

Health Seeking Behaviour among Tuberculosis Patients in India: A Systematic Review

JANMEJAYA SAMAL

ABSTRACT

Introduction: The Revised National Tuberculosis Control Programme's (RNTCP) passive case finding approach strongly influence the health seeking behaviour of patients and the timing of health seeking as well.

Aim: A systematic review was carried out to understand the health seeking behaviour, related delays and the knowledge and attitude regarding Tuberculosis (TB) and the health services linked with it.

Materials and Methods: A manual search strategy was adopted using PUBMED and Google Scholar search engines to obtain research papers in the said subject. Of 113 articles obtained by the end of this search process 10 full text articles were finally selected for the purpose of this review.

Results: Of the 10 studies identified, the results were delineated in 7 thematic areas such as: (1) Knowledge and perception of TB patients regarding TB and health services for TB; (2) Delays in seeking help; (3) Facility based health seeking behaviour; (4) Reasons for not seeking care/Delay in seeking care; (5) Geographical pattern (Rural-Urban) of health seeking; (6) Socio-cultural factors associated with health seeking; and (7) Gender based health seeking behaviour.

Conclusion: Health seeking behaviour and related delays are of utmost importance in TB care from two important perspectives; firstly TB requires timely treatment and secondly it requires protracted treatment. Required level of knowledge and positive health behaviour helps the patients in taking timely help from appropriate health facility.

Keywords: Help seeking, Patient delay, Treatment delay, Health system delay

INTRODUCTION

Tuberculosis (TB) is a global public health crisis. The WHO's 1990 global disease burden report ranked TB in the seventh position and expected to continue the same till 2020 in terms of morbidity [1]. In India TB continues to be a devastating health crisis having more than 3,00,000 deaths, 2.2 million new cases with an economic loss of \$23bn (£14.9bn; €20.3bn) each year [2]. In India TB in the community is managed by a centrally sponsored TB control program known as Revised National TB Control Programme (RNTCP). The main target of this programme is 85% cure rate and 70% case detection rate. Since 2007, India has achieved this global target of cure rate and case detection rate. Furthermore RNTCP has 100% coverage rate under DOTS and India has achieved the global targets however the problem does not end there owing to the involvement of multiple factors [3]. The RNTCP heavily depend on passive case finding [4] which is strongly linked with health seeking behaviour and related delays in TB treatment. Health seeking behaviour allows the patients to choose their preferred healthcare destination and the time of seeking help for TB treatment as per their own wish. In most of the Indian communities it has been observed that the first point of contact by a chest symptomatic/cough symptomatic is a private health facility. Studies reveal that 50-80% of TB patients seek medical care at private health facilities in India and the treatment offered at private health facilities remains substandard [5-7]. The flip side of the coin is that most of the people are not aware of national programs for TB as in a study conducted at the P.D. Hinduja National Hospital and Medical Research Centre, Mumbai, India among TB patients, not exposed to TB services offered in the public sector, found 170 out of 200 patients interviewed (85%) to be unaware of the DOTS program [8]. Moreover the delay in TB treatment is also significant. Studies reveal that the mean patient delay in seeking care ranges from 25 to 120 days [9] and that the patients meet several health care providers before getting diagnosed and initiated with the TB treatment [10,11]. The health seeking behaviour of TB patients and various delays, patient delay and health system delay, may

lead to disastrous outcomes such as conversion of simple cases to Multidrug Resistance (MDR) and Extensively Drug (XDR) forms, further spread of disease and increased out of pocket expenditure etc.

AIM

The primary objective of this systematic review was to understand the health seeking behaviour of TB patients, delays in seeking help among TB patients and to assess the knowledge and perception regarding TB and the availability of health services for TB.

MATERIALS AND METHODS

Search Strategy

A manual search strategy was adopted to obtain research papers in the said subject. The search was primarily carried out using PUBMED and Google Scholar search engine and the key words used for the purpose of search include "health seeking behaviour, help seeking, TB patients, Treatment delays, India". A total of 113 articles were obtained by the end of this search process and 10 full text articles were finally selected for the purpose of this review.

