ORIGINAL ARTICLE

Tuberculosis knowledge and health seeking behaviour: A tale of two districts of Sindh, Pakistan

Syed Mohammad Ali Warsi,[1] Syed Hasan Danish,[2] Farah Ahmad,[3] Aneela Iqbal Khan,[4] Muzammil Parvaiz Khan,[5] Salma Bano,[6] Vedwiyas Lohana[7]

Abstract

Objective: To assess the knowledge about tuberculosis and health-seeking behaviour of people living in rural areas of Sindh.

Methods: This cross-sectional survey was conducted by the Pakistan Red Crescent Society in Dadu and Badin districts of Sindh, Pakistan, from January to August 2014. Cluster sampling technique was used for the selection of 900 households from two union councils. Those staying for less than 6 months and who refused to participate were excluded. Personal interviews were conducted by trained data collectors on pretested questionnaire. Data was analysed using SPSS 20.

Results: Of the 900 households, there were 450(50%) in each districts. In Dadu, 298(66.6%) participants were illiterate compared to 236(52.4%) in Badin. Half of the respondents n= 225 (50%) in Dadu were farmers compared to 136(30.2%) in Badin. Besides, 341(75.7%) in Dadu and 311(69%) in Badin were earning less than Rs10,000 per month. In addition, 318(70.6%) respondents in Dadu and 235(52.2%) in Badin had heard about tuberculosis. In Dadu, 237(52.6 %) thought it was curable compared to 263(58.4%) in Badin, whereas 32(7%) in Dadu and 45(10%) in Badin thought there was no remedy for it. Besides, 216(48%) villagers in both the districts were of the opinion that fever was the chief symptom, followed by cough and weight loss. Only 109(24.2%) respondents in Badin district confirmed the presence of a lady health worker in their village compared to 75(16.6%) in Dadu.

Conclusion: Pakistanis living in rural areas had insufficient knowledge about most aspects of tuberculosis, and held misconceptions about the disease.

Keywords: Tuberculosis, Rural areas, Health-seeking behaviour, Knowledge. (JPMA 66: 1120; 2016)

Introduction

Tuberculosis (TB) has reached epidemic proportions with one-third global population being infected by the disease[1] and places itself as the second leading cause of mortality.[2] TB is an infectious disease on the forefront accounting for an incidence of 8.6 million cases yearly, mostly in developing countries.[3] TB stands significant among Asian population. India, Bangladesh, China, Indonesia and Pakistan together carry 50% of the global TB burden.[4] It has taken 6th position among 22 countries with maximum TB burden.[3,5] TB is responsible for 5.1 percent of the total national disease burden.[6] Its prevalence in Pakistan is 420,000 and incidence is 231 per 100,000 population.[5] The World Health Organisation (WHO) reported 93,000 cases arising from Sindh in 2010.[7]

[1]Provincial Health Manager, Sindh, Pakistan Red Crescent Society, [2,3]Ziauddin University, [4]Programme Manager- Health, German Red Cross, [5]Project Coordinator, Pakistan Red Crescent Society, [6]Provincial CBHFA Coordinator, Sindh, [7]Health Officer, PHC-Badin.

Correspondence: Syed Hasan Danish. Email: dowite_hasan@hotmail.com

In Pakistan, approximately 68% of people(50% of them being women)reside in rural areas with minimum access to healthcare services.[8] The majority of Sindh population also resides in rural areas with poverty affecting 52% people living in rural areas.[9] People living in rural areas lack quality health services and need-based treatments.[10] The risk of TB spikes among those who are socioeconomically disadvantaged.[11] Studies in Pakistan have shown that cultural and social values barricade the health-seeking behaviour from healthcare services.[12] Numerous authors have lamented that TB control has been overlooked.[13] TB mostly occurs in women in their reproductive years, hence the disease has a significant impact on children and families.[13] Local surveys on knowledge and attitude towards TB have produced a positive impact on planning, education and implementation of control programmes.[14] To date, very few studies have been performed on assessing the health-seeking behaviour of the masses with specific emphasis on TB in Pakistan.[15] The current study was planned to assess the demographic profile, health-seeking behaviour with special emphasis on the knowledge, attitudes and practices regarding TB in rural areas.

