

Knowledge and Attitude Regarding Leprosy among Adults in Selected Community of Pokhara

Garima Baral¹, Kalpana Shrestha²

¹ Manipal College of Medical Sciences, Pokhara, Nepal,

² Birgunj Nursing Campus, Institute of Medicine, Tribhuvan University, Parsa, Nepal

Correspondence: Garima Baral, Manipal College of Medical Sciences, Pokhara, Nepal

Email: garimabaral87@gmail.com

ABSTRACT

Background: Leprosy is an ancient bacterial disease, despite being curable, continues to be a significant health problem in many parts of the world. It has been associated with extreme prejudice, fear, and stigma throughout its history. Although significant progress has been made in reducing the national burden, leprosy services still remain as major challenges.

Methods: Descriptive cross-sectional study was conducted among 209 adults aged 18 years and above in Nayagaun 15, Pokhara, where Green Pastures Hospital, the major referral center for leprosy treatment and rehabilitation in western Nepal, is located. Data were collected through face to face interview using structured questionnaire employing a non-probability convenience sampling technique. Data were analyzed using descriptive (mean, frequency and median) and inferential statistics (Chi square and Correlation coefficient) with SPSS version 16, considering $p < 0.05$ as statistically significant.

Results: The study found that 55.5% had good knowledge and 85.6% demonstrated a favorable attitude toward leprosy. Level of knowledge was significantly associated with age, occupation and family history of leprosy, while attitude showed significant association with age, education and family history. A strong positive correlation was observed between knowledge and attitude ($r = 0.746$, $p < 0.01$).

Conclusion: Study concluded that half of the respondents had poor knowledge and few had an unfavorable attitude toward leprosy. This finding highlights the importance of community-based awareness program to enhance knowledge and foster positive attitudes to reduced stigma related to leprosy in the community.

Keywords: Adults, attitude, community, knowledge, leprosy

INTRODUCTION

Leprosy is a chronic, progressive bacterial infection caused by *Mycobacterium leprae* that primarily affects the nerves of the extremities, skin, lining of the nose, and the upper respiratory tract. Common symptoms include skin lesions, muscle weakness and numbness of hands, arms, feet and. If left untreated, the disease may lead to severe deformities, permanent disability, and social consequences.¹

Globally, leprosy remains an important public health and social concern, with ongoing transmission reported

in at least 122 countries. According to the World Health Organization (WHO), the highest burden of newly detected leprosy cases in 2020 was reported from India, Brazil, Indonesia, the Democratic Republic of the Congo, and Bangladesh, together accounting for 67.3% of global new cases.² Although Nepal achieved the national target of leprosy elimination in 2010, a total of 2,173 new cases were detected during the fiscal year 2020/2021, indicating that transmission persists and that sustaining elimination and further reducing disease burden remain significant challenges.^{3,4}

Leprosy, despite being curable, it continues to be associated with deep-rooted stigma, fear, and discrimination across societies and cultures. These social perceptions are often influenced by inadequate knowledge and unfavorable attitudes within communities.⁵ Studies from India reported that only 54.7% of respondents had adequate knowledge and merely 23.4% demonstrated a favorable attitude toward leprosy.⁶ Similarly, evidence from Nepal indicates suboptimal community awareness, with only 31% having good knowledge in Mithila,⁷ followed by 42.1% with good knowledge and 40.9% with favorable attitude towards leprosy in Parsa and Dhanusha.⁸

Limited studies have been published on this aspect especially from western part of Nepal, particularly in settings where community members have regular contact with individuals affected by the disease. Understanding these factors is essential, as community perceptions play a critical role in early case detection, treatment adherence, and social integration of affected individuals. Therefore, this study aims to assess the knowledge and attitude toward leprosy among community people.

