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Determinants of Leprosy Incidence in West Bekasi, Indonesia: A Cross-Sectional Study

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Abstract

Background: Leprosy remains a chronic infectious disease that can lead to long-term disability when diagnosis and treatment are delayed. Caused by Mycobacterium leprae, the disease primarily affects the skin and peripheral nerves and continues to pose public health challenges in several endemic regions, including parts of Indonesia. Understanding the factors associated with leprosy incidence is essential for developing effective prevention and control strategies.
Objective: This study aimed to identify factors associated with the incidence of leprosy at the Danau Indah Cikarang Barat Community Health Center, Bekasi Regency.
Methods: A quantitative study with a cross-sectional design was conducted involving 90 respondents selected through purposive sampling. The independent variables examined included age, sex, socioeconomic status, educational level, knowledge, history of contact with leprosy patients, personal hygiene practices, environmental conditions, and access to health information media. Data were collected using structured questionnaires and analyzed using the Chi-square test with a significance level set at 0.05.
Results: The analysis revealed statistically significant associations between leprosy incidence and contact history, socioeconomic status, personal hygiene, and environmental conditions ($p < 0.05$). In contrast, age, sex, educational level, and access to information media were not significantly associated with leprosy incidence.
Conclusion: The findings indicate that leprosy incidence is strongly influenced by social, behavioral, and environmental factors. Strengthening health education, improving environmental sanitation, and enhancing early detection and treatment programs are essential to reduce leprosy transmission in endemic areas. These results may serve as valuable input for healthcare providers and policymakers in developing targeted leprosy prevention and control initiatives.

Keywords: Contact history; Environment; Leprosy; Personal hygiene; Socioeconomic factors

INTRODUCTION

Leprosy is a long-standing infectious condition caused by Mycobacterium leprae that is primarily spread through respiratory droplets released from the nose or mouth during extended and close interaction with individuals who have not received treatment. The infection mainly targets the skin, peripheral nervous system, upper airways, and ocular tissues. Without appropriate management, leprosy may result in long-term impairment and physical disability. Although effective treatment is available, late identification and insufficient therapy can worsen disease outcomes and increase the risk of permanent damage. The causative bacterium develops slowly, with an incubation period that may range from two to five years, and is capable of surviving outside the human host for several days. If disease control is inadequate, progressive nerve and tissue damage may occur, often presenting as numbness in the extremities and visible skin abnormalities. While mortality associated with leprosy is uncommon, the resulting disabilities frequently lead to stigma, social exclusion, and psychological burden for affected individuals (1,2).

Global surveillance data from 2023 indicate that 184 countries reported a total of 182,815 newly diagnosed leprosy cases, including 72,845 women and 10,322 children. During the same period, 9,729 cases of grade 2 disability were identified worldwide, with 266 cases occurring among children. The highest concentration of cases was observed in regions of Africa and Southeast Asia. Indonesia remains one of the countries with a high leprosy burden, ranking third globally. National records show an increase in reported cases from 13,487 in 2022 to 14,376 cases across 38 provinces in 2023. In West Java Province, the number of cases declined between 2019 and 2021 but rose again to 1,723 cases in 2023. Similar upward trends were noted at the district level, with Indramayu Regency reporting an increase from 161 cases in 2021 to 235 cases in 2023, while Bekasi Regency experienced a rise from 195 to 353 cases during the same timeframe.

The development of leprosy is influenced by the interaction between host susceptibility, the presence of Mycobacterium leprae, and environmental conditions. Various factors have been identified as potentially contributing to disease occurrence, including demographic characteristics, socioeconomic status, educational background, level of knowledge, history of close contact with leprosy patients, personal hygiene behaviors, and environmental sanitation. Transmission typically occurs through a prolonged chain of exposure involving close interpersonal contact (3,4).

Evidence from previous research demonstrates inconsistent findings regarding the relationship between these factors and leprosy incidence. One study conducted in Semarang involving 31 participants comprising both multibacillary and paucibacillary cases—reported that most respondents had limited understanding of leprosy. Statistical analysis using the chi-square test ($p = 0.038$) showed no meaningful association between disease occurrence and variables such as age, sex, or contact history. Conversely, research carried out at the Juntinyuat Primary Health Care Center with 60 participants identified close contact with infected individuals and inadequate personal hygiene as significant risk factors, with odds ratios of 38.5 and 3.14, respectively. These findings indicate that contact patterns and hygiene practices may play a critical role in leprosy transmission in certain settings.

