JPSIM Journal of Pakistan Society of Internal Medicine

Original Article

Multidrug Resistant Tuberculosis: Difficulties Faced During Treatment

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Abstract

Objective: Present study was undertaken to observe the personal, social and environmental difficulties of MDR TB patients during treatment on a programmatic management of drug resistant TB site.

Methods: This cross-sectional study was undertaken at PHRC TB Research Laboratory and PMDT site, King Edward Medical University/Mayo Hospital, Lahore, from January 1st to May 31st, 2021. Confirmed MDR-TB patients seeking treatment were included in this study after taking informed consent. Pre-designed proforma containing information about demography, socio-economic status, transportation issues, attitude of healthcare staff, social stigma, provision of support from PMDT site and side effects of treatment was used for data collection. Data was entered and analysed in statistical package for social science (SPSS) software.

Results: A total of 100 MDR-TB patients taking treatment from Programmatic Management of Drug-Resistant Site (PMDT) were interviewed that included 42% males and 58% females. Patients had to travel an average distance of 45.4±42.2 km with a range of 2-215 km to reach the PMDT site. Patients had to spend a mean amount of 818±1206 rupees to reach the hospital and spend about 400±150 rupees to take meals during traveling. Attitude problems from household and in laws were also observed among 13% patients most of which (10%) were females. Joint pain was the most dominant adverse drug effect and was reported by 48% respondents, followed by nausea 46%, weakness 36%, irritability 28% and vision problems in 15% of the patients.

Conclusion: Problems of MDR-TB patients include long travelling distances, insufficient financial support and troublesome side effects of second line anti TB drugs. In addition to these, misbehaviour and neglect from the spouse and in laws, belief in religious and spiritual treatments, exploitation by homeopaths, hakims and quacks are other issues that must be focused on and addressed properly.

Keywords: Multidrug resistant TB, Problems, Side Effects, Incidence.

How to cite this:

Saeed H, Hanid, A, Munir MK. Multidrug Resistant Tuberculosis: Difficulties Faced During Treatment. J Pak Soc Intern Med. 2025;6(3): 245-249

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Received: 05-01-2025 **Revised:** 08-02-2025 **Accepted:** 23-07-2025

DOI: https://doi.org/10.70302/jpsim.v6i3.2545

Introduction

Tuberculosis (TB) is a contagious, communicable ailment and falls amongst the top ten causes of death globally and the foremost cause of mortality due to a single infectious agent, ranked above Human immunodeficient virus (HIV).[1] *Mycobacterium tuberculosis* (MTB) is responsible for human ailment since ancient times and spreads by expelling the MTB bacilli in air from infectious patients. It can cause disease in every part of the body causing extra-pulmonary TB, though it typically affects lungs to cause pulmonary tuberculosis (PTB). According to World Health Organization (WHO) report 2019, around 10.3 million new TB cases in 2017 and 10 million in 2018 were reported showing an incidence of 118-146 cases per 100,000 population in the world. A total of 562000 new TB cases were reported in Pakistan during 2018 accounting for an incidence of 265/100,000 population.[1]

Multidrug resistant (MDR) TB is an advanced form

of the disease in which Mycobacterium Tuberculosis becomes resistant to isoniazid and rifampicin, the two most important first line anti-TB drugs with or without resistance to other first line drugs. Treatment options to handle MDR-TB are limited thus prolonging treatment and increasing the problems of the patients.[2] In addition, resistance to second line anti TB drugs may threaten to cause extensively drug resistant (XDR) TB, which is a progressive form of MDR-TB when additional resistance to quinolones and one of the three injectable (amikacin, kanamycin or capreomycin) is reported among bacilli.[3] A data of ninety-one countries revealed a prevalence of 6.2 % XDR-TB among MDR-TB patients.[4]

Prompt treatment of XDR-TB patients is the only key to prevent spread and save the lives of patients although various factors including poverty, ethnicity, migration, substance abuse, co-infection with HIV and other chronic diseases are reported to create hindrance in its control.[5] Other issues include personal problems, social stigmas, attitude of households and healthcare staff that are scarcely reported and difficult to handle. Therefore, this study was undertaken to observe the personal, social and environmental difficulties of MDR-TB patients during treatment on a Programmatic Management of Drug-resistant TB (PMDT) site.

