Psychosocial Support Intervention for Drug-Resistant Tuberculosis Patients

Activity Completion Report

June 2019

USAID FROM THE AMERICAN PEOPLE

CHALLENGE TB

Acknowledgments

Challenge TB thanks the Innovation for Wellbeing Foundation for implementing this activity, particularly Akib Ul Huque, Monira Rahman, Umme Kawser, Andalib Mahmud, Jahan Ara, Mrittika Kamal, DNet, Terracota Creative Multimedia, and all Management Sciences for Health and IRD staff at their home and country offices who provided extensive review and editing of this report. We are grateful to the National Tuberculosis Control Program, National Institute of Diseases of the Chest and Hospital Bangladesh, and the staff that supported the Wellbeing Foundation in various aspects of this activity. Finally, we are enormously grateful to the drug-resistant TB patients who, despite their debilitating illnesses, participated in our intervention programs, performed the activities as best as they could, and provided invaluable feedback that will help us to further develop our initiatives.

All photographs are courtesy of the Challenge TB project team.

Disclaimer

The Global Health Bureau, Office of Infectious Disease, US Agency for International Development, financially supported this report through Challenge TB under the terms of Agreement No. AID-OAA-A-14-00029. This report is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of the Innovation for Wellbeing Foundation and do not necessarily reflect the views of USAID or the United States Government.

Contents

Abbreviations and Acronyms

CTB	Challenge TB
DR-TB	drug-resistant TB
GHQ	general health questionnaire
IWF	Innovation for Wellbeing Foundation
MHFA	mental health first aid
MHLS	mental health literacy scale
NIDCH	National Institute of Diseases of the Chest and Hospital
PMR	progressive muscular relaxation
TB	tuberculosis

Executive Summary

The intervention was commissioned by Challenge TB (CTB) Bangladesh to provide follow up psychosocial counseling services, expressive art therapy, and income-generation training to drug-resistant tuberculosis (DR-TB) patients at the National Institute of Diseases of the Chest and Hospital (NIDCH) Bangladesh. The intervention also included training a group of nurses on mental health first aid (MHFA) and developing a mobile application with information related to the treatment of TB and mental illness.

Various activities were carried out during the intervention period to enhance the mental health of DR-TB patients. These include assessing the mental health needs of DR-TB patients, providing need-based psychoeducation and psychosocial support, organizing expressive art therapy sessions, and arranging workshops on income-generation activities. In addition, 30 NIDCH nurses/providers were given MHFA training to increase their ability to provide empathetic and responsive services to DR-TB patients. A mobile app containing TB and mental health-related information, inspirational songs, and educational games and videos was developed. To assess the effectiveness of the intervention program, validated tools were used to conduct pre- and post-intervention assessments of DR-TB patients. The intervention processes were documented, and intervention status reports were submitted to CTB.

We used both quantitative (survey) and qualitative (interview and observation) methods to evaluate the effectiveness of intervention activities. The psychosocial intervention was provided to 271 DR-TB patients, and 30 NIDCH nurses went through the MHFA training course. All patients had symptoms of depression, with 61% reporting severe depression. Most patients (58%) reported mild anxiety, and roughly 25% had severe or profound anxiety.

The psychosocial intervention significantly improved self-esteem and reduced distress in the post-intervention phase. Self-esteem increased from 66.5 in the pre-intervention phase to 77.5 post-intervention, and distress decreased from 5 to 3. The MHFA training significantly improved nurses' mental health literacy and positive attitudes toward mental illnesses. Knowledge scores improved slightly, from 63 to 65, while attitude improved from 39 to 53. Both DR-TB patients and participant nurses highly commended the intervention programs.

Introduction

DR-TB, in which patients are resistant to one or more otherwise effective TB drugs (such as rifampicin) is a great health concern worldwide (Zaman, 2010). In 2016, 600,000 new patients around the world were identified as resistant to rifampicin, among whom 490,000 were multidrug resistant, or resistant to two of the most powerful first-line drugs—rifampicin and isoniazid (World Health Organization, 2017). Bangladesh is one of the top 30 DR-TB burden countries, where an estimated 1.6% of new cases and 29% of previously treated cases are multidrug resistant (World Health Organization, 2017).

The treatment regimen for DR-TB is long (Brown et al., 2015) and extremely costly (Zaman, 2010) and produces severe physical side effects (Yang et al., 2017). The illness also has negative social and psychological consequences, such as social isolation, stigma, threatened livelihood, and mental illness (Morris et al., 2013). Anxiety and depression are the most common psychological conditions associated with this disease (Brown et al., 2015).

The psychological disorders negatively interfere with the patient's adherence to timely and regular medicine intake, which allows TB bacteria to become more drug resistant and virtually unbeatable by the available drugs (Sweetland, Oquendo, Wickramaratne, Weissman, Wainberg, 2014). It has been suggested that treating co-morbid mental disorders will improve the treatment outcome of DR-TB (Pachi, Bratis, Moussas, Tselebis, 2013; Thomas et al., 2016). Studies have found that psychological interventions improved treatment adherence, increased the rate of cure, and enhanced quality of life for DR-TB patients (Janmeja, Das, Bhargava, Chavan, 2005; Sweetland et al., 2014). However, only a few such studies have been carried out globally (Thomas et al., 2016), and the majority of them did not adequately describe the intervention techniques and protocols so they could be replicated. In addition, it is not clear what psychological theories and models these support services are based on or whether they are suitable for different places and countries worldwide. It is also unknown whether the intervention programs took into account the physical fitness of the patients to participate in therapy sessions. Though social aspects (e.g., family life, employment status, social stigma) greatly influence patient quality of life, most of the intervention programs did not consider them. Given that there is an acute shortage of trained and qualified mental health professionals in countries like Bangladesh, providing individual (i.e., one-to-one) counseling or psychotherapy to DR-TB patients or any other patient group is a challenge. In such cases, a more feasible procedure would be to design group sessions so that a counselor or psychotherapist could support patients in groups. It would also be desirable to use simple therapeutic activities for intervention that are easy to follow, even for nonmental health professionals who have been trained to carry them out.

