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Risk Factors for Leprosy in All Health Centers at The Bau-Bau City

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ABSTRACT

Introduction: Leprosy is spreading throughout the world, with most cases occurring in tropical and subtropical regions. For the last 3 (three) years until 2021 of all Regencies / Cities in Southeast Sulawesi, the Regency / City with the highest prevalence of leprosy cases is Bau-Bau City. This study aims to analyze the risk factors for leprosy in all health centers in Bau-Bau City.

Method: The type of research used in this study is quantitative research, using the Case Control Study research design. The case population in this study was 47 people. The sample of research cases was 41 people and with a ratio of 1: 1, so that the total sample amounted to 82 people. In this study, the research sampling technique used Simple Random Sampling. Analysis of the research data was carried out descriptively and inferentially using the Odd Ratio test.

Result: The results showed that education (OR=3.109) and personal hygiene (OR=4,844).

Conclusion: Education and personal hygiene are risk factors of the incidence of leprosy in all health centers in Bau-Bau city.

Introduction

Leprosy is spread worldwide, with most cases occurring in tropical and subtropical areas, but with population movements the disease can strike anywhere. The number of leprosy cases in Indonesia in 2019 was 17,439 cases (0.74/10,000 population), in 2020 there were 11,173 cases (0.49/10,000 population), and in 2021 there were reported 10,976 cases (0.45/10,000 population). In 2020, the COVID-19 pandemic caused early detection of cases in the community to be less than

optimal due to restrictions on community gathering activities.^[1]

In 2021, the recorded case detection rate (Prevalence Rate) in Southeast Sulawesi is 7.7/10,000 population. This figure has increased from 2020 which was 6.29/10,000 residents and in 2019 it was 8.8/10,000 residents. During the last 3 (three) years until 2021, of all Regencies/Cities in Southeast Sulawesi, the District/City with the highest prevalence of leprosy cases is Bau-Bau City. The discovery of leprosy cases in Bau-Bau City from 2019 to 2021 tends to increase. In 2019

it is known that there were 27 cases with a prevalence rate of 1.57/10,000 population. Continue to increase in 2020 by 35 cases with a prevalence rate of 2.19/10,000 population and in 2021 it will increase by 47 cases with a prevalence rate of 2.74/10,000 population.^[2]

Considering that the incidence of leprosy is still quite high and the impact is also large, efforts are needed to prevent it. One way that can be done is to know the risk factors that influence the incidence of leprosy. Research in Indonesia by Yuniarsari and Muharry found that the factors that influence leprosy are the level of knowledge, sanitation, type of work, and socio-economic. In addition to causative factors and hosts, environmental factors also have a major influence on the transmission of leprosy. Supportive environmental conditions such as residential density, ventilation area, and access to clean water make it easier for germs to grow and increase their virulence.^[3]

Based on the description of the background above, the authors are interested in conducting research on "Risk Factors for Leprosy in Community Health Centers in Bau-Bau City".

Methods

The type of research used in this research is quantitative research using a Case Control Study research design. The population in this study were all people who visited the public health center, totaling 77,547 visits in 2021. Calculation of the number of respondents using the Lemeshow method with a 95% confidence level resulted in 41

respondents for cases and 41 respondents for controls. In this study the research sampling technique used Simple Random Sampling. Collecting data through interviews and observation using a questionnaire. Because the research design is Case Control, the Odds Ratio (OR) is calculated.

Result

Table 1 shows that 25 respondents (61.0%) had a low-risk level of education in the case group and 16 respondents (39.0%) had a high-risk level of education. Meanwhile, there were 34 respondents (82.9%) in the control group who had a low-risk level of education and 7 respondents (17.1%) who had a high-risk level of education. Based on the results of the Odds Ratio (OR) statistical test, the value of OR = 3.109 is obtained, meaning that the education level variable with high risk has a 3.109 times greater risk of developing leprosy when compared to the low-risk education level.

Table 2 shows that there were 16 respondents (39.0%) who had good personal hygiene in the case group and 25 respondents (61.0%) who had poor personal hygiene. Meanwhile, 31 respondents (75.6%) had good personal hygiene and 10 respondents (24.4%) had poor personal hygiene. Based on the results of the Odds Ratio (OR) statistical test, the value of OR = 4.844 was obtained, meaning that personal hygiene variables with high risk had a 4.844 times greater risk of leprosy when compared to low-risk personal hygiene.

