

Original Research Article

A comparative assessment of quality of life and leprosy related knowledge and attitude in two urban communities

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ABSTRACT

Background: In India, health care providers thought they had vanquished leprosy in 2005. But it lived on, cloaked in stigma and medical mystery. Leprosy causes well-defined deformities and imposes a massive social stigma which in turn, makes the disease harder to detect and banish. To assess and compare the quality of life, knowledge, attitude, regarding leprosy among adults residing in selected leprosy colony and urban slum.

Methods: Quantitative research approach was used with descriptive comparative design. Tool used were Wisconsin quality of life client questionnaire, structured interview schedule on knowledge and 5-point Likert scale on attitude. The study was conducted in leprosy colony and urban slum. Total of 200 samples were selected 100 from leprosy colony and 100 from the urban slum through convenient sampling technique.

Results: The results showed that the adults residing in leprosy colony have a better quality of life than the adults residing in the urban slum. Adults in leprosy colony were having average knowledge whereas in urban slum were having poor knowledge. In leprosy colony there is favorable attitude whereas in urban slum were having neutral attitude. A significant weak negative correlation between quality of life and knowledge in leprosy colony and a strong negative correlation between quality of life and attitude in urban slum.

Conclusions: To achieve the eradication of the disease it is necessary to provide regular health awareness programs in the local community and slums as inadequate knowledge and unfavorable attitude towards the disease condition give rise to its incidence.

Keywords: Knowledge, Leprosy, Quality of life, Slum

INTRODUCTION

Leprosy is a contagious disease, but not highly communicable; it only spreads with prolonged and close contact with an untreated patient over a month or year. *Mycobacterium leprae* is responsible to cause of leprosy that affects the skin, respiratory tract mucosa, peripheral nerve disorder and eyes.^{1,2} Cure is only possible if the community is educated about the early stage of treatment, which will eventually prevent physical disability, mental stigmatization and social discrimination of an individual.³ Developing country like India is being considered as

emergent place for the disease with strict confirmation of the disease since 2000 B.C. It was believed that the disease has spread through business from borders and war situations to different parts of the world.

During the older times in India those who suffered from this infection were isolated due to the communicability, incurability and associated stigma of previous life karmas.⁴ In 1898, India has launched leprosy act for segregation of leprosy victims and provision of asylums to prevent reproduction. In 1991, country accounts 75% of the cases. Leprosy patients were treated and handled by the national leprosy elimination program. In 2005, the

healthcare system broadened its wings, incorporated the elimination program and started the eradication program and soon after that, India declared that leprosy has been eliminated.^{5,6} Secondary level of prevention i.e., prompt detection and early management with multiple drug therapy are the only interventions to break in the transmission of the bacteria and to reduce the incidence globally. However, people's thoughts influence one's attitude and knowledge that eventually affect their activity of daily living and subsequently their standard of living. The quality of life is hampered by many physical, mental, social and spiritual changes in such a way that it becomes difficult to face the society. The condition is more miserable for the disabled lepers as they suffer from a lot of neglect and poor quality of life.⁷⁻⁹

There are various studies conducted in India after the year 2000, most of them found that people were having a low level of knowledge and negative attitude.¹⁰ Research studies resulted poor knowledge and negative attitudes towards lepers.¹¹ Hence, aim of this research is to assess and compare the quality of life, compare the knowledge, attitude towards leprosy, to find the relationship between quality of life and knowledge and attitude towards leprosy in adults residing in a selected leprosy colony and the urban slum of New Delhi.

METHODS

Quantitative research descriptive comparative design was used to assess the quality of life, knowledge and attitude towards leprosy in adults residing in a selected leprosy colony and a selected urban slum of New Delhi.¹² Sample size was 200 adults, 100 from leprosy colony and 100 from urban slum selected convenient sampling technique.

Both male and female included under 25-50 years. of age who were not affected with leprosy living with family members in a leprosy colony and urban slum, people who have a residence of more than 5 years and subjects who understand Hindi/English. Subjects excluded from the study who were not willing to participate, subjects affected with leprosy, terminal illness like AIDS, Cancer and any other physical disability.

