

# Knowledge and attitude among under-graduate medical students towards leprosy in tertiary care hospital - A questionnaire based study

Harish Muddanahalli Rajegowda, Deepadarshan Kalegowda, Shashi Kumar Basavapura Madegowda, Bhanutej Kadapalakere Lakshminarasimhaiah

Department of Dermatology, Mandya Institute of Medical Sciences, Mandya.

## Abstract

**Background** Leprosy is a chronic granulomatous infectious debilitating condition with still persisting social stigmatization in community. It is essential for medical students who become future physicians to be well aware of knowledge and to have positive attitude towards leprosy, so that effective counselling and guidance would be possible.

**Objective** This study aimed to assess knowledge and attitude towards leprosy among under graduate medical students.

**Methods** In this cross sectional study, a well-structured questionnaire containing 20 questions each to assess knowledge and attitude towards leprosy was given to 82 under graduate (III phase) students following brief description about study and objectives. Students who responded correctly for upto 8 questions were assigned level 1 (poor), 9 to 12: level 2 (average), 13 to 16: level 3 (good) and for more than 16: level 4 (excellent) in each questionnaire.

**Results** With a mean score for knowledge 15.48, total of 39% excellent, 48.8% good and 12.2% had average knowledge about leprosy. With a mean score for positive attitude 12.04, a total of only 7.3% excellent, 41.5% good, 31.7% average and 19.5% had poor positive attitude towards leprosy and leprosy patients.

**Conclusion** Even though majority of students had good and excellent knowledge about leprosy, there is significant negative attitude towards leprosy affected persons among medical students. This emphasizes the need for innovative ideas to build up the positive attitude among under graduates.

## Key words

Leprosy, knowledge and attitude, students, stigma.

## Introduction

Leprosy is a chronic infectious disease caused by Mycobacterium Leprae, with main mode of transmission through droplet infection. Leprosy is one of the oldest diseases known to mankind,<sup>1</sup> however a clear diagnostic criterion was

established only a half century back.<sup>2</sup> The disease spectrum varies from mild cutaneous disease to very severe form with extensive nerves and systemic involvement.<sup>3</sup> The chronic sequelae of untreated disease are irreversible and persistent mutilating deformities and disability.<sup>4</sup>

## Address for correspondence

Dr. Bhanutej Kadapalakere Lakshminarasimhaiah  
Junior Resident, #13, OPD Block,  
Department of Dermatology, Venereology &  
Leprosy, MIMS, Mandya.  
Email: mr.bhanutej@gmail.com

Imprecise knowledge about disease transmission, course of disease, availability of curative treatment are the main causes of widespread stigmas prevailing in diverse segments of the society. Delay in diagnosis and

starting of effective treatment are important risk factors for development of disability in leprosy.<sup>5</sup> Social stigmatisation seriously affects the interpersonal communications, marriage, social activities and occupation, there by affecting the quality of life in leprosy patients.<sup>6</sup>

Since, medical students are the future doctors of the society, it is imperative to be well aware of causation, spreadability, signs and symptoms along with management of leprosy in India. This study was undertaken in an attempt to assess the knowledge and attitude of undergraduate medical students towards Leprosy disease.

## **Methods**

This cross sectional study was conducted in a medical college after obtaining approval from Institutional Ethics Committee. Final year Undergraduate students who agreed to participate in the study and agreed to sign for informed consent were included for study & those who had participated in similar assessments were excluded.

Students were given with study proforma, containing details regarding demographic data of the students and leprosy related semi-structured questionnaire containing 40 questions which includes 20 questions based on knowledge about Leprosy disease that is, cause, disease course, complications associated, necessary investigations and treatment of the disease. And 20 questions to assess the attitude of students towards leprosy affected individuals. Students were approached without prior notice regarding the study details and were given a brief explanation about the study and its objectives. The time limit for answering was around 30 minutes.

The filled study proformas were collected and analysed. Correct answers to questions were

given 1 point each while wrong answers received no points. Collection of information was done in a single session. Participants were conveyed with correct responses after data collection and were also given with an opportunity to ask any queries related to Leprosy. Performances were graded based on number of questions they responded correctly as for >16 as Excellent, 13-16 as Good, 9-12 as Average, ≤8 as Poor. Data processing and statistical analysis were performed through the software Statistical Package for Social Sciences, version 20. A percentage reflecting the number of students that choose the correct answer was presented.

## **Results**

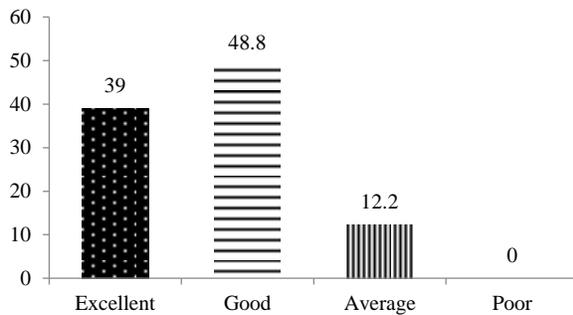
Demographic Characteristics of subjects - The study included 82 final year Undergraduate students ranging from 21-25 years of age with mean age of 21.7 years with 33 males and 49 females.

