Education               | Frequency (n) | Percentage (%) |
|----|----------------------------------|---------------|----------------|
| 1  | Graduate Elementary School       | 90            | 65.22          |
| 2  | Graduate Junior High School      | 19            | 13.77          |
| 3  | Graduate High School             | 29            | 21.01          |
| **Total** | 138 | | 100       |

Based on table 3 it is known that the majority of Ringworm patients in the SAE Pujon Cooperative outpatient clinic are those who have completed primary school as many as 90 people (65.22%).

#### 3.2. Univariate Data Analysis
Table 4. Frequency Distribution of Ringworm Incidents in the SAE Cooperative Outpatient Clinic in Pujon

| No | Ringworm Incident | Frequency (n) | Percentage (%) |
|----|-------------------|--------------|----------------|
| 1  | Ringworm          | 34           | 24.64          |
| 2  | Not Ringworm      | 104          | 75.36          |
| Total |                    | 138          | 100            |

Based on Table 4, it is known that 34 patients in the SAE Pujon Cooperative outpatient clinic suffer from Ringworm disease (24.64%).

Table 5. Frequency Distribution of Patient's Personal Hygiene at the SAE Cooperative Pujon Outpatient Clinic

| No | Personal Hygiene | Frequency (n) | Percentage (%) |
|----|------------------|--------------|----------------|
| 1  | Good Hygiene     | 70           | 50.70          |
| 2  | Not Hygiene      | 68           | 49.30          |
| Total |                    | 138          | 100            |

Based on Table 5, it is known that 70 Ringworm patients at the SAE Pujon Cooperative outpatient clinic have good personal hygiene (50.70%), while 68 Ringworm patients who are not hygiene (68.30%).

3.3. Bivariate Analysis Results

Table 6. Relationship of Personal Hygiene with Ringworm occurrences in Patients at the SAE Pujon Cooperative Outpatient Clinic.

| Ringworm Incident | Total | P Value |
|-------------------|-------|---------|
| Good Hygiene      |       |         |
| Ringworm          | 4 (5.7%) | 70 (100%) | 0.03 |
| Not Ringworm      | 66 (94.3%) |         |     |
| No Hygiene        | 30 (44.1%) | 38 (55.9%) |     |

Based on Table 6, it is known that of 34 people with Ringworm there are 30 people who have personal hygiene. Whereas 4 people with ringworm with good personal hygiene.

4. Discussion

4.1. Age

The percentage of Ringworm cases based on the age criteria in Table 1 shows that the highest number of Ringworm patients in the outpatient clinic of SAE Pujon Cooperative was 26.81%, from the age group of 45 as many as 25 people. While the lowest percentage of 0.72% occurred in 1 person (child) aged 10 years.

At the age of 45 years is a productive age where high activity will produce excessive sweating. Moreover, coupled with the factors of hot weather during the day and cold at night, humidity and are associated with their daily work activities as cattle breeders, then exposure to Ringworm disease can quickly occur. The results of this study are in accordance with previous studies, namely by Hidayati, et al (2009) which states that the largest age group of Ringworms in Dr Soetomo Regional Hospital is productive age, namely 25-44 years. Productive age has predisposing factors, such as wet work, trauma, and lots of sweating, so the risk of suffering from Ringworm is greater than other age groups [7]. Whereas the age that most rarely suffered from Ringworm in the URJ Mycology Division of the
skin and venereal disease Dr. Soetomo Surabaya is a 1-4 year age group which is a group of toddlers who have a few risk factors.

4.2. Sex
Based on the results of the analysis that has been done shows that the Ringworm sufferers in the SAE Pujon Cooperative outpatient clinic are mostly male. This is because men tend not to maintain or pay attention to their appearance which will affect their personal hygiene care. While the risk of exposure to Ringworm in women is smaller, this is because women are more likely to care for themselves and maintain their appearance. This is consistent with the opinion of Notoatmojo, S (2003) which states that the behavior of men from the lower middle social level toward health care and personal hygiene tends to be lower than women's behavior [1]. The same thing was also stated by Muin (2009) in his study that male respondents were more at risk of developing dermatophytosis than female respondents [8]. So with good self care, the risk of exposure to dermatophytosis will be reduced.

4.3. Education Level
Based on the analysis in Table 3, it is known that the majority of Ringworm patients in the SAE Pujon Cooperative outpatient clinic are those who have completed primary school as many as 90 people (65.22%). The low level of education is very influential on the understanding of knowledge, including in terms of applying Good Farming Practice. Based on observations at several locations of cattle farms, farmers are generally reluctant to receive knowledge related to technical guidance or efforts to prevent infectious diseases from animals to humans on the grounds that there is no time or opportunity. These observations are consistent with the opinion of Chin, James (2006) which states that respondents with lower levels of education are more at risk of contracting fungal diseases [9]. The higher education, the more people will get lessons on how to prevent infectious diseases.

4.4. Personal Hygiene
From the results of the analysis note that there is a link between personal hygiene and ringworm occurrences. While the results of observations in several locations Pujon breeder settlements, generally gives a picture of an unhealthy home environment. Cow cages and piles of cow dung which are located very close to the kitchen and family beds are a source of breeding of germs including fungal species parasites.

On the other hand researchers also found many cattle with different locations giving clinical picture of Ringworm such as lesions / scabs in the form of white spheres such as rings, crusts and hair loss in the head, neck, shoulders and tail area. The clinical picture of ringworm symptoms in cattle can be seen in the photo below: The clinical picture of ringworm symptoms in cattle can be seen in the photo below:
Figure 2. The clinical picture of ringworm symptoms in cattle

Thus it can be concluded, that bad personal hygiene is a risk factor for ringworm transmission. While good personal hygiene is one of the efforts that can prevent ringworm events. This is in accordance with the opinion of previous researchers Ferry (2009) which states that with the increase in personal hygiene efforts, it can improve the level of health for the better, so that it can be avoided from infectious diseases [10].

Conclusion

Based on the results of research and analysis that has been done, it can be concluded that the prevalence of Ringworm in Pujon District Malang Regency is 34 people (24.6%) out of 138 people. Based on the results of statistical tests show that the Ringworm incident has a relationship with personal hygiene (P = 0.03).

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