Subjects and Methods

The baseline survey was conducted by the Pakistan Red Crescent Society from January to August 2014 in Dadu and Badin districts of Sindh, Pakistan. The household listings for Dadu were compiled with the help of Pakistan Bureau of Statistics (PBS).

The survey area comprised one union council from Dadu with 96 villages having 3,765 households and a total population of 17,845 individuals. The survey area from Badin consisted of one union council with 106 villages having 4,416 households and a total population of 27,632 individuals.

To determine a representative household sample size, the following equation was used:

$$n = \frac{N\,\pi\,(1-\pi)}{(N-1)\,(C/Z_{\alpha/2})^2 + \pi\,(1-\pi)}$$

Where n is the recommended sample size, N is population size, π is proportion of a characteristic of interest, C is $\pm$ error rate (confidence interval, or CI), and $\alpha/2$ Z is tabulated value for CI. The proportion for a baseline survey was taken at 50% (which gave the maximum variance, with a margin of error for 5% and at 95% CI). The estimated sample size was 384 in both districts which, after adding for wastage, was inflated to 450. The total sample size, as such, was 900.

Selection of households was carried out through the cluster sampling technique. Anyone who had been staying for less than 6 months was not interviewed along with those who refused to provide consent. As shown by earlier works in rural areas, family interviews are more beneficial than individual interviews, hence we started our process by focus group discussions (FGDs).[16] The discussions were carried out by trained individuals. In the first phase, two FGDs were carried out after random selection of two villages. The FGD comprised 10-12 villagers, including area influentials, Masjid Imam, school teacher, community worker, elderly females and other relatively heterogeneous people with diverse backgrounds for highlighting the needs of the community.

From the information generated through the discussions, a semi-structured questionnaire was developed having both closed- and open-ended questions. The questionnaire was then translated into Urdu and Sindhi. To ensure quality of fieldwork, training sessions were held for interviewers and supervisors. Towards the end of the training, one-day field practice in different villages was carried out. Eight teams were organised to collect data; each consisted of a field supervisor, one male interviewer and a female interviewer as it has been demonstrated that for successful TB control, it is necessary to target women to elicit their beliefs and knowledge regarding TB as well as their health-seeking behaviour.[17] Informed consent was taken verbally from each head of the household and objectives of the survey were explained in detail before initiating face-to-face in-house interviews. The entire questionnaire was completed in 40 minutes as has been performed in previous studies.[17]

The household questionnaire included questions on age, gender, literacy and socioeconomic status. The questionnaire related to the health-seeking behaviour assessed the availability of various types of health facilities and other associated services, particularly transportation, cost, etc. The portion on TB was related to knowledge and attitude towards the disease.

Data quality was ensured at all levels of data collection. The supervisors were responsible for overseeing the data collection, reviewing the completed questionnaires to ensure that information was recorded correctly, and verifying information by revisiting and re-interviewing respondents and finally signing the questionnaires. The supervisors were in the field from the beginning of the fieldwork to the end of the survey. Data was entered by two data entry officers for 100 percent verification. Data was edited using Microsoft Excel 10. SPSS 20 was used for data analysis. Descriptive analysis was carried out with frequencies and percentages for categorical variables and mean and standard deviation for numerical variables.

Results

Of the 900 households, there were 450(50%) in each district. Besides, 440(97.7%) heads of the households in both the districts were men. In Dadu, 298(66.6%) participants were illiterate compared to 236(52.4%) in Badin. Farming was the main profession of almost half of the respondents in Dadu compared to 136(30.2%) in Badin. Moreover, 405(90%) respondents were married in both the districts, while 270(60%) households were of nuclear structure in both the districts. Besides, 341(75.7%) in Dadu and 311(69%) in Badin were earning less than Rs10, 000 per month (Figure-1).

