

Students' Knowledge, Beliefs and Attitudes on Leprosy: An Empirical Study

Nalla Jemimah*, U.Shameem**, Zeba Hashmath***, A.Ramya*, K.Vasudha*, M.Komali*

*Research Scholar, Department of Zoology, Andhra University, Visakhapatnam, Andhra Pradesh, India

** Professor, Department of Zoology, Andhra University, Visakhapatnam, Andhra Pradesh, India

*** Medical Graduate, Rangaraya Medical College, Kakinada, Andhra Pradesh, India

Corresponding Author: Nalla Jemimah

Abstract

The main aim of the study was to find out the Awareness, Knowledge and Beliefs of students about Leprosy. For the purpose of the study, 2 Rural and 2 Urban schools were selected in the Vizaianagaram District, Andhra Pradesh, India and about 200 students (100 each from Rural and Urban schools) were selected by convenient sampling technique. The study found that majority of the students of both the groups confessed to feeling ashamed to admit to others if they had a leprosy patient in the family, disliked shaking hands with leprosy patients, were unwilling to buy food from them and even make friends with them. They are also not willing to sit beside them in public places or work with them; Unfortunately, none of the students have substantial knowledge about the disease, be it through teaching in school or reading books. Our study proposes that by providing accurate and appropriate information about leprosy via education, the existing negative impression of the students and of the community can be changed to a perspective that is both factual and positive. The need to introduce a class curriculum that covers every discipline is felt.

KEYWORDS: Hansen's Disease, Knowledge Leprosy, *Mycobacterium leprae*

Introduction

Leprosy is one of the oldest diseases known to mankind. It is also known as Hansen's disease, named after Norwegian physician, Gerhard Henrik Armauer Hansen, who debunked the prevailing notion of the time that leprosy was a hereditary disease and showed that the disease had a bacterial cause instead¹. Leprosy (Hansen's disease) is caused by *Mycobacterium leprae* which was one of the first bacteria to be incriminated as a cause of human disease². For thousands of years, people with leprosy have been stigmatized and considered to be at the extreme margins of the society. In the time of Christ, it was considered to be a holy curse conferred upon the people due to their wrong doings and the affected unfortunate were totally isolated and discarded. According to some ancient transcripts the patients were confined to huge dungeons or wells and even tortured and stoned to death if they tried to enter the cities³. Leprosy is acquired by prolonged contact with patients of lepromatous leprosy who discharge *M. leprae* in large numbers in their nasal secretions and skin lesions⁴. Despite its low communicability, leprosy remains endemic among an estimated 10 to 15 million people living in poor tropical countries⁵.

Sustaining progress and future efforts

Although in the last two decades, the reported global prevalence of active leprosy infection has dropped by almost 90 %; yet a parallel drop in the incidence or new case detection has not been seen. From 1994 through 2011, the NCDR has persistently been more than 10 >100,000 new cases annually⁶. The last three decades brought a tremendous and hard-earned success in fighting leprosy, thanks to the impressive co-operation of various highly committed actors from civil society, government, and the private sector. As the last mile is always the hardest to go, a fresh and future oriented debate about sustainability is highly desirable at this point in the campaign against this disease.

The first attempt to deal with leprosy as a public health problem was taken up in 1952 by the Gandhi Memorial Leprosy Foundation (GMLF), an institution started under the Gandhi Memorial Trust. At that time, the only method to deal with the disease was to isolate leprosy patients in “leprosy homes” “sanatoria” or “asylums”⁷. The aim of World Leprosy Day is to bring change in the attitude towards leprosy and increase public awareness of the fact that leprosy can now be easily prevented and cured. The date for World Leprosy Day was chosen to coincide with the anniversary of Indian freedom fighter, Mahatma Gandhi’s assassination on January 30, 1948. During his lifetime, Mahatma Gandhi worked tirelessly towards the betterment of people afflicted with leprosy.

Magnitude of leprosy cases

While the country is celebrating its near victory over polio, leprosy continues to haunt the nation. The latest available data from the World Health Organisation (WHO) indicate that India accounted for 134,752 new cases out of a total worldwide of 232,857. South Asia and Southeast Asia come first with 71 % of new cases (166,445), followed by the Americas with 16 % (36,178); Africa, 9 % (20,599), the Eastern Mediterranean, 2 % (4,235), and the Western Pacific, 2 % (5,400)⁸.

According to the WHO, this trend is due to two factors: new health programmes in areas not previously covered brought forth new data and a drop in the number of cases led many governments to cut national programmes and related health services, undermining monitoring.