Ethical permission acquired from ethical committee of Holy Family Hospital and formal administrative permission from the concerned authorities of RWA, Tahirpur and Saahasee NGO of New Delhi. Half of the samples were selected from the leprosy colony and half from the urban slum as per inclusion criteria. Informed written consent was taken from the participants (25-50 years). Anonymity was assured.

Analysis of the research data was calculated by both descriptive as well as inferential statistics. Investigator filled structured socio-demographic data profile. Wisconsin quality of life client questionnaire (standardized tool) utilize to assess the quality life of

adults. Structured knowledge tool was used for interview schedule to assess knowledge and Likert scale to assess the attitude towards leprosy residing in a selected leprosy colony and the urban slum of New Delhi.

The content validity of the self-structured tools was established by 7 experts from the field of community health nursing, mental health, social work and psychology and medicine. Reliability of the tools were checked using Kuder-Richardson Formula 20 (KR 20) and the value of $r=0.78$. The reliability of 5-point Likert scale for attitude assessment, Crohn back's alpha was applied and the value of $r=0.93613$.

RESULTS

Table 1 illustrates that mostly 26% of adults in leprosy colony were between 41-45 years of age and 25% of the adults in urban slum were between age group of 36-40 years. About 64% of individuals were educated till primary education in leprosy colony and 57% in urban slum were educated till primary education. Majority of the adults in leprosy colony 77% were homemakers and 64% in urban slum were homemakers.

Majority of the adults in leprosy colony 91% were having monthly family income between Rs. 5000-Rs. 10000 and 54% in urban slum were having monthly earnings between Rs. 5000-Rs. 10000 and 54% in urban slum. Total 100% adults were married in both leprosy colony and urban slum. All the adults 100% were having more than 2 children in leprosy colony and majority of adults 89% in urban slum were having more than 2 children. Majority of the adults 67% in leprosy colony were living in a nuclear family and 60% in urban slum were living in nuclear family.

Table 2 illustrates comparative analysis of quality of life where in leprosy colony, the weighted WQLI-Score was 1.99 and the unweighted score was 1.95 with a mean score of 1.97 and in urban slum, the weighted WQLI-Score was 1.67 and unweighted WQLI-Score was 1.49 in urban slum with a mean score of 1.58.

Table 3 quality-of-life mean score for participants of leprosy colony 1.97 which is higher than urban slum 1.58. The mean difference was 0.39 with standard deviation 0.21 and 0.18, Respectively. Utilizing SEM Difference 0.15 and 0.79, The calculated Z score was 13.64 that was more than the table value of 1.95 thus result was found statistically significant.

Table 4 represents comparative analysis of knowledge where in leprosy colony and urban slum adults were having not have good knowledge (0%) regarding leprosy. 70% adults in leprosy colony were having average knowledge and 1 (1%) adults in urban slum were having average knowledge regarding leprosy. 30% adults in leprosy colony were having poor knowledge and 99% adults in urban slum were having poor knowledge

regarding leprosy. Table 5 represents in leprosy colony, knowledge mean score was 9.23, standard deviation was 2.30, standard error of mean difference was 0.23. The knowledge mean score in urban slum was 3.61, standard deviation was 1.63 and standard error of mean difference was 0.16. The calculated Z score of 19.87 which was more than the table value of 1.95 thus the result was significant at $p < 0.05$ level of significance. Table 6 represents comparative analysis of attitude where in leprosy colony 100 (100%) adults were having favorable attitude towards leprosy and 100 (100%) adults in urban slum were having neutral attitude.

Table 7 In leprosy colony, attitude mean score was 78.55, standard deviation was 4.55. The attitude mean score in urban slum was 59.44, standard deviation was 2.73 and standard error of mean difference was 0.45. The calculated Z score of 36.26, which was more than the table of 1.95. Table 8 represents correlation between quality of life and knowledge of leprosy colony and urban

slum where the mean score of quality of life of adults in leprosy colony was 1.96, knowledge mean score was 9.23. The calculated absolute 'r' value was 0.65 which was more than table value of 0.518, hence the result was found statistically significant. The mean score of quality of life of adults in urban slum was 1.58, knowledge mean score was 3.61. The calculated absolute 'r' value of 0.16 which was less than the table value of 0.251.