Information obtained from a preliminary interview conducted on 21 November 2024 with the Head of Administration at the Danau Indah Primary Health Care Center in West Cikarang revealed that the facility has established a target to achieve leprosy elimination by the 2024–2025 period. This goal is supported by ongoing health promotion initiatives aimed at increasing community awareness of leprosy and its prevention. Additionally, treatment services for individuals diagnosed with leprosy are provided at an auxiliary health post, with regular clinical services available on a weekly basis.

Based on this context, the present study seeks to examine the distribution of factors associated with leprosy incidence at the Danau Indah Primary Health Care Center in West Cikarang, Bekasi Regency. The variables assessed include age, sex, socioeconomic condition, educational attainment, exposure to health information media, level of knowledge, personal hygiene practices, contact history, and environmental factors. The alternative hypothesis (H_1) proposes that these variables are related to leprosy incidence in the study area, whereas the null hypothesis (H_0) assumes no association between these factors and the occurrence of leprosy.

METHODS

Study Design

This study applied a quantitative research approach using a cross-sectional design. The cross-sectional method was chosen to examine the relationship between multiple risk factors and the occurrence of leprosy by collecting data at a single point in time. This design is suitable for identifying associations between variables in a health service setting without implementing interventions or follow-up measurements.

Population and Sample

The study population comprised all patients who visited the general outpatient clinic of Danau Indah Primary Health Care Center, West Cikarang, during December 2024, totaling 932 individuals.

A purposive sampling technique was employed to select participants who met the predefined inclusion and exclusion criteria. Sample size determination was conducted using the Slovin formula with a 10% margin of error, resulting in a final sample of 90 respondents.

The inclusion criteria were patients attending the general outpatient clinic who were willing to participate in the study and able to communicate effectively. The exclusion criteria included patients who were uncooperative or not present during the data collection period.

Research Instrument

Data were collected using a structured questionnaire developed to capture information related to the study variables. The questionnaire consisted of sections addressing demographic characteristics (age and sex), socioeconomic status, educational level, knowledge about leprosy, history of contact with leprosy patients, personal hygiene practices, environmental conditions, and exposure to health information media.

The questionnaire used in this study had been applied in previous research and had undergone validity and reliability testing, demonstrating acceptable accuracy and consistency for data collection purposes.

Data Collection Procedure

The research was conducted from November 2024 to February 2025 at the Danau Indah Primary Health Care Center, West Cikarang. Prior to data collection, official permission was obtained from the relevant authorities. Respondents were informed about the purpose and procedures of the study, and informed consent was secured before participation.

Primary data were gathered through direct interviews and self-administered questionnaires, depending on the respondents' ability to complete the instrument independently. Secondary data were obtained from relevant scientific literature and official health reports to support the research context.

Data Analysis

Collected data were checked for completeness and accuracy before analysis. Descriptive statistics were used to summarize respondent characteristics and the distribution of study variables in the form of frequencies and percentages. Prior to inferential analysis, data normality was assessed using skewness and kurtosis values.

Inferential analysis was performed using the Chi-square test to examine the association between independent variables and leprosy incidence. A significance level of 0.05 was applied to determine statistical significance.

Ethical Considerations

This study was conducted in accordance with ethical principles for research involving human participants. Ethical approval was obtained from the appropriate research ethics committee before the study commenced. Participation was entirely voluntary, and respondents had the right to withdraw at any time without consequences. Confidentiality and anonymity were maintained by ensuring that personal identifiers were not included in the data analysis or reporting, and all information collected was used solely for research purposes.

RESULTS

A total of 90 respondents who met the inclusion criteria were included in the analysis.

Univariate Analysis

Univariate analysis was conducted to describe respondents' characteristics, independent variables, and the occurrence of leprosy. The distribution of variables is presented in Table 1.

The majority of respondents were under 40 years of age (53.3%) and female (52.2%). Most participants had a low economic status (74.4%)

but a higher educational level (71.1%). Limited access to information media was reported by 73.3% of respondents, and 65.6% demonstrated a low level of knowledge regarding leprosy. Although most respondents reported good personal hygiene (68.9%) and favorable environmental conditions (81.1%), 27.8% were diagnosed with leprosy.

Bivariate Analysis

Bivariate analysis was performed to determine factors associated with leprosy occurrence using Chi-square tests, odds ratios (OR), and p-values. The results are shown in Table 2.