Nontraditional psychotherapeutic interventions, such as doing or observing creative artistic activities, have been reported to enhance both the physical and psychological state (Stuckey, Nobel, 2010). Expressive art therapy is the therapeutic use of art in which different creative mediums are used to promote emotional growth and healing (Malchiodi, 2003). The philosophy underlying expressive art therapy is "poiesis", a Greek word that refers to the natural process of moving from everyday expectations into the world of imagination and creativity, which can becomes one's road to emotional wellbeing. Research has found that art therapy helps to reduce anxiety (Schouten, de Niet, Knipscheer, Kleber, Hutschemaekers, 2015) and depression (Bar-Sela, Atid, Danos, Gabay, Epelbaum, 2007). Although expressive art therapy can potentially be used to improve the psychological state of DR-TB patients, no study has been carried out to examine this possibility.

DR-TB may affect patients' ability to continue their regular job for a considerable period of time, putting them at great financial hardship (Thomas et al., 2016). This further worsens their already vulnerable psychological state brought on by the disease. A pragmatic intervention for this would be to train patients in income-generation activities that are compatible with their physical condition so that they can remain productive, earn money, and feel confident about their abilities and financial condition.

To improve the community's level of mental health literacy, an MHFA training course was developed based on the model of conventional first aid (Kitchener, Jorm, 2008). This evidence-based training has spread to more than 20 countries, including Australia, the UK, the US, Canada, India, and Japan. Everyone taking an adult MHFA course is taught a set of skills that enables them to support someone experiencing mental health issues.

The MHFA program was first brought to Bangladesh by the Innovation for Wellbeing Foundation (IWF) in 2015, which is the only organization licensed to run the international MHFA program in Bangladesh. The IWF, with support from MHFA England—a UK-based community interest company—has trained 39 MHFA instructors from various professional and academic backgrounds, including psychology, educational and counseling psychology, and clinical psychology. It has trained 700 mental health first aiders and 3,000 mental health champions throughout Bangladesh.

The National TB Control Program has implemented programmatic management of DR-TB in Bangladesh since 2008. Specialized public chest disease hospitals like the NIDCH are serving as DR-TB treatment initiation centers. Bangladesh has adopted the treatment strategy that DR-TB patients have to be admitted and stay in the hospital for a few months after diagnosis and during the initial phase of treatment. The long and arduous treatment regime uses effective but powerful drugs with psychiatric side effects. Thus, DR-TB patients are required to be under close observation during treatment. To improve treatment adherence and the psychosocial wellbeing of DR-TB patients, CTB is committed to provide evidence-based mental health support to patients in hospital settings.

In December 2016, CTB signed a six-month sub-agreement with the IWF (June–December 2017) to enhance the psychosocial wellbeing of DR-TB patients at the NIDCH. This shot-term intervention had a positive impact on the psychosocial wellbeing of DR-TB patients, and CTB signed a second sub-agreement to continue psychosocial support services for DR-TB patients. In addition to running a pilot program, CTB wanted to train NIDCH nurses/providers in MHFA so they could provide empathetic and responsive services to all TB patients. Nursing and midwifery students regarded the MHFA training program as an appropriate and useful addition to their professional skills (Kelly, Birks, 2017). The training sensitized health care students to mental health issues, decreased the stigma they placed on mental illnesses, increased their confidence, and improved their ability to deal with psychiatric problems in patients (Bond, Jorm, Kitchener, Reavley, 2015; Davies, Beever, Glazebrook, 2018). MHFA courses, in general, promote early intervention and recovery by training people to provide quick and preliminary support to individuals who may be experiencing mental health issues (Kitchener, Jorm, 2008). To further improve the psychosocial wellbeing of DR-TB patients, CTB wanted to develop application software containing TB-related information, games, videos, and songs that could be used as a digital psychosocial support tool for patients, caregivers, and service providers.

To implement evidence-based psychosocial support interventions among DR-TB patients and train nurses on MHFA at NIDCH, CTB contracted with the IWF through a competitive process. The contract had the following deliverables: A final activity plan with a detailed protocol for app development and the

intervention package; training of 30 nurses/providers on mental health; and developing a final version of the app to provide TB-related information, inspirational songs, educational cartoons, games, and videos.

Various support activities for DR-TB patients (i.e., psychosocial counseling, expressive art therapy, income-generation training, MHFA training, and development of a mobile application) were undertaken during the intervention from March 15 to September 30, 2018. These are described in detail in section 2. A number of outcome measures were used to assess the effectiveness of the intervention programs, and their structure and psychometric properties are described in section 3. The findings (i.e., effectiveness of the intervention programs to improve the mental health of DR-TB patients) and associated statistical analyses are presented in section 4. The various aspects of the intervention are discussed in section 5, followed by a list of recommendations for further pragmatic and sustainable psychosocial support for DR-TB patients.

Section 1. Description of Interventions

This intervention combined two complementary approaches. The first focused on psychoeducation, which encompassed one-on-one and group sessions to educate patients on a range of topics.