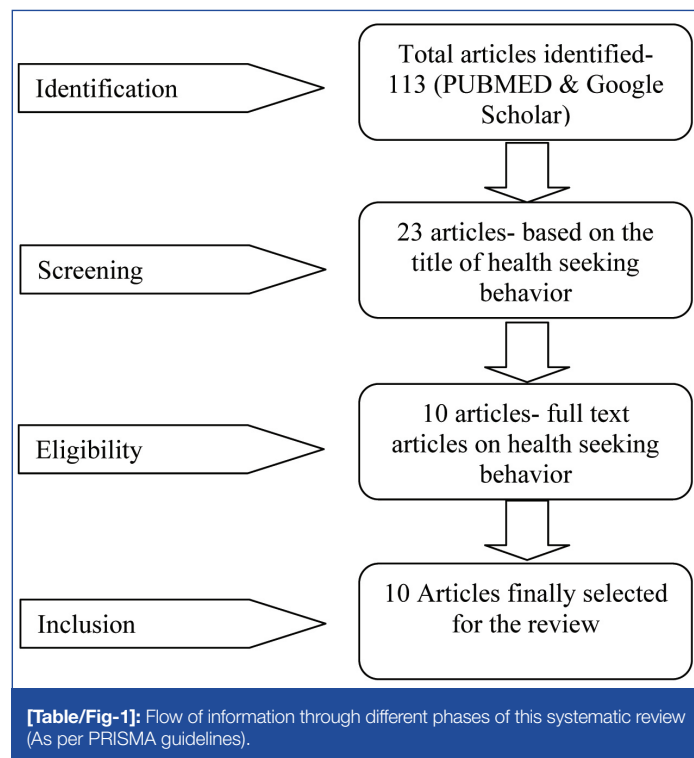
Inclusion and Exclusion Criteria

The studies that fall under the category of inclusion criteria include those researches that have been carried out in India only. Articles published in English language were only included in the review. Furthermore articles published after the year 2000 till 2015 were included in this review. The studies those did not fall in these categories were excluded from review. In addition this review categorically included original research carried out at health facilities and/or communities in various Indian states and precluded the review articles in the said subject.

Data Extraction and Analysis

In the first phase the articles were identified based on the objectives of the study. In the second phase the articles identified on the basis of study objectives were pooled together for the purpose of

screening by reading the titles and thereafter the abstracts. Articles were excluded at this stage not satisfying the inclusion criteria. After this the eligible articles were further screened by reading the full texts and those not meeting the inclusion criteria were excluded. By the end of this process the eligible full text articles meeting the inclusion criteria were included in the study. The [Table/Fig-1] gives an idea about the flow of information through different phases of this systematic review as per PRISMA (Preferred Reporting Items for Systematic review and Meta Analysis) guidelines (<http://www.prisma-statement.org/>).



RESULTS

Selection of Studies

Out of total 113 records obtained in the literature survey 10 articles were finally selected for the review. Most of the studies finally selected for the review are community based cross-sectional studies; 9 (n=10) community based studies and 1 (n=10) hospital based cross-sectional study with one study adopted cultural epidemiological study design. The earliest study reviewed in this systematic review includes a 2003 study by Selvam JM et al., [11] published in 2007 and the most recent study included in this review is the study by Maske AP et al., [12] published in July 2105. The state wise distribution of studies included in this review includes Maharashtra (n=4), Tamilnadu (n=3), Chandigarh (n=1), Jharkhand (n=1), Delhi (n=1). In most of the studies semi structured interview schedule has been used as the study tool to collect data. The sample size ranged from lowest 10 to highest 656.

Characteristics of the Individual Studies

The [Table/Fig-2] delineates the characteristics of individual studies reviewed in this paper [12-21].

Factors Associated with Health Seeking Behaviour

Knowledge and Perception of TB Patients Regarding TB and Health Services for TB:

The cultural epidemiological study conducted in the tribal pockets of Thane district revealed that 10% (n=50) of the study population were unaware of the cause of TB which was higher for Leprosy (28%, n=100). In this study various types of perceived causes have been reported by TB patients; 26% food and smoking, 22%

constitutional weakness, 12% environmental, 34% traditional, cultural and supernatural and 30% contact related as the causes of TB [12]. Study at Chennai and Madurai among 606 participants showed that more than half of the study participants were aware that TB spreads through air. The most commonly reported cause of TB was germs followed by smoking. Other modes of transmission mentioned were water, food and touch. More than 75% (n=606) of both rural and urban respondents said that TB is curable. Moreover 69% (n=311) of the rural and 62% (n=295) of urban symptomatics were aware that treatment for TB is available at their closer vicinities [13].