The bivariate analysis revealed that educational level, economic status, access to information media, knowledge level, personal hygiene, contact history, and environmental conditions were significantly associated with leprosy occurrence ($p < 0.05$). Respondents with lower education, lower economic status, limited access to information, poor knowledge, inadequate personal hygiene, a history of risky contact, and unfavorable environmental conditions had a higher likelihood of developing leprosy.

Table 1. Univariate Distribution of Respondent Characteristics (n = 90)

Variable	Category	n	%
Age (years)	< 40	48	53.3
	≥ 40	42	46.7
Sex	Male	43	47.8
	Female	47	52.2
Economic status	Low	67	74.4
	High	23	25.6
Educational level	Low	26	28.9
	High	64	71.1
Information media access	Low	66	73.3
	High	24	26.7
Knowledge level	Low	59	65.6
	High	31	34.4
Personal hygiene	Poor	28	31.1
	Good	62	68.9
Contact history	At risk	8	8.9
	Not at risk	82	91.1
Environmental condition	Poor	17	18.9
	Good	73	81.1
Leprosy occurrence	Leprosy	25	27.8
	No leprosy	65	72.2

Table 2. Factors Associated with Leprosy Occurrence (n = 90)

Variable	Category	Leprosy n (%)	No Leprosy n (%)	Total	*p-value*	OR
Age	< 40	11 (22.9)	37 (77.1)	48	0.387	0.595
	≥ 40	14 (33.3)	28 (66.7)	42		
Sex	Male	12 (27.9)	31 (72.1)	43	0.979	1.012
	Female	13 (27.7)	34 (72.3)	47		
Education	Low	12 (46.2)	14 (53.8)	26	0.026*	3.363
	High	13 (20.3)	51 (79.7)	64		
Economic status	Low	23 (34.3)	44 (65.7)	67	0.036*	5.489
	High	2 (8.7)	21 (91.3)	23		
Information media	Low	23 (34.8)	43 (65.2)	66	0.027*	5.884
	High	2 (8.3)	22 (91.7)	24		
Knowledge	Low	22 (37.3)	37 (62.7)	59	0.011*	5.550
	High	3 (9.7)	28 (90.3)	31		

Personal hygiene	Poor	13 (46.4)	15 (53.6)	28	0.016*	3.611
	Good	12 (19.4)	50 (80.6)	62		
Contact history	At risk	6 (75.0)	2 (25.0)	8	0.005*	9.947
	Not at risk	19 (23.2)	63 (76.8)	82		
Environment	Poor	9 (52.9)	8 (47.1)	17	0.016*	4.008
	Good	16 (21.9)	57 (78.1)	73		

*Statistically significant ($p < 0.05$)

DISCUSSION

Univariate Analysis of Age

The univariate analysis showed that leprosy cases at Danau Indah Primary Health Care Center were slightly more common among individuals younger than 40 years (53.3%) than among those aged 40 years and older (46.7%). However, the difference between age groups was small, indicating that leprosy affects adults across a wide age range. This suggests that age alone is not a determining factor, as other conditions such as immunity, environmental exposure, and personal hygiene may also influence disease occurrence. These findings highlight that leprosy remains a health concern among productive-age populations and requires prevention efforts targeting all age groups. Regarding sex, the distribution of leprosy cases was almost equal between males (47.8%) and females (52.2%). This result indicates that sex was not a major factor associated with leprosy in this study population, and both men and women appear to have a similar risk of developing the disease.

The findings suggest that the risk of leprosy infection may be more strongly shaped by non-biological determinants, such as environmental exposure, daily activities, socioeconomic conditions, access to health services, and personal hygiene practices. While females may possess certain biological advantages in immune response, these factors alone do not appear sufficient to significantly alter leprosy risk. Therefore, leprosy transmission in this setting is likely driven by complex interactions between social, environmental, and behavioral factors rather than sex-based biological differences alone (5).

In terms of educational level, most respondents had a higher level of education, accounting for 71.1%, while 28.9% had a lower educational background. This distribution suggests that individuals with higher education are more likely to possess better understanding of health-related issues. Education is known to influence awareness of personal hygiene and disease prevention, including measures to reduce the risk of leprosy. People with higher educational attainment generally have greater access to health information and are better able to understand messages related to disease transmission and prevention. In contrast, individuals with lower educational levels may have limited health literacy, which can affect their ability to adopt effective preventive behaviors. Reduced access to accurate health information may increase vulnerability to infection due to insufficient knowledge of preventive practices. Therefore, educational level may indirectly influence the risk of leprosy by shaping knowledge, attitudes, and health-related behaviors (6,7).

