

# Impact of Socio – Environmental Concerns on Stigmatised Diseases (With Special Reference to TB and Leprosy)

## Abstract

In the present study an endeavour has been made to understand the observance of socio – economic and environmental concerns and its impact on occurrence of Tuberculosis (TB) and Leprosy. A total of 80 patients (40 patients of TB and 40 patients of leprosy) were selected purposively from Out Patient Department (OPD) of TB Sapru government hospital of Allahabad district for collection of primary data. Secondary data were collected through different secondary sources such as different journals, reports, internet sources etc. An interview schedule having open and closed ended questions were used for data collection. The questions pertaining socio – economic and demographic characteristics of patients with TB and leprosy were included in the interview schedule. Result of the study show that persons living in *kuchha* houses, traditional methods used as cooking fuel, insufficient number of meals and improper food stuffs taken, lower level of educational status, overcrowded household without proper ventilation all linked with poor socio – economic and environmental conditions that make a person more susceptible for TB and leprosy infection. Proper health education programmes must be propagated by the government and non – government bodies to detect the ailment at the early stage. Health camps must be run by the government and non – government bodies for free health check – ups for early detection of the ailment.

**Keywords:** Stigma, Immunity, Malnourished, Overcrowded.

## Introduction

Tuberculosis (TB) and leprosy both are airborne bacterial diseases caused by bacterial infection of *Mycobacterium tuberculosis* and *Mycobacterium leprae* respectively. Nasal and oral droplet dispersion is direct and major route of transmission of both of the stigmatised diseases (Rodrigues & Lockwood, 2011). Though after the introduction of WHO and global spread of the cure medicine DOTS the mortality rate due to TB has been fallen to 47% since 1990. Globally the TB prevalence rate has fallen by an average of 1.5% per year since 2000 and presently the case incidence is 18% lower than the level of 2000 (WHO, 2015)<sup>a</sup>. In the same way after the introduction of MDT by WHO the global burden of leprosy decreased from 5 million cases in 1980s to 2,00,000 cases in 2015 (WHO, 2015)<sup>b</sup>. In spite of global burden of leprosy and TB are decreasing still stigma associated to both of the diseases are present even today.

## Review of Literature

Social Stigma considerably associated with leprosy and TB affect the socio – economic and cultural life of the patients such as marriage prospects, employment opportunities, social participation, interpersonal relationship and leisure activities (Van Brakel, 2003). Patients with TB and leprosy experience social discrimination after disclosing about their ailment and after effect experience loneliness (Omar et al, 2017). Substantial stigmatisation and discrimination is being faced by patients with stigmatised illness at community level as well as family level (Omar et al, 2017) that affects the 'Quality of Life' of the patients (Dhuriya, Sharma & Ingle, 2008) in terms of physical, psychological, economic, spiritual and social well – beings. In a study of Meghan et al (2013) it was found that when patients were diagnosed with TB then hopelessness and fear were two psychological impacts found in most of the patients. Misconceptions regarding leprosy and TB are found even in health workers and considered as incurable disease that may be transmitted through touch and thus considered that patients should be kept apart from other people (Briden &

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Maguire, 2003). Sometimes discrimination may be self emerged (Hurting, Porter & Orden, 1993) to avoid the gossips and comments made by the community members and also due to fear of transmission of infection. Perceived stigma and its effect in the social life of patients increase the chance of concealment about the ailment with their family, friends and neighbours due to fear of their mistreatment, rejection and exclusion from society (Garbin et al, 2015).

Thus review of above studies show that leprosy as well TB both is not confined to a medical problem but has socio – economic repercussions. After the introduction of DOTS and MDT by World Health Organisation (WHO) unquestionably the prevalence of TB and leprosy are decreasing continuously. Still global statistics of TB and leprosy reported by WHO in 2015 show that 58% of TB and 72% of leprosy cases reported from South East Asian Region (SEAR) and Western Pacific region (WHO, 2015)<sup>a</sup>. Most of the countries in SEAR are low and middle income which raise a question undoubtedly that why maximum prevalence of TB and leprosy are coming from SEAR countries? Schmidh (2008) found in his study that low and middle income countries having unhygienic and unsanitary living conditions that is why having high prevalence of TB and leprosy. Thus besides bacterial infection of TB and leprosy through nasal and oral droplets from person – to – person, socio – economic and environmental factors also contribute a prominent source of transmission of disease. But scant attention has been made by the social scientists to access the effect of socio – environmental issues on TB and leprosy occurrence.

Thus being a social scientist in the present research work an endeavour has been made to access the socio – economic and environmental concerns and its impact on diseases such as leprosy and TB occurrence.

