A Process Report on Physical and Psychological Determiners of Social Functioning in Leprosy Patients

D Sanyal[1], D Das Gupta[2], N Mahapatra[3], SK Samanta[4]

Management and rehabilitation of leprosy patients needs information about the social acceptance and its association with physical and psychological problems of the affected person. Ninety three leprosy patients (72 male and 21 female) were selected from outpatient department of the hospitals/clinics and their demographic and clinical informations were recorded. The patients were screened for common mental diseases using GHQ-60 (Bengali version). The social functioning was assessed using SSFI. Mean age was 35.19±12.5 years, 69.9% of the subjects were from urban areas. Multibacillary cases accounted for 60.2% of the cases, 21.5% of the patients had deformity, 53.8% of the patients screened positive for common psychiatric diseases. Social functioning impairment of mild, moderate and severe level was 9.7%, 82.8, and 7.5% respectively. On Univariate analysis, presence of deformity was the only variable showing significant association with moderate to severe degree of social impairment. Using decision tree (Exhaustive CHAID) analysis, presence of deformity along with urban residence was strongly predicted severe social functioning impairment. The results of the study show the need to formulate suitable psychosocial intervention strategy especially in the context of high psychiatric morbidity.

Key words : Social Functioning, Leprosy, Psychiatric Morbidity

Introduction

Leprosy would seem on the surface to be a relatively simple problem requiring a simple biomedical care; effective chemotherapy, re-habilitative surgery and physiotherapy. However, due to misunderstanding and stigma associated with the disease it creates tremendous problems in various aspects of patient's life which include the physical, psychological and social aspects. It is desirable to assess the physical, psychological and social needs of these patients and means to achieve overcome them (Ranney 1974). Social problems influence patient's quality of life, and decision making regarding completion of treatment. Unfortunately, social problems in leprosy have not been studied in detail in this context.

Keeping in mind that a leprosy patient should be

[1] MD (Psychiatry), Associate Professor, Department of Psychiatry, Midnapore Medical College.

[2] MD (Psychiatry), former Resident, Calcutta Medical College.

[3] MD (Paediatrics), Associate Professor, Department of Paediatrics, Calcutta National Medical College.

[4] MS (Ophthalmology), Associate Professor, Department of Paediatrics, Calcutta National Medical College.

Correspondence to : D Sanyal   **Email:** dsanyal99@hotmail.com

treated as a whole (Dharmendra 1978) our study intends to –

1) Assess social impairment among leprosy patients.

2) screen for common mental disorders among leprosy patients

3) To see any association between social impairment and mental illness.

Materials & Methods

Instruments and Investigations Used

1) Bengali version of General Health Questionnaire (GHQ) of Goldberg (1972) has 60 items. This General Health Questionnaire 60 item version is a self rated instrument, having 4 options for each question. Each item is scored according to 0-0-1-1 scoring scheme. The Bengali version was previously standardized and used by Sanyal and Basu (1998). GHQ is well studied instrument useful to screen for common mental illness, patients scoring above certain cut-off value (in our case   11) are considered to be screener positive for common mental illness. Screener diagnosis needs detailed structured clinical interview for accurate specific diagnosis, this was not attempted for this study.

2) A semi-structured proforma to record clinical and demographic details

3) SCARF social functioning index (Padmavati et al 1995) was used to assess social functioning. The instrument has four main components *viz*. self care, occupational role, role in the family and other social roles. Each of these components are measured by rating the sub-components. Social functioning in the previous one month is rated. Higher the score, peer is the social functioning. At the end of the interview, a global assessment of social functioning; is made on a three point rating scale, *viz.* mild (total of all items greater than 60), moderate (total score ranging between 30 to 60), severe (total score less than 30). This is currently regarded as an established measure of social function (Venkatesan 2010).

Places of Work

Leprosy Clinic, Dermatology Outpatient Department, Medical College, Kolkata.

Inclusion Criteria

1. Have literacy up to class IV and able to read Bengali and understand questions in the form.

2. Age is between 14-55 years.

3. Should be physically fit to answer the questions.

4. Availability of co-operation of the spouse, parents and other relatives as needed in the study.

Exclusion Criteria

1. Obvious damage to brain or nervous system e.g., cerebrovascular accident or any concomitant disease which could affect the nervous system e.g., multiple sclerosis.

2. Patient is taking any medicine, which can produce cognitive and, other psychological defect.

3. Presence of other co morbid dermatological and general medical conditions.

4. Refusal to sign the consent form for inclusion in the study.

Methods

90% of 103 leprosy patients attending Leprosy Clinic and fulfilling the study criteria were selected randomly and requested to answer questionnaires faithfully and completely. Random selection was done to avoid selection bias and to minimize the effect of unknown confounding variables. Informed consent was taken from all the patients before the study. Study was done during period March 2001 to February 2002.

