Original Research Article

The correlation between contact history and knowledge with incidence of leprosy in Jeneponto district, South Sulawesi, Indonesia

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ABSTRACT

Background: Leprosy is one of neglected tropical diseases, which is caused by Mycobacterium leprae. This disease attacks especially on the skin, peripheral nerves, mucosa of the upper respiratory tract, and eyes. This study aims to analyze the influence of contact history and knowledge on the incidence of leprosy in Jeneponto district.
Methods: This study used observational descriptive research with a case control approach. This research was conducted in the work area of the Health Office in Jeneponto district from January to June 2018. A total of 31 leprosy patients and 31 non lepers were sampled in this study. Statistical analysis of Chi square test was used to determine the relationship between contact history and knowledge with the incidence of leprosy.
Results: The results showed that there was a significant relationship between contact history with the incidence of leprosy (p=0.001<0.05). But knowledge did not have a significant relationship with the incidence of leprosy, (p=0.203> 0.05).
Conclusions: Contact history is a predictive factor for leprosy in Jeneponto. It is expected that the population who has contact with leprosy patients to pay attention to other things that can increase the risk of leprosy.

Keywords: Contact history, Knowledge, Leprosy

INTRODUCTION

Leprosy is one of neglected tropical diseases, which is caused by *Mycobacterium leprae*. This disease attacks especially on the skin, peripheral nerves, mucosa of the upper respiratory tract, and eyes. Leprosy can be cured and treatment at an early stage can prevent disability.[1] According to the National Guidelines for Leprosy Control Program, leprosy is one of the diseases that cause very complex problems.[2] The problem was not only from a medical approach but also through national social, economic, cultural, security and resilience problems.[2]

Leprosy transmission by respiratory tract and skin (long and close direct contact), germs reach the surface of the skin through hair follicles and sweat glands.[3] Various things can be done to reduce the impact on leprosy transmission, one of which is recommended to avoid direct contact with leprosy patients. This has been proven to reduce the incidence of leprosy and reduce the incidence of new cases in various regions.[3] Contact history of leprosy patients was known to have a risk of leprosy compared to the general population. The high incidence of leprosy in people at home contacts was almost ten times compared to those who do not have house contact. Those who were in house contact with Multi-biliary patients (borderline and lepromatosa) had a higher risk than home contact with patients with biliary pain (tuberculoid and indeterminate), which was between four to ten times in contact with Multi Basiler patients

compared to only twice in contact with Pausi Basiler sufferers. A child who lives long in leprosy endemic areas also has a greater chance of making contact with infectious leprosy sufferers. The high incidence of leprosy in home contact people is almost ten times compared to those who do not have house contact.[4] Contact events tend to be more frequent and intense at home contact with a higher risk of transmission. Neighbour contact and social contact also affect leprosy transmission even though the risk of transmission is lower.[5]

Leprosy was generally found in developing countries. Leprosy was still feared by the community, including some health workers. This was due to the lack of knowledge and understanding, mistaken trust in leprosy and the defects it causes. There is a meaningful relationship between the level of knowledge as one part of the behavior with the process of transmission and healing in lepers. People who have high knowledge about leprosy will certainly try to distance themselves from the factors that can be a source of transmission of this disease.[6] In addition, knowledge of the disease must also be in line with community behavior in preventing transmission of the environment that has a source of transmission.

According to official reports received from 138 countries from WHO regions, the global prevalence of leprosy registered globally by the end of 2015 was 176 176 cases (0.2 cases per 10,000 people. The number of new cases reported globally in 2015 was 211 973 (2.9 new cases per 100,000 people. In 2014, 213 899 new cases were reported, and in 2013, 215 656 new cases. The number of new cases shows the rate of transmission of infections continues.[7]

In Indonesia, lepers are found in almost all regions with uneven spread. Leprosy sufferers 90% live among their families and only a few percent live in leprosy hospitals, shelter colonies or leprosy villages. In 2015, 17,202 new cases of leprosy were reported with 84.5% of cases including Multi Basiler (MB) type. Whereas according to gender, 62.7% of new leprosy sufferers were male and 37.3% were female.[8] In 2015, there were 1220 new cases in South Sulawesi Province with a prevalence of 1.36 per 10,000 population. (MOH, 2016). Kab. Jeneponto recorded a new case in 2015 of 67 cases and increased to 72 cases in 2016.[9]

METHODS

This study used observational descriptive research with a case control approach. This study aims to analyze the influence of contact history and knowledge on the incidence of leprosy in Jeneponto district. This research was conducted in the work area of the Health Office in Jeneponto district from January to June 2018. The sample of cases in this study were leprosy patients with inclusion criteria were lepers who living in the working area of Public Health Center in Jeneponto district, recorded in medical records, age >15 year, and good communication. The exclusion criteria were not willing to take part in this reasearch and not in the place when the research took place.

The control sample is not a leper who lives in Jeneponto district at the time of the study. A total of 31 leprosy patients and 31 non lepers were sampled in this study. The inclusion criteria were non lepers who had the same age, gender and type house as the case sample, age ≥15 years and stay in the Jeneponto Regency. The exclution criteria were not willing to take part in this research, do not settle in Kab. Jeneponto at the time of the research and not at the place when the research took place

The primary data consists of data were obtained through questionnaires. Statistical analysis of Chi square test was used to determine the relationship between contact history and knowledge with the incidence of leprosy.