### Objectives of the Study

The present research work has the following objectives –

1. To study the socio – economic profile of the respondents
2. To investigate the impacts of socio – environmental factors on the onset of ailments having stigma such as TB and leprosy.

### Method

The present research work is an empirical effort. For the same purpose a sample of 80 patients (40 patients of Tuberculosis (TB) and 40 patients of Leprosy) were selected purposively from Out Patient Department (OPD) of T B Sapru government hospital of Allahabad District. An interview schedule having open and closed ended questions were used for data collection. Data were collected through in – depth interview of the respondents.

### Result

Analysis of data shows that 62% of the respondents are male and rest 38% of them are female. Data distributed according to age wise show that most of the respondents (48%) belong to age in between 36 – 51 than age group in between 20 – 35 belonged by 30% of the respondents. 22% of the respondents having age more than 51 years. Marital

status of the respondents show that more than half of the respondents (58%) are married. On the other hand 24% are unmarried. 16% of the respondents are divorced/separated by their respective spouse. 2% of the respondents are widowed.

Data according to occupation of the respondents are tabulated in Table – 1.

**Table – 1**  
**Occupation of the respondents**

Occupation	Respondents of leprosy (N=40)	Respondents of TB (N=40)
Cultivator	08 (20)*	07 (17.5)
Agricultural labour	12 (30)	09 (22.5)
Skilled labour	03 (7.5)	06 (15)
Business man	02 (5)	03 (7.5)
Government service	---	03(7.5)
Begging	06 (15)	03 (7.5)
Unemployed	09 (22.5)	06 (15)
Others	---	03(7.5)
Total	40 (100)	40 (100)

\*percentage in parentheses

Analysis of data of Table – 1 show that 20% respondents of leprosy and 17.5% respondents of TB were cultivator. On the other hand 30% of leprosy respondents and 22.5% of TB respondents were agriculture labour. Thus occupation of 50% of leprosy respondents and 40% of TB respondents were associated to agriculture.

**Table – 2**  
**Educational status**

Educational Status	Respondents of leprosy (N=40)	Respondents of TB (N=40)
Illiterate	16 (40)*	13 (32.5)
Primary educated	08 (20)	08 (20)
High school	10 (25)	08 (20)
Intermediate	04 (10)	06 (15)
Graduate	02 (5)	03 (7.5)
Above graduation	---	02 (5)
Total	40 (100)	40 (100)

\*percentage in parentheses

**Table – 3**  
**Types of Household**

Type of Household	Respondents of leprosy	Respondents of TB
<i>Kuccha</i>	19 (47.5)*	16 (40)
<i>Pucca</i>	10 (25)	10 (25)
<i>Semi – pucca</i>	11 (27.5)	14 (35)
Total	40 (100)	40 (100)

\*percentage in parentheses

Table – 2 depicts that most of the respondents suffering from stigmatised diseases are illiterate (40% respondents of leprosy and 32.5% respondents of TB). On the other hand 20% respondents of leprosy and same frequency of the respondents of TB are primary educated.

Table – 3 shows that most of the respondents of leprosy (47.5%) and TB (40%) are living in the *kuccha* houses.

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**Table – 4**  
**Average number of windows per room**

Average no. of windows/room	Respondents of leprosy	Respondents of TB
No windows/room	12 (30)*	16 (40)
One window/room	16 (40)	15 (37.5)
>one window/room	12 (30)	09 (22.5)
Total	40 (100)	40 (100)

\*percentage in parentheses

Table – 4 is distribution of data according to average no. of windows per room. Proper number of windows in a room is necessary to let in fresh air and proper ventilation. On the basis of average no. of windows per room it is found that 30% of leprosy respondents and 40% of TB respondents have not window in their room. On the other hand average no. of one window in a room reported by 40% of leprosy respondents and 37.5% of TB respondents.

**Table – 5**  
**Numbers of members in the family**

Number of family members	Respondents of leprosy	Respondents of TB
1 – 2	05 (12.5)*	07 (17.5)
3 – 4	08 (20)	11 (27.5)
5 – 6	16 (40)	08 (20)
>6	11 (27.5)	14 (35)
Total	40 (100)	40 (100)

\*percentage in parentheses

Table – 5 shows the data according to number of members in the family respondents have. The data show that 35% respondents of TB and 27.5% respondents of leprosy have more than 6 members in their family. On the other hand 20% respondents of TB and 40% respondents of leprosy have the members in their family in between five to six.

Data according to mode of cooking method used in the respondents' household show that traditional fuel such as firewood, dung cakes and agricultural waste are used in cooking in their household reported by 37.5% respondents of leprosy and 47.5% of TB patients as shown in Table – 6.