Psychoeducation

Psychoeducation is an evidence-based therapeutic intervention in which patients receive necessary information and support to better understand and cope with challenges in life. The intervention comprised four psychoeducation sessions designed to achieve the following objectives with DR-TB patients:

- Helping patients develop a positive attitude about themselves and their ongoing treatment
- Providing adequate information to help patients better understand their present condition
- Establishing a trusting relationship and helping the patient tell his or her story
- Confidential sharing
- Active and non-judgmental listening
- Interactive discussions with patients to clarify their questions
- Encouraging patients to attend the psychosocial intervention sessions as provided under the present intervention

DR-TB patient participating in art therapy

Medical and psychological information about DR-TB was delivered through one-on-one and group sessions lasting 20 to 30 minutes. Patients and their caregivers learned the following through these sessions:

- A bacteria that spreads from person to person through the air causes TB, but it does not spread by shaking someone's hand or sharing food.
- TB bacteria become drug resistant if TB drugs are not taken as prescribed.

- Living in close contact with someone known to have DR-TB is a risk factor for catching the disease.
- The symptoms of depression (e.g., feeling sad, crying episodes, perceiving life as useless, losing interest in things); somatic disturbances (e.g., headaches, lack of appetite); and decreased vital energy (e.g., tiring easily, dissatisfaction with tasks, constantly feeling tired) are very common in TB patients.
- In most of the cases, TB and DR-TB can be cured with proper treatment and care (i.e., by taking all drugs precisely as prescribed by the doctor).
- With early identification and proper psychosocial support, symptoms of mental disorders can be alleviated.

Section 2. Psychosocial Intervention Based on Counseling Techniques

The second approach was based on psychosocial support services that addressed the psychosocial issues and mental health of DR-TB patients. The intervention program was based on a unique combination of treatments for mental disorders. Intervention activities included therapeutic tasks adapted from several psychotherapy approaches, such cognitive behavior therapy, acceptance and commitment therapy, eye movement desensitization and reprocessing, and psychodrama. The interventions were carried out in four sessions and all the activities were carried out under the supervision of professional psychologists. Expressive art therapy was also observed (appendix A).

Orientation and counseling session for DR-TB patients

The psychosocial support module included:

- Team building
- Stress management
- Coping with anxiety
- Coping with depression

The objectives of the program were to:

- Understand the uniqueness of each person and motivate them to feel good about themselves and maintain self-esteem
- Help patients identify the factors causing stress and teach basic stress management skills
- Help participants to learn and implement coping skills that result in the reduction of anxiety and worries and improve patient function
- Help participants learn coping and self-management strategies for dealing with depression

Psychosocial counseling session

Table 1. Psychosocial module

Session	Duration	Content	Objectives	Methodology
Session 1	90 minutes	• Introduction • Self esteem • Support system	• To understand the uniqueness of each person • To realize and find a support system in life	• Group discussion and sharing • Art as healing • Role play
Session 2	90 minutes	• What is stress • Causes of stress • Stress management	• To understand the concept and causes of stress • To understand and practice stress management skills	• Group discussion and sharing • Art as healing • Imaginary exercise
Session 3	90 minutes	• Identify positive power • Anxiety management	• To understand one's own positive power/skills • To understand and practice anxiety management skills	• Group discussion and sharing • Art as healing • Progressive muscular relaxation exercise
Session 4	90 minutes	• Depression and its causes • Positive self-talk	• To understand depression and its causes • To understand and practice techniques for dealing with depression	• Group discussion and sharing • Imaginary exercise • Art as healing

Income-Generation Activities Module

Samples from the expressive art therapy workshop

A group of DR-TB patients received vocational/income-generation training. They learned six activities during three sessions over two weeks. The activities are described below.

Table 2. DR-TB patient training program

Session	Duration	Content		Objectives	Methodology
Session 1	90 minutes	Activity 1: Gift Box	Activity 2: Room Bell	Participants learned how to make monetarily valuable, useful objects from waste. It was expected that the activities and group learning experiences would strengthen their self-esteem.	Individual work and group discussion
Session 2	90 minutes	Activity 1: Pen Box	Activity:2 Wall Mat	To give participants the opportunity to evaluate the self as in control of the outcomes of their actions.	Individual work and group discussion
Session 3	90 minutes	Activity 1: Beaded Brooch	Activity:2 Tissue Flower Activity 3: Wheel Flower	It was expected that this training would facilitate self-reliance and induce positive change in thinking.	Individual work and group discussion

Expressive art therapy workshop

Expressive Art Therapy

The intervention involved expressive art therapy through painting. This was chosen and designed to match DR-TB patients' health conditions, available time, and the physical environment at the NIDCH. Artistic ability or training in art was not necessary to receive the therapy because the therapeutic goal was to work on these different artistic expressions based on a creative process to reduce stress and anxiety while receiving treatment. Art therapy was held in three sessions. Geometric patterns and designs were used, and acrylic paint on canvas was chosen as the medium of artwork. Participants were given a brief orientation about the process of painting and asked to pair up and sit facing one another. Each pair then received a canvas with prepainted geometric patterns, a set of brushes, three colors of paint, and other tools to complete the project.

MHFA Training

MHFA is an internationally recognized training course designed to teach people how to spot the signs and symptoms of mental illness and provide help. Everyone taking an adult MHFA course is taught a set of skills that enables them to support someone experiencing mental health issues. A quality-assured instructor who has successfully completed a seven-day instructor training program facilitated by MHFA England delivers each MHFA course in Bangladesh.