METHODS

Descriptive, cross-sectional quantitative research design was used for the study. The study was conducted in Nayagaun-15, Pokhara, where Green Pasture Hospital is located. It is the major referral center for leprosy treatment and rehabilitation in western Nepal, where community members have regular contact with individuals affected by the disease. Data was collected only after taking formal approval from Institutional Review Committee (IRC) of Manipal Teaching Hospital (MTH) and ward office of Nayagaun-15, Pokhara. Objectives were explained and data collection was done through face to face interview only after taking consent from each participants. Confidentiality was maintained by using codes instead of names and not disclosing anyone's response to others. The interview was conducted in a private area where others could not hear by taking informed consent. The knowledge questionnaire constructed by the researcher herself was used to assess knowledge which included 20 multiple choice questions and two multiple response questions. Each correct response was given one and

wrong response was given zero. Total score was 25. The level of knowledge was categorized as having good knowledge and poor knowledge. The categorization of the score was done based on 75% cut off score.⁸

Five-point Likert scale was used to assess attitude as Strongly Agree, Agree, Neutral, Disagree and Strongly disagree. It consisted of 18 items. Out of them, 10 were positive statements and eight were negative statements. The maximum score was 90 and minimum score was 18. The categorization of the score was done as favorable and unfavorable attitude according to 50% cut off score.⁸ Pretesting was done in 10% (21) of total sample size in Phulbari-11, Pokhara among community people of age 18 years and above to maintain reliability and no any modifications were made.

The validity of this research tool was maintained by developing the instrument based on literature review, peer discussion, seeking the opinion from research advisor and subject expert. The semi structured instrument was given to three subject experts to check for its content validity. The experts were requested to judge the items in terms of agree and disagree related to relevance, clarity, accuracy, appropriateness and usefulness to the present study. As per the suggestion and recommendation of the experts, necessary modification was made in the tool. Since the tool was developed in English language, language experts were consulted to translate the instrument into Nepali language and also back translation was done to retain same meaning.

In this study, the study population was all the community people of age 18 years and above residing in Pokhara, ward no 15. The inclusion criteria were community people who were willing to participate and available at the time of data collection whereas those with communication difficulty, diagnosed mental illness and health professionals were excluded from the study. The sample size was calculated as 190 using Cochran's formula with prevalence of good knowledge of 42%,⁷ Z=95% and margin of error 7%. Non-probability convenience sampling technique was used and data were analyzed using SPSS version 16, considering $p \leq 0.05$ as statistically significant. Mean, percentage, frequency, and standard deviation were used as descriptive statistics. Chi-square test was used to determine the association

between the knowledge level, attitude level and selected demographic variables. Correlation coefficient was used to determine correlation between knowledge and attitude.

RESULTS

This study found that 39.7% were of age group 60 years and above. More than half of the respondents (56%) were female. About 67% of the respondents were married, 72.2% had monthly family income of less than NRs. 30,000, 33% of the respondents were able to read and write and 28.2% of respondents were housewife (Table 1).

Table 1: Socio- demographic characteristics of the participants n= 209

Variables	Number	Percent
Age (in years)		
18- 39	44	21.1
40-59	82	39.2
60 and above	83	39.7
Mean± SD	54.52 ±17.18	
Gender		
Male	92	44.0
Female	117	56.0
Marital status		
Married	140	67.0
Widowed	47	22.5
Unmarried	20	9.6
Divorced	2	1.0
Monthly family income (NRs)		
Less than 30000	151	72.2
More than 30000	58	27.8
Education		
Illiterate	24	11.5
Can read and write	69	33.0
Basic level	43	20.6
Secondary	26	12.4
Bachelor	37	17.7
Masters	10	4.8
Occupation		
Housewife	59	28.2
Agriculture	43	20.6
Business	38	18.2
Daily wages	26	12.4
Service	23	11.0
Students	17	8.1
Abroad	3	1.4

The present study found that 12% of the respondents had past history of leprosy. Similarly 22.5% of the respondents had family history of leprosy. More than three fourth of the respondents (79.4%) are known with leprosy patients (Table 2).