Delays in Seeking Help:

Study at Chennai and Madurai among 606 participants showed that the median interval between onset of symptoms and seeking care at a health facility (both public and private) was uniformly 10 days in all categories of subjects (rural and urban) with slight differences in the range [13]. The cross-sectional study conducted at the E-ward of Mumbai Municipal Corporation revealed that the patient delay was observed among 64.1% (n=156) of TB patients with median delay of 8 weeks [15]. In addition to patient delay, provider delay has also been reported in this study [15]. The study reported that the patients who had minimal delay are more treatment adherent [15]. The hospital based cross-sectional study conducted among 656 cough symptomatics at the Rajendra Institute of Medical Sciences (RIMS), Ranchi revealed significant patient delay in which acceptable patient delay (≤ 30 days) was observed in 24.39% (n=656) and significant patient delay (beyond 30 days) was observed in 75.61% (n=656) of the cough symptomatics [19]. The cross-sectional study conducted among 300 patients in Chennai revealed that the mean patient delay is 18.3 days, the median being 7 days. The mean patient delay was more among literates, unemployed people, males and patients with a per capita income of less than Rs.1100. Patients with extra-pulmonary TB showed more mean patient delay (55.7) as compared to the patients with pulmonary TB (14.8) and this difference was found to be statistically significant ($p < 0.001$) [20].

Facility Based Health Seeking Behaviour:

The study conducted in the tribal pockets of Thane district revealed that TB patients were more likely to seek care from private practitioners and traditional providers. A comparison between TB and leprosy patients showed health seeking behaviour at public health facilities in three fourth and one third respectively [12]. The study conducted among 105 chest symptomatics in the urban slums of Aurangabad city revealed that 51.4% (n=105) visited private health facilities and 23.8% preferred government health facilities. 24.76% have not visited any health facilities of which 12.4% had indulged in self medication which was higher among the age group of 35-54 [14]. Similarly the cross-sectional study conducted at the E-ward of Mumbai Municipal Corporation revealed that patients initially preferred private practitioners and self medication [15]. The cross-sectional study conducted among 601 patients in Tamilnadu revealed that the first point of contact was a government provider for 47% and a private provider for 43% of the respondents. The main reasons given for approaching private providers first were faith in the provider (87/262, 33%) and physical proximity (63/262, 24%), while the main reason for approaching a governmental facility first was because of the advice given in the community (72/280, 26%) [17]. The cross-sectional study among 189 TB patients at Wardha revealed 97 (51.3%) were receiving treatment at rural health facilities and 92 (48.7%) at urban health facilities; 85% of all patients were treated at government health facilities, and the remainder by non-governmental organizations [18]. The hospital based cross-sectional study conducted at RIMS, Ranchi revealed that 52.29% (n=656) participants approached government health facilities for their problem, while 23.47% and