**Table – 6**  
**Mode of cooking**

	Respondents of leprosy	Respondents of TB
Traditional fuel	15 (37.5)*	19 (47.5)
Other mode	25 (62.5)	21 (52.5)
Total	40 (100)	40 (100)

\*percentage in parentheses

Table – 7 and Table – 8 are data according to intake of meals and food stuffs reported by the respondents. Analysis of data of Table – 7 shows that 40% respondents of leprosy and 37.5% of TB respondents take their meals only one or two times in a day. Proper healthy diet that includes *dal*, vegetables, rice, *roti*, fruits and milk must be taken in regular way for physical fitness and wellness. Only 30% of leprosy respondents and 27.5% of TB respondents affirmed that they take proper healthy

diet most of the days. It is sometimes only affirmed by 37.5% of leprosy respondents and 32.5% of TB respondents. 32.5% respondents of leprosy and 40% respondents of TB never take proper healthy food stuffs due to weak economic conditions.

**Table – 7**  
**Number of Meals Taken/Day**

Number of meals/day	Respondents of leprosy (N=40)	Respondents of TB (N=40)
1 – 2 meals/day	16 (40)*	15 (37.5)
3 meals/day	21 (52.5)	19 (47.5)
>3 meals/day	03 (7.5)	06 (15)
Total	40 (100)	40 (100)

\*percentage in parentheses

**Table – 8**  
**Proper Healthy Food Stuffs Have Taken**

Intake of Proper healthy diet	Respondents of leprosy (N=40)	Respondents of TB (N=40)
Most of the days	12 (30)*	11 (27.5)
Some days	15 (37.5)	13 (32.5)
Never	13 (32.5)	16 (40)
Total	40 (100)	40 (100)

\*percentage in parentheses

## Discussion & Conclusion

Leprosy and TB both are considerably considered as air borne diseases and route of infection considered from person – to – person through nasal and oral droplet dispersion (Rodrigues and Lockwood, 2011). This is direct route of infection. Different social – environmental factors also contribute a great source of leprosy and TB transmission. Table – 1 shows that occupation of most of the respondents of TB and leprosy are associated to agriculture. Leprosy and TB bacillus can be chemoautotroph both in human body and the soil. Thus soil is also an alternative source of infection (Chakrabarty & Dastidar, 2002). Thus leprosy and TB bacillus make more susceptible to those whose occupation is associated to agriculture. A significant number of the respondents of TB and leprosy are either illiterate or primary educated as shown in Table – 2. Lower education level increases the high incidence of TB and leprosy infection (Ponnighaus et al, 1994) as health awareness and health care services found more in educated class in comparison to illiterate or lower educated class. Besides education, overcrowded households due to more number of family members increase the proximity of contact that makes a person more susceptible for leprosy and TB infection. (Khaliq, Khan et al, 2015). Sinha (2000) also found that humid environment and overcrowded places make people more prone to the infection. Data of Table – 5 shows that 67.5% respondents of leprosy and 55% respondents of TB have members in their family five or more than five. After analysis of data associated to average number of windows per room, it is found that there is no window in a room of 30% respondents of leprosy and 40% respondents of TB. Windows in the room are must to let in proper air and proper ventilation.

E: ISSN No. 2349-9435

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Crowded household without proper ventilation also increase the risk of infection (Mangtani et al, 1995).

Traditional methods were used for cooking in the household reported by 47.5% of leprosy and 65% of TB patients (Table – 6). Indoor pollution generated through traditional mode of cooking such as dung cakes, fire wood, agricultural waste especially in rural areas also contribute to lung infection (Khaliq et al, 2015 & Schmidt, 2008). Immune system needs to work to fight off viruses and infection (Schmidt, 2008). Proper nutritious diet and food habits are must for body immunity. Food habit which directly link to food intake, types and quality of food taken. All of them affect the immunity system that further affects the incidence of diseases (Sinha, 2000 & Schmidt, 2008). Proper healthy food stuffs were taken by only 30% respondents of leprosy and 27.5% respondents of TB most of the times show that most of TB and leprosy respondents were incompetent to intake proper healthy diet for their physical fitness and wellness. In the low income household people unable to take proper number of meals and also malnourished that affects adversely the body immunity and makes a person more susceptible for infection (Kerr – Pontes Ligia et al, 2006 & Mc Ginnis, 1988).

Thus data resulting that most of the respondents with TB and leprosy were living in *kuccha* houses, using traditional methods as cooking fuel, insufficient meal intake, lower level of educational status, living in overcrowded households without proper ventilation. All the above indicators show the weaker socio – economic conditions of the respondents. Thus deprived groups are more susceptible for occurrence of TB and leprosy infection than elevated groups. Proper health education programmes must be propagated by the government and non – government bodies to detect the ailment at the early stage. Health camps must be run by the government and non – government bodies for free health check – ups for early detection of the ailment.

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