Table 2: Leprosy related characteristics of respondents n=209

Variables	Number	Percent
Past history of leprosy		
Yes	25	12.0
No	184	88.0
Family history of leprosy		
Yes	47	22.5
No	162	77.5
Known someone with leprosy		
Yes	166	79.4
No	43	20.6

The present study found that more than half (55.5%) of the respondents had good knowledge regarding leprosy. The maximum score was 24 and minimum score was 11, range was 15, mean was 18.9 and standard deviation was 3.4. Further the study resulted that more than three fourth (85.6%) of the respondents had favorable attitude regarding leprosy. The maximum attitude score was 83 and minimum score was 33, mean was 60.41 and standard deviation was 13. (Table 3)

Table 3: Knowledge and attitude of respondents regarding leprosy n=209

Knowledge and attitude	Percent
Level of Knowledge	
Good (≥19-25)	55.5
Poor (0-18)	44.5
Mean knowledge score ± SD	18.9±3.4.
Level of Attitude	
Favorable (≥45)	85.6
Unfavorable (<45)	14.4
Mean attitude score ± SD	60.4±13.0

This study found a significant association between the level of knowledge with age, occupation and family history of leprosy at the level of significance ($p \leq 0.05$) (Table 4).

Table 4: Association between level of knowledge and selected demographic variables n=209

Variables	Level of knowledge		p-value
	Poor N (%)	Good N(%)	
Age (years)			
20-59	45(35.9)	81(64.3)	0.02*
≥60	48(57.8)	35(42.2)	
Education			
No formal education	47(50.5)	46(49.5)	0.11
Formal education	46(39.7)	70(60.3)	
Occupation			
Service	4(17.4)	19(82.6)	0.01*
Agriculture	23(53.5)	20(46.5)	
Business	15(39.5)	23(60.5)	
Daily wages	17(65.4)	9(34.6)	
Housewife	28(47.5)	31(52.5)	
Others#	6(30.0)	14(70.0)	
Family history of leprosy			
Yes	6(12.8)	41(87.2)	0.00*
No	87(53.7)	75(46.3)	

* p-value Significant, # = students, abroad

Further level of attitude was found to be significantly associated with age, education and family history of leprosy (Table 5).

Table 5: Association between level of attitude and selected demographic variable n=209

Variables	Level of attitude		p-value
	Unfavorable N (%)	Favorable N (%)	
Age (years)			
20- 59	8(6.3)	118(93.7)	0.02*
60 and above	22(26.5)	61(73.5)	
Gender			
Male	9(9.8)	83(90.2)	0.09
Female	21(17.9)	96(82.1)	
Marital status			
Married	17(12.1)	123(87.9)	0.194
Single	13(18.8)	56(81.2)	
Education			
No formal education	28(30.1)	65(69.9)	0.00*
Formal education	2(1.7)	114(98.3)	
Family history of leprosy			
Yes	2(4.3%)	45(95.7)	0.025*
No	28(17.3%)	134(82.7)	

* Significant at the level of p£0.05

The study revealed strongly positive correlation between knowledge and attitude in which r value is 0.746 and p value is <0.001. (Table 6)

Table 6: Correlation between knowledge and attitude score n=209

Variables	Spearman's Rank Correlation Coefficient	p-value
Knowledge	0.746	<0.001*
Attitude		

*Significant at the level of p£0.05

DISCUSSION

The present study conducted to assess knowledge and attitude regarding leprosy among 209 respondents reported that 55.5% had good knowledge. This finding is consistent with a study conducted in the Kancheepuram district of Tamil Nadu, India, which reported adequate knowledge among 54.7% of the respondents.⁶ Similarly, a study from leprosy endemic district of Eastern Ethiopia showed that 56.91% had adequate knowledge.⁹ Similarity in findings may be attributed to comparable study setting, as Ethiopian study was conducted in leprosy endemic area and the present study was conducted in Nayagaun, Pokhara, where leprosy referral hospital is situated.⁹ In both setting, community people are likely to have exposure to leprosy patients and health services.¹⁰ However, despite being conducted in endemic regions, nearly half of the respondents still demonstrated inadequate knowledge, which highlights the persistent gaps in community awareness and the need of awareness campaign.