The two-day MHFA training course for NIDCH nurses was based on the standard two-day MHFA course for adults. The course covered a number of areas, including what mental health is, stigma and discrimination, risks and protective factors influencing mental health, understanding depression, stress- and anxiety-related disorders, and psychosis. The training also taught skills for providing first aid for depression; suicidal crises; anxiety-related disorders, including panic attacks; and psychotic episodes.

The MHFA training gave a deeper understanding of the issues that affect the mental health of DR-TB patients and taught practical skills that could be used to assist all of a person's needs with empathy while spotting the signs and symptoms of mental health issues and remaining confident in guiding people toward appropriate support.

The MHFA course for nurses was a two-day course with two sessions per day. Each session comprised 30% presentation (e.g., slide presentation, video show) and 70% activity (e.g., individual work, small group work, role play, simulation). Handouts were provided on the topics taught. Three certified mental health professionals conducted the training.

Astha: Sustho Hoboi (Mobile Application)

A mobile application was developed to allow DR-TB patients, their family members and caregivers, and service providers to access culturally appropriate information on the assessment and treatment of DR-TB and mental health in simple Bangla language. The application not only provides information but also includes education through entertainment, which will be primarily used by TB patients to get information about TB and mental health.

Android App Functionalities

The Astha: Sustho Hoboi Android application includes:

- An easy and user-friendly interface
- An extensive library of videos and music/audio with positive messages for DR-TB patients that can be updated through the admin panel
- TB and mental wellbeing-related information
- A hotline number that a user can call to ask questions or report an emergency

Web Admin Panel Functionalities

- The admin will be signed into the admin panel after login
- The admin can upload/edit/delete and manage all information, including videos, audio files, and games

Section 3. Evaluation Design

Baseline and endline data were collected for both the intervention and comparison groups. A within-subjects design was used to determine the effects of interventions on psychological problems and processes (i.e., state distress, state self-esteem, and mental health literacy). Qualitative data were obtained through observation and participants' comments and opinions.

Demographic Information Questionnaire

A demographic questionnaire was used to collect information about participants' gender, age, marital status, residence, financial condition, family support, medical conditions other than TB, and mental health support status (i.e., previous counseling and psychotherapy sessions).

Depression Scale

The 30-item depression scale was developed for Bangladeshi people (Uddin, Rahman, 2005) and measures the severity of depression patients had experienced in the previous week. There are five response options for each item, from 1 (*not at all applicable*) to 5 (*completely applicable*). The total score range is 30–150; 30–100 indicates minimal, 101–114 mild, 115–123 moderate, and 124–150 severe depression. The Bangla depression scale has adequate psychometric properties (Uddin, Rahman, 2005). In this study, Cronbach's Alpha values were .90 and .73 in the pre- and post-administration of the scale, respective, indicating good internal consistency.

Anxiety Scale

The anxiety scale developed for Bangladeshi people includes 36 items (Deeba, Begum, 2004). Respondents were asked to rate various anxiety symptoms that they experienced in the last 30 days. Each item was scored on a 5-point Likert scale ranging from 0 (*not experienced at all*) to 4 (*experienced a lot*). The total score range is 0–144; below 55 indicates mild, 55–66 moderate, 67–77 severe, and 78–144 profound anxiety. The scale has adequate psychometric properties (Deeba, Begum, 2004). In this study, the estimates of internal consistency were good, with Cronbach's Alpha values of .89 and .92 in the pre- and post-administration of the scale, respectively.

State Distress Measure

This one-item visual analogue scale was used to rate participants' current distress level using a continuum ranging from 0 (*no distress*) to 10 (*unbearable distress*). It has significant correlation with Bangla GHQ-12 (p=.003), indicating criterion validity of the scale.

State Self-Esteem Scale

The 20-item Bangla state self-esteem scale (translated following standard adaptation procedures) measures short-lived changes in self-esteem. Participants are asked to indicate the extent to which each statement is applicable to them at that moment using a rating scale ranging from 1 (*not at all*) to 5 (*extremely*). The original English version of the scale has good psychometric properties.

Mental Health Literacy Scale

The mental health literacy scale (MHLS) includes 35 univariate items measuring knowledge and attitude regarding mental health (O'Connor, Casey, 2015). A 4-point scale ranging from 1 (*very unlikely/unhelpful*) to 4 (*very likely/helpful*) was used for 15 items, and a 5-point scale ranging from 1 (*strongly disagree/definitely unwilling*) to 5 (*strongly agree/definitely willing*) was used for the remaining items. The total score range is 35–160, with higher scores indicating better mental health literacy. The

original English MHLS has good psychometric properties (O'Connor, Casey, 2015). The scale was translated into Bangla using standard adaptation procedures.

Training Evaluation Questionnaire

This 17-item questionnaire assessed the usefulness of MHFA training, trainer's performance, and confidence about dealing with mental health issues. There were 5 response options for each item ranging from 1 (*completely disagree*) to 5 (*completely agree*).

Evaluation Methodology

Participants were provided psychoeducation, their queries were answered, and they received information about the objectives of the intervention. Informed consent was obtained prior to being enrolled in the intervention. Three trained research assistants met patients individually and, with consent, asked questions from the evaluation measures and recorded responses. A trained counselor and an observer carried out counseling sessions with patients in groups (n=10–12) over a period of two weeks. A training and art therapy session was carried out by an art therapist, who also conducted the vocational/income-generation training. Nurses attended the MHFA training provided by three mental health experts.