RESULTS

Most leprosy cases were less knowledge as many as 19 respondents (30.6%) and a contact history of 15 respondents (24.2%). Unlike the control case, most of them had good knowledge as many as 17 respondents (27.4%) and had no contact history as many as 26 respondents (41.9%) (Table 1).

Table 1: Contact history and knowledge frequency distribution in Jeneponto district (n= 62).

No.	Variabel	Leprosy			
		Case		Control	
		N	%	N	%
1	Knowledge				
	Good	12	19.4	17	27.4
	Less	19	30.6	14	22.6
2	Contact History				
	Yes	15	24.2	5	8.1
	No.	16	25.8	26	41.9

Source: Primary data (2018)

Table 2: Host factor relationship with leprosy incidence in 2018.

	Variable	Leprosy				Total		P value
		Case		Control		N	%	
		N	%	N	%			
1	Knowledge							
	Good	12	19.4	17	27.4	29	46.8	0.203
	Less	19	30.6	14	22.6	33	53.2	
2	Contact History							
	Yes	15	24.2	5	8.1	20	32.3	0.001
	No.	16	25.8	26	41.9	42	67.7	

Source: Primary data (2018)

The results of the study with Chi square statistical tests showed that there was a significant relationship between contact history with the incidence of leprosy (p value=0.001<0.05). Different with knowledge variabel which does not have a significant relationship with the incidence of leprosy, with value of p=0.203>0.05. (Tabel 2).

DISCUSSION

Leprosy transmission by respiratory tract and skin (long and close direct contact), germs reach the surface of the skin through hair follicles, sweat glands, and is suspected through milk so leprosy can be prevented by improving personal hygiene.[3] Various things can be done to reduce the impact on leprosy transmission, one of which is recommended to avoid direct contact with leprosy patients. This has been proven to reduce the incidence of leprosy and reduce the incidence of new cases in various regions.[3] Contact of leprosy patients is known to have a risk of leprosy compared to the general population. The results of this study indicate a significant relationship between the history of contact with the incidence of leprosy in Jeneponto. This result is based on Chi-square test, obtained p=0.001<0.05. This was supported by Aisyah's research showed that history of contact was a risk factor for leprosy in the work area of the Siko Health Center.[10] The incidence of leprosy with house contact was obtained by an OR value of 2.023 which means that household contact (duration of contact with patients) was twice the risk of the occurrence of leprosy compared to people who contacted leprosy sufferers only short.[11] Izumi reported that out of 70 household contacts from various places, there were 7.1% positive.[12] While from two endemic villages in South Sulawesi found a positive population in general as much as 27.7% and 35.5% from each village.[13]

Dur˜aes et al found an independent risk of leprosy for two exposures: the first type of household and kinship relationships (father, mother, son / daughter, and siblings).[14] Although our study controlled for other variables in multivariate analysis, there was agreement with the results of the prevalence of parents, siblings, and offspring at a higher risk of developing leprosy. Moet et al highlighted an increased risk of disease among household contacts.[15] The "close association type" and "close time long" variables do not measure contact intensity because while the intrahousehold coexistence can have occurred for a long time, the frequency of contact may be sporadic, and when considering the duration of the association close to the index case, there is a significant relationship with prevalence but not with incidence. Similar results were found in previous analyzes and in other studies.[16,17]

The source of leprosy transmission was whole or solid leprosy from leprosy patients, so leprosy transmission is easier to occur if there is contact with leprosy patients. Based on the results of the study, 60% of respondents had a contact history and 40% had no contact history.[18] The possibility of leprosy transmission was not only limited to groups of family members who are at home contact even though the intensity of contact occurs more frequently so that a higher risk is often found. But contact with neighbors and social contact is also important in leprosy cases. Leprosy sufferers tend to have a previous contact history as many as (45.3%). Persons affected by leprosy before suffering from leprosy tend to have good contacts with people at home and those around them who also suffer from leprosy. Contact events tend to be more frequent and intense at home contact with a higher risk of transmission. Neighbor contact and social contact also affect leprosy transmission even though the risk of transmission is lower.[5]

Another factor related to leprosy is knowledge. People who have high knowledge about leprosy would certainly try to distance themselves from the factors that can be a source of transmission of this disease.[19] In addition, knowledge of the disease must also be in line with one's hygiene behavior in everyday life. Based on research, it was known that hygienic behavior has a significant relationship in the transmission of leprosy.[6] On the other hand, good knowledge must be supported by practice. It is also good to eradicate leprosy which is implemented optimally.

Improving community knowledge about leprosy was done by optimizing counseling. Health education as one of the concepts of health education aims to increase knowledge and change the behavior of unhealthy people

to be healthy.[20] The results showed that there was no relationship between the level of knowledge with the incidence of leprosy in Jeneponto District. This result is based on Chi-square test, obtained p value=0.203> α=0.05. According to the assumption of the researcher this is caused by high stigma and discrimination, so that knowledge of people about leprosy will affect them. Based on research in the field it was found that most respondents have less knowledge as many as 19 people or 30.6% in the case group and they have good knowledge about the control group is 17 or 27, 4%. From this result it can be seen that there are still many respondents who have low knowledge. Respondents saw symptoms of leprosy, but considered the symptoms that appeared were other skin diseases such as tinea versicolor, so there was less action to check into health services and not some of them experienced delays in treatment. know how to send or prevent it has provided counseling to leprosy and the general public through health cadres in several villages but is less effective due to leprosy stigma and discrimination.

CONCLUSION

Contact history is a predictive factor for leprosy in Jeneponto. It is expected that the population who has contact with leprosy patients to pay attention to other things that can increase the risk of leprosy.

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