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Original Research Article

A study of knowledge and attitude about leprosy among nursing students and nursing staff at a tertiary care health centre in Gujarat

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Abstract

Background: Leprosy caused by Mycobacterium leprae, is a infectious disease that remains prevalent in India. The disease carries heavy stigma, leading to social and psychological issues like depression. While medical research on leprosy is extensive, its social aspects remain underexplored. Nursing staff forms backbone in patient care, counselling, wound management yet face challenges in integrating leprosy in general health programs. This study aims to assess and improve the knowledge and attitudes of paramedical personnel for leprosy

Aims and Objectives: To study of Knowledge and attitude about leprosy among nursing students and nursing staff.

Materials and Methods: This cross-sectional study was conducted for 6 months at a tertiary health institution, Anand and changa. A total of 1000 nursing staff and students participated, with 982 respondents completing a self-administered, pre-structured questionnaire of 35 questions via Google Forms after voluntary consent.

Results: Among total 1000 nursing staff and nursing students enrolled, 982 were respondents. For knowledge 897 correctly identified bacteria as the cause of leprosy, and 808 correctly identified Hansen's disease as synonymous of leprosy. The majority of participants refused to marry one who was previously affected with leprosy but would work together with leprosy patients in same centre. 594 thought that leprosy is highly contagious and 654 thought leprosy patients must be isolated.

Conclusion: The study highlights knowledge gap and stigmatised attitude of nursing staff and students towards leprosy. By addressing these gaps, it contribute to reducing leprosy stigma provide empathetic patient care.

Keywords: Mycobacterium leprae, Social stigma, Kushtha rog, Ulnar nerve, Nursing staff

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1. Introduction

Leprosy, often known as Hansen's disease, is a major stigma in our society. Mycobacterium leprae is the bacterial agent which is responsible for leprosy. Leprosy is still prevalent in certain part of the world, particularly India and South America.[1] In early times, it was thought that leprosy was a hereditary disease that only affected certain households because of its long incubation period and the fact that, many cases of familial infection occurred during early childhood when immunity is low. Mycobacterium leprae (M. Leprae), a slow-growing, obligatory intracellular bacterial pathogen, is the cause of leprosy, a chronic infectious disease. Mankind has been plagued by leprosy for thousands of years.[2]

The disease has had a very negative image for hundreds of years and is known for being a very stigmatized condition. Stigma and discrimination can lead to stress, anxiety, depression, suicide, isolation and problems in interpersonal relationships of persons affected[3]. Although extensive research has been conducted on the medical aspect of leprosy, comparatively little research has been done on social aspect of this disease.[3] As we know the nursing staff has an important role in finding healthy environment in the society, patients counselling and wound care management etc. Integration of the vertical leprosy program with the existing horizontal health program poses various administrative and operational challenges for program managers but still is of great value in society.[4] The nursing staff forms the first line of care for patients after doctors since they are the ones who

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are regularly in touch with patients. The patient- nursing staff relation is an underrated and underexplored arena. There is undoubtedly a lot many stigmata surrounding leprosy. Nursing staff form the initial point of contact for patients. Hence, this study aims at evaluating the level of knowledge and attitudes about leprosy amongst paramedical personnel and giving suggestions to improve the same.

2. Material and Methods

This cross-sectional study was conducted in June 2023 to November 2023 at a tertiary health care centre, Gujarat. All nursing staff and nursing students of a tertiary health institution were included. A total 1000 nursing staff and students working and studying at these institutions were enrolled. Information will be obtained using pre-tested, self-administered, pre- structured questionnaires in a google form. The language of the questionnaire was English and contained 35 questions. The parameters included in proforma are based on the Knowledge and Attitude about Leprosy among nursing staffs and students' personnel.

The questionnaire will be self-administered Respondent's participation in the study will be voluntary and all information provided will be kept confidential. Only those who are willing to give consent will be included in the study and considered to be eligible to participate.

Descriptive statistics [Mean (SD), Frequency (%) etc.] will be used to present profile of study participants as well as knowledge and attitudes about particular domains of leprosy. Based on type of variables involved, Analysis of Variance (ANOVA)/ Chi Square test was employed to assess the relationship between socio-demographic variables and Knowledge/ attitudes about leprosy.

Furthermore, the study approved by the institutional ethics committee of Bhaikaka University, with the assigned approval number IEC/BU/144/Faculty/16/161/2023 on dated 25/05/2023.