Well-lit and well-ventilated ward corridors were used for the intervention sessions. Patients sat on a large, comfortable floor mat in a semi-circle facing the service providers (i.e., counselor, vocational trainer, art therapist). Research assistants recorded patients' comments during the activities. Participants were free to withdraw from an activity or leave at any time without explaining their actions. Participation in the intervention programs was voluntary, and there was no financial incentive to participate.

Statistical Analysis

Descriptive statistics (i.e., frequency, percentage, median, interquartile range) were used to describe the prevalence of psychological disorders in DR-TB patients and the intervention's effects on them. As the questionnaires produce ordinal data, the Wilcoxon signed rank test was used to determine whether patients' psychological disturbances (i.e., psychiatric disorders, state distress, and state self-esteem) changed after the interventions. The Wilcoxon signed rank test was also used to analyze mental health literacy data obtained from nurses before and after the MHFA training. The Mann-Whitney U test was used to compare treatment and control patients. Participants' comments were recorded to obtain qualitative evidence to evaluate the effectiveness of the intervention programs.

Section 4. Findings

Participation in the Intervention Programs and Response Rates to Questionnaires

All DR-TB patients admitted to the NIDCH, Dhaka, between March 15 and July 14, 2018, were eligible to receive psychosocial support. Of those, 271 patients (female=138, male=133) between 14 and 72 years of age (mean=32.21, SD=13) consented to take part in the intervention, and 148 attended psychosocial intervention sessions. For minors (less than 18 years of age), consent was obtained from their legal guardians. For MHFA training, 30 NIDCH nurses were recruited. The income-generation training was given to 20 participants, 12 of whom answered the state self-esteem scale in the pre- and post-test phases. Twenty-six patients attended expressive art therapy.

Pre-Intervention Prevalence Rate of Depression and Anxiety

Depression scores indicate that all patients had symptoms of depression, with 19 (61.3%) reporting severe depression, 7 (22.6%) moderate depression, and 5 (16%) mild depression (figure 1). Anxiety scores indicate that 4 (12.9%), 4 (12.9%), 5 (16.1%), and 18 (58.1%) patients were suffering from profound, severe, moderate, and mild forms of anxiety, respectively (figure 2).

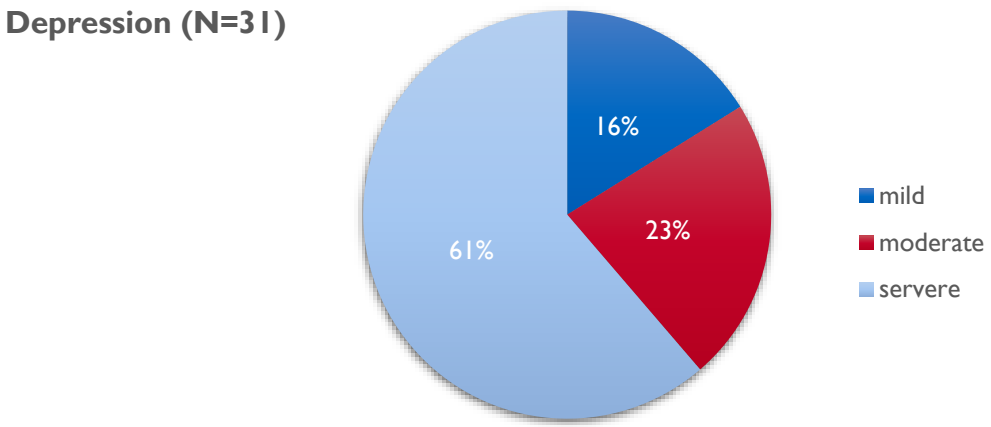

Figure 1: Mental health status of DR-TB patients (frequency, percentage) as assessed by depression scale (N= 31)

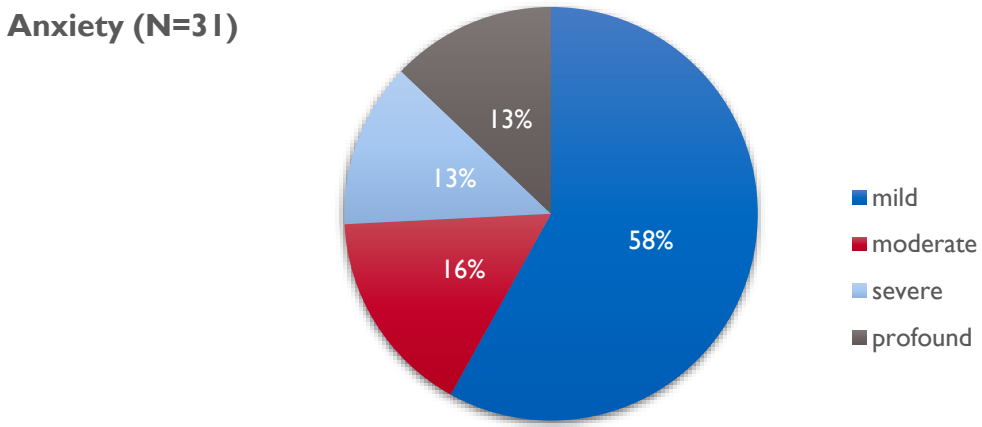

Figure 2: Mental health status of DR-TB patients (frequency, percentage) as assessed by the anxiety scale (N=31)

Effects of Psychosocial Intervention on DR-TB Patients

Changes in State Self-Esteem

The vocational training significantly increased participants' state self-esteem (p=.05) and decreased their state distress (p<0.001) (table 3).