Authors	J/YOP	Methodology/ Type of study	Study tool/ Sample size	Time frame and Place of study	Important findings
Maske AP et al., [12]	Infectious Diseases of Poverty (2015) 4:33	Cultural epidemiological study	Semi structured interview/50 TB patients	April 2011 and September 2012, Tribal blocks of Thane district, Maharashtra	As per the multivariate logistic regression, all patients who reported heat, cold or humoral as their perceived cause (PC) of illness were three times more likely to prefer traditional providers for help seeking (HS) than non-traditional providers. Patients who reported close contact with someone with the same problem as the PC of their illness were about 1.5 times more likely to prefer traditional providers for HS. Patients who perceived demons, fate, gods, stars or karma as the cause of their illness were 1.6 times more likely to prefer the private sector for HS.
Charles N et al., [13]	PLoS ONE (2015) 5(9): e12379. doi:10.1371/journal.pone.0012379	Community based cross-sectional study	Interview tool/ 606 chest symptomatics	March 2008- August 2008, Chennai and Madurai district	Longer delays in seeking care were seen amongst symptomatic above 45 years of age and those who had taken previous TB treatment. Overall, 50% (222/444) of the chest symptomatics approached a government health care facility first. Sixty two (28%) of the 222 made a second visit to a government facility, while 17% shifted to a private facility. Dissatisfaction with the health care facility was one of the major reasons expressed.
Karanjekar VD et al., [14]	International Journal of Basic and Applied Medical Sciences. 2014;4(1): 173-179	Community based cross-sectional study	Survey questionnaire. 105 chest symptomatic	July 2007 to Sept.2008, urban slums of Aurangabad city in Maharashtra, India	54 (51.4%) of them visited to private hospitals while only 25 (23.8%) of them preferred government health centers for treatment. The factors like sex, religion, type of family, education and socioeconomic status were significantly associated with visit to health facility and its choice among chest symptomatic.
Kulkarni PY et al., [15]	International Journal of Medicine and Public Health. 2013;3(4)	Community based cross-sectional study	Semi structured interview schedule. 156 TB patients	E-ward of Mumbai Municipal Corporation (MMC), Maharashtra	Median duration of cough with expectoration before consulting a provider was 8 weeks (min = 1, max = 96 weeks). Risk factors for patient delay were age <45 years, living without family. Mean provider delay was 17.91 days. First approach to the private sector for the treatment was associated with provider delay. Mean delay to start continuation phase (CP) was 18.46 days (min = 4 days, max = 67 days). Delay was associated with migration, smoking, alcoholism, living away from family, social stigma involving hiding the disease from spouse and relatives.
Kaur M et al., [16]	Indian J Tuberc. 2013; 60: 217-222	Cross-sectional study	Interview tool. 109 TB patients	2009, Eight randomly selected health institutions of Chandigarh	More women (40%) resorted to home remedies at the onset of symptoms compared to men (13%). More men (87%) consulted qualified medical practitioners compared to the women (60%). Consultations from private doctors were more common among men. Mean delay in diagnosis was more in men (60 days) than women (33 days). Main reasons for delay were late referral by doctor (37% vs 26%), long distance to health institution (29% vs 28%), prolonged use of self-medication (30% vs 26%), and financial constraints (7% vs 17%). More women (20.8%) reported missing a prescribed dose of treatment as compared to men (11.1%). 10% men were on re-treatment compared to none of the women.
Selvam JM et al., [17]	INT J Tuberc Lung Dis. 2007 11(2):161-167	Cross-sectional study	Semi-structured interview schedule. 601 TB patients	Jan- March 2003, Government facilities of randomly selected blocks in Tamil Nadu	65% contacted a provider within 28 days of onset of symptoms. The first contact was governmental for 47% and non-governmental for 53%. Median total, patient and provider delays were 62, 28 and 28 days respectively; provider delay was 9 days with government and 50 days with private provider. In multivariate analysis, patient delay was significantly associated with smoking and mode of travel, and provider delay with first consultation with a private provider and distance >5 km from the health facility. Twenty-five per cent of patients took more than two actions before diagnosis.
Nimbarte S B, Wagh V, Selokar D [18]	Int J Biol Med Res. 2011; 2(1): 394-397	Cross-sectional study	Structured interview schedule. 189 TB patients	Nov.2008 to April 2009, Wardha district, Maharashtra	The median patient delay was 19 days. 35% of patients delayed seeking care for more than 1 month, of whom 41% attributed delay owing to lack of awareness about TB. Men postponed seeking care for longer periods than women. The total delay resulted largely from a long patient delay when government providers were consulted first.
Shamim H et al., [19]	International Journal of Interdisciplinary and Multidisciplinary Studies. 2015; 2(8):42- 9.	Cross-sectional study-Hospital based study	Semi-structured interview schedule, 656 cough symptomatics	March 2013-May 2014, Jharkhand	75.61% of the patients were having significant patient delay (>30 days). Main reasons for delay were self medication (30.79%) and perception of symptom will disappear/not severe (13.26%). Over half of the patients (52.29%) consulted Government health facility, unqualified practitioners were main care givers (24.24%) followed by qualified private practitioners (23.47%). Demographic variables such as poverty, illiteracy, rural background and advanced age group were strongly associated with patient delay and seeking care from unqualified practitioners.
Ananthakrishnan R et al., [20]	Journal of Clinical and Diagnostic Research. 2012;6(6): 990-993	Cross-sectional study	Semi-structured questionnaire, 300 TB patients	March 2007 to June 2007 Chennai, Tamilnadu	30.6% and 75.6% of patients were diagnosed at their first and second contact with the health facility respectively. The mean patient delay was 18.3 days. Patients with extra-pulmonary TB had more mean patient delay (55.7) as compared to the patients with pulmonary TB.
Jayachandran V [21]	Ann Trop Med Public Health 2014;7:124-129	Qualitative study	In-depth interview, 10 patients who had defaulted and were undergoing CAT-II treatment	Delhi	People refuse treatment at government health centre as they are ready to get treated at any expense and seek private health care for prompt treatment. There is a notion that free service from public sector is not as effective as private corporate hospitals. In the public sector patients defaulted owing to side effects of drugs, fear of getting admitted in big TB hospitals, incompatible timing, neglect, long waiting time, TB deaths in the family and lack of family support. Among migrants, lack of employers support, family support forced them to return home. Ignorance about DOTS centre with free treatment was observed.