Prevention of disability is one area that has been innovative, with self-care, community and family involvement, participation in groups of people affected by leprosy, and the use of available, affordable, acceptable appliances such as footwear. Advocacy must play an increasing role to bring about change by influencing those who are responsible to ensure that leprosy be included in health care and social care, and that people affected are fully included in all aspects of society.⁹

Importance of the present study

Prevention is better than cure. Awareness on disease regarding causes, threat and remedial measures definitely helps prevent disease spread. A number of cross-sectional studies were conducted over the world to find out the general attitude towards leprosy in the communities, patients, families of patients and rehabilitation homes. The results show a negative attitude towards leprosy.¹⁰ The results of these studies emphasized that there is a need to educate people and impress upon the population that leprosy is a treatable infectious disease, not congenitally acquired and is curable if detected early. School going students form an important link between the past, present and future of our society. Meanwhile, there has been no specific study

conducted in the state of Andhra Pradesh, hence, the present study is undertaken with the following objectives.

Objective

- To find out the beliefs and knowledge among students about leprosy.
- To bring awareness among school going students and people regarding Leprosy

Material and Methods

Sampling Design

Students were the target group in this studies rather the general population because they represent the community's attitude and general belief regarding a particular problem. Before undertaking the main study, a pilot study was done enrolling 50 school students for determining the validity of the questionnaire. Students in the age group of 15 to 18 years of studying secondary education were interviewed. For the purpose of the study, 2 Rural and 2 Urban schools were selected in Vizianagaram district, Andhra Pradesh, India. And about 200 students (100 students each from rural and urban) were selected by *convenient sampling technique*. Information was obtained from the students by using a structured questionnaire, designed in English, containing both open and close ended questions. The questionnaire was translated into Telugu and then re-translated into English.

Apart from the tabular analysis, some of the relevant statistical tools like *Percentage, and X² test* models have been used at appropriate places. Cross section analysis method is followed in the explanation of some tables in the study.

Hypothesis of the study

H₀: It is assumed that all the students have similar perceptions regarding different issues of leprosy.

H₁: All the students do not have perceptions regarding different issues of leprosy.

Results of the study

As said earlier, the disease primarily affects skin mucous membrane and peripheral nerves. The public health importance of leprosy lies in the capacity of the disease to produce deformities as well as psychological and social disabilities. Awareness in this regards gives better results in control and mental support to the patients. In this context, an attempt is made to find out the knowledge about disease aspect of Leprosy among the students.

The following table shows student's perception on Leprosy

Table 1: Student's Perceptions on Knowledge about Disease of Leprosy							
Students' Perception	Rural			Urban			X ² test and probability values
	Yes	No	Can't say	Yes	No	Can't say	
Do you know about Leprosy	83	10	7	89	8	3	X ² =16.32 P<0.05
Is Leprosy highly contagious	65	27	8	88	6	6	X ² =17.21 P<0.05

Source: Field Survey

From the table it is identified that Leprosy awareness was noticed in significant number of urban and rural students (83% and 89% respectively). Majority

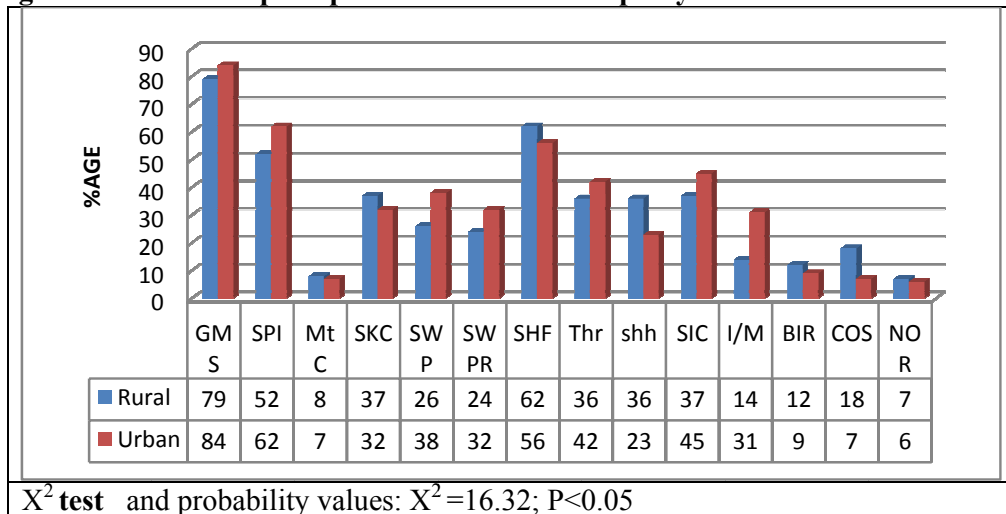
of the students (65% and 88 %) of the both areas viewed Leprosy as a highly contagious disease. Only 6-8 % opined that Leprosy is not highly contagious and only 3-6 % were not aware of the issue. The chi-square values reveals a high degree of differences between the students of rural and urban as against to the hypothesis at 5% (p value) level of significant that there is similar perception regarding the issue.