Table 3. Median (interquartile range) state distress and state self-esteem of patients before and after intervention sessions

	Phase			
State	**Before**	**After**	**Sample size (n)**	**p-value for difference**
Distress	5 (4.8–8)	3 (2–5)	158	<0.001
Self-esteem	66.5 (62.8–68.8)	77.5 (63.5–81.5)	12	0.05

Note: A higher score indicates higher levels of distress and self-esteem

MHFA Training

Effects of MHFA Training on the Mental Health Knowledge and Attitudes of Nurses

Changes in mental health knowledge and attitudes among nurses before and after the MHFA training are presented in table 4. While knowledge remained relatively unchanged (63% pre-intervention and 65% post-intervention), it was found that training significantly increased both knowledge (p=.01) and positive attitude (p=.001) about mental health.

Table 4. Median (interquartile range) of knowledge and attitude about mental health before and after MHFA training

	Phase			
Mental health	**Before**	**After (Q3–Q1)**	**Sample size (n)**	**p-value for difference**
Knowledge	63 (58–65)	65 (63–69)	21	0.01
Attitude	39 (33–49)	53 (46–60)	21	0.001

Patients' Comments

During the intervention sessions, patients shared their distress spontaneously. These data were not analyzed, but the team pulled out some quotes to illustrate the experiences. The following paragraphs present a descriptive summary of the most relevant comments. One patient said:

> "I did not see my face in the mirror for the last two and a half years. My own people do not understand me."

Some were worried about their sex life. A female patient asked:

> "Can I have sex with my husband like before?"

The intervention tasks alleviated patients' distress. One participant commented:

> "I am feeling well after attending the session. Before coming here, I was in my bed and was much tensed."

After doing a task aimed at reducing depression, a patient mentioned:

> "I am feeling very calm after throwing my pain in the river."

Patients expressed their satisfaction with the intervention program. They asked us to come frequently, as one said:

> "We are feeling very happy that you are coming here for listening to our problems and involving us in various activities; many thanks to the people who have recruited you."

Another patient commented:

> "Please come every day. We feel good. We laugh and feel relaxed and light."

The income-generation training made participants confident and optimist about the future as one commented:

> "I did not realize that I would learn to make brooches easily. I want to continue with this in some way or other after completion of the sessions. The program is too exciting. I am amazed as I will be able to earn (money selling the products) even with my (medical) condition".

The art therapy helped participants to think positively about themselves, as one said:

> "I never thought my painting would look so beautiful!"

Another participant shared her work with her doctor and received positive feedback:

> "My doctor looked at my picture yesterday and asked where I got it from. I said I made it. He was smiling and that actually made me feel special."

Nurses' Comments about MHFA Training

Nurses reported that they learned about mental health and illness from the training as one commented:

> "We have learned a lot from this training."

Another said:

> "We have learned about the mental illnesses of patients and how to show them empathy. Now we know what information and initial treatment are needed to help patients with their psychological conditions."

The training helped the nurses to think differently about mental illnesses. One nurse felt that the training program was:

> "Very nice. I can now accept the person whom I would abandon before."

Regarding the usefulness of the training, one nurse suggested:

> "This training is necessary for doctors, patients, nurses, healthcare professionals, and everyone. All the nurses should attend this training and there should be more sessions on the topics."

Importantly, the training increased nurses' awareness of their own mental health. One participant commented:

> "This training helped us to gain self-awareness."

Discussion

The intervention was carried out to provide psychosocial support and income-generation training to DR-TB patients and train NIDCH nurses in MHFA. Psychosocial intervention programs were developed, and all DR-TB patients admitted to the NIDCH during the intervention period were offered the service. Patients who were willing to take part in the intervention program were assessed on a number of psychopathology domains to determine the prevalence of psychological problems among the group and to obtain baseline data to assess the effectiveness of the support module. In agreement with other studies, it was found that the majority of the DR-TB patients were suffering from psychological disturbances. It was also found that the intervention program significantly improved the patients' psychological conditions.

The psychosocial intervention program is cost-effective and brief (i.e., each session requires a maximum of one hour), and the tasks are theory-based but simple. The tasks were designed so that patients can easily follow them even in poor physical condition. The simplicity of the intervention tasks makes it possible for medical nurses to be trained to carry them out with patients. This is a pragmatic solution to the problem of a lack of qualified psychosocial counselors and psychotherapists in Bangladesh. However, further investigations are required to ascertain its feasibility and effectiveness.

The majority of the patients had psychological disturbances, but a large number (41.03%) did not attend the group psychosocial intervention program even though they received psychoeducation, consented to take part in it, and responded to the questionnaires. In addition, some patients were absent during sessions and we did not know where they were. Future studies should identify the barriers that demotivate patients or keep them from receiving psychosocial support and what can be done to ensure their participation.

Findings indicate that the intervention had a significant negative association with psychological disturbances, as the more psychosocial support patients received, the more their psychological problems decreased. However, given that the study groups were formed naturally (i.e., patients were not randomly allocated to control and treatment groups), a definitive cause-and-effect relationship between the intervention and observed improvement in patients' mental health cannot be established. For this, a randomized controlled study needs to be designed and carried out. A challenge in this case would be to get the required number of patients who will be willing to stay in the hospital for the month-long study period. A solution would be to plan a study for a longer duration (e.g., six months or more), which would increase the population size and thus the probability of obtaining an adequate number of patients available for the study.

