

Treatment Adherence among MDR TB Patients in Nepal

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Abstract

Background: Tuberculosis usually strikes most vulnerable people of society. Treatment Adherence plays vital role for restricting the development of resistance against any disease. Patients always describe the needs of psychological supports to mitigate the difficulties of regular clinic visit, performing family and personal responsibility while on treatment. So, this study examines the role of family and social support contributing the treatment adherence.

Objective: The study aims to find out the status of adherence among MDR TB patients and also the role of family and social support contributing to treatment adherence of the disease.

Methods and material: A descriptive cross-sectional study was conducted in 3 different DR-TB management centers (NTC, GENETUP and TB Nepal), which were purposively selected. A total of 100 patients were taken as sample population through sampling technique and data was collected using a semi structured questionnaire.

Results: Out of 100 respondents, 5% did not followed the instructions provided by health workers. The main reason was side effects of drug (2 out of 5) whereas feeling of cured was also one reason along with alcohol and smoking. 96% received family support during the treatment while more than 3/4th of the respondents disclosed their status. About 24% had experienced unusual behavior from the community and 20% are only engaged in income generating activities. A significant association was seen between family support and treatment adherence.

Conclusion: Hence, this study concludes that family support is very crucial for the treatment adherence but there are other determinants which cause non adherence. High level of depression is seen among the patients to disclose their status due to stigma and discrimination.

Keywords: Treatment adherence, MDR TB, family support, social support.

Introduction

Tuberculosis (TB) remains a significant public health problem. It is most common communicable disease especially in underdeveloped and developing countries. Main reason behind death is due to anti-microbial resistance and leading mortality factor among people with HIV. Globally, only 55% of MDR-TB are successfully treated (Key facts, WHO). Though Nepal has been implementing specific policies and strategies for the systematic management of DR-TB cases but still the cases of DR-TB are unable to be notified annually (Nepal Tuberculosis Program Annual Report, 2018). Due to long treatment regimen, large quantity of medicines and their side effects adherence to treatment has been difficult to maintain. Patient's poor adherence to treatment, remains the

principal cause of treatment failure in an around 40% cases of developing countries (Bhattacharya, Ray, Biswas, & Das, 2018). The economic and social impact on patient's, families, careers and the household have been explored in several studies. It leads to poverty and social isolation in different cases. Hence, the study aims to find out the status of treatment adherence among MDR TB patients and the role of family and social support contributing to treatment adherence.

Methodology

Research design and study area

A descriptive cross-sectional study was conducted in three centers from Nepal. Nepal Tuberculosis Center (NTC), GENETUP from Kathmandu valley and TB Nepal from Nepalgunj

were purposively selected for the study. All the MDR patients who were undergoing treatment and had completed 1-month course from the center were the main respondent for the study.

Sampling techniques

A total of 100 sample size was calculated (considering 5% margin of error, 95% confidence level, 2.2% prevalence of MDR TB with addition of 10% non-response rate). As the treatment centers were selected purposively after that list of all the MDR patients from all TB centers were obtained and those people meeting the inclusion criteria were considered as the sample population of the study. The participants were selected on the basis of following inclusion criteria: Patients registered as MDR TB patient and taking regular treatment services from study sites and Patients who had completed 1 month of treatment course.

National TB program of Nepal has clearly mentioned that the treatment regimen for patients with MDR TB is minimum 20 months which includes an initial intensive phase of 8 months and continuation phase of at least 12 months. Hence, patients will be under close observation of health workers during intensive phase and the medication will also be regular. But after the phase, the chance of dropout is high so we have taken the sample who has undergoing the treatment and completed 1-month course.

Data collection, management and analysis

A semi structured questionnaire was used for the study. Regular visit was done on the identified study sites for data collection. The data thus collected were compiled, coded and were entered into SPSS v20. Data was analyzed using SPSSv20 in which proportions and associations were calculated and hypothesis testing was carried out.

Limitations

Study was conducted in limited treatment centers with limited samples. Although study had used all the scientific techniques and methods, it can be easily generalized but still it may lack other perspective of TB.