Economic status plays an important role in leprosy occurrence through its influence on access to health care, sanitation, and personal hygiene. In this study, most respondents were classified as having a low economic status (74.4%), while only a smaller proportion had a higher economic status (25.6%). This finding indicates that economic constraints may increase vulnerability to leprosy. Limited financial resources can reduce access to preventive health services and adequate hygiene facilities, thereby elevating disease risk. These results highlight the need for targeted support and inclusive health programs for economically disadvantaged populations (8).

Access to health information is essential for increasing awareness and promoting preventive behaviors. In this study, the majority of respondents reported limited access to health information (73.3%), while only 26.7% had good access. This suggests that insufficient exposure to health information may limit understanding of disease prevention and health maintenance. Restricted access may reduce awareness and healthy practices, thereby increasing the risk of leprosy. Strengthening the dissemination of health information is therefore important to support effective disease prevention (9).

Knowledge is an important factor in influencing health-related attitudes and preventive behaviors. In this study, most respondents had a

low level of knowledge about leprosy (65.6%), while only a smaller proportion demonstrated higher knowledge (34.4%). This finding indicates limited understanding of leprosy among the study population. Low knowledge levels may be influenced by educational background, limited access to information, and lack of prior exposure to health education. Insufficient knowledge can reduce awareness of prevention strategies and delay early treatment, which may increase the risk of leprosy (10).

Personal hygiene includes daily practices that help maintain cleanliness and prevent disease transmission, including leprosy. In this study, most respondents showed good personal hygiene (68.9%), while a smaller proportion had poor hygiene (31.1%). Inadequate hygiene may increase the risk of leprosy transmission, particularly when combined with limited awareness and access to hygiene facilities. These findings indicate the importance of strengthening hygiene education to support effective disease prevention (11).

Close contact with individuals affected by leprosy, especially those with the multibacillary type, increases the risk of transmission. In this study, most respondents were not exposed to risky contact (91.1%), while only a small proportion reported a history of close contact (8.9%). Although exposure was relatively low, individuals with contact history still require careful monitoring, as they remain vulnerable to infection. Strengthening routine screening and contact tracing is therefore important to prevent leprosy transmission (12).

Environmental conditions related to living spaces and daily activities can influence the risk of disease transmission. In this study, most respondents lived in good environmental conditions (81.1%), while a smaller proportion resided in less favorable environments (18.9%). This finding suggests that environmental factors were not the main contributors to leprosy occurrence in this setting. However, continuous improvement in sanitation and access to health services remains important to support effective leprosy prevention and control (13).

Age has been considered a factor in the risk of leprosy reactions, as individuals diagnosed after the age of 15 are thought to be more susceptible than those diagnosed earlier. However, previous studies have reported no significant association between age and leprosy occurrence. One study showed a bivariate analysis result with a p-value of 1.00 and an odds ratio (OR) of 0.47, indicating no meaningful relationship between age and leprosy incidence, while another study reported similar findings with a p-value of 1.00 and an OR of 1.53 (14) Based on the assumption of this study, age is not the main determinant of leprosy transmission; instead, the duration and intensity of contact with infected individuals play a more important role. Nevertheless, earlier research has noted that leprosy cases are more frequently identified in older age groups than in younger individuals. This pattern was also observed in the present study conducted at Danau Indah Primary Health Care Center, where most leprosy cases occurred among respondents of more advanced age (15).

Sex is a biological factor that distinguishes males and females and may influence disease patterns. In leprosy, infection can occur in both sexes, although some studies have reported a higher prevalence among males. However, research findings on this association remain inconsistent. Several studies have shown no significant relationship between sex and leprosy occurrence, as indicated by non-significant chi-square results and odds ratios close to one. These findings suggest that sex alone is not a determining factor in leprosy incidence. These findings suggest that sex may not be a decisive factor in leprosy transmission (16). Nevertheless, epidemiological observations have frequently shown that leprosy cases are more common among males (17), which may be related to differences in occupational exposure, social activities, health-seeking behavior, and hygiene practices rather than biological factors alone. This pattern was also observed in the present study conducted at Danau Indah Primary Health Care Center, where male patients accounted for 13 cases (27.9%) of leprosy (18).