The sample size was computed based on the following assumptions

1) About 70% patients are likely to have moderate to severe social functioning impairment.

2) We are likely to be able to recruit 100 patients during study period.

3) We wanted to achieve a sample size which is likely to allow above mentioned level of social impairment within a error of 2%.

4) Using EpiInfo version 6 (CDC, Atlanta) the required sample size calculated to be 91.

Statistical Method

The frequency of various categorical variables, mean, and standard deviation of various numerical variables were used as summary measures of the data. A chi-squared test (or Fisher exact test when chi-squared test was not applicable) was used to test association between levels of social impairment and various categorical variables. Monte Carlo Approximation was done if the Fisher exact test could not be evaluated completely. To compare numerical scores across levels of social impairment ANOVA was used. In all cases, two-tailed tests were used, and a p value of less than 0.05 was considered to be statistically significant. Exhaustive chi-square automatic interaction detection (CHAID) was utilized to identify the variables, which can be used in establishing the predictive model for levels of social impairment. Statistical analysis was done with SPSS 15.0 for Windows software.

Results

Mean age was 35.19±12.5 years, 69.9% of the subjects were from urban areas. Multibacillary cases accounted for 60.2% of the cases, 21.5% of the patients had deformity and 53.8% of the patients screened positive for common psychiatric diseases. Social functioning impairment of mild, moderate and severe level was 9.7%, 82.8, and 7.5% respectively. On univariate analysis (Table 1), presence of deformity was the only variable showing significant association with moderate to severe degree of social impairment.

Table 1 : Distribution of social impairment level according to demographic and clinical variables

Variables		Mild	Moderate	Severe	
		Social Impairment			
Sex	Male	8(11.1%)	59(81.9%)	5(6.9%)	P=.705, N.S.[1]
	Female	1(4.8%)	18(85.7%)	2(9.5%)	
Residence	Rural	4(14.3%)	24(85.7%)	0	P=0.16, N.S.[1]
	Urban	5(7.7%)	53(81.5%)	7(10.8%)	
Leprosy type	Paucibacillary	4(10.8)	33(89.2)	0	P=0.081, N.S.[1]
	Multibacillary	5(8.9%)	44(78.6%)	7(12.5%)	
Deformity	Absent	9(12.3%)	62(84.9%)	2(2.7%)	P=0.003***
	Present	0	15(75%)	5(25%)	
Psychiatric	Absent	6(14%)	34(79.1)	3(7%)	P=0.5, N.S.[1]
morbidity	Present	3(6%)	43(86%)	4(8%)	
Age (years)		37.00±9.644	34.65±+12.355	38.86±17.752	P=0.632, N.S. using ANOVA

Note : N.S.[1]- Chi-squared test
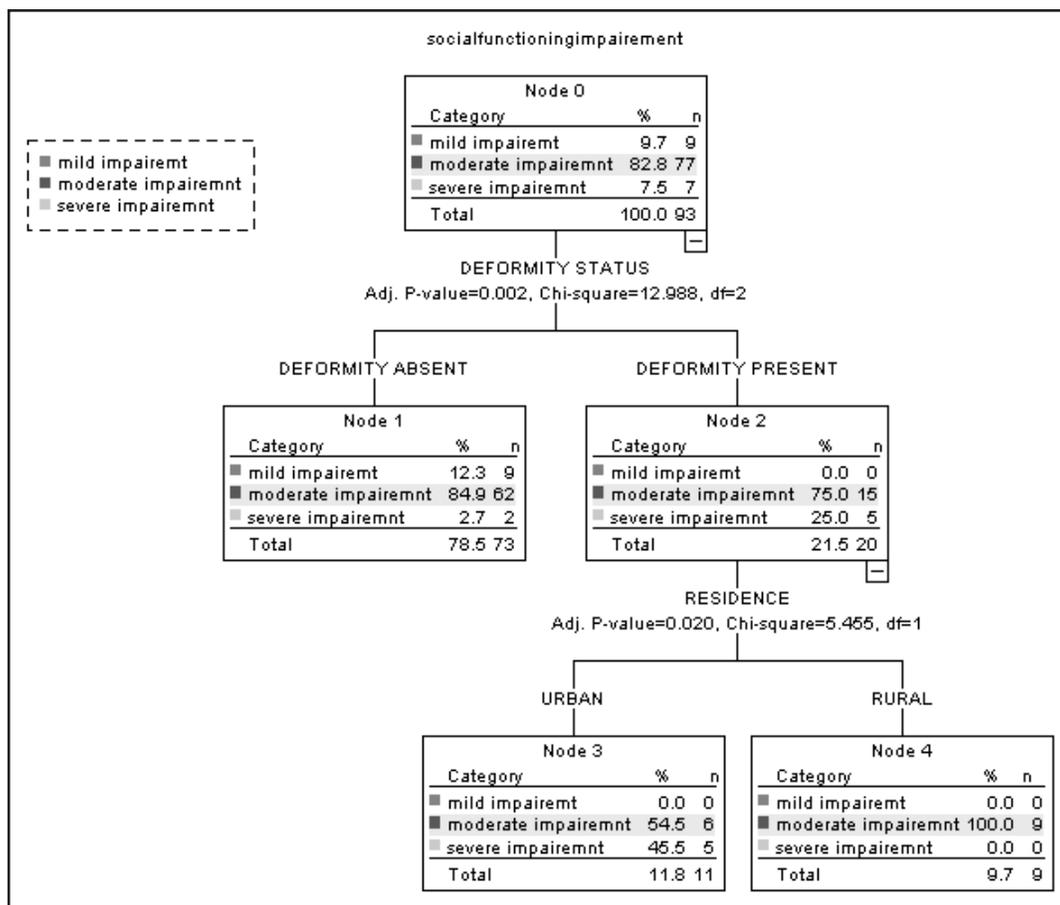
Fig 1 : Shows the decision tree (exhaustive chaid analysis to predict level of social functioning impairment level according to demographic and clinical variables