Student’s’ perceptions on Causes of Leprosy

Leprosy is caused by a type of bacteria (*mycobacterium leprae*) that multiplies very slowly. Its incubation period can last up to 20 years and it mainly affects the skin and peripheral nerves. It is to be noted that, contrary to the social stigma, leprosy is not highly contagious, and does not cause body parts to fall off. In fact, 95% of the world’s population is naturally immune to the disease and, once diagnosed, a person is easily cured. There are different superstitions on leprosy disease among the public. Thus, a systematic awareness can control these superstitions and provide to consolation to them.

The researcher asked the respondents about the knowledge regarding cause of Leprosy. In both rural and urban groups’ almost 70 to-84% of students answered germs as most common cause of leprosy and around 56-62% students also answered that sharing food is another causes. The other modes of spread like sharing personal items and food, skin contact, shaking hands and sitting side by side with the patients (Figure 1). Thus, in this case the hypothesis also not accepted and recorded by alternative hypothesis at 5 % (p value).

Figure-1: Student’s’ perceptions on Causes of Leprosy

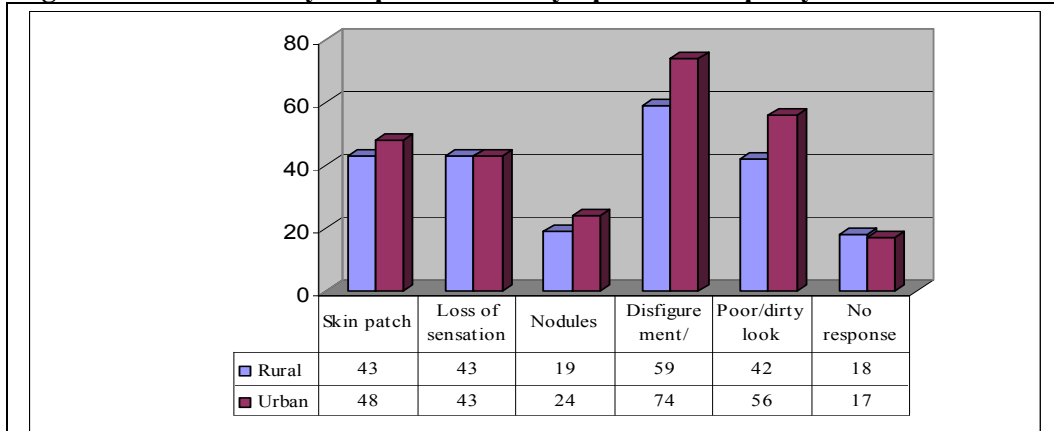


[Note: GMS=Germs, SPI= S p items, MtC= mother to child, SKC=Skin contact, SWP= Sex with patients, SWPR= Sex with prostitutes, SHF= Sharing food, Thr=through air, shh=Shaking hands, I/M= Insects/mosquitoes, SIC= Sitting close, COS= Contaminated soil, NOR=No response] Source: Field Survey

Student’s Myths questions for symptoms of Leprosy

Figure 3 reveals the questions for myths questions for disfigurement/deformity was the major symptom reported by 59 % of rural and 74% of urban students followed by poor/unpleasant look. Almost 43% of students from both Rural and Urban areas responded loss of sensation where as skin patch as sign of leprosy expressed by 43 % and 48 % respectively. Variation is noted among the students of rural and urban indicated by the X² test results.