Table 9 represents correlation between quality of life and attitude in leprosy colony and urban slum in which the mean score of quality of adults in leprosy colony was 1.96, attitude mean score was 78.55. The calculated absolute 'r' value of 0.04 which was less than table value of 0.69. The quality-of-life mean score of adults in urban slum was 1.58 and attitude mean score was 59.44. The calculated absolute 'r' value of 1 and table value of 0.28 hence, the result was found statistically significant at p value < 0.05 .

Table 1: Sociodemographic variables of study participants (n=200).

Variable		Frequency (%)	
		Leprosy colony (n1=100)	Urban slum (n2=100)
Age (in years)	25 -30	15 (15)	22 (22)
	31-35	18 (18)	22 (22)
	35-40	25 (25)	25 (25)
	41-45	26 (26)	17 (17)
	45-50 and above	16 (16)	14 (14)
Type of family	Joint family	09 (9)	22 (22)
	Nuclear family	67 (67)	60 (60)
	Extended family	24 (24)	18 (18)
	Single parent family	09 (9)	00 (00)
Marital Status	Unmarried	00 (0)	00 (00)
	Married	100 (100)	100 (100)
	Divorced	00 (0)	00 (00)
	Widow	00 (0)	00 (00)
Occupation	Beggars/ rag pickers	00 (0)	00 (00)
	Laborers	03 (3)	02 (2)
	Private job	20 (20)	34 (34)
	Government job	00 (0)	00 (00)
	Home maker	77 (77)	64 (64)
Education	Illiterate	25 (25)	22 (22)
	Primary education	64 (64)	57 (57)
	Secondary Education	11 (11)	20 (20)
	Higher secondary Education	00 (0)	00 (00)
	College education	00 (0)	00 (00)
Monthly family income in rupees	<5000	09 (9)	46 (46)
	5000-10000	91 (91)	54 (54)
	10001-15000	00 (0)	00 (00)
	>15000	00 (0)	00 (00)
Number of children in the family	Nil	09 (9)	22 (22)
	1	67 (67)	60 (60)
	2	24 (24)	18 (18)
	>2	00 (00)	00 (00)

Table 2: WQLI-Scores both weighted and unweighted of study participants (n=200).

	Leprosy colony n1=100	Urban slum n2=100
Unweighted WQLI-Score	1.95	1.49
Weighted WQLI-Score	1.99	1.67

Table 3: Descriptive analysis and Z score of quality-of-life score of study participants (n=200).

Setting	Quality of life mean score	MD	SD	SEM Difference	Z Score	P value
Leprosy colony (n1=100)	1.97	0.39	0.21	0.15	13.64	<0.0001*
Urban slum (n2=100)	1.58		0.18	0.79		

*Significant at p<0.05 level of significance.

Table 4: Level of knowledge comparison about leprosy of study participants (n=200).

	Leprosy colony (n1=100)	Urban slum (n2=100)
Good	0	0
Average	70	1
Poor	30	99

Table 5: Descriptive analysis and Z score of Knowledge score regarding leprosy of study participants (n=200).

Setting	Knowledge means score	MD	SD	SEM difference	Z Score	P value
Leprosy colony (n1=100)	9.23	5.62	2.30	0.23	19.87*	<0.001
Urban slum (n2=100)	3.61		1.63	0.16		

*Significant at p<0.05 level of significance.

Table 6: Level of attitude comparison about leprosy of study participants (n=200).

	Leprosy colony (n1=100)	Urban slum (n2=100)
Favorable attitude	0	0
Neutral attitude	70	1
Unfavorable attitude	30	99

Table 7: Descriptive analysis and Z score of attitude score regarding leprosy of study participants (n=200).

Setting	Knowledge mean score	MD	SD	SEM Difference	Z Score	P value
Leprosy colony (n1=100)	78.55	19.11	4.55	0.27	36.26*	<0.00001
Urban slum (n2=100)	59.44		2.73	0.45		

(p<0.00001) *Significant at p<0.05 level of significance.

Table 8: Pearson's correlation co-efficient between quality of life and knowledge towards leprosy of study participants (n=200).