3. Results

Among the total 1000 nursing staff and nursing students enrolled out them, 982 were respondents. 898 (91.54%) of the people had heard about the disease leprosy (Kustha rog) before enrollment. For the knowledge regarding the cause of leprosy they responded 897 (91.62%) due to bacteria, 33 (3.37 %) due to fungi, 17 (1.74%) due to polluted water and 32 (3.27 %) due to viruses. 853 (87.13%) participants knew leprosy is caused by Mycobacterium leprae. 808 (82.96%) correctly responded Hansen's disease as synonymous of leprosy. 783 (80.64%) participants responded India having the biggest leprosy problems with 864 (88.34%) considering leprosy as a major public health problem. Majority 507 (52%) wrongly responded skin as the first structure to be affected. 419 (42.97%) correctly responded nerve to be the first structure affected and 593 (60.95%) responded ulnar nerve is commonly affected nerve in leprosy. 724 (74.56%) respondents considered lepromatous leprosy as the most severe form. Most common mode of transmission was recorded to be droplet infection 610 (62.56%) followed by skin-to-skin contact 285 (29.23%) followed by fomites 49 (5.03%) followed by mother-to-child transmission 31 (3.18%). The majority of the participants refused to marry one who was previously affected with leprosy but work together with leprosy patients in same centre. 642 (65.98%) participants agrees that leprosy patients should be segregated from the community. 844 (87.28%) of nursing staff and students agrees that paramedical staff be included in the team of front-line worker for leprosy management. 326 (33.75%) participants had not attended any seminar of leprosy. 589 (60.72%) participants were insightful that loss of sensation over the affected skin is a typical feature associated with skin patches caused due to leprosy. 358 (36.95%) anticipated swelling of feet is not sign or symptom of leprosy. Patient with pain in the nerve need immediate medical attention according to 668 (68.94%) of respondents. Damage of nerve is cause of deformity in leprosy as majority participants. 878 (90.70%) responded yes, leprosy be cured with early diagnosis and treatment. 511 (52.57%) aware that Slit skin smear is done in patient suspected of leprosy and majority were aware of multi-drug therapy and that isoniazid not component of multi-drug therapy. Majority respondents answered 6 months duration of the treatment for paucibacillary leprosy and treatment available free of cost in India. Majority 525 (54.12%) felt sympathetic on staying with the family member of leprosy patient. 467 (48.19%) responded there is no vaccine available for leprosy. 772 (79.59%) answered no to question that only old people are affected by leprosy. Maximum 615 (63.47%) replied no to question that leprosy is no longer exist and 703 (72.40%) believed that leprosy cannot be cured. 686 (70.65%) assume that lepra bacilli survive for long time in various places. 655 (67.18%) supposed that leprosy is a slowly progressive disease. 732 (75.46%) contemplate leprosy spreads in proportion to immunity of susceptible host. 594 (61.17%) thought that leprosy is highly contagious and 654 (67.21%) thought leprosy patient must be isolated.(**Table 1**)

Table 1: Questionnaire regarding study of knowledge and attitude about leprosy among nursing students and nursing staff

Questions	Response	No.	%
Have you heard about leprosy (kustha rog)? (n= 981)	Yes	898	91.54
	No	83	8.46
Leprosy is disease due to (n= 979)	Bacteria	897	91.62
	Fungi	33	3.37
	Polluted water	17	1.74
	Virus	32	3.27
Leprosy is caused by (n= 979)	Clostridium perfringes	16	1.63
	Mycobacterium leprae	853	87.13
	Mycobacterium tuberculosis	86	8.78
	Pseudomonas aeruginosa	24	2.45
Synonyms of leprosy (n= 974)	Hansens disease	808	82.96
	Harrys disease	42	4.31
	Hartmans disease	56	5.75
	Humpreys disease	68	6.98
Which country with the biggest leprosy problem? (n= 971)	America	23	2.37
	Brazil	89	9.17
	China	76	7.83
	India	783	80.64
Is leprosy public health problem in India? (n= 978)	No	114	11.66
	Yes	864	88.34
Which structure is affected first in leprosy? (n= 975)	Lungs	30	3.08
	Nerves	419	42.97
	Skin	507	52.00
	Vessels	19	1.95
Which nerve commonly affected in leprosy? (n= 973)	Popliteal	119	12.33
	Posterior tibial	72	7.40
	Radial	189	19.42
	Ulnar	593	60.95
Which is the most severe form of leprosy? (n= 971)	Borderline	34	3.50
	Lepromatous	724	74.56
	Mid Borderline	63	6.49
	Tuberculoid	150	15.45
Leprosy most common mode of transmission. (n= 975)	Droplet infections	610	62.56
	Fomites	49	5.03
	Mother to child transmission	31	3.18
	Skin to skin contact	285	29.23
Will you marry one who was previously affected with leprosy? (n= 968)	No	557	57.54
	Yes	411	42.46
Whether should leprosy person should be segregated from community for management? (n= 973)	Agree	642	65.98
	Disagree	331	34.02
Should paramedical staff be included in the team of front-line workers for leprosy management? (n= 967)	No	123	12.72
	Yes	844	87.28
Have you attended any seminars on leprosy? (n= 966)	No	640	66.25
	Yes	326	33.75
Which are the typical features associated with skin patches caused due to leprosy? (n= 969)	Extreme pain over the affected skin	71	7.32
	Loss of sensation over the affected skin	589	60.72
	None	91	9.38
	Skin over affected area appeared very dark	218	22.47
Which is not a sign or symptom of leprosy? (n= 969)	Hyperpigmentation of face	195	20.12
	Swelling of feet	358	36.95