Figure 3: Student’s myths questions for symptoms of Leprosy



X^2 test and probability values: $X^2=16.32$, $P<0.05$

Source: Field Survey

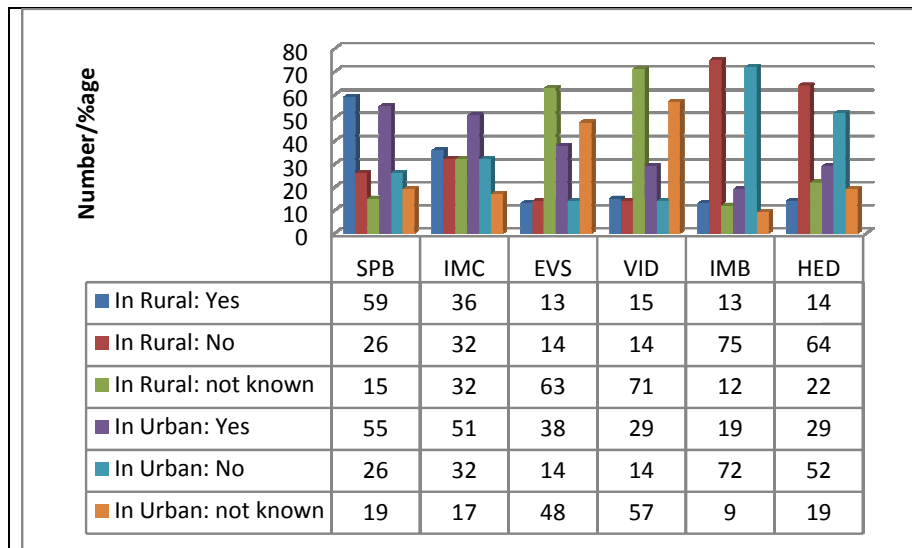
Student’s Myths/Beliefs Regarding Leprosy

Unfortunately, almost all have various myths and beliefs regarding leprosy. It is observed from the figure 4 that such as “*sins of previous birth* “*immoral conduct*” were significantly more prevalent in rural students as compared to urban counterparts ($P<0.05$). Most of the rural students as well as urban believed that leprosy is caused due to *sins of previous birth* .

Student’s feelings on leprosy patients and their family members

Table 2 gives the information regarding Student’s feelings on leprosy patients and their family members. About 50-60 % of the Student’s students in both the groups showed negative attitude towards leprosy patients.

Figure 4: Student’s Myths/Beliefs Regarding Leprosy



X^2 test and probability values: $X^2=16.32$; $P<0.05$

Note: SPB=Sins of Previous birth; IMC= Immoral conduct; EVS= Evil spirits; VID=Vitamin deficiency; IMB= Impure blood; HED= hereditary.(Source: Field Survey)

Although negative attitude towards patients was present in both the groups, it was significantly higher among rural students ($P < 0.05$). Only 15-34 % of the rural and 7-30 % of the urban students feel sympathy about the leprosy patients and their family members. Majority of the rural and urban students (60-58 %) are afraid about the issue.

Table: 2: Student’s feelings on leprosy patients and their family members

Student’s Feelings	Rural			Urban			X 2 test and probability values
	Normal	Symp	Afraid	Normal	SYMP	Afraid	
Feelings about Leprosy Patients	06	34	60	17	30	58	X2=3.120 p >0.05
Feelings about Family Members of Leprosy Patient	16	15	69	34	7	59	X2=11.32 p <0.05

Note: Symp: sympathetic: Source: Field Survey

Student’s Attitude regarding Leprosy

Attitude of students regarding Leprosy is a very important issue. Misconceptions regarding the cause of leprosy are one of the most compelling factors that influence a community's health seeking behavior and determine their attitude towards those affected by the disease¹¹. Similar misconceptions were also found in our study, which were more prevalent in rural students and the same was for the attitude regarding leprosy. Hence, it is important to study the beliefs and misconceptions associated with leprosy before appropriate interventions can be planned.

The perceived modes of spread were significantly higher among the rural students who believed that leprosy spreads easily such as 'sitting side by side' or 'shaking hands' with leprosy patient or 'sharing food' with an ex-leprosy patient. Other studies in many parts of the world¹² have also reported largely negative community attitudes towards leprosy patients. In India, merely to large a range of the students were willing to share food with leprosy patients¹³. Some other studies reported avoidance of a leprosy patient because of the fear of being infected and some opposed to even casual contact with leprosy patients¹⁴. Therefore, in the Indian context, leprosy education of the community should focus on the core message that leprosy does not spread easily and a treated patient does not transmit the disease and one should educate people on how leprosy is not a transmissible disease .

Thus it can be said that students had a “*negative attitude*” regarding leprosy. The study propose that the existing “*negative attitude*” of students and the community can be changed to positive attitude by providing accurate and appropriate information on leprosy and educating people .