	Leprosy colony n1=100		Urban slum n2=100	
Variables	Mean	'r' value	Mean	'r' value
Quality of life	1.96	-0.65*	1.58	0.16 NS
Attitude	9.23		3.61	

*Significant at p<0.05 level of significance.

Table 9: Pearson's correlation co-efficient between quality of life and attitude towards leprosy study participants (n=200).

Variables	Leprosy colony n1=100		Urban slum n2=100	
	Mean	'r' value	Mean	'r' value
Quality of life	1.96		1.58	
Attitude	78.55	-0.04 NS	59.44	-1*

*Significant at $p < 0.05$ level of significance.

DISCUSSION

Urban slums are considered breeding grounds for the most of the communicable diseases due to poor socio-economic status and poor hygienic conditions which is relatively discussed in this study.¹⁴ Adults in the leprosy colony reported a normal secured life, they reported that the crime rates are less inside the area as the people are afraid to come inside so the people feel safe with their families. On the other hand, the adults of urban slums are underprivileged, are surrounded by the maladjusted environment and reported unsatisfactory life.¹⁵ Knowledge regarding leprosy between adults of leprosy colony and urban slum found statistically significant as the adults of leprosy colony (mean score 78.55) were having better knowledge about the manifestations, characteristics and treatment of leprosy than the adults of urban slum (mean score 59.44).

Overall attitude of adults in leprosy colony was favorable but few reported that they would not marry a leprosy-affected individual. They did not feel ashamed of the having a family member affected with leprosy but on the other hand adults of urban slum were having neutral attitude, they don't mind drinking water from the hand of leprosy affected person but would not work in the same office where a leper would work. They don't feel ashamed if any of the relative is affected with leprosy and would not even give divorce to the spouse. However, they responded that having leprosy is the effect of immoral behavior in the past life.

In the present study, adults were not having good knowledge regarding leprosy in leprosy colony and urban slum. 70% adults in leprosy colony were having average knowledge and 1% adults in urban slum were having average knowledge regarding leprosy. 30% adults in leprosy colony were having poor knowledge and most of the adults 99% adults in urban slum were having poor knowledge regarding leprosy. Nisar et al revealed the corresponding results in a study in a community of Karachi, where majority of individuals had low level of knowledge, i.e., 90% of people were not aware about the manifestation of disease and 82% said that this disease is incurable. Only 7.3% participants had good knowledge about leprosy. 31% participant were not aware of spread leprosy and only 5% said that this disease could be preventable.¹⁷ In the present study comparison was done between the attitudes and there was huge gap in attitude i.e. 100% adults in leprosy colony were having favorable attitude towards leprosy and 100% adults in urban slum

were having neutral attitude and similar results shown by Adhikari et al in a community of western Nepal which concluded that negative attitude like social stigma highly associated with lack of knowledge and the attitude can be improved only by dissemination of health education regarding the disease.¹⁷

Contradicting study results were shown by Madhavi et al which stated that people of the diseases have lower physical and psychological domain than the control group that depict glaring gap between the quality of life of the in-leprosy colony and urban slum. With the better quality of life in leprosy colony than the urban slum, it gave an impression on the increasing need to improve the upgrade the standard and provide them with comfortable life in the urban slums of the city. Hazardous environmental conditions increase the sufferer and make them prone to vulnerable population or at-risk population. Leprosy being a nightmare to the population resist themselves to have the conceptual background of the disease.¹⁸

Regular training and IEC programs among the health care professionals and in the community settings with periodic health screening especially in underserved areas to spread awareness and reduction of social discrimination.¹⁹ Despite the progress in the research, the results show similarities on the ground level. Different myths and misconceptions remain in society with the never-changing attitude of the common man.²⁰

The researcher felt that the role of a family is essential in controlling leprosy. Dissemination of the correct knowledge among the family members about disease boost the way of living the life by the diseased. Family members who have knowledge of disease shows more positive attitude and hence have a better perspective to live life.