Our findings strongly suggest that the psychosocial intervention was effective in temporarily alleviating distress and associated psychological conditions, as the level of state distress significantly decreased immediately after an intervention session. This, however, does not say anything about the long-term effects of the intervention program. We do not know whether the brief protocol and therapeutic tasks that were used in the present intervention would be adequate to improve the long-term mental health of DR-TB patients. Future studies should increase the duration of the psychosocial intervention (for example, intensive sessions for one month or the same number of sessions distributed over a three-month period) and incorporate an endline assessment phase (for example, six months after the intervention) to ascertain the long-term effects of receiving mental health intervention for DR-TB patients.

It is also necessary to investigate the effects of psychosocial interventions on various dimensions of the patient's life, such as family, social, and financial, which are greatly disrupted by the disease. Whether TB treatment adherence can be improved with group psychosocial interventions like those employed in this study is another important issue that future studies should examine.

With regard to the expressive art therapy, none of the patients who attended the workshop had ever painted on a canvas before, and this was an interesting exposure for them. The workshop enabled participants to explore their creative side. The environment of the NIDCH is quite depressing, and there is no source of entertainment or mental stimulation for patients. Though the patients were in extreme physical and psychological distress because of their illnesses and medicinal side effects, none expressed any desire to leave the workshop, and all were very enthusiastic about learning how to paint. Art can have a calming effect on one's mind, and the participating patients welcomed this relief. Some female patients even expressed interest in continuing with art in some way after completing their sessions. The expressive art therapy taught patients a new and unique way of using the nonverbal language of creativity to communicate inner feelings, which they could not do by thinking or talking.

The income-generation (i.e., vocational) training lifted participants' self-esteem. This suggests the possibility of enhancing the trait self-esteem (which is more durable than state self-esteem) of patients by involving them in an elaborate vocational training program with the goal of thinking of different ways to earn money after they finish treatment. This would also contribute to the enhancement of their overall psychological well-being. Future projects should consider these probable positive effects of vocational training on DR-TB patients' mental health.

MHFA training for nurses demonstrated that the participant nurses acquired new knowledge about mental health, and their attitude toward mental illnesses changed due to the training. They reported to have improved knowledge and attitudes in dealing with mental health issues in DR-TB patients after attending the training sessions. While the improvements are statistically robust, it should be noted that the magnitude of improvement for knowledge was small, with the median score increasing from 63 to 65. Median scores for attitude were much greater, increasing from 39 to 53. This and the findings of other studies suggest that health care professionals in general should attend the MHFA training program to enhance their professional skills in detecting and dealing with mental health issues in patients. Future projects should also investigate the feasibility of arranging MHFA training for a wide group of health care providers and assessing its immediate and long-term (i.e., 3–6 months after attending the training) effects on their mental health literacy and performance.

Given that DR-TB has wide-reaching effects on a patient's life, a multidimensional and multimodal continuing intervention involving standard medical treatment; group psychosocial intervention and support groups; and individual counseling or psychotherapy for severely affected patients, with psychiatric drugs if necessary, is recommended. Vocational and income-generation training for patients, mental health training for caregivers and hospital staff, and social awareness program should work as a more effective intervention package to significantly increase the cure rate and contain the disease to the lowest level. Future research projects should investigate such models.

Recommendations

1. Our findings strongly support the use of psychosocial interventions to improve the mental health of DR-TB patients. We strongly recommend the integration of a psychosocial intervention program in mainstream medical services for DR-TB patients. Continuous psychoeducation and

psychosocial support for patients is required as long as they stay in the hospital and has the following benefits:

- Early identification, rapid recovery, and prevention of mental illnesses
- Broader knowledge about mental disorders, which will remove some of the stigma
- Better informed about available mental health services
- Improved self-care and better ability to cope with psychological distress
- Connected to a psychosocial support network for patients and caregivers

2. In agreement with other studies, we found a high prevalence rate of psychiatric comorbidity in DR-TB patients. It is therefore essential to develop guidelines for psychiatric assessment of and treatment for the doctors who work with DR-TB patients.

3. Some DR-TB patients had very high scores on the assessment questionnaires used in this study, which suggests that they need psychiatric medicine. A psychiatrist can be employed to address this need or linkages can be created with existing mental health programs. In addition, existing DR-TB doctors may be trained to treat mental illnesses.

4. DR-TB patients spend a significant amount of time during treatment at home and away from the hospital. During this time at home, they might experience mental health issues but fail to get the support they need, as there is a dearth of mental health services in Bangladesh. A telephone help line and counseling service can be established to address this issue. Patients can contact designated counselors over the phone, share their problems, and receive the necessary counseling support.

5. To strengthen social networks and enhance social support, peer support groups of recovered DR-TB patients can be formed. As a pilot project, group members can be trained on psychosocial support services and employed to maintain regular contact with and support DR-TB patients (e.g., guidance, organize vocational training, arrange recreational activities) in hospital and community settings.

6. Taking care of DR-TB patients is physically and psychologically exhausting. This might cause psychological disturbances in caregivers/attendants, which in turn might negatively affect the mental health of the patients. To address this, psychosocial support (e.g., psychoeducation, individual and group counseling, MHFA training) should also be provided to patients' caregivers/attendants to:
   - Increase knowledge about mental health issues
   - Improve coping and psychological support skills
   - Accept and understand mental illnesses
   - Connect to psychosocial support networks

7. The physical environment of patient wards should be relaxing and lively. For example, the rooms can be painted in bright colors and decorated with posters. Gardens can be created on the hospital grounds.