Educational level influences knowledge and quality of life, including awareness and health-related behaviors. Limited access to health workers and health information, particularly in underserved areas, may reduce the effectiveness of disease prevention efforts. Previous studies have reported inconsistent results regarding the association between educational level and leprosy occurrence (19–21). Previous studies have shown differing results regarding the relationship between education and leprosy. One study found no significant association, with a chi-square p-value of 1.000 and an odds ratio of

1.000. In contrast, a study by Silaban reported a significant relationship, with a p-value of 0.001 and an odds ratio of 0.412, indicating a higher risk of leprosy among individuals with lower educational levels. In line with these findings, the present study at Danau Indah Primary Health Care Center, West Cikarang, also identified a significant association between educational level and leprosy occurrence. This suggests that education may affect leprosy risk by influencing knowledge, health-seeking behavior, and preventive practices (22).

Economic status encompasses financial conditions, income level, and access to resources that influence individual well-being. Individuals with low economic status are generally at a higher risk of developing leprosy compared with those in better economic conditions (23). Previous studies have consistently reported a significant association between economic factors and leprosy occurrence. Another study reported a significant association between economic status and multibacillary leprosy, with a p-value of 0.019 and an odds ratio (OR) of 5.200, indicating a substantially higher risk among individuals with lower economic status (24). One study found a significant relationship between economic status and the risk of disability among leprosy patients, with chi-square analysis showing a p-value of 0.000. These findings are consistent with the results of the present study conducted at Danau Indah Primary Health Care Center, West Cikarang, Bekasi Regency, which also demonstrated a significant relationship between economic status and leprosy occurrence. This suggests that economic limitations may increase vulnerability to leprosy through reduced access to adequate nutrition, health services, and living conditions (25)

Health information media are important channels for delivering health knowledge to the community. Information provided through health services, such as counseling and educational materials, can improve awareness, influence attitudes, and support preventive behaviors related to leprosy. Previous studies have shown a significant relationship between access to health information and leprosy occurrence, indicating that limited exposure to health information is associated with weaker prevention practices (26,27) Consistent with these findings, the present study conducted at Danau Indah Primary Health Care Center found a significant relationship between access to health information media and leprosy incidence, suggesting that insufficient information dissemination may hinder effective disease prevention (28).

Knowledge is a key determinant in shaping individuals' perceptions, attitudes, and health-related actions. Adequate knowledge enables individuals to make informed decisions, particularly regarding disease prevention and early treatment. Prior studies have reported significant associations between knowledge levels and leprosy occurrence in both urban and rural populations(29). The findings of the present study also demonstrated a significant relationship between knowledge and leprosy incidence, indicating that limited understanding of leprosy may reduce awareness of preventive measures and delay health-seeking behavior (30).

Personal hygiene is an essential preventive measure in reducing the transmission of leprosy caused by Mycobacterium leprae. Maintaining good hygiene practices contributes to overall health and helps minimize the spread of infectious diseases. (31–33). Previous studies have consistently shown that poor personal hygiene is significantly associated with leprosy occurrence. (34) In line with these findings, the present study identified a significant relationship between personal hygiene and leprosy incidence, emphasizing the importance of regular hygiene practices and continuous health education (35).

A history of close contact with individuals affected by leprosy is a well-established risk factor for disease transmission. The risk increases with the frequency and duration of contact, particularly when the infected individual has not received adequate treatment. Several previous studies have reported strong associations between contact history and leprosy occurrence (36). Similarly, this study found a significant relationship between contact history and leprosy incidence, reinforcing the importance of early detection, contact tracing, and routine screening to control transmission (37).

Environmental factors also play an important role in leprosy transmission. Within the epidemiological triangle, the interaction between host, agent, and environment determines disease occurrence. Poor environmental conditions, such as inadequate sanitation and overcrowding, may facilitate the spread of Mycobacterium leprae.

Previous research has demonstrated significant associations between environmental conditions and leprosy incidence (38). The findings of the present study are consistent with earlier evidence, showing a significant relationship between environmental factors and leprosy occurrence. This highlights the need for continuous improvements in environmental sanitation and access to health services as part of comprehensive leprosy control strategies (39).

CONCLUSION

This study concludes that leprosy occurrence at the Danau Indah Primary Health Care Center is influenced by a combination of social, behavioral, and environmental factors. Educational level, economic status, access to health information media, level of knowledge, personal hygiene, contact history, and environmental conditions were significantly associated with leprosy occurrence. Individuals with lower education, limited access to information, poor knowledge, inadequate hygiene practices, risky contact history, and unfavorable living environments were more likely to develop leprosy. In contrast, age and sex were not significantly associated with leprosy incidence, indicating that the disease can affect individuals across different age groups and both sexes. Overall, these findings highlight the importance of strengthening health education, improving access to reliable health information, promoting good hygiene practices, and enhancing early detection and contact tracing to support effective leprosy prevention and control efforts.