[Table/Fig-2]: Studies conducted in different Indian states on health seeking behaviour among TB patients (n=10).

*J-Journal, YOP-Year of Publication

24.24% of study participants approached qualified and unqualified private practitioners respectively [19].

Reasons for not Seeking Care/Delay in Seeking Care:

The Madurai and Chennai study showed three important reasons for delay; not recognizing symptoms as severe, work pressure and dissatisfaction with facility. The other reasons were financial constraints, lack of proximity and dependence on alcohol and inconvenient working hours [13]. The study conducted among 105 chest symptomatics in the urban slums of Aurangabad city revealed similar results as 35 (62.5%, n=105) of the chest symptomatics felt that their symptoms were not severe while 16 (28.6%, n=105) had domestic preoccupation and work pressure problem that prevented them from seeking care. The other reasons mentioned were lack of money: 3 (5.4%), dissatisfaction with health facilities: 2 (3.8%) and lack of transport: 2 (3.8%) [14]. The cross-sectional study conducted at the E-ward of Mumbai Municipal Corporation revealed that majority of patients initially thought it as routine cough. Some patients tried home remedies for long duration and then consulted private practitioners for investigation and treatment. Some patients went to native place for long duration for rest and/or treatment [15]. The cross-sectional study conducted at Chandigarh among 109 TB patients revealed that TB patients delayed seeking care as the doctors did not advise them to do so. In addition, long distance from home to the health facility, financial constraint and resorting to home remedies were other stated reasons for delayed health seeking behaviour [16]. The cross-sectional study conducted in Tamilnadu revealed various factors associated with patient delay which includes difficulty in accessing health facility, mode of transport, smoking habit, sex, age, literacy, occupational status and the type of provider consulted [17]. Similarly the provider delay is primarily associated with the type of provider consulted; private, public or traditional healer etc. [17]. The cross-sectional study at Wardha revealed the factors associated with delay in seeking help; lack of awareness about TB, poor socio-economic condition, lack of awareness about health facility and domestic preoccupation [18]. The hospital based cross-sectional study conducted at RIMS, Ranchi revealed various reasons for patient delay; self medication (30.79%), patients thought the symptoms were not severe (13.26%), lack of awareness of health facilities (11.58%), poor socio-economic status (9.91%), inaccessible health facilities (8.54%) and social stigma (1.52%) [19]. The qualitative study conducted among 10 treatment defaulters in Delhi revealed several factors associated with patient delay; financial constraints, fear of public tertiary hospital, hot drugs (allopathic drugs are perceived to be hot drugs and hence sought help from traditional therapists), "nobody to take care of my shop" (preoccupation), lack of awareness and misconceptions about the diseases [21].

Geographical Pattern (Rural-Urban) of Help Seeking:

A community based cross-sectional study conducted among 606 chest symptomatics in Madurai and Chennai showed that 73% (444) approached a health facility for their symptoms of which 75% are rural and 71% are urban. The rest 27% (162), rural 25% and urban 29%, did not make any approach at all. 50% (222) of these symptomatics, 142 (61%) rural and 80 (38%) urban, approached government health facility. Similarly 38% (167) of them, 30% (69) rural and 46% (98) urban, approached private health facility. 28% (62) of the 222 who approached the government facility made a second visit to the government facility (rural 26% and urban 31%) while 17% shifted to a private facility (rural 14% and urban 21%) and 21% (rural 23% and urban 18%) went to practitioners of alternate systems of medicine. 35% did not take a second action. Furthermore, of the 167(38%) who approached a private facility initially, 25% (rural 29% and urban 21%) made a repeat visit to a private facility and 23% (rural 29% and urban 18%) shifted to a government facility and 23% (rural 14% and urban 30%) went

to practitioners of alternate systems of medicine. 29% did not take second action with any facility [14]. Dissatisfaction has been observed as the main cause of drifting of patients from one provider to the other [13].