Methods

This cross-sectional study was undertaken at PHRC TB Research centre, King Edward Medical University/Mayo Hospital, Lahore, from January 1st to May 31st, 2021. Confirmed MDR-TB patients seeking treatment from PMDT site for more than nine months were included in the study. After taking informed consent, a total of 100 patients were included in the study sample, using convenient sampling technique.

Pre-designed proforma was used for data collection comprising of information about demography, socio-economic status, prior history of TB and MDR-TB among other households and presenting complaints were noted. Further questions regarding transportation issues, attitude of healthcare staff, social stigma, provision of support from PMDT site and side effects were also noted. Data was entered and analysed in statistical package for social science (SPSS) software.

Results

A total of 100 MDR-TB patients taking treatment from PMDT site were interviewed that includes n (42%) males and n (58%) females. A male to female ratio was calculated to be1:1.38 in this study. Sixty-two percent patients were married, 52% were illiterate and 56% belonged to Lahore district. Most of the patients; 50% belonged to poor socio-economic status while 26% belonged to very poor socio-economic status and previous history of ATT was established among only 52% patients. Demographic characteristics of patients are presented in Table I.

Different social issues related to the logistics of these patients were observed. Most of the patients (98%) had to visit once a month for examination and to take their medicine, 60% patients were using public transport to reach the healthcare facility. A total of 42% patients necessarily needed an attendant to reach the healthcare facility while 18% patients had attendants on jobs and needed to take leave from work place. All the patients were taking medicine from Mayo Hospital free of cost. However, 12% patients were hospitalized during treatment as depicted in the Table II. Similarly, patients had to travel an average distance of 45.4±42.2 km with a range of 2-215 km to reach the PMDT site. Patients had to spend a mean amount of 818±1206 rupees to reach the hospital and spend about 400±150 rupees to take meals during traveling.

Quality of services provided to patients at PMDT site by healthcare workers was also recorded, which were reported to be very good by 42% respondents while only 6% patients were not satisfied and rated the services as poor and 14% patients rated the services as average. Detailed quality of services provided are also depicted in table III.

Few other behavioural issues were also noted from the patients; 20% patients had belief in spiritual/ religious healers, 3% in formal medical practitioners, 11% believed in Hakims and 5% in Homeopaths. Attitude problems from household and in laws were also observed among 13% patients, most (10%) of which were females. Most of the females suffered from social stigma and 3 were divorced and 5 were sent to their parents till completion of treatment. There were 16% students who had to compromise their studies due to illness and other issues.

Joint pain was the most dominant adverse drug effect and was reported by 48% respondents, followed by nausea 46%, weakness 36%, irritability 28% and vision problems that were seen in 15% of the patients.

Table 1: *Demographic Characteristics of Patients*

Characteristics		Gender					
		Male (N= 42)		Female (N= 58)		Total (N= 100)	
		N	%	N	%	N	%
Age Range (in years)	<= 20	14	33.3	30	51.7	44	44
	21 – 30	14	33.3	20	34.5	34	34
	31 – 40	6	14.3	4	6.9	10	10
	41 – 50	4	9.5	4	6.9	8	8
	51+	4	9.5	0	0	4	4
Marital Status	Married	24	57.1	38	65.5	62	62
	Unmarried	18	42.9	20	34.5	38	38
Education	Illiterate	22	52.3	30	51.7	52	52
	Primary	10	23.8	10	17.2	20	20
	Middle	4	9.5	8	13.7	12	12
	Higher Above	6	14.3	10	17.2	16	16
District of Residence	Gujranwala	8	19	18	31	26	26
	Lahore	28	66.7	28	48.3	56	56
	Others	6	14.3	12	20.7	18	18
Socio-Economic Status	Very poor	16	38.1	10	17.2	26	26
	Poor	14	33.3	36	62.1	50	50
	Lower Middle	10	23.8	8	13.8	18	18
	Middle	2	4.8	4	6.9	6	6
	High	0	0	0	0	0	0
History of ATT		22	52.4	30	51.7	52	52