Ethics

Prior to initiating the study, approval was taken from NTC to conduct the research. Data collection method was started only after the approval from Nepal Health Research Council

(NHRC). A written consent was sought from all patients before starting interview with a clear information that they can withdraw from the interview anytime they wish.

Results

A total of 100 participants were interviewed during study time frame. Male participants (63%) were more in number than female. The median age of the respondents was 27.5 years where the majority of the respondents (39 %) were from age group 21-30 years followed by the age group of 10-20 years. Both married and unmarried participants were almost equally affected by the disease but 3 out of 5 non-adherences had been seen among married male participants. A total of 85 percent of the respondents are literate. The association between the adherence of treatment and socio-demographic characteristics were not statistically significant except the occupation where it is statistically significant (p-value <0.05, Chi square= 21.237, df= 5) at 95% confidence interval. The descriptive as well as analytical statistics has been summarized in below Table 1.

There is always a challenge to maintain the adherence among the MDR. In this study, 5% of the respondents did not follow the prescribed treatment procedures and didn't take medicine regularly TB drugs which is shown in Table 2. The main reason behind the discontinuation of the treatment was mainly due to side effect of the drugs whereas feeling of being cured, alcoholic and smoking habit of patient are some other reasons. Majority of the respondent had experienced some type of side effects due to TB drugs. Among the side effects, weakness (77%) and dizziness (70.5%) was the side effect mostly experienced by the respondents followed by nausea/vomiting (63.6%).

Family members are the one who are very close to the patient and their support is always crucial. Supports for regular diet, care, economic support and regular dose of medicine were the prime supports reported in the study. Regarding family member's support 68% of the participants told that parents were the one who fully supported more for the treatment of the disease followed by spouse 39.6% and children 36%. The Chi-square test showed that the p-value is <0.05 as in Table 3. Hence, there is significant association between family support and treatment adherence of the MDR-TB patient.

Social support cannot be measured directly. Respondents disclosed their health status to near and dear ones only as they think it was not necessary for them. Those who were professionally engaged had fear of losing their job so did not disclosed the status while others have fear to be discriminated by the community. More than a half (56%) of the respondents were

not involved in any social activities due to weakness, skin color change, control the transmission of disease to others and fear of stigma and discrimination. The Chi- square test showed that the p-value is >0.05 for each societal aspect as shown in Table 3. Hence, there is no significant association between social support and treatment adherence of the MDR-TB patient.

Table 1. Socio-demographic characteristics of participants

Characteristics	Frequency (n=100)	Percentage (%)	Treatment Adherence		P-value
			Yes	No	
Age (in years)					
10-20	22	22.0	22 (100.0%)	0	0.314
21-30	39	39.0	38 (97.4%)	1(2.6%)	
31-40	18	18.0	17 (94.4%)	1 (5.6%)	
41-50	5	5.0	4 (80.0%)	1 (20.0%)	
51-60	8	8.0	7 (87.5%)	1 (12.5%)	
60 and above	8	8.0	7 (87.5%)	1 (12.5%)	
Gender					
Male	63	63.0	58 (92.1%)	5 (7.9%)	0.079
Female	37	37.0	37 (100.0%)	0	
Ethnicity					
Brahmin/Chhettri	24	24.0	24 (100.0%)	0	0.425
Janajati	60	60.0	56 (93.3%)	4 (6.7%)	
Dalit	6	6.0	5 (83.3%)	1 (16.7%)	
Muslim	3	3.0	3 (100.0%)	0	
Madhesi	7	7.0	7 (100.0%)	0	
Religion					
Hindu	65	65.0	62 (95.4%)	3 (4.6%)	0.796
Islam	5	5.0	5 (100.0%)	0	
Christian	5	5.0	5 (100.0%)	0	
Buddhist	25	25.0	23 (92.0%)	2 (8.0%)	
Marital status					
Married	45	45.0	42 (93.3%)	3 (6.7%)	0.864
Unmarried	47	47.0	45 (95.7%)	2 (4.3%)	
Single Men/Women	7	7.0	7 (100.0%)	0	
Separated	1	1.0	1 (100.0%)	0	
Education status					
Literate	12	12.0	12(100.0%)	0	0.150
Primary	16	16.0	16 (100.0%)	0	
Secondary	30	30.0	26 (86.7%)	4 (13.3%)	
Higher secondary and above	27	27.0	26 (96.3%)	1 (3.7%)	
Illiterate	15	15.0	15 (100.0%)	0	
Main Occupation					
Agriculture	22	22.0	22 (100.0%)	0	0.02
Business	13	13.0	9 (69.2%)	4 (30.8%)	
Housewife/husband	11	11.0	11 (100.0%)	0	
Labor	9	9.0	9(100.0%)	0	
Service	31	31.0	30 (96.8%)	1 (3.2%)	
Student	10	10.0	10 (100.0%)	0	
Others	4	4.0	4 (100.0%)	0	

Table 2. Treatment adherence among MDR patients

Treatment Adherence	Frequency (n=100)	Percentage (%)
Yes	95	95.0
Side effects of medicine		
Yes	88	88.0

Table 3. Family and social support to the patients

Support from family members	Frequency (n=100)	Percentage	P-value	
Yes	96	96.0	0.04	
Social Support	Disclosed status			
	Yes	79	79.0	0.9
	Treat differently from community			
	Yes	24	24.0	0.3
	Involved in income generation			
Yes	20	20.0	1	

Discussions

Drug resistance has been the major problem faced by patient. Although DOTS has been implemented in Nepal but still there are other factors which play direct role in treatment adherence. Similar, study shows that drug compliance, treatment with proper DOTS strategies and nutritional status of the TB patient were the main factors linked directly with MDR-TB (Aderita et al., 2016). According to this study, 5% of the participants did not followed the regular DOTS guidelines which is less in compared to Ethiopia and USA (11.5%), China (12.2%) and India (33%) but the level is almost similar as compared to that report from Kenya (4.5 %) (Tesfahuneygn, Medhin, & Legesse, 2015). One of the major reason behind non-adherence of the treatment was side effects of the drugs as 88% had experienced side effects which is similar to a study done at Terai region of Nepal (D.F., S., A.K., & R., 2003) whereas long duration of treatment, complex and costly treatment were also equally responsible for patient discontinuation of the drugs (Jain & Dixit, 2008). Similarly, feeling of cured, alcoholism and smoking habit were some other reasons among respondents. Previous studies have evidence that family support played a pivotal role in the treatment adherence (Deshmukh et al., 2018; Samal & Dehury, 2016; Samal, 2017) as they are the one who monitor the patient regularly. This study also shows 96% of the respondents had received support from their family members whereas remaining 4% had not disclosed their status. Majority of them told that they received more support from parents whereas spouses

support was more among married ones. Many studies in India have shown that harassment from in-laws were also the major barriers for women in seeking health care (Samal, 2017).

In this study social support had been measured using variables like disclosure of disease status, social involvement, experience of discrimination and involvement in income generation activity. Many of them have disclosed their status to community but still 21% are afraid of the discrimination or they think it is not of their use. Support from close friends, neighbors and landlords was also reported in the study. A study done among adult and pediatric TB patients showed that more than half of respondents limited their disclosure to a close circle of entrusted family, and very few respondents (4/43) showed willingness to disclose to members of the community such as teachers, neighbors, or colleagues (Paz-Soldán, Alban, Jones, & Oberhelman, 2013). Another study related to social support among MDR patients conducted in China revealed that participants who did not disclosed their disease status tended to receive more social support ($P=0.010$). It was reported that almost one fourth of the participants had experienced different behavior from community after the disease condition. A qualitative study done in Eritrea showed that social stigmas like being pointed at the neighborhood, gossiping related to their illness and exclusion from social events were experienced by the patients (Gebreweld et al., 2018). Statistically, this study shows also show significant association between the family support and treatment adherence of the DR-TB patient as the p-value is >0.05 .

Conclusion

This study showed that 5% participants lacks adherence in the treatment, 2 out of 5 respondents didn't maintain the adherence due to side effects. Similarly, study shows significant association between family support and treatment adherence of the patient.

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