Socio-cultural Factors Associated with Health Seeking:

The study conducted at Chennai and Madurai among 606 participants showed that age and literacy greatly influences the health seeking behaviour among urban population. Furthermore income level is associated with choice of provider; more than half of those who earned less than or equal to Rs. 2000 per month sought care from a government facility while those who earned more than two thousand rupees per month sought private care [13]. The study conducted among 105 chest symptomatics in the urban slums of Aurangabad city revealed that the percentage of the chest symptomatics from low socioeconomic status not visiting to any health facility was 18.8% as compared to only 2.4% from upper socioeconomic status. The chest symptomatics educated below high school level visited to private practitioners in higher proportion compared to higher educated who primarily seek help at government health facilities [14]. The cross-sectional study conducted at the E-ward of Mumbai Municipal Corporation revealed that patient delay is significantly higher among the patients aged <45 years and with the patients who live without their own family [15]. Furthermore social stigma led to concealment of the symptoms from spouse or near-relatives which were associated with delay to start continuation phase (as per RNTCP guidelines) on time [15]. The cross-sectional study conducted at Chandigarh among 109 TB patients reported about restricted mobility of women as a factor for health seeking. This happens primarily because the health seeking behaviour of a married woman is decided by the in-laws in the family [16].

Gender Based Health Seeking Behaviour:

The study conducted among 105 chest symptomatics in the urban slums of Aurangabad city revealed that seeking help at private health facilities is higher among female than the males and is 53.3% (n=105). Furthermore the practice of self medication is also more among the females than the males [14]. The cross-sectional study conducted at Chandigarh among 109 TB patients revealed that at the onset of symptoms, more women (40%) than men (13%) resorted to home remedies or medicines without prescription. More men (87%) directly consulted qualified medical practitioner as compared to women (60%). The proportion of consultation with private doctors was higher among men than women. Multiple consultations before starting the DOTS were higher among men than women (on an average 1.4 and 1.1 respectively). The mean delay was 60 days and 33 days among men and women respectively [16]. As far as treatment is concerned, more women (20.8%) reported missing a prescribed dose of treatment as compared to men (11.1%). Among women, 87.3% reported that they would stop treatment at the advice of doctor; 9.1% could not say when they would stop treatment; and 3.6% would stop when the symptoms would disappear. In contrast, all men stated that they would stop treatment only at the advice of the doctor [16].

DISCUSSION

Studies on TB have shown that lack of knowledge about the causes, modes of transmission and treatment affects both health seeking behaviour of patients and programme control strategy as well [22–27]. However in this review two studies reported higher level of knowledge of study participants [14] regarding the curability of TB which indicates that there are other factors, besides knowledge, that affects the health seeking behaviour. In this review several common reasons for delayed health seeking behaviour have been identified as reported by various studies. These includes financial constraints, symptoms are not severe (as perceived by the

patients), work pressure, lack of awareness, first consulted non-public sector, inaccessibility to health facility, home remedy, social stigma, self medication, transport problem and dissatisfaction with health facility. Similarly the median patient delay ranged from 7 days to 56 days as reported by various studies [12-21]. Studies report that ≤ 30 days is acceptable patient delay whereas delays beyond 30 days is a significant patient delay [19].

When facility based health seeking behaviour was analyzed, it was observed from all the studies that patient first approached private practitioners which includes qualified, unqualified and traditional practitioners. A significant proportion of TB patients purchased medicine over the counter and tried home remedies as well [12-21]. This is an erratic health seeking behaviour which ultimately leads to delayed health seeking or the subjects getting landed up with other advanced forms of TB such as Multi Drug Resistant-TB (MDR-TB) or Extremely Drug Resistant-TB (XDR-TB).

Gender plays a significant role in TB care as TB is associated with social stigma. Studies reveal that women prefer home remedies at the onset of symptoms [14,16]. This is primarily due to fear of getting treated from designated public sector health facilities which may reveal the truth of them as being the TB patients leading to social isolation. A study in Russia reported "female gender" as a significant predictor of MDR-TB [28]. In the Indian context, harassment by in-laws, difficulty in getting married, or dismissal from the work were reported as major barriers for women to get appropriate treatment. Social stigma, lack of scientific awareness about the disease, and social commitments are other stated reasons for interrupting and defaulting from the treatment [29]. These findings underscore the importance of understanding local needs and socio-cultural aspects of the community to implement any disease control program, such as for TB, effectively [30].

One study that reported about the rural urban pattern of health seeking behaviour could not show a clear pattern of health seeking behaviour among both these groups. The study shows that there is no clear pattern of health seeking behaviour among rural and urban population rather it varies with the specific aspect of health seeking behaviour [13].

Social determinants are of paramount importance especially in TB control as it is associated with social stigma. It is not only the social stigma but a whole range of social factors associated with TB control that needs to be addressed. Some of the social issues include poverty, gender discrimination, homelessness, lack of livelihood support and lack of awareness which need urgent attention in order to control TB in any particular community. Most patients with TB still lack access to stable employment, nutrition, decent housing and quality health care [31]. Poverty leads to under nutrition, which itself is affected by both scarcity of food and intra-household distribution. A poor nutritional status also affects drug absorption, resulting in sub-therapeutic serum drug levels, which may lead to non-response to drug therapy [32].