Table 2: *Social Problems of MDR TB patients. (N=100)*

Characteristics		Gender					
		Male (N= 42)		Female (N= 58)		Total (N= 100)	
		N	%	N	%	N	%
Frequency of Monthly Visits	Once	42	100	56	96.6	98	98
	Twice	0	0	0	0	0	0
	More	0	0	2	3.4	2	2
Type of Vehicle Used	Personal	8	19	6	10.3	14	14
	Public	26	61.9	34	58.6	60	60
	Private	8	19	18	31	26	26
Need Attendant		10	23.8	32	55.2	42	42
Attendant Working		6	14.3	12	20.7	18	18
Got Admitted in Hospital		8	19	4	6.9	12	12
Received Medicine from PMDT Site		42	100	58	100	100	100

Table 3: *Quality of Services Provided by Healthcare Workers.*

Characteristics		Gender					
		Male (N= 42)		Female (N= 58)		Total (N= 100)	
		N	%	N	%	N	%
Attitude of Health Care Staff	Very Good	20	47.6	22	37.9	42	42
	Good	12	28.6	18	31.1	30	30
	Average	8	19.1	6	10.4	14	14
	Poor	2	4.8	4	6.9	6	6

Discussion

Various domestic, social and logistic issues of the patients were observed in this study. Most important of all was the travel of an average distance of 45.4±42.2 km with a range of 2-215 km that patients had to undertake to reach the PMDT site, where patients come from nearby districts having territories far from Lahore. Furthermore, 60% of MDR-TB patients used public transport which is an additional threat to the public getting direct exposure to resistant strains of TB. Similar findings regarding travelling distance of patients have been reported by another study in similar settings.[2] Clear policies for travelling of MDR TB patients on public transports are not present though patients are advised to use masks during travelling and handkerchief during coughing which is not enough.[6] Although infection control measures are brought into account but implementation is compromised among general public where 61.5% of patients from a single family consecutively got infection following one after other.[7]

Patients had to spend a mean amount of 818±1206 rupees to reach the hospital and spend about 400±150 rupees to take meals during traveling. National TB Control Program (NTP) started to support the patients from the resource acquired from global funding[8] few years back which was only 600 rupees a month which was not enough.[9] Moreover, patients coming from far areas had to spend 400±150 rupees to take meals during traveling. Transportation support initiative (TSI) model was presented by China in 2007 to pro-poor TB patients aimed to help the treatment completion of patients by targeting economically suppressed population.[10] The TSI model adopted in China was used for general TB patients but this model was introduced in Pakistan for patients suffering from drug resistant TB during 2015. In the beginning a subsidy of around 4500 rupees per month per patient was given to patients for food basket and transportation[9] but has now been awfully reduced to 2200 rupees now.

Vulnerability of patients could be observed by high illiteracy rate of 52% and poverty of 76% in this study. Misbehaviour from spouse and other households was also reported among 20% patients which is also comparable with another study[2] but not in agreement with an Indian study that presented great support of around 95% from spouse where male spouse remained more helpful.[11] Attitude of the healthcare staff towards MDR-TB patients remained satisfactory in this study and in agreement with previous studies from the same settings.[8,12] Adverse drug reactions were joint pain among 48% respondents, nausea 46%, weakness among 36%, irritation among 28% and 15% patients reported vision problems.[13]

Conclusion

It is obvious, in conclusion, that despite provision of various facilities to the MDR TB patients they are still facing many inconveniences, most important of which are long travelling distances, insufficient financial support and troublesome side effects of second line anti TB drugs. Misbehaviour by the staff is also scarcely reported and these issues should be addressed by proper training and management. In addition to these, misbehaviour and neglect from the spouse and in laws, belief in religious and spiritual treatments, exploitation by homeopaths, hakims and quacks are other issues that must be focused on and addressed properly.

Ethical Approval: The IRB/EC approved this study via letter no. 929/RC/KEMU dated December 09, 2020.

Conflict of Interest: *None*

Funding Source: *None*

Authors' Contribution

HS: Conception

MKM: Design of the work

HA, AH: Data acquisition, analysis, or interpretation

HS, MKM: Draft the work

AH: Review critically for important intellectual content

All authors approve the version to be published

All authors agree to be accountable for all aspects of the work

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