Using decision tree (Exhaustive Chaid) analysis (Figure 1), presence of deformity along with urban residence was strongly predicted severe social functioning impairment.

Discussion

The present study provides many interesting findings, which needs to be put in the perspective of our present knowledge obtained from other research work done at different setups.

In the present study, 53.8% of the patients screened positive for common psychiatric diseases. The values of prevalence of psychiatric morbidity differ widely across different studies. Kisivuli et al (2005) in a study conducted in Kenya found similar morbidity rate, while study conducted in North India by Verma and Gautam (1994) found 76% psychiatric morbidity.

Social functioning impairment of mild, moderate and severe level was 9.7%, 82.8, and 7.5% respectively. Bhatia et al (2006) reported significant dysfunction on social domain in 58.9% patients. But unlike Bhatia et al (2006) study, our study showed that the presence of deformity was

the only variable showing significant association with moderate to severe degree of social impairment and failed to find any relationship with psychiatric morbidity. Perhaps, deformity increases the social stigma due to leprosy and makes persons occupational and social life difficult.

However, the present study has some short comings—

1) The study size is small, so the power of study is low.

2) No follow up study was attempted to see the effect of treatment on leprosy treatment on psychiatric morbidity and SSFI.

3) Stigma of leprosy is known to be an important issue in determining psychosocial functions. This aspect was not looked in the present study.

Conclusion

This process report shows that leprosy is associated with a fair amount of psychiatric and social morbidity, which currently remains unattended in routine leprosy treatment. Closer liaison between leprosy clinics and psychiatry units is essential to address this problem. Special emphasis needs to be given on patients with deformities who seem to be especially prone to social problems.

A detailed study on this subject covering a appropriate sample size will reveal the real scenario and at that time concerted efforts from all concerned will help in dealing with the huge problem of leprosy in a comprehensive manner and enable the patients to lead a productive life.

References

1. Bhatia MS, Chandra R, Bhattacharya SN et al (2006). Psychiatric morbidity and pattern of dysfunctions in patients with leprosy. *Indian J Dermatol.* **51:** 23-25.

2. Dharmendra (1978). Treatment of leprosy – General considerations. In leprosy. Vol. I. Kothari Medical Publishing House, Bombay, pp 355-358.

3. Goldberg DP (1972). The detection of psychiatric illness by quiestionnaire. London: Oxford University Press.

4. Kisivuli AJ, Othieno CJ, Mburu JM et al (2005). Psychiatric morbidity among leprosy patients in Teso and Busia districts of Western Kenya. *East Afr Med J.* **82:** 452-457.

5. Padmavati R, Thara R, Srinivasan L et al (1995). SCARF Social functioning index. *Indian J Psychiatry*. **37**: 161-164.

6. Ranney DA (1974). Rehabilitation goals in leprosy surgery. *Leprosy India,* **46**: 253-257.

7. Sanyal D and Basu J (1998). The role of life events in short term metabolic control of Non-Insulin Dependent Diabetes Mellitus. *Indian J Psychiatry*. **40**: 350-356.

8. Venkatesan S (2010). Indian scales and inventories. *Indian J Psychiatry*. **52**: 378-385.

9. Verma KK and Gautam S (1994). Psychiatric morbidity in displaced leprosy patients. *Indian J Lepr.* **66**: 339-43.