	Tingling sensation	160	16.51
	Ulceration and deformity	256	26.42
Which patient need immediate medical attention? (n= 969)	Patient with burning in the feet	105	10.84
	Patient with itching	120	12.38
	Patient with pain in the nerve	668	68.94
	Patient with sudden onset of Hairfall	76	7.84
What is cause of deformity in leprosy? (n= 974)	Damage of colon	35	3.59
	Damage of heart	32	3.29
	Damage of lungs	21	2.16
	Damage of nerve	886	90.97
Can leprosy be cured with early diagnosis and treatment? (n= 968)	No	90	9.30
	Yes	878	90.70
Which leprosy test is done in patient suspected of leprosy? (n= 972)	Culture and sensitivity	157	16.15
	KOH mount	47	4.84
	Peripheral nerve	257	26.44
	Slit skin smear	511	52.57
Are you aware of multi-drug therapy in leprosy? (n= 972)	No	238	24.49
	Yes	734	75.51
What is the duration of the treatment of paucibacillary leprosy? (n= 972)	12 months	174	17.90
	15 months	46	4.73
	6 months	632	65.02
	9 months	120	12.35
Which of the drugs is not included in multidrug therapy used in the treatment of leprosy? (n= 969)	Clofazimine	85	8.77
	Dapsone	145	14.96
	Isoniazid	574	59.24
	Rifampicin	165	17.03
Is leprosy treatment available free of cost to the patient of India? (n= 974)	No	208	21.36
	Yes	766	78.64
Would you work together with leprosy patients in same centre? (n= 972)	No	357	36.73
	Yes	615	63.27
What type of feeling you have on staying with the family member of leprosy patient? (n= 970)	Afraid	125	12.89
	Normal	320	32.99
	Sympathetic	525	54.12
Is there any vaccine available against leprosy? (n= 969)	No	467	48.19
	Yes	502	51.81
Only old people are affected by leprosy. (n= 970)	No	772	79.59
	Yes	198	20.41
Leprosy is no longer exists. (n= 969)	No	615	63.47
	Yes	354	36.53
Leprosy cannot be cured (n= 971)	No	703	72.40
	Yes	268	27.60
What is viability of lepra bacilli? (n= 971)	Can survive for long time in various places	686	70.65
Leprosy is disease (n= 975)	Fragile	285	29.35
	Fast progressive	216	22.15
	Non progressive	51	5.23
	None of the above	53	5.44
	Slow progressive	655	67.18
Leprosy spreads in proportion to immunity of susceptible host (n= 970)	No	238	24.54
	Yes	732	75.46
People who have leprosy must be isolated (n= 973)	No	319	36.79
	Yes	654	67.21
Leprosy is highly contagious. (n= 971)	No	377	38.83
	Yes	594	61.17

4. Discussion

Leprosy is classified by WHO as one of twenty Neglected tropical diseases. Its occurrence is often related to poor socio-economic conditions, hence seen in developing nations like India.[5] A similar link between poverty and disease incidence is emphasized in studies from Kolkata and Hyderabad.[6,7] It is a communicable disease, caused by Mycobacterium leprae (M. leprae), with a long incubation period. The 10-year Global Leprosy Strategy 2021–2030 "Towards zero leprosy" was developed with a goal of ending the disease.[8] Hence it is crucial to check awareness among paramedical workers which usually forms the point of first contact in our country.