Table 1.
Risk Factors of Education Level on the Incidence of Leprosy at Community Health Centers in Bau-Bau City

Level of education	Leprosy Incident				Total		OR	95% CI
	Case		Control		n	%		
	n	%	n	%				
High Risk	16	39.0	7	17,1	23	28.0	3.109	1.113 – 8.685
Low Risk	25	61.0	34	82.9	59	72.0		
Total	41	100.0	41	100.0	82	100.0		

Table 2.
Personal Hygiene Risk Factors for the Incidence of Leprosy at Health Centers in Bau-Bau City

Personal Hygiene	Leprosy Incident				Amount		OR	95% CI
	Case		Control		n	%		
	n	%	n	%				
High Risk	25	61.0	10	24,4	35	42,7	4,844	1.874 – 12.520
Low Risk	16	39.0	31	75,6	47	57,3		
Total	41	100.0	41	100.0	82	100.0		

Discussion

Level of Education with Leprosy Incidence

The proportion of respondents who have a low level of education is greater than the proportion of respondents who have a high level of education. The level of education will affect the inability to change one's mindset in oriented towards the future, with a low level of education, people do not have access to information, knowledge and technology. So that it will affect his ability to think about switching jobs other than farming. Someone who has a low level of education is relatively difficult to accept something new, on the other hand someone who has a higher education will be easier to accept new things and tend to be more open.^[4]

Regency which found that there was no relationship between education level and the incidence of leprosy.^[5] The results of this study are in line with the research conducted by Muntasir and Snow (2018) regarding the study of factors related to the incidence of leprosy in the working area of the Bakunase Health Center, Kupang City in 2017 which stated that there was a relationship between education level and the incidence of leprosy.^[6]

The results of this study note that more leprosy sufferers have a low level of education in Bau-Bau City. According to Soekidjo (2005) said that the level of education is one of the elements that determines a person's experience and knowledge, both in science and social life, therefore it can be concluded that the low education of sufferers should be related to the

incidence of leprosy. In general, the higher a person's education, the better the level of knowledge, by providing information about ways to achieve a healthy life, how to maintain health, how to prevent disease and so on will increase people's knowledge about it.^[7]

Personal Hygiene with Leprosy

Personal hygiene is a person's efforts to maintain personal hygiene and health in order to obtain physical and psychological well-being. A person's behavior or habits in carrying out daily life are related to cleanliness (personal hygiene) which can also affect a person's health.^[8]

Based on the results of the analysis, the OR value was 4.844 (OR > 1) meaning that people who have poor personal hygiene with patients with leprosy are at risk of 4.844 times compared to people who have good personal hygiene with leprosy sufferers. In this study, the results showed that personal hygiene was a risk factor for leprosy in Bau-Bau City. Who state that there are risk factors between personal hygiene and the incidence of leprosy. From these results it can be seen that there are still many respondents who have poor personal hygiene. Many of them do not know that the habit of sharing personal tools (towels, soap, combs) can be a means of transmitting leprosy.^{[9],[10]}

In this study personal hygiene is closely related to the skin which is a vital aspect in the transmission of leprosy. Actions that need to be taken to maintain cleanliness include bathing at least 2 times a day, bathing with soap and avoiding using shared bathing tools

As it is known that leprosy can occur through prolonged and close contact through the surface of the skin follicles and sweat glands, therefore it is very necessary to maintain personal hygiene. The germs that cause leprosy are predicted to enter through the hair follicles and sweat glands attached to the surface of the skin, so that maintenance and cleanliness of the skin is very necessary to prevent transmission of the disease.^[11]Based on the research, it can be seen that hygiene behavior has a significant relationship with leprosy transmission.

Conclusion

Based on the research results, the following conclusions are obtained:

1. The level of education is a risk factor for the incidence of leprosy in health centers in Bau-Bau City.
2. *personal hygiene* is a risk factor for the incidence of leprosy in health centers in Bau-Bau City

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