Student’s perception on prevention and treatment

Proper knowledge and information can give better results in preventing the disease. The survey results regarding Student’s perception on prevention and treatment is presented in table 4.it is found that 51-52 % of the urban students

believed that Leprosy is preventable and Leprosy is Curable. But only 36-39 % of rural students fall under this category .

Table: 3: Attitudes regarding Leprosy

Attitudes regarding Leprosy	Rural			Urban		
	Agree	Disagree	Nutral	Agree	Disagree	Nutral
Feel ashamed to tell others if having leprosy patient in the family	46	23	31	32	23	45
Like to shake hand with leprosy patient	28	54	18	32	36	32
Can buy food from a leprosy patient	16	64	20	21	35	44
Make leprosy patient your friend	15	65	20	21	36	43
Share food from the same plate with an ex-Leprosy patient	2	86	12	26	54	20
Sitting side by side with leprosy patient in a public conveyance	34	56	10	18	27	55
Work with leprosy patient	45	21	34	40	14	46
Like to help a leprosy patient	60	26	14	76	24	10

Source: Field Survey

At the same time majority of the students of both groups not aware of the fact that anti-leprosy drugs are distributed by the Government, treatment is available free of cost, about duration of treatment and leprosy treatment centers in their area.

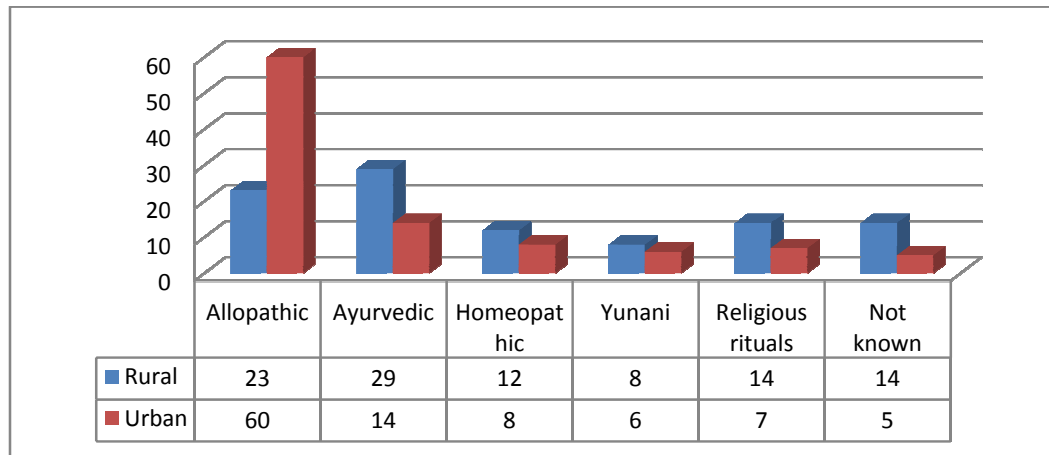
Table-4: Student’s perception on prevention and treatment

Student’s Perceptions on Prevention and Treatment	Rural			Urban		
	Yes	No	Not known	Yes	No	Not known
Leprosy Preventable	39	26	36	52	26	22
Leprosy Curable	36	32	32	51	32	17
Anti- leprosy drugs distributed by the Government	13	14	63	38	14	48
Treatment available free of cost	15	14	71	29	14	57
Know the duration of treatment	13	75	12	19	72	9
Know leprosy treatment center in your area	14	64	22	29	52	19

Source: Field Survey

Meanwhile, 53-60.46% of rural and urban students preferred/suggested allopathic treatment. The alternative treatments, including *ayurvedic*, *homeopathic*, *yunani* and *religious rituals*, were preferred (Figure5).