Around 315(70%) households in Badin and 285(63.3%) in Dadu were made of mud walls and thatched roofs. As for sanitary conditions, 352(78.2%) households in Dadu and 302(67%) in Badin had animal and human faeces visible in their yards. Piped water was available to 50(11%) households in Dadu and 95(21%) in Badin district. Only

Table: Practices regarding healthcare facility utilisation.

	Badin		Dadu	
	n=450	%	n=450	%
Mode of transport when seeking medical care				
On foot	99	22.0	46	10.1
Animal cart	26	5.8	26	5.7
Motor cycle/ car/ jeep	150	33.3	152	33.4
Public transport	156	34.7	221	48.6
Didn't answer	19	4.2	10	2.2
Last time that a member of your family visited a health facility				
Within a week	200	44.4	159	34.9
1 month ago	146	32.4	198	43.5
1 year ago	47	10.4	67	14.7
More than 1 year	18	4.0	10	2.2
Never visited a health facility	20	4.4	7	1.5
Didn't answer	19	4.2	14	3.1
Time to reach the health facility				
Less than 1 hour	192	42.7	115	25.3
1 hour - 2 hours	158	35.1	165	36.3
2 hours or more	79	17.6	116	25.5
Didn't answer	21	4.7	59	12.9
Usual cost to reach the health facility				
No cost	41	9.1	43	9.5
Less than 50 rupees	55	12.2	74	16.3
50 rupees - less than 100 rupees	161	35.8	114	25.1
More than rupees100	172	38.2	171	37.6
Didn't answer	21	4.7	53	11.6
Usual cost for one visit to the health facility				
No cost	41	9.1	47	10.3
Less than 500 rupees	98	21.8	98	21.5
500 rupees - less than 1000 rupees	134	29.8	142	31.2
More than rupees1000	159	35.3	116	25.5
Didn't answer	18	4.0	52	11.4

54(12%) households were boiling water before drinking in Badin compared to 71(15.7%) in Dadu. Besides, 336(74.6%) households in Dadu had their own toilets compared to 99(22%) in Badin. In both the districts, majority of the households 810 (90%) owned the houses, yet overcrowding was a marked feature as the houses had either 1 or 2 rooms while average number of household members was seven to eight.

Moreover, 405(90%) households preferred allopathic doctors over other healthcare providers. Government health facilities were utilised by 247(55%) in Badin and 238(53%) in Dadu. Pattern of using healthcare facilities was noted (Table) and so were the reasons for utilising government facilities (Figure-2). Only 109(24.2%) respondents in Badin district confirmed the presence of a lady health worker (LHW) in their village compared to 75(16.6%) in Dadu.

In addition, 318(70.6%) respondents in Dadu and 235(52.2%) in Badin had heard about TB. Besides, 216(48%) villagers in both the districts were of the opinion that fever was the chief symptom, followed by cough and weight loss. For mode of transmission, 199(44.2%) in Dadu compared to 150(33%) in Badin perceived that TB was transmitted by air through coughing or sneezing. Sharing of utensils was seen by 174(38.6%) participants in Dadu as significant mode of transmission compared to 219(48.6%) in Badin. Sexual contact was assumed by 46(10.2%) in Dadu compared to 31(7%) in Badin as a mode of transmission while 33(7.3%) in Dadu and 44(10%) in Badin deemed touching patients with TB as a transmission mode. In Dadu, 102(22.6%) and 153(34%) in Badin had no idea of transmission modes. In Dadu, 237(52.6%) thought that TB was curable compared to 263(58.4%) in Badin, whereas 32(7%) in Dadu and 45(10%) in Badin thought that there was no remedy for it. In Dadu, 186(41.3%) and 147(31.7%) in Badin had no information to this query.

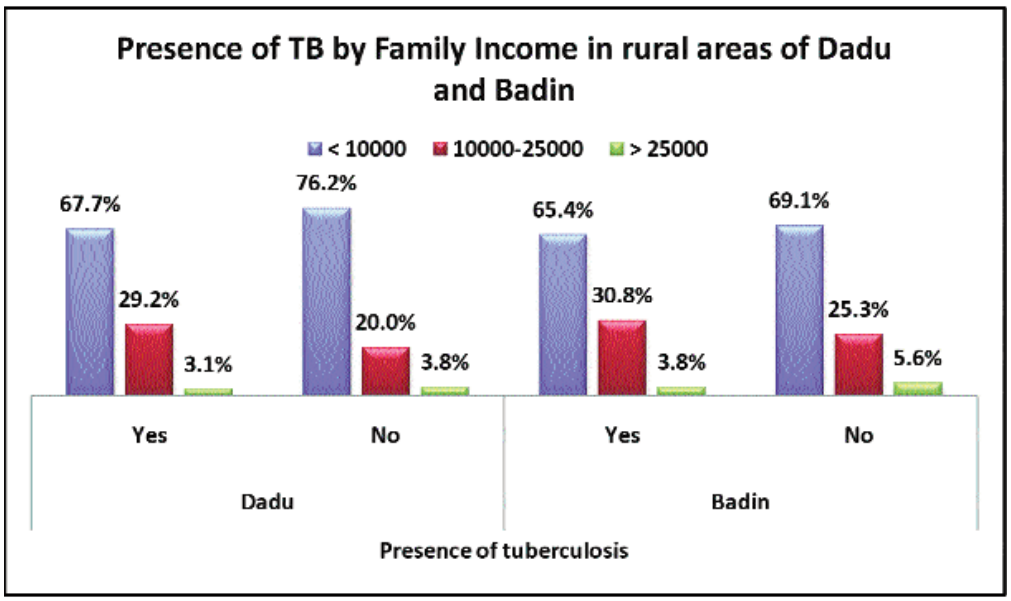
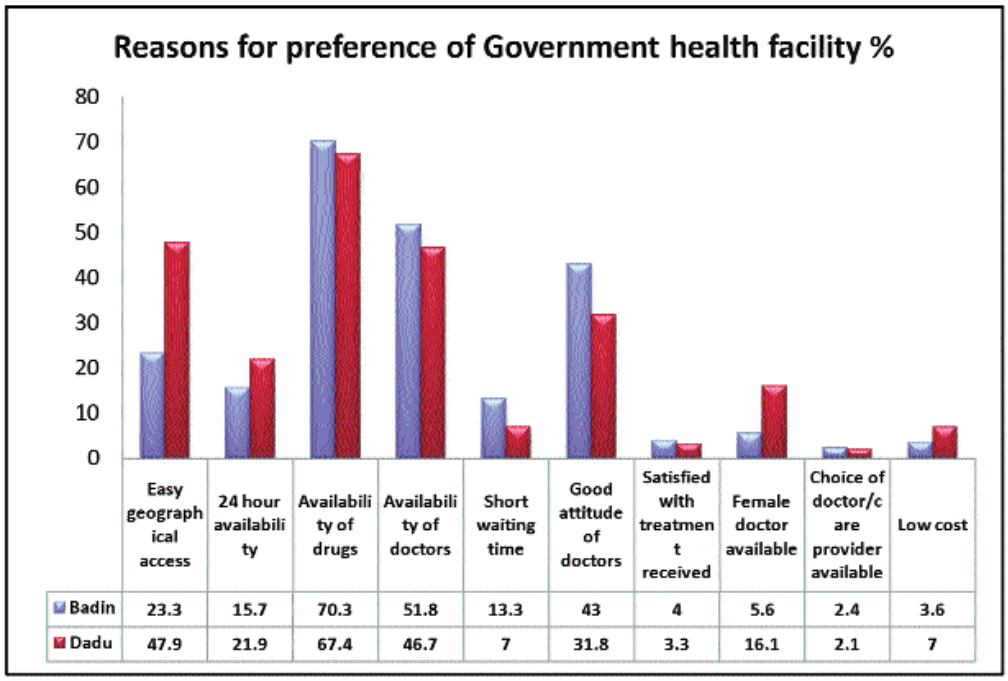


Figure-1: Association of Family Income with presence of tuberculosis (TB) in Dadu and Badin districts of Sindh.