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Author Contributions
NA contributed to the study concept, research design, data collection, data analysis, and manuscript preparation. H contributed to data interpretation, statistical analysis, and manuscript revision. RPS contributed to methodological guidance, supervision, and critical review of the manuscript. CNAB contributed to research supervision, validation of findings, and final approval of the manuscript. All authors reviewed and approved the final version of the manuscript.

Conflict of Interest
The authors declare that there are no conflicts of interest related to this study.

Data Availability
The datasets generated and analyzed during the current study are available from the corresponding author upon reasonable request, in accordance with ethical and confidentiality considerations.

REFERENCES

1. Organization WH. Guidelines for the diagnosis, treatment and prevention of leprosy. World Health Organization. Regional Office for South-East Asia; 2018.
2. Huang CY, Su SB, Chen KT. An update of the diagnosis, treatment, and prevention of leprosy: A narrative review. Medicine. 2024;103(34):e39006.
3. Le PH, Philippeaux S, Mccollins T, Besong C, Kellar A, Klapper VG, et al. Pathogenesis, clinical considerations, and treatments: a narrative review on leprosy. Cureus. 2023;15(12).
4. Chen KH, Lin CY, Su SB, Chen KT. Leprosy: a review of epidemiology, clinical diagnosis, and management. J Trop Med. 2022;2022(1):8652062.
5. Ilyas AM, Abdi DA, Safei I, Royani I. ANALISIS FAKTOR RISIKO USIA, JENIS KELAMINDAN INDEKS MASSA TUBUH TERHADAP KEJADIAN KUSTA DIRUMAH SAKIT TADJUDDIN CHALID MAKASSAR TAHUN 2023. 2024;5:12353–8.
6. Nuraeni T. Faktor Risiko Kejadian Kusta pada Anak di Kota Surabaya Tahun 2018. Jurnal Kesehatan Manarang. 2018;4(1):40.
7. Sartika M, Suryana I, Azam R, Jumaiyah W. The Implementation of Hands and Feet Exercise Towards Pain Management Among DM Type II Patients with Peripheral Neuropathy in Indonesia. Jurnal Keperawatan Komprehensif (Comprehensive Nursing Journal). 2023;9(3).