The present study revealed that a majority of respondents (85.6%) demonstrated a favorable attitude toward leprosy. This finding is consistent with a study conducted in India, where 91% of participants reported a positive attitude.¹¹ The similarity may be attributed to comparable study settings, as both areas have leprosy related health centers, which are found to be involved in various leprosy awareness and anti-stigma campaign.¹⁰ In contrast, a study conducted in Mithila, Nepal reported that only 31% of respondents had good knowledge and 35% demonstrated a favorable attitude toward leprosy and leprosy patients.¹⁷ Further contrasting finding was reported from other study conducted in Dhanusha and Parsa districts with only 40.9% demonstrating favorable attitude. This difference may be attributed to variations in educational status of two provinces. As knowledge and attitude are closely associated with literacy levels, Madhesh Province possess lower literacy rate (68.3%) compared to Gandaki Province (83.4%).¹² These contrasting findings emphasize the critical role of community-based health education in improving knowledge and fostering positive attitudes toward leprosy.

The present study demonstrated a significant association

between the level of knowledge and age of respondents. This finding is consistent with a community-based study conducted in the Dhanusha and Parsa districts of Nepal among people residing around Lalgadh Leprosy Hospital.⁸ However, the present study did not find a significant association between level of knowledge and educational status, a finding that is supported by a study conducted in rural Cameroon, Central Africa.¹³ This suggests that factors other than formal education, such as community exposure, health campaigns, and contact with health services, may influence knowledge levels in leprosy-endemic settings.

Regarding attitude, the present study found a significant association between attitude toward leprosy and both age and education. This finding is supported by a study conducted in Thailand.¹⁴ The similarity may be attributed to comparable study contexts, as both studies were conducted in leprosy colony or leprosy-endemic regions where community interaction with affected individuals and health services is relatively common, potentially shaping favorable attitudes.

In terms attitude, the present study revealed that 64.6% believed that leprosy can be completely cured, which is comparable to a study conducted in an island setting where 65.9% of respondents believed leprosy to be curable.¹⁵ Furthermore, the majority of respondents (97.7%) in the present study agreed that people affected by leprosy should be allowed to work and obtain employment. However, this finding contrasts with a study from New Zealand, where only 53.4% supported employment for leprosy patients.¹⁶ This variation may be explained by differences in the time period and social context of the studies, as the New Zealand study was conducted in 2014 and reported that only 13.7% of respondents personally knew someone affected by leprosy,¹⁶ whereas in the present study, a substantial proportion (79.4%) of respondents reported knowing a person with leprosy, which may have contributed to greater empathy and acceptance.

Additionally, the present study identified a strong positive correlation between knowledge and attitude toward leprosy ($r = 0.746$, $p \leq 0.01$), indicating that higher knowledge levels are associated with more favorable

attitudes. This finding is consistent with a study conducted in the West Shewa Zone of Ethiopia, which also reported a strong positive correlation between knowledge and attitude ($r = 0.725$).¹⁷ These findings collectively emphasize the importance of improving community knowledge as a key strategy to foster positive attitudes and reduce stigma among individuals affected by leprosy. The study limits the generalization of the findings due to non-probability convenience sampling method. There is also possibility of social desirability response bias.

CONCLUSION

The present study concluded that more than half of the respondents had good knowledge, while the majority demonstrated a favorable attitude toward the disease. Level of knowledge was significantly associated with age, occupation and family history of leprosy, while attitude showed significant association with age, education and family history. Despite the study being conducted in a setting with access to specialized health services, substantial gaps in knowledge persist, indicating the need for continued community awareness and education programs. Further, a strong positive correlation between knowledge and attitude suggests that improved awareness can foster more favorable attitude. Overall, strengthening community-based health education and anti-stigma interventions remains essential to enhance understanding, promote social acceptance, and support ongoing leprosy control efforts.

ACKNOWLEDGEMENT

The author would like to express the deepest appreciation to all the participants who have provided enormous support and co-operation during the study.