	Easy geographical access	24 hour availability	Availability of drugs	Availability of doctors	Short waiting time	Good attitude of doctors	Satisfied with treatment received	Female doctor available	Choice of doctor/care provider available	Low cost
Badin	23.3	15.7	70.3	51.8	13.3	43	4	5.6	2.4	3.6
Dadu	47.9	21.9	67.4	46.7	7	31.8	3.3	16.1	2.1	7

Figure-2: Reasons for the preference of Government facilities by villagers in Dadu and Badin Districts of Sindh.

Furthermore, 57(12.6%) in Dadu compared to 70(15.5%) in Badin had a family member suffering from TB. Regarding the appropriate duration required for treating the disease, 192(42.6%) in Dadu and 72(38.2%) in Badin stated that TB treatment took between 6-9 months. Besides, 206(45.7%) in Dadu and 165(36.6%) in Badin had no knowledge regarding the treatment duration of TB. For 293(65%), management of TB took place in a hospital setting. Basic Health Unit (BHU) served as a source of treatment for 6(1.3%) residents in Dadu compared to 16(3.6%) in Badin. Directly observed treatment, short-course (DOTS) programme served as a source of remedy for 19(4.2%) in Dadu compared to 88(19.5%) in Badin.

Discussion

The healthcare system in Pakistan is beleaguered with several tribulations in context of structural fragmentation, scarcity of resources, gender insensitivity, inefficiency and lack of accessibility and utilisation.[18]

Compared to urban areas, rural areas have lower utilisation of government hospitals.[19] Our results displayed that half of the participants visited government health facility, with allopathic treatment most popular among them. In Sindh, private healthcare provider is providing 80% of treatment.[20] However, our results contrasted with it. Only 6-10 percent of our participants consulted alternative modalities (hakims, homeopaths and spiritual healers) for TB which was still less than those detected by earlier studies in districts of Punjab.[15]

Various other studies have also shown delay in TB diagnosis. Analysis of TB transmission dynamics quoted delays as most significant barrier to control TB epidemics.[21]

Also, studies in India and Pakistan have shown doubtful practices of doctors when it comes to TB.[20]

However, health seeking behaviour has been strongly correlated with socioeconomic status, distance from health facility, cultural norms according to ethnic and religious factions, making patients delay treatment unless symptoms get severe.[22] Additionally, for health expenditure in Pakistan, 76% is out of pocket expense.[23] High cost for travel, long waiting hours and lack of 24-hour availability of doctors were significant factors in our study, similar to findings of previous surveys in Pakistan and abroad.[22]

The rural population of Sindh mostly depends on agriculture and livestock with least access to healthcare and education.[24] As observed from our results, most residents belong to lower socioeconomic status dwelling in homes with one or at most two rooms which itself led to overcrowding and poor nutrition, known risk factors for augmenting the incidence and transmission of TB.[25] The Stop TB Strategy and recent guidelines stress the enhanced risk of TB in close contact and advise routine contact investigation.[26] A TB-infected person infects 10-15 people per year on average, hence community should be made aware of TB symptoms and the need for early treatment.[27]

It is stated that in Pakistan, 10% of general population has not heard of TB.[27] Similarly, in our survey knowledge of TB was seen to be quite trifling as has been illustrated by earlier studies in rural areas of the country as well as throughout Pakistan.[17]