8. Agusni I. Hubungan antara Tingkat Penghasilan dengan Kejadian Kusta Multibasiler. Tasalina Yohana Parameswari Gustam , Indropo Agusni , Djohar Nuswantoro. 2023;1(1):71–8.
9. Prasanti D 2017. Penggunaan Media Komunikasi Bagi Remaja Perempuan dalam Pencarian Informasi Kesehatan The Portrait of Media Health Information For Urban Community in The Digital Era. Iptek-Kom. 2019;19(2):149–62.
10. Hidayah EN, Ginandjar P, Martini M, Udiyono A. Hubungan Tingkat Pengetahuan, Sikap dan Tingkat Dukungan Keluarga dengan Praktik Perawatan Diri Pada Penderita Kusta di Kota Semarang. Jurnal Ilmiah Mahasiswa. 2020;10(1):10–4.
11. Eso A, Beatrice Patandianan Y, Kardin L, Martisa E. Analisis Faktor Resiko Personal Hygiene Dan Riwayat Kontak Dengan Kejadian Kusta Di Kabupaten Kolaka. ANALISIS FAKTOR RESIKO PERSONAL HYGIENE DAN RIWAYAT KONTAK DENGAN KEJADIAN KUSTA DI KABUPATEN KOLAKA. 2022;11(2):1529–34.
12. Susanti KN, Azam M. Hubungan Status Vaksinasi Bcg, Riwayat Kontak Dan Personal Hygiene Dengan Kusta Di Kota Pekalongan. Unnes Journal of Public Health. 2016;5(2):130.
13. Wati F, Suyitno S, Hayati MN. Pencegahan Penyakit Kusta di Lingkungan Hutan Tropis Lembab Kalimantan Melalui Pemodelan Geographically Weighted Poisson Regression. Eksponensial. 2021;12(1):27.
14. Paskawati N, Borlyin DE. FAKTOR RISIKO KEJADIAN PENYAKIT KUSTA DI PUSKESMAS KOTARAJA Risk Factors for The Event of Leprosy in Kotaraja Health Center. FAKTOR RISIKO KEJADIAN PENYAKIT KUSTA DI PUSKESMAS KOTARAJA. 2022;1(1):1–10.
15. Muntasir LPR. Studi Faktor-Faktor Yang Berhubungan Dengan Kejadian Penyakit Kusta Pada Wilayah Kerja Puskesmas Bakunase Kota Kupang Tahun 2017 Description of Factors Connected with Loss Events in the Working Region of Bakunase Community Health Center Kupang City in 201. Studi Faktor-Faktor Yang Berhubungan Dengan Kejadian Penyakit KustaPada Wilayah Kerja Puskesmas BakunaseKota Kupang. 2018;16:197–213.
16. Salsabila I, Khairunnisa C, Mellaratna WP. Gambaran Karakteristik Sosiodemografi Penderita Kusta di Kabupaten Aceh Utara Tahun 2017-2021. GAMBARAN KARAKTERISTIK SOSIODEMOGRAFI PENDERITA KUSTA DI KABUPATEN ACEH UTARA. 2023;3(11):3689–700.
17. Muharry A. Jurnal Kesehatan Masyarakat Andalas. FAKTOR RISIKO KEJADIAN KUSTA. 2021;11(1):87–95.
18. Rika Widianita D. HUBUNGAN STIGMA DIRI DENGAN KECACATAN PASIEN KUSTA: STUDI KASUS DI RSUD DR. H. ABDUL MOELOEK DAN RSUD DR. A. DADI TJOKRODIPO PROVINSI LAMPUNG. AT-TAWASSUTH: Jurnal Ekonomi Islam. 2023;VIII(I):1–19.
19. Setyorini AD, Isnaeni E. Peningkatan Kualitas Hidup Penderita Kusta Dengan Pendidikan Kesehatan. Peningkatan Kualitas Hidup Penderita Kusta Dengan Pendidikan Kesehatan. 2020;1(1):1–6.
20. Rahayu P, Sartika M, Neningsih E. Pemberian Guide Imagery Sebagai Tatalaksana Responpsikologis Pada Remaja Dengan Resiko Dm Di Sman 3 Tambun Selatan Tahun 2023. PROFICIO: Jurnal Pengabdian Kepada Masyarakat. 2023;5(1):1–6.
21. Sartika, Mila. A. Faktor-faktor Yang Berhubungan dengan Upaya Pencegahan Penyebaran Covid-19 Pada Penderita Hipertensi. IPM2KPe. 2022;4(2):1–11.
22. Agustian I, Saputra HE, Imanda A. Pengaruh Sistem Informasi Manajamen Terhadap Peningkatan Kualitas Pelayanan Di Pt. Jasaraharja Putra Cabang Bengkulu. Profesional: Jurnal Komunikasi dan Administrasi Publik. 2019;6(1):42–60.
23. Agusni I. Hubungan antara Tingkat Penghasilan dengan Kejadian Kusta Multibasiler. Tasalina Yohana Parameswari Gustam , Indropo Agusni , Djohar Nuswantoro. 2023;1(1):71–8.
24. Samad Hi Husen, Ramli Muhammad. Faktor-Faktor Yang Berhubungan Dengankejadiankecacatan Pada Pasien Kusta Di Wilayahkerjapuskesmas Kalumata Kota Ternate Selatan. FAKTOR-FAKTOR YANG BERHUBUNGAN DENGANKEJADIAN KEPADA PASIEN KUSTA DI WILAYAHKERJAPUSKESMAS KALUMATA KOTA TERNATE SELATAN. 2019;6(2):41–7.

25. Tarigan R, Handiyani H. Manfaat Implementasi Dokumentasi Asuhan Keperawatan Berbasis Komputerisasi Dalam Meningkatkan Mutu Asuhan Keperawatan. 2019;08(2):110–6.
26. Hannan M, Huzaimah N. Peran Media Informasi, Efikasi Diri, dan Perilaku Keluarga Dalam Upaya Mencegah Penularan Kusta. Peran Media Informasi, Efikasi Diri, dan Perilaku Keluarga Dalam Upaya Mencegah Penularan Kusta. 2023;4(1):27–35.
27. Mardianto M sartika. PENGARUH EDUKASI TERHADAP TINGKAT PENGETAHUAN PASIEN TERKAIT KELENJAR GETAH BENING (KGB) DI RS. SENTRA MEDIKA CIKARANG TAHUN 2022. 2022;4(11):177–84.
28. Maulana A, Fahdhienie F, Ariscasari P. Analisis Faktor Yang Berhubungan Dengan Perilaku Masyarakat Dalam Upaya Mencegah Penularan Penyakit Kusta Di Wilayah Kerja Puskesmas Ingin Jaya Kecamatan Aceh Besar Tahun 2023. Analisis Faktor Yang Berhubungan Dengan Perilaku Masyarakat Dalam Upaya Mencegah Penularan Penyakit Kusta Di Wilayah Kerja Puskesmas Ingin Jaya Kecamatan Aceh Besar Tahun 2023. 2024;10(1):65.
29. Dianita. HIGEIA JOURNAL OF PUBLIC HEALTH. Perbandingan Determinan Kejadian Kusta pada Masyarakat Daerah Perkotaan dan Pedesaan. 2020;4(Special 3):692–704.
30. Saleh AA, Mutmainna A, Sabil FA. Analisis Faktor Risiko Yang Berhubungan Dengan Kejadian Kusta di Puskesmas Tamalanrea Jaya Kota Makassar. ANALISIS FAKTOR RISIKO YANG BERHUBUNGAN DENGAN KEJADIAN KUSTA DI PUSKESMAS TAMALANREA JAYA KOTA MAKASSAR. 2024;4(1):44–50.
31. Marsanti AS, Ardiani H. Hubungan Antara Personal Hygiene Dengan Kejadian Kusta Di Wilayah Kerja Puskesmas Wonoasri Kabupaten Madiun. Jurnal Keperawatan dan Kesehatan Masyarakat Cendekia Utama. 2020;9(2):102.
32. Sartika M. Upaya pencegahan penyebaranan Covid- 19 melibatkan peran kader/rt/rw di kabupaten bekasi tahun 2020. Lentera Negeri. 2021;2(2):33–41.
33. Sartika, Mila., Maria Emilia Putri Parera. at all. Keperawatan Infeksi, Pencegahan dan Pengendalian. 1st ed. Nadeak IM, editor. Medan: Yayasan Kita Menulis; 2025. 290 p.
34. Pratama BNM, Shelvi Indah Ayu Puspita. Hubungan Personal Hygiene Dengan Kejadian Kusta: Studi Kasus Kontrol. HUBUNGAN PERSONAL HYGIENE DENGAN KEJADIAN KUSTA: STUDI KASUS KONTROL. 2024;14(3):75–82.
35. Eso A, Beatrice Patandianan Y, Kardin L, Martisa E. Analisis Faktor Resiko Personal Hygiene Dan Riwayat Kontak Dengan Kejadian Kusta Di Kabupaten Kolaka. ANALISIS FAKTOR RESIKO PERSONAL HYGIENE DAN RIWAYAT KONTAK DENGAN KEJADIAN KUSTA DI KABUPATEN KOLAKA. 2022;11(2):1529–34.
36. Muntasir LPR. Studi Faktor-Faktor Yang Berhubungan Dengan Kejadian Penyakit Kusta Pada Wilayah Kerja Puskesmas Bakunase Kota Kupang Tahun 2017 Description of Factors Connected with Loss Events in the Working Region of Bakunase Community Health Center Kupang City in 201. Studi Faktor-Faktor Yang Berhubungan Dengan Kejadian Penyakit KustaPada Wilayah Kerja Puskesmas BakunaseKota Kupang. 2018;16:197–213.
37. Eti Kurniawati, Parman, Sugiarto, Ratna Sari Dewi, Indri Indah Lestari. Faktor Risiko Kejadian Kusta Di Kecamatan Mendahara Kabupaten Tanjung Jabung Timur. FAKTOR RISIKO KEJADIAN KUSTA DI KECAMATAN MENDAHARA KABUPATENTANJUNG JABUNG TIMUR. 2020;3(2):279–87.
38. Siswanti, Yuni W. Faktor Risiko Lingkungan Kejadian Kusta. Faktor Risiko Lingkungan Kejadian Kusta Di Puskesmas Bnadarharjo. 2018;2(3):352–62.
39. Patmawati P, Setiani NO. Faktor Risiko Lingkungan dan Perilaku Penderita Kusta di Kabupaten Polewali Mandar. Faktor Risiko Lingkungan dan Perilaku Penderita Kusta di Kabupaten Polewali Mandar. 2019;43(3):207–12.

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