### **Knowledge about leprosy**

The questions covered the basic knowledge related to Leprosy. Questions with number and percentage of participants who gave correct response are listed in **Table 1**. Distribution of performances of participants is given in **Figure 1**. With the mean Knowledge score of 15.48 which is a good performance, nearly 90% of students have good to excellent grade performances. Majority have responded correctly for questions related to aetiology, mode of transmission, cardinal signs, communicability, drugs used and duration of MDT, curability. A large number of students responded incorrectly for questions related to incubation period, commonly employed diagnostic test, leprosy vaccination and ocular complications.

**Table 1** Knowledge based questionnaire and percentage performance of students.

Knowledge based questions	Correct response	
	(n=82)	(%)
1. Other name for Leprosy	78	95
2. Aetiology	82	100
3. Incubation period	18	22
4. Mode of transmission	82	100
5. Characteristic hallmark of the cutaneous lesions	64	78
6. Cardinal signs of leprosy	70	85
7. Commonly afflicted nerve in leprosy	56	68
8. Communicability of leprosy	68	83
9. Commonly employed diagnostic test	56	68
10. Drugs in multidrug therapy of leprosy	80	98
11. As per WHO, the period of Rx in PB & MB leprosy	66	80
12. Reason for deformities in Leprosy patients	72	88
13. Can Leprosy affect people of any age group	76	93
14. Sex wise susceptibility differences	68	83
15. Presence of Bacilli in the breast milk	44	54
16. Leprosy vaccination	24	29
17. Leprosy curability	70	85
18. Leprosy is eradicated in India as public health problem	74	90
19. Ocular complication with Leprosy	50	61
20. Chemoprophylaxis for Leprosy	72	88



**Figure 1** Graphical representation for Grading of Knowledge based questionnaire performances.

**Attitude towards leprosy and leprosy affected individuals**

The attitude of students in this study towards leprosy was unfavourable. Most have negative attitude towards leprosy. Questions with number and percentage of participants who gave correct response are listed in **Table 2**. Distribution of performances of participants is given in **Figure 2**. More than 50% had only average and poor attitude. Most showed unfavourable attitude in allowing leprosy affected individual for marriage, for conceiving, treating their general

illnesses in general wards, sharing common utensils, and common work place.

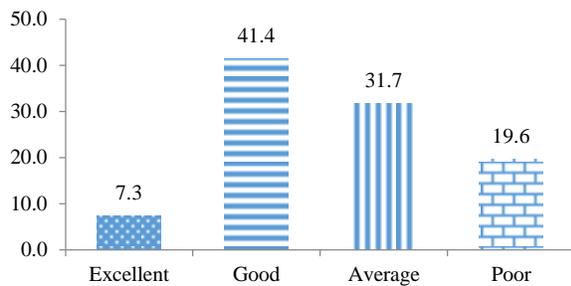
**Discussion**

India had achieved elimination of leprosy as a public health problem in December 2005, but still contributes to 60% of new cases reported globally each year. Of the total new cases detected, almost 50% were multibacillary and the child rate was about 8.7%, both indicating continued transmission of leprosy in the community. Even with the availability of simple and clear diagnostic criteria and with effective drug therapy for leprosy treatment, the burden of disease is still high.<sup>7</sup>

This study was done to analyse the knowledge and attitude of under graduate medical students towards Leprosy. The goals of this study were to discover where the potential gaps in Leprosy knowledge exists and to explore factors associated with Leprosy-related stigma among students. This information would help how the medical education and training could be

**Table 2** Attitude based questionnaire and percentage performance of students.

Attitude based questions	Correct response	
	(n=82)	(%)
1. Is it ok if normal people touch leprosy patient	52	63
2. Is it fine for an individual without leprosy to marry a leprosy patient	28	34
3. Are you willing to share workplace with leprosy patients	54	66
4. Can you catch leprosy disease	52	63
5. Are you scared of leprosy	24	29
6. Will you allow a leprosy affected mother to breast feed her child	40	49
7. Leprosy affected people should be isolated from society during treatment period	66	80
8. Do all patients with leprosy land up in deformities	78	95
9. Are you okay with leprosy affected people using public means of transport	72	88
10. Leprosy affected persons should go and take part in all social activities	52	63
11. If someone in your family has leprosy, would you talk about it with your friend	58	71
12. Can person with leprosy be allowed to work as cook	10	12
13. Persistent deformity means persistent disease	66	80
14. Leprosy affected female should avoid pregnancy	26	32
15. Leprosy should be one of the grounds for decree of nullity of marriage	56	68
16. It is necessary to establish separate schools for leprosy affected children	52	63
17. Leprosy patients should be forbidden from entering religious places.	64	78
18. Will you get disgusted by seeing leprosy affected patients	72	88
19. Will you admit a leprosy affected person in general ward for other illnesses	30	37
20. Does a leprosy patient needs a separate utensils	36	44