Figure 5: Student’s idea towards treatment

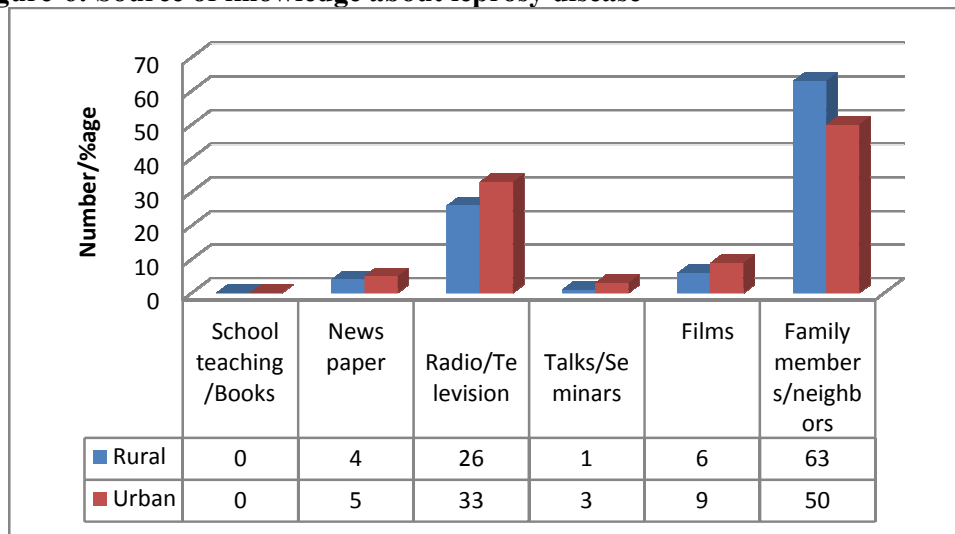


Source: Field Survey

Source of knowledge about leprosy disease

It is found from the study (Figure 6) that in both the groups the source of knowledge was through family members and friends (50 to 63%) and the remaining know through Radio/Television, Newspaper and Films. Unfortunately, none of the students acquired information from School teaching/Books. Thus, it is said that there should be a need to introduce curriculum in class lessons in all discipline.

Figure-6: Source of knowledge about leprosy disease



Source: Field Survey

Conclusions

The study found that the most common source of knowledge regarding leprosy is family members and surrounding people. As students are the future generation of the society, it is important that they get educated properly and accurately about a particular disease (like leprosy). They can help spread correct knowledge and break the myths, false beliefs and negative attitude of the community towards the disease in long term and make early detection possible. This study would be a small step in developing future health education interventions and information obtained from the study can be utilized for implementing the awareness programmes for leprosy. It can strongly be suggested that there is an immediate need to introduce lessons on leprosy in curriculum in every discipline.

References

- ¹<http://www.timeanddate.com/holidays/world/world-leprosy-day>, referred on 30/9/2015
- ²Bryceson A, Pfaltzgraft RE, editors. Leprosy, 3rd edn. Edinburgh: Churchill Livingstone; 1990
- ³Marie-Adelaide Leprosy Organization website for leprosy awareness available at www.malc.org/pk. visited on May 6, 2008.
- ⁴Bryceson A, Pfaltzgraft RE, editors. Leprosy, 3rd edn. Edinburgh: Churchill Livingstone; 1990.
- ⁵WHO, Expert Committee on Leprosy. WHO Technical Report Series. Geneva: WHO; 2010.
- ⁶World Health Organization. Global leprosy situation 2012. *Wkly Epidemiol Record* 2012; 34 : 317-28
- ⁷Desikan KV. Elimination of leprosy & possibility of eradication - the Indian scenario. *Indian J Med Res* 2012; 135 : 3-5.
- ⁸<http://www.asianews.it/news-en/India-still-tops-the-world-in-2014-in-new-cases-of-leprosy-30126.html>
- ⁹Pandya SS. Historical background. In: Kar HK, Kumar B, editors. IAL textbook of leprosy. New Delhi: Jaypee; 2008. p. 1-18.
- ¹⁰Croft RP and Croft RA (1999). Knowledge, attitude and practice regarding Leprosy and Tuberculosis in Bangladesh. *Lepr Rev.* 70: 34 - 42.
- ¹¹Kumaresan JA and Maganu ET (1994). Sociocultural dimensions of leprosy in North-Western Botswana. *Social Sci Med.* 4: 537-541.
- ¹² (1). Chen PCY (1986). Human behavioural research applied to the leprosy control programme of Sarawak, Malaysia. *Southeast Asian J Trop Med Pub Health.* 17: 421-426, (2) Tekle-Haimanot R, Forsgren L, Gebre-Mariam A et al (1992). Attitudes of rural people in central Ethiopia towards leprosy and a brief comparison with observation with epilepsy. . 63: 157-168 and (3) Hilary C (2000). Comparative study of knowledge, attitudes and practices towards leprosy in an intervention and a control group of the community in Bangladesh. Unpublished Master's Dissertation, National University of Singapore
- ¹³Raju MS and Kopparty SNM (1995). Impact of knowledge of leprosy on the attitude towards leprosy patients: a community study. . 67: 259-272.
- ¹⁴Withington SG, Joha S, Baird D et al (2003). Assessing socio-economic factors in relation to stigmatisation, impairment status and selection for socio-economic rehabilitation: a 1-year cohort of new leprosy cases in north Bangladesh, 74: 120-132.