CONCLUSION

Health seeking behaviour and related delays are of utmost importance in TB care from two important perspectives; firstly TB requires timely treatment and secondly it requires protracted treatment. Required level of knowledge and positive health behaviour helps the patients in taking timely help from appropriate health facility. RNTCP being a centrally sponsored programme health seeking from a public health facility is highly desirable. However studies reveal that symptomatics primarily resort to self medication and approach private practitioners and traditional healers as their first point of contact. Furthermore studies reveal that there is unacceptable level of defaulter cases who receive TB care from public health facilities. Level of defaulter is affected by the level of knowledge about the curability of the disease and trust on public health facilities. Among the prominent causes of

delayed health seeking financial constraint is the prominent one which requires proper awareness as TB care is absolutely free as a centrally sponsored programme. The other reasons such as symptoms are not severe, work pressure, lack of awareness and consultation with private sector also requires awareness in the community and relevant interventions.

REFERENCES

- [1] Murray, Christopher J.L., Lopez, Alan D. The global burden of disease: a comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020: summary-WHO Geneva, Switzerland, 1996; W 74 96GL-1/1996.
- [2] Udhwadia ZF. TB in India: Ancient enemy just gets stronger. *BMJ*. 2015;350:h1080
- [3] TBC India. Directorate General of Health Services, Ministry of Health and Family Welfare, Govt. of India. <http://www.tbcindia.nic.in> (Accessed on 15 Jan 2016)
- [4] Sreeramareddy CT, Qin ZZ, Satyanarayana S, Subbaraman R, Pai M. Delays in diagnosis and treatment of pulmonary TB in India: a systematic review. *Int J Tuberc Lung Dis*. 2014;18(3):255-66.
- [5] Uplekar M, Juvekar S, Morankar S, Rangan S, Nunn P. TB patients and practitioners in private clinics in India. *Int J Tuberc Lung Dis*. 1998;2(4):324-29.
- [6] International Institute for Population Sciences (IIPS) and Macro International 2007. National Family Health Survey (NFHS-3), 2005-06: India: Volume I.
- [7] Kelkar-Khambete A, Kielmann K, Pawar S, Porter J, Inamdar V, Datye A, et al. India's Revised National TB Control Programme: looking beyond detection and cure. *Int J Tuberc Lung Dis*. 2008;12(1):87-92.
- [8] Pinto LM, Udhwadia ZF. Private patient perceptions about a public programme; what do private Indian TB patients really feel about directly observed treatment? *BMC Public Health*. 2010;10(1):357.
- [9] Van Der Werf MJ, Chechulin Y, Yegorova OB, Marcinuk T, Stopolyanskiy A, Voloschuk V, et al. V. Health care seeking behaviour for TB symptoms in Kiev City, Ukraine. *Int J Tuberc Lung Dis*. 2006;10(4):390-95.
- [10] Rajeswari R, Chandrasekaran V, Suhadev M, Sivasubramaniam S, Sudha G, Renu G. Factors which were associated with the patient and health system delays in the diagnosis of TB in south India. *Int J Tuberc Lung Dis*. 2002;6(9):789-95.
- [11] Selvam JM, Wares F, Perumal M, Gopi PG, Sudha G, et al. Health-seeking behaviour of the new smear-positive TB patients who were under a DOTS programme in Tamil Nadu, India, 2003. *Int J Tuberc Lung Dis*. 2007;11(2):161-67.
- [12] Maske AP, Sawant PA, Joseph S, Mahajan US, Kudale AM. Socio-cultural features and help-seeking preferences for leprosy and TB: a cultural epidemiological study in a tribal district of Maharashtra, India. *Infectious Diseases of Poverty*. 2015;4(1):1-14.
- [13] Charles N, Thomas B, Watson B, Chandrasekaran V, Wares F. Care seeking behaviour of chest symptomatics: a community based study done in South India after the implementation of the RNTCP. *PLoS one*. 2010;5(9):e12379.
- [14] Karanjekar VD, Gujarathi VV, Lokare PO. Socio demographic factors associated with health seeking behaviour of chest symptomatics in urban slums of Aurangabad city, India. *Int J App Basic Med Res*. 2014;4(1):173-79.
- [15] Kulkarni PY, Kulkarni AD, Akarte SV, Bhawalkar JS, Khedkar DT. Treatment seeking behaviour and related delays by pulmonary TB patients in E-ward of Mumbai Municipal Corporation, India. *Int J Med Public Health*. 2013;3:286-92.
- [16] Kaur M, Sodhi SK, Kaur P, Singh J, Kumar R. Gender differences in health care seeking behaviour of TB patients in Chandigarh. *Indian J Tuberc*. 2013;60:217-22.
- [17] Selvam J M, Wares F, Perumal M, Gopi P G, Sudha G, Chandrasekaran V, et al. Health-seeking behaviour of new smear-positive TB patients under a DOTS programme in Tamil Nadu, India, 2003. *Int J Tuberc Lung Dis*. 2007;11(2):161-67.
- [18] Nimbarte SB, Wagh V, Selokar D. Health seeking behaviour among pulmonary TB patients in rural part of central India. *Int J Biol Med Res*. 2011;2(1):394-97.
- [19] Shamim H, Vidyasagar, Shalini S, Sneha K, Bhushan SS. Health care seeking behaviour of cough symptomatics (pulmonary tb suspects) attending medicine outpatient department of a tertiary care hospital of Jharkhand. *International Journal of Interdisciplinary and Multidisciplinary Studies*. 2015;2(8):42-49.
- [20] Ananthkrishnan R, Jeyaraju A R, Palani G, Sathiyasekaran BWC. Care seeking behaviour of the TB patients who were registered in an urban government TB Control in Chennai, Tamilnadu, India. *Journal of Clinical and Diagnostic Research*. 2012;6(6):990-93.
- [21] Jayachandran V. A case study on TB treatment defaulters in Delhi: Weak health links of the community with the public sector, unsupported migrants and some misconceptions. *Ann Trop Med Public Health*. 2014;7:124-29.
- [22] Engel N, Bijker W. Innovating TB control in India. *Econ Polit Wkly*. 2012;XLVII:111-18.
- [23] Legesse M, Ameni G, Mamo G, Medhin G, Shawel D, Bjune G, et al. Knowledge and perception of pulmonary TB in pastoral communities in the middle and Lower Awash Valley of Afar region, Ethiopia. *BMC Public Health*. 2010;10:187.
- [24] Kanodia SK, Dixit AM, Shukla SR, Seth AK, Balothia V, Gupta R. A study on knowledge, beliefs and attitude towards leprosy in students of Jaipur, Rajasthan. *Indian J Lepr*. 2012;84:277-85.
- [25] Mankar MJ, Joshi SM, Velankar DH, Mhatre RK, Nalgundwar AN. A comparative study of the quality of life, knowledge, attitude and belief about leprosy disease among leprosy patients and community members in Shantivan Leprosy Rehabilita. *Public Health Res*. 2011;3:378-82.
- [26] Thilakavathi S, Manickam P, Mehendale SM. Awareness, social acceptance and community views on leprosy and its relevance for leprosy control, Tamil Nadu. *Indian J Lepr*. 2012;84:233-40.