**Figure 2** Graphical representation for Grading of Attitude based questionnaire performances.

improved. It was found that even though with near excellent grade of Knowledge about Leprosy, there were specific shortcomings like regarding incubation period, vaccination, ocular complications associated with leprosy. As it is particularly essential for providing proper education to patients and their families, early recognition and initiation of treatment to prevent disability, clearing their phobias and misconceptions and to increase compliance to treatment. It was only average to good grade of Positive attitude towards Leprosy, mainly regarding phobia, social isolation, discrimination at work place. Favourable attitude is required for

helping patients to retain their place in family and society, for guarding their fundamental rights, improving quality of life. Leprosy is more a social problem than just a disease, some prejudices and misconceptions still exists.

In a similar study by Kumeti swapna et al where the knowledge and attitude of under graduate medical students in 1<sup>st</sup> and final year were compared which concluded that there were few deficiencies about this topic in students which emphasizes the need for the topic to be addressed in disciplines of basic as well as clinical sciences.<sup>8</sup> Meena Jain et al in a similar study conducted among final year under graduate dental students stated that an increased emphasis is required on imparting adequate leprosy related knowledge by specifically targeted educational programs.<sup>9</sup> Doulat Rai et al in their study conducted on general practioners in Hyderabad revealed that there were inconsistent and defeciciencies in the knowledge about transmission, prognosis and cure of leprosy and opined that there is requirement of regular refresher courses and hands on

workshops.<sup>10</sup> Rajanna Tiwari et al in their study conducted to assess the impact of one day training program on knowledge and attitude among undergraduate medical students towards leprosy concluded that training programme should be regularly organized as these may not only increase the knowledge of the undergraduate students but also have a positive change in the attitude of students.<sup>11</sup>

Since the data is collected from final year undergraduates of only one college, the sample may not warrant generalizations, it may be a pointer to the feelings of students towards leprosy. It is therefore important to replicate this

## References

1. Udaya kiran K: Introduction and Historical Aspects of Leprosy. In Sacchidanand S. IADVL Textbook of Dermatology. 4<sup>th</sup> ed. 3059.
2. Goncalves, A. Realities of leprosy control: updating scenarios. *Rev Bras Epidemiology*.2013. p611.
3. Churchill Livingstone: Clinical features of Hansen's disease. In Bryceson M & Pfaltzgraft R E. Leprosy, 3rd ed. p240.
4. Nanda Kishore B: Disablement- Its prevention and management. In Sacchidanand S. IADVL Textbook of Dermatology. 4<sup>th</sup> ed. 3181.
5. Bekri W, Gebre S, Mengiste A et al: Delay in diagnosis of leprosy and start of treatment in leprosy patients: a case control study of disabled and non-disabled patients in three different settings in Ethiopia. *Int J Lepr*. 1998;**66(1)**:1-9.
6. Zhang F, Chen S, Sun Y, Chu T: Healthcare seeking behaviour and delay in diagnosis of leprosy in a low endemic area of China. *Lepr Rev*. 2009;**80(4)**:416-23.

study on more representative students. It is responsibility of both medical colleges and the national health programmes to identify the gaps in theoretical and practical knowledge and also should capacitate the medical students in terms of the sensibility to treat the patients with dedication and empathy.

## Conclusion

Even though majority of students had near excellent grade knowledge about leprosy, there is significant negative attitude towards leprosy and leprosy affected persons among medical students.

7. Narasimha Rao P and Sujai Sunnetha: Current situation of Leprosy in India and its Future Implications. *Indian Dermatol Online J*. 2018;**9(2)**:83-9.
8. Swapna K, AL SK, Aruna C, Sridevi K, Ramamurthy DVSB: An assessment of knowledge and attitude towards leprosy among undergraduate medical students. *Indian J Exp Dermatol*. 2019. 68-74.
9. Jain M, Sharma A, Jain V, Virjee K, Singh S. Knowledge and Attitude about Leprosy among Indian Dental Students in Faridabad. *Journal of clinical and diagnostic research: J Clin Diagn Res*. 2016;**10(3)**:ZC48.
10. Bajaj DR, Matlani BL, Soomro FR, Iqbal MP. Knowledge, attitude and practices regarding leprosy among general practitioners at Hyderabad. *J Coll Physicians Surg Pak*. 2009;**19(4)**:215-8.
11. Tiwari R, Srivastava DK, Bansal M, Adhikari P, Mishra S. An assessment of the impact of one day training programme on knowledge and attitude of undergraduate students on leprosy at G. R Medical college, Gwalior, Madhya Pradesh. *Natl J Community Med*. 2013;**4(2)**:14-7.