Many studies had assessed the knowledge and attitude towards leprosy and the data obtained had helped us in creating awareness and various health programs for leprosy. In our study questionnaire was designed to check the level of knowledge and attitude towards leprosy in nursing staff and students. A total of 91.54% of respondents had heard about leprosy before enrolment. A significant majority correctly identified bacteria, specifically Mycobacterium leprae, as the causative agent. However, certain misconceptions were identified, such as the belief by 52% of respondents that the skin is the first structure affected, Various misconceptions regarding the cause of leprosy are one of the most compelling factors that impact a community's health-seeking behaviour found in a study (Kumaresan et,1994).[9]

The study found that the perception of leprosy is a public health problem, with 88.34% considering it a significant issue. While 65.98% agreed that leprosy patients should be segregated, indicating a level of stigma, 54.12% expressed sympathy towards staying with the family member of a leprosy patient. These findings highlight the complex interplay of understanding and empathy among healthcare professionals.

A noteworthy revelation from our study was the reluctance of the majority of participants to consider marrying someone previously affected by leprosy. This finding highlights the enduring stigma attached to leprosy,[10] even among nursing students and staff. A significant proportion (65.98%) agreed that leprosy patients should be segregated from the community. Poor knowledge, fear of contagion as identified in a study (Van't Noordende AT, et al, 2021) are major factors contributing to such stigma in community.[11] This perspective, though reflecting prevailing societal attitudes, poses challenges to the larger goal of inclusivity and may contribute to the marginalization of individuals who have overcome leprosy.

A notable divergence arises when examining beliefs about the curability of leprosy. Our study revealed that a substantial proportion (72.40%) of participants believed that leprosy cannot be cured, diverging from the optimistic perspective often portrayed in literature emphasizing early diagnosis and treatment. Similar beliefs were present among the participants in a study in Bangladesh that leprosy is incurable (Croft and Croft etal.1999).[12] This contrast highlights a critical point for intervention and education within the healthcare community, indicating a potential gap in communicating the advancements in leprosy treatment and recovery.

On the diagnostic front, the study highlights a moderate awareness level, with 52.57% of participants indicating an understanding that a slit skin smear is performed in patients suspected of leprosy. While this percentage represents a majority, it also underscores a potential gap in knowledge regarding specific diagnostic procedures. In a study (Giri, et al, 2011) 3% of participants did not have knowledge about multidrug therapy.[13] In contrast to this study, 27% of participants were not aware about the use of multidrug therapy in leprosy. Also 21.36 % did not had the knowledge that leprosy treatment is available free of cost in India.[14]

The coexistence of high optimism regarding curability and a moderate awareness level of diagnostic procedures presents an opportunity for targeted educational interventions. Future training programs for nursing staff and students can focus on reinforcing the positive narrative around leprosy treatment outcomes while concurrently deepening their understanding of diagnostic methodologies. Programs to change attitudes and provide accurate information are needed to dismantle long-standing myths and support reintegration of cured patients.[15] This dual approach can empower healthcare professionals with a more comprehensive skill set, fostering a proactive and informed approach to leprosy diagnosis and management.

Also, our study illuminates a positive and forward-thinking perspective among nursing staff and students regarding the inclusion of paramedical staff in the frontline management of leprosy. An overwhelming 87.28% of participants agreed with the idea, underscoring a recognition of the multidisciplinary approach essential for comprehensive leprosy care.

5. Limitation

As it is not a multi centric study, we were not able to analyse on a larger scale.

6. Conclusion

The study offers a comprehensive assessment of the knowledge and attitudes of nursing staff and students towards leprosy at a tertiary care centre. While commendable awareness exists, targeted educational interventions are essential to correct misconceptions and promote accurate information. Improving healthcare professionals' knowledge and attitudes is crucial for enhanced patient care, and effective leprosy management. Addressing these complexities is vital for building a well-informed healthcare workforce committed to dismantling societal barriers hindering the reintegration of individuals affected by this

curable disease. Future initiatives should bridge knowledge gaps, ensuring professionals are informed about both biological aspects and the latest advancements in leprosy treatment. By addressing these gaps, healthcare providers contribute to reducing leprosy stigma through informed and empathetic patient care, fostering a culture of collaboration and inclusivity in evolving healthcare practices.

7. Source of Funding

None.

8. Conflict of Interest

None.

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