CONCLUSION

The present study focused on the people living in the leprosy colony and the urban slums to gather statistics and compare the attributes of the people in both settings. It was always believed that the people of the leprosy colony are deprived of the resources and knowledge, but in the current study, it is concluded that the urban slums need more health education due to the variety of people living there under one roof. The environment of the slums is so tough that the people are not aware of the global diseases and their impact on our lives. It is very important to impart the advocacy and the varied range of knowledge

imparting among them in a way that their view towards life changes.

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REFERENCES

1. Chaptini C, Marshman G. Leprosy: a review on elimination, reducing the disease burden, and future research. *Leprosy Rev*. 2015;86(4):307-15.
2. Das NK, De A, Naskar B, Sil A, Das S, Sarda A, Chatterjee G. A quality-of-life study of patients with leprosy attending the dermatology OPD of a tertiary care Centre of Eastern India. *Indian J Dermatol*. 2020;65:42-6.
3. Noordende AT. The role of perceptions and knowledge of leprosy in the elimination of leprosy: A baseline study in Fatehpur district, Northern India. *PLOS Neglected Trop Dis*. 2019;13(4):7302.
4. Tabah EN, Nsagha DS. Community knowledge, perceptions and attitudes regarding leprosy in rural Cameroon: The case of Ekondotiti and Mbonge health districts in the South-west Region. *PLOS Neglected Trop Dis*. 2018;12(2):6233.
5. Pandey A, Rathod H. Integration of leprosy in general health system vis-a-vis leprosy endemicity, health situation and socioeconomic development: observations from Chhattisgarh & Kerala. *Lepr Rev*. 2010;81(2):121-8.
6. Sarode G, Sarode S, Anand R, Patil S, Jafer M, Baeshen H, Awan KH. Epidemiological aspects of leprosy. *Disease-a-month*. 2020;66(7):100899.
7. Schreuder PA, Noto S, Richardus JH. Epidemiologic trends of leprosy for the 21st century. *Clinics in Dermatology: Leprosy Part II*. 2016;34(1):24-31.
8. Pitchaimani G, Srinivasan S, Darlong J. Quality of life of persons affected by leprosy in an endemic district, West Bengal, India. *Indian J Dermatol*. 2018;63(6):459-64.
9. Joseph GA, Rao S. Impact of leprosy on quality of life. *Bulletin of WHO*. 1999;77(6):515-21.
10. Kaur H. People's perception of leprosy - A study in Delhi. *Indian J Leprosy*. 2003;75(1):37-46.
11. Handa N. Knowledge, Attitude and Practices Regarding Leprosy Among Patients Attending Dermatology OPD in Western Rajasthan, India. *J Evol Medical Dental Sci*. 2015;4(98):16375-9.
12. Dash Bijayalaskhmi. *Essentials of Nursing Research & Biostatistics*. 1st ed. Jaypee Brothers. 2017:159-161.
13. Widasmara D, Ekasari DP, Basuki S. The validity and reliability test of the leprosy life quality questionnaire in leprosy patients. *Research*. 2022;11:1117.
14. Khan S, Malaviya P. Quality of life among the slum dwellers of Jammu city- A comparative study. *Int J Environ Rehabil Conserv*. 2017;8(2):52-60.
15. Jha D, Tripathi VK. Quality of life in slums of Varanasi city: A comparative study. *Transact Inst Indian Geograph*. 2014;36:171-83.
16. Nighat N, Khan AI. Knowledge, Attitude and Practices about Leprosy in a Fishing Community in Karachi. *Pakistan J Medical Sci*. 2007;20(6):936-40.
17. Adhikari B, Shrestha K, Kaehler N, Raut S, Chapman RS. Community attitudes towards leprosy affected persons in Pokhara municipality of western Nepal. *J Nepal Health Res Council*. 2013;11(25):264-8.
18. Mankar J Madhavi, et al. Comparative study of QOL, knowledge, attitude and belief among leprosy patients and community. *J Global Infect Dis*. 2011;3(4):378-82.
19. AA T. Assessment of knowledge and attitude of community on leprosy patients in Kuyera Town, West Arsi Zone, Oromia Region Southeast Ethiopia. *Hereditary Genetics*. 2016;5(1):2386.
20. Singh R, Singh B, Mahato S. Community stigma of leprosy in Nepal. *PLOS Negl Trop Dis*. 2019;13(1):7075.

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