- [27] Nsagha D, Bamgboye E, Oyediran ABO. Operational barriers to the implementation of multidrug therapy and leprosy elimination in cameroon. *Indian J Dermatol Venereol Leprol.* 2009;75:469.
- [28] Chaisson R. The Russian correction: An evolving paradigm for TB control. Available at www.hopkins-tb.org (Last accessed 10 Jan.2016)
- [29] Uplekar MW, Rangan S. Tackling TB: Search for Solutions. The Foundation for Research in Community Health: Bombay; 1996.
- [30] Atre SR, Mistry NF. Multidrug-Resistant TB (MDR-TB) in India: An attempt to link biosocial determinants. *Journal of Public Health Policy.* 2005;26:96–114..
- [31] Oxlade O, Murray M. TB and poverty: why are the poor at greater risk in India? *PLoS One.* 2012;7:e47533.
- [32] Byrd RP. Malnutrition and pulmonary TB. *Clin Infect Dis.* 2002;35:633–34.

PARTICULARS OF CONTRIBUTORS:

1. Independent Public Health Researcher, Bhubaneswar, Odisha, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Janmejaya Samal,
C/o Mr. Bijaya Ketan Samal, At-Panasapalli, Po-Bangarada, Via-Gangapur, Dist-Ganjam, Odisha-761123, India.
E-mail: janmejaya_samal@yahoo.com

FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Feb 21, 2016**

Date of Peer Review: **Apr 15, 2016**

Date of Acceptance: **May 06, 2016**

Date of Publishing: **Oct 01, 2016**