8. A number of patients shared with counselors concerns about their sex life. This suggests that psychosexual education is needed for adult DR-TB patients, which will help them to better understand the issues and get rid of unrealistic and irrational fear and anxiety.

9. Further investigations should be carried out to replicate the findings of this intervention and determine its long-term effects on patients' mental health.

References

1. Bar-Sela G, Atid L, Danos S, Gabay N, Epelbaum R (2007). Art therapy improved depression and influenced fatigue levels in cancer patients on chemotherapy. *Psycho-Oncology*, *16*(11), 980–984. https://doi.org/10.1002/pon.1175

2. Bond KS, Jorm AF, Kitchener BA, Reavley NJ (2015). Mental health first aid training for Australian medical and nursing students: an evaluation study. *BMC Psychology*, *3*(1). https://doi.org/10.1186/s40359-015-0069-0

3. Brown J, Capocci S, Smith C, Morris S, Abubakar I, Lipman M (2015). Health status and quality of life in tuberculosis. *International Journal of Infectious Diseases*, *32*, 68–75. https://doi.org/10.1016/j.ijid.2014.12.045

4. Davies EB, Beever E, Glazebrook C (2018). A pilot randomised controlled study of the Mental Health First Aid eLearning course with UK medical students. *BMC Medical Education*, *18*(1). https://doi.org/10.1186/s12909-018-1154-x

5. Deeba F, Begum R (2004). Development of an Anxiety Scale for Bangladesh population. *Bangladesh Psychological Studies*, *14*, 38-54.

6. DECP, University of Dhaka (2017). Bangla general health questionnaire-12. Unpublished manuscript.

7. Gelaye B, Tadesse MG, Lohsoonthorn V, Lertmeharit S, Pensuksan WC, Sanchez SE, Williams MA (2015). Psychometric properties and factor structure of the General Health Questionnaire as a screening tool for anxiety and depressive symptoms in a multi-national study of young adults. *Journal of Affective Disorders*, *187*, 197–202. https://doi.org/10.1016/j.jad.2015.08.045

8. Goldberg DP, Gater R, Sartorius N, Ustun TB, Piccinelli M, Gureje O, and Rutter C (1997). The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychological Medicine*, *27*(1), 191–197. https://doi.org/10.1017/S0033291796004242

9. Hardy GE, Shapiro DA, Haynes CE, Rick JE (1999). Validation of the General Health Questionnaire-12: Using a sample of employees from England's health care services. *Psychological Assessment*, *11*(2), 159.

10. Janmeja AK, Das SK, BhargavaR, Chavan BS (2005). Psychotherapy Improves Compliance with Tuberculosis Treatment. *Respiration*, *72*(4), 375–380. https://doi.org/10.1159/000086251

11. Kelly J, Birks M (2017). 'It's the simple things you do first that start the process of help ': Undergraduate nursing and midwifery students' experiences of the Mental Health First Aid course. *Collegian*, *24*(3), 275–280. https://doi.org/10.1016/j.colegn.2016.04.004

12. Kitchener BA, Jorm AF (2008). Mental Health First Aid: an international programme for early intervention. *Early Intervention in Psychiatry*, *2*(1), 55–61. https://doi.org/10.1111/j.1751-7893.2007.00056.x

13. Malchiodi CA (2003). Expressive arts therapy and multimodal approaches. In *Handbook of art therapy* (pp. 106–117). New York, NY: The Guildford Press.

14. Morris MD, Quezada L, Bhat P, Moser K, Smith J, Perez H, Rodwell TC (2013). Social, economic, and psychological impacts of MDR-TB treatment in Tijuana, Mexico: a patient's perspective. *The International Journal of Tuberculosis and Lung Disease*, *17*(7), 954–960. https://doi.org/10.5588/ijtld.12.0480

15. O'Connor M, Casey L (2015). The Mental Health Literacy Scale (MHLS): A new scale-based measure of mental health literacy. *Psychiatry Research*, *229*(1–2), 511–516. https://doi.org/10.1016/j.psychres.2015.05.064

16. Pachi A, Bratis D, Moussas G, Tselebis A (2013). Psychiatric Morbidity and Other Factors Affecting Treatment Adherence in Pulmonary Tuberculosis Patients. *Tuberculosis Research and Treatment*, *2013*, 1–37. https://doi.org/10.1155/2013/489865

17. Schouten KA, de Niet GJ, Knipscheer JW, Kleber RJ, Hutschemaekers GJM (2015). The Effectiveness of Art Therapy in the Treatment of Traumatized Adults: A Systematic Review on Art Therapy and Trauma. *Trauma, Violence, & Abuse*, *16*(2), 220–228. https://doi.org/10.1177/1524838014555032

18. Stuckey HL, Nobel J (2010). The connection between art, healing, and public health: A review of current literature. *American Journal of Public Health*, 100(2), 254–263.

19. Sweetland A, Oquendo M, Wickramaratne P, Weissman M, Wainberg M (2014). Depression: a silent driver of the global tuberculosis epidemic. *World Psychiatry*, *13*(3), 325–326. https://doi.org/10.1002/wps.20134

20. Thomas BE, Shanmugam P, Malaisamy M, Ovung S, Suresh C, Subbaraman R, Nagarajan K (2016). "Psycho-Socio-Economic Issues Challenging Multidrug Resistant Tuberculosis Patients: A Systematic Review". *PLOS ONE*, *11*(1), e0147397. https://doi.org/10.1371/journal.pone.0147397

21. Uddin MZ, Rahman MM (2005). Development of a scale of depