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Effects of Counselling on the Quality of Life of Multidrug Resistant Tuberculosis Patients in Khyber Pakhtunkhwa

Uzma Hidayat[1], Safia Khanam[2]✉, Hafsa Khan[3], Haleema[2], Nadia Ashiq[1], Zia Ullah[4]

[1]Programmatic Management of Drug Resistant TB Unit, Lady Reading Hospital, Peshawar - Pakistan [2]Khyber Girls Medical College, Peshawar - Pakistan [3]Khyber Medical College, Peshawar - Pakistan [4]Peshawar Medical College, Riphah University, Islamabad - Pakistan

Corresponding Author
Safia Khanam
Khyber Girls Medical College,
Peshawar - Pakistan
E-mail: safiakhanam2019@gmail.com

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ABSTRACT

Background: Multidrug Resistant Tuberculosis (MDR-TB) remains a major cause of death due to an infectious disease worldwide. Due to stigma and severity of disease, patients with MDR-TB have very low quality of life. Different studies suggests that counselling may play important role in the enhancement of the quality of life of such patients.

Objective: This study was conducted with the aims to analyze effect of counselling on changes in the quality of life of MDR-TB patients.

Methodology: A quasi-experimental design with a randomized pretest and posttest control group is used in this kind of research. 120 patients were randomly chosen between January 2019 to February 2022 made up the study's samples. The data were then analyzed using the Wilcoxon test, the Mann Whitney test, and the two mean difference tests. Counseling using the SOWAN approach is supported by observation, well-being, action, and nursing.

Results: Total 120 enrolled MDR-TB patient were included in this study. For study purpose, these patients were divided into two groups i.e., intervention group and control group. Both group consists of 60 MDR-TB patients each. The Intervention group comprised patients who received a complete course of counselling as per the study protocol, whereas the Control Group did not receive such counselling and only received psychological assistance according to National guidelines This study emphasizes the pivotal role of counselling in determining the final outcomes of the study cases. An important finding of the present study suggested a significant association with a P-value of 0.0271, a chi-square value of 4.8807, and 1 degree of freedom between counselling and the final treatment outcome of the selected study cases.

Conclusion: This study concluded the importance of counselling in the treament of MDR-TB. This study point out the special role of clinical psychologist: Further the study showed and help in achouy the successful treament outcome.

Keywords: MDR-TB; Quality of Life; Effects of Counseling

Background

Tuberculosis (TB) is an infectious disease and responsible for high mortality level through out the globe, with an anticipated 1.6 million deaths from TB in 2022 (including 187,000 HIV patients).[1] Due to continuous efforts of World Health Organization (WHO) with the help of different organization and National TB control program of different countries across the globe, TB is somewhat control in few areas of the world and hope arise that a day came when this disease continuously erase from the world but unfortunately all these efforts become useless due to the occurrence of Drug–resistant tuberculosis (DR-TB). DR-TB is a type of TB in which the causative organisms become resistance to different anti-TB drugs. So, DR-TB is a more severe case of TB and Multidrug Resistant TB (MDR-TB) is the most prevalent and difficult type of DR-TB. MDR-TB is now become the most serious global health threat, causing the ongoing TB pandemic and increasing TB morbidity and death globally.[2-4]

The resistance type of TB is a man-made disease and might result from incomplete or inadequate treatment for their previous TB illness. As adherence to TB treatment is very important along with the timely and proper treatment for TB, but this may be difficult to achieve in case of MDR-TB therapy. Multidrug-resistant tuberculosis continues to pose a danger to all TB control program and in 2022, around 500,000 instances were reported worldwide.[2] When compared to drug-susceptible TB, treatment regimens for DR-TB are more expensive, longer, less successful and associated with adverse effects.[1,3] Due to this reason, global treatment success rate for DR-TB remains under 60%, and a significant number of patients died each year.[4,5] As MDR-TB is the most prevalent one among DR-TB, so this rate mainly is for MDR-TB.

Drugs used for treatment of MDR-TB therapy is known as Second line drugs (SLDs). These drugs related with different types of drugs side.[6] Along other side effects, some psychological issues like Anxiety, sadness, treatment rejection, self-blame, and suicide (in some patients) are few consequences of MDR-TB treatment. Additionally, individuals with multidrug-resistant tuberculosis (MDR-TB) experience a loss of social freedom, which hinders their ability to attain their desired social objectives. They often face stigma, live below societal norms, encounter challenges in maintaining social relationships, endure stigmatization within healthcare facilities and their families, confront discrimination, grapple with social isolation, and suffer from reduced social status. Therefore, counselling plays a valuable role in addressing the psychological issues faced by MDR-TB patients and can contribute to enhancing their overall quality of life.[8] Counseling or psychotherapy can be valuable approaches when dealing with MDR-TB patients. These techniques can be customized to address the unique needs of each case, employing a systematic approach that draws from a wide range of interventions designed to tackle specific challenges faced by MDR-TB patients. The ultimate aim is to enhance the overall quality of life for these patients and improve their health status.

One of the contributing factors to the issues mentioned above is the patient's limited understanding of their condition, which can make various counselling and guidance programs appear unattractive and unnecessary. Therefore, before delving further into guidance and counselling, it is crucial to address the challenges related to the organization of counselling programs and the counselling process itself. These issues within guidance and counselling programs must be resolved to effectively enhance the quality of life for patients through the implementation of counselling modules or guidelines.[7,8]

Pakistan ranks fifth in the Eastern Mediterranean Region for DR TB, according to WHO. Over the years, the government has made significant strides in improving DR TB care through various initiatives, such as the development of Direct Observation Short Course Treatment (DOTs) and programmatic management of DR TB. However, despite these efforts, the country still faces substantial challenges in managing and eliminating DR TB. For better treatment outcomes and higher success rates, it is essential to implement all necessary precautions and care methods for MDR-TB patients. Counseling also plays a crucial role in adherence and the outcomes of MDR-TB treatment. Surprisingly, there have been no published articles on this important topic in this region. Hence, we conducted research on this vital subject.

Objective

The purpose of this study is to investigate the impact of counselling on changes in the quality of life and final treatment outcome of MDR-TB patients in a tertiary care hospital of Peshawar, Khyber Pakhtunkhwa.

Methodology

In this research, a quasi-experimental design was utilized, incorporating a randomized pretest and posttest control group. The study involved a total of 120 MDR-TB patients who were enrolled at the Programmatic Management of Drug Resistant TB Unit (PMDT) at Lady Reading Hospital in Peshawar, Khyber Pakhtunkhwa. The study took place from January 2019 to 2022.

For the purposes of the study, the selected patients were divided into two groups, each consisting of 60 patients. These patients visited the hospital every month for follow-

up checkups and medication. A dedicated team provided them with all the necessary facilities and support. A trained and qualified Clinical Psychologist regularly provided counselling to these patients. In the case of the studied group, the psychologist followed a specific study protocol.

Data were collected using specially designed proformas and then entered into a Microsoft Excel sheet. Subsequently, all the data were transferred to the SPSS software for further analysis. The data were analyzed using the Wilcoxon test, the Mann Whitney test, and two mean difference tests.

Results

A total of 120 enrolled MDR-TB patients were included in this study. The study duration was from January 2019 till February 2022. All patients whom final treatment outcome achieved was included in the final analysis. The Intervention Group comprised patients who received a complete course of counselling as per the study protocol, whereas the Control Group did not receive such counselling. Among the study cases, the intervention group have (58.3%) female and (41.7%) were male. Majority of the study cases (43.3%) were from age group above 40 years of age. Regarding marital status, the study revealed that (75.0%) of patients were married. In terms of geographical distribution, the participants hailed from various areas within the province, encompassing both rural and urban areas. Specifically, (15%) were from rural areas, and (45%) were from urban areas. The smoking history of the study participants was also recorded. The results indicated that (30%) were smokers, while (70.0%) were non-smokers. Various treatment strategies were employed for patient care. The study findings demonstrated that (43.3%) of the participants were on the Longer treatment strategy, whereas (56.7%) were on Shorter treatment strategies.

In control group, 66.7% were female. Majority (65.0%) of

Table 1. Characteristics of Study Cases

Variables	Intervention Group (n=60)	Control Group (n=60)	Chi Square ($\chi 2$)	Degree of Freedom	P-value
Gender					
Male	25 (41.7%)	20 (33.3%)	0.889	1	0.3458
Female	35 (58.3%)	40 (66.7%)			
Age Groups					
20 – 30	13 (21.7%)	16 (26.7%)	0.853	1	0.3558
31 – 40	10 (16.7%)	12 (20.0%)			
41 – 50	7 (11.7%)	3 (5.0%)			
51 – 60	4 (6.7%)	8 (13.3%)			
>60	26 (43.3)	21 (35.0%)			
Marital Status					
Married	45 (75.0%)	39 (65.0%)	1.429	1	0.2320
Unmarried	13 (21.7%)	20 (33.3%)			
Widow	2 (3.3%)	1 (1.7%)			
Smoking Hstory					
Smoking	18 (30.0%)	15 (25.0%)	0.376	1	0.5397
Not Smoking	42 (70.0%)	45 (75.0%)			
Residence					
Rural	45 (75.0%)	32 (53.3%)	6.125	1	0.0133
Urban	15 (25.0%)	28 (46.7%)			
Treatment Strategies					
STR	34 (56.7%)	29 (48.3%)	0.835	1	0.3607
LTR	26 (43.3%)	31 (51.7%)			
Treatment outcomes					
Cured	45 (75.0%)	35 (58.4%)	4.8807	1	0.0271
Complete	3 (5.0%)	02 (3.4%)			
Died	6 (10.0%)	4 (15.0%)			
Loss to Follow up	3 (5.0%)	13 (21.7%)			
Failed	3 (5.0%)	6 (10.0%)			

the study cases in this group were married. Like intervention group, more patients (53.3%) belonged to ruler areas of the province and 75.0% were smokers. Here in this group, more (51.7%) patients were on Langer treatment strategies as compared to intervention group where number of patients (56.7%) is more on short treatment strategies (Table 1).

In this study, we also aimed to investigate whether a relationship exists between psychological counselling and the quality of life of patients. The results revealed a statistically significant positive association between psychological counselling and the two groups under consideration. Specifically, patients in the intervention group exhibited higher scores in three domains compared to those in the control group. Notably, the social relationship domain had higher scores in the control group compared to the intervention group.

These findings are supported by a P-value of 0.0216, which is less than the significance level of 0.05. Therefore, it can be concluded that there is a significant difference in the quality of life of MDR-TB patients who received counselling compared to those in the control group. Consequently, it can be inferred that the counselling provided exerts an influence on the ultimate treatment outcomes of MDR-TB patients (Table 2).

When a patient experiences an improved quality of life, they are more likely to remain engaged and committed to completing their treatment with a successful outcome. This study further emphasizes the pivotal role of counselling in determining the final outcomes of the study cases. An important finding of the present study suggested a significant association with a P-value of 0.0271, a chi-square value of 4.8807, and 1 degree of freedom between counselling and the final treatment outcome of the selected study cases (Table 3).

Table 2. Comparison of two Groups to See the Effects of Counseling on Quality of Life in MDR TB Patients.

Group	Mean score of Intervention Group	Mean score of Control Group	P-value
Domain-I Physical Health	20.05	19.03	**<0.01**
Domain-II Psychological	17.46	15.23	
Domain–III Social Relationship	9.6	7.88	
Domain–IV Environment	22.0	18.91	

Table 3. Effect cancelling on final outcome of study cases

Treatment outcomes	Intervention Group	Control Group	Chi Square ($\chi 2$)	Degree of Freedom	P-value
Successful Treatment Outcome	48 (80.0%)	37 (68.4%)	4.8807	1	**0.0271**
Unsuccessful Treatment Outcome	12 (20.0%)	23 (31.6%)			

Discussion

Tuberculosis (TB) is a worldwide public health concern, but it may also be viewed as an individual health issue. Patients with tuberculosis suffer not only physiologically, but also psychologically and socially, with serious implications. Fear of spreading the sickness, helplessness, and social stigma associated with this ailment are all potential explanations that diminish patients' self-esteem and reinforce non-adherence.[9]

In our present study, we enrolled 120 patients diagnosed with Multi-Drug Resistant Tuberculosis (MDR-TB) and categorized them into two groups, each comprising 60 patients. In the intervention group, we observed that the percentage of female patients was 58.3%, while male patients accounted for 41.7%. In contrast, in the control group, the distribution was 66.7% females and 33.3% males. Interestingly, similar patterns were observed in several other studies conducted in various countries such as Pakistan, India, Uganda, and Brazil.[10-13] A common trend across all these studies was the higher incidence of MDR-TB among women compared to men. One primary contributing factor to this gender disparity is the delayed initiation of healthcare treatment for women. This delay is often driven by societal stigma, as women may fear negative judgments from their communities. Additionally, in many regions, women do not have access to a high standard of living, which can further hinder their ability to seek timely medical care. Unfortunately, in many areas, females are marginalized and do not receive specialized care during their illness. So, the most important point raise here is to counselled females for timely and accurate treatment and complete the treatment with good adherence. The present study suggests that counselling play a very important role in achieving successful treatment outcome and good quality of life of the patients.

MDR-TB is a disease that can affect individuals of any age and race. However, it tends to impact individuals in their

productive years, which are the years when a person is capable of working and contributing to their own well-being as well as that of others. This disease has a particularly detrimental effect on communities in developing countries, as it can lead to an increase in mortality rates. The term "productive age" refers to the age range at which a person is typically able to engage in work or create value for themselves and their community. Unfortunately, MDR-TB can have severe economic consequences, both for affected individuals and their countries. Patients who are over the age of 40 and contract MDR-TB may become unproductive or even become a burden to their families. On one hand, they are unable to work due to their illness, and on the other hand, their entire family can suffer due to the economic impact of their illness. In our present study, we observed that the majority of MDR-TB patients were aged over 40, comprising 61.6% of the patients in the intervention group and 63.3% in the control group. This is a significant and concerning aspect of this disease because during this stage of life, people are typically responsible for leading their families and contributing to their well-being. However, due to this deadly disease, they are often rendered unable to do so. Similar findings have been reported in other studies as well.[14-16] Elderly individuals do not respond as effectively to the treatment of MDR-TB. They require specialized care and proper treatment to achieve successful outcomes. Providing continuous counselling and fostering hope is essential to help them overcome the stigma associated with the disease and ensure good treatment adherence. Our present study demonstrates that counselling plays a pivotal role in supporting these patients, and their quality of life may significantly improve with consistent counselling at various stages of their treatment.

Enrolled MDR-TB patients belongs to different areas of the province and most of the patients belongs to rural areas of the province. About 75.0% in the intervention group whereas 53.3% in the control group belongs to far rural area of the province. Different studies suggests that poor outcome of MDR-TB treatment is strongly associated with living in rural areas[11,14,16] one speculative explanation for this phenomenon is that patients belong to rural zones were from far-flung areas with limited health facilities, difficult implementation of DOTS, low education level, and poor socioeconomic conditions with malnutrition leading to an ineffective pharmacological response to drugs. Rationally, the most important tool for improving the treatment outcome of MDR-TB in rural areas is patient education. A strong emphasis should be placed on effective patient counselling and education in rural areas for better results.

In this study, two different treatment strategies were employed: a shorter treatment regimen (STR) lasting for 11 months, and a longer treatment regimen (LTR) spanning from 18 to 24 months. Among the participants, 56.7% were on the STR, while 51.7% were on the LTR treatment plans. The success rate of treatment outcomes differed between the two groups as well, with 80.0% of patients in the STR group achieving successful outcomes, compared to 61.8% in the LTR group.

The impact of counselling on the final outcome of these two groups was found to be significant, as indicated by a chi-square value of 4.8807, 1 degree of freedom, and a p-value of 0.0271. All enrolled MDR-TB patients underwent routine screening for potential side effects. For the purpose of this study, one group received special counselling sessions in addition to the routine screenings for psychological issues.

Furthermore, this study demonstrated that counselling had a positive influence on the quality of life of MDR-TB patients. Various studies have highlighted the crucial role of counselling in reducing social stigma, addressing confidentiality concerns, mitigating job loss, and effectively alleviating psychological stress, such as depression. It also improved the overall quality of life for patients.[17,18]

The present study suggests that counselling significantly contributes to enhancing the quality of life of MDR-TB patients. Notably, the p-value (<0.01) is smaller than the conventional threshold of 0.05, providing strong evidence of a significant difference in the quality of life of MDR-TB patients before and after receiving counselling. This underscores the positive impact of counselling on the quality of life.

In summary, this study has concluded that counselling plays a crucial role in both achieving a higher quality of life and ensuring successful final treatment outcomes for MDR-TB patients. Throughout the study, the counselor provided patients with information and emotional support, enabling them to develop behaviors that improved their relationships with themselves and their environment.[19,20]

In this study, the concept of health-related quality of life (HRQoL) is distinct, focusing on how a patient's symptoms and medical challenges impact their overall quality of life. Given that health is the primary concern, HRQoL takes precedence over the broader concept of quality of life within the context of health.[21]

On the contrary, the treatment duration plays a pivotal role in addressing psychological difficulties. The daily Directly Observed Therapy (DOT) can be a substantial burden, particularly for patients in low- and middle-income countries. Additionally, patients need consistent access to the limited technical expertise required for regular check-ups, particularly concerning potentially life-threatening medication side effects.[22]

This study aimed to gather information about the role of counselling in improving the quality of life of MDR-TB patients and enhancing their final treatment outcomes in resource-poor settings. The findings from this study may prove valuable to the staff of Programmatic Management of Drug-Resistant Tuberculosis (PMDT) in such areas, guiding them in implementing these practices for their enrolled patients. This, in turn, can significantly impact the lives and treatment outcomes of these patients.

Conclusion

This study concluded the importance of counselling in the treament of MDR-TB. This study point out the special role of clinical psychologist: Further the study showed and help in achouy the successful treament outcome.

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