Our results elucidated the fact that majority of participants, much higher than those shown by earlier studies (18%), perceived that TB was not a contagious disease.[17] Owing to such fallacious beliefs, meta-analysis among low- and middle-income countries revealed TB among household contacts.[28] In contrast to previous studies in India, Kenya and even Pakistan where utensils sharing was assumed to be a causative factor,[27] our results from rural districts manifested that majority had no issues sharing dishes with TB patients. Evil spirit and sexual intercourse have been incriminated in studies of Ethiopia as risk factor[29] whereas our results displayed only a small portion of participants who assumed sexual contact as a risk factor for transmission. Unlike our study, TB patients have been prone to banishment from the community.[29]

Knowledge that disease is treatable augments health-seeking behaviour among affected people,[30] whereas in our survey a major chunk of rural residents were illiterate. Our study displayed that rural residents did not have proper information regarding curability of TB. This finding was in contrast with previous studies where 90% of patients acknowledged the curability of disease.[27] However, other studies from Pakistan have shown that many deem TB as non-infectious a few weeks after treatment while some halt treatment on rectification of symptoms.[31] Knowledge on duration of treatment was very bleak in our survey. Such factors have led to issues of non-compliance and defaulting treatments without completion of required course as demonstrated by earlier studies.[31] Keeping up with earlier studies, our results are alarming as lower knowledge is reckoned to be directly proportional to higher burden of TB in Pakistan.[32] Previous studies in India, Bangladesh and Pakistan have shown masses quite accustomed to symptoms of TB.[15] In our study, results were divergent as most had no idea of TB-related symptoms.

Our study had numerous strengths. It focused on health-seeking behaviour in rural areas, a factor not much worked on. We trained data collectors who were themselves health volunteers of local areas from which they collected data. Due to our sampling technique, selection bias was taken care of. Our data was collected in local language. Each form was checked by team supervisor immediately after conducting interviews and rectified for missing elements on the spot. Later on, it was scrutinised by principal investigators. However, the survey was prone to a few weaknesses like underreporting of some minor complaints.

In Pakistan healthcare delivery has failed to improve health status, especially in rural areas.[33] With this intricate picture of health system utilisation and health-seeking behaviour in Pakistan, accent should be laid on reorientation of health system. Coordinated effort is imperative in developing viable partnerships with healthcare providers in the private sector, adopting a systematic approach consistent with WHO guidelines, delegating supervision of treatment from the diagnostic centre's to BHUs, designing health promotion campaigns through inter-sectoral collaboration, and focusing more on vulnerable segments of the population. Education is key to attenuate the intensity of such fallacies and misconceptions like TB being "punishment from God" that stigmatise the disease[17] hindering the people from seeking appropriate healthcare.

Since many rural residents in our study were living in the close vicinity of livestock as part of their living, Bovine TB needs to be worked upon.[34] Contact tracing and active case finding strategies in target groups, symptom screening, house-to-house case search, and contact

investigation can generate high yields through home visits in rural areas plus reduce diagnosis delays.[26] Techniques like short message service (SMS) texting (as most rural residents owned mobile phones) and LHW programme would serve beneficial outcomes. Programmes should incorporate focus on health culture belief subsidised travel, medication costs, basic education, media campaign, knowledge through LHWs, banners, different non-governmental organisations (NGOs), etc. Mass-level health awareness as well as behavioural health promotion campaigns, evidence-based realistic and beneficial policies need to be implemented. To make the TB control programme effective, not only the communities but also healthcare providers must be educated. Healthcare workers serve as the base to TB elimination.[35] The current economic crisis has impacted TB programmes in impoverished populations[36] along with reduced international funding.[37] Public-private partnerships can provide a window to share financing, improve performance and ultimately enhance the quality of services. At government level public private partnerships to implement DOTS for TB control to achieve Millennium Development Goals (MDGs). The government needs to pursue activities with great vigour and expanded framework for achieving regional and global targets. With increasingly globalised environment TB burden can be transmitted to multitude of world settings.[38]

Conclusion

Pakistanis living in rural areas had insufficient knowledge about most aspects of TB, e.g. symptoms, diagnosis, treatment and transmission, and held misconceptions about the disease.

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