REFERENCES

1. Donohue M. Leprosy. Healthline. 2023. Available from: <https://www.healthline.com/health/leprosy>
2. Yang J, Li X, Sun Y, Zhang L, Jin G, Li G, et al. Global epidemiology of leprosy from 2010 to 2020: A systematic review and meta-analysis of the proportion of sex, type, grade 2 deformity and age. *Pathog Glob Health*. 2022 Dec;116(8):467–76.
3. Epidemiology and Disease Control Division. Leprosy Control & Disability Management Section [Internet]. 2026 [cited 2026 Feb 2]. Available from: <https://edcd.gov.np/section/leprosy-control-section>
4. Zewdu A. Knowledge, Belief and Attitude of the Community towards Leprosy Patients in Gindeberet Woreda, West Shewa Zone. *NHIJ*. 2018;2(4). Available from: <https://www.medwinpublishers.com/NHIJ/NHIJ16000156.pdf>
5. Bennett BH, Parker DL, Robson M. Leprosy: Steps Along the Journey of Eradication. *Public Health Rep*. 2008;123(2):198–205.
6. Gopalakrishnan S, Grace GA, Sujitha P, Anantha Eashwar VM. Knowledge, attitude, and health seeking behavior on leprosy among urban adults in Kancheepuram district of Tamil Nadu: A Community-based cross-sectional study. *J Family Med Prim Care*. 2021 May;10(5):1895–903.
7. Baskota R, Mahato P, Sah S, Singh R. Knowledge and attitude of community towards leprosy. 24th World Congress of Dermatology Milan 2019.
8. Singh R, Singh B, Mahato S. Community knowledge, attitude, and perceived stigma of leprosy amongst community members living in Dhanusha and Parsa districts of Southern Central Nepal. *PLoS Negl Trop Dis*. 2019 Jan;13(1):e0007075.
9. Urgesa K, Bobosha K, Seyoum B, Geda B, Weldegebreal F, Mihret A, et al. Knowledge of and Attitude Toward Leprosy in a Leprosy Endemic District, Eastern Ethiopia: A Community-Based Study. *Risk Manag Healthc Policy*. 2020;13:1069–77.
10. Green Pastures Hospital - International Nepal Fellowship: INF Nepal. 2024. Available from: <https://inf.org.np/green-pastures-hospital/>
11. Mohite R, Mohite V. Knowledge and attitude of Indian rural community towards leprosy after post elimination phase: A survey from Karad Block, India. *National Journal of Community Medicine*. 2016 Oct 31;7(10):797–801.
12. Koirala P. Nepal's literacy rate - myRepublica - The New York Times Partner, Latest news of Nepal in English, Latest News Articles | Republica. myRepublica - The New York Times Partner, [Internet]. 2024 Jun 26; Available from: <https://www.myrepublica.nagariknetwork.com/news/nepal-s-literacy-rate-reaches-77-4-percent>
13. Tabah EN, Nsagha DS, Bissek ACZK, Njamshi TN, Njih INN, Pluschke G, et al. Community knowledge, perceptions

- and attitudes regarding leprosy in rural Cameroon: The case of Ekondotiti and Mbonge health districts in the South-west Region. *PLoS Negl Trop Dis*. 2018 Feb;12(2):e0006233.
14. Kaehler N, Adhikar B, Raut S, Marahatta SB, Chapman RS. Perceived stigma towards leprosy among community members living close to Nonsomboon leprosy colony in Thailand. *PLOS ONE*. 2015 Jun 5;10(6):e0129086.
 15. G J, Rao S, Thatkar PV, Sethuraman AR, Julius LCS, Gaur BPS. Community perception on leprosy in the islands. *National Journal of Community Medicine*. 2019 Jan 31;10(01):45–9.
 16. Faatoese A, Sikaleti S, Priest P, Chambers S. Knowledge and attitudes to leprosy of Pacific People living in New Zealand. *Leprosy Review*. 2016 Sep 1;87(3):368–77.
 17. Zewdu A. Knowledge, belief and attitude of the community towards leprosy patients in Gindeberet Woreda, West Shewa Zone. *NHIJ*. 2018;2(4). Available from: <https://www.medwinpublishers.com/NHIJ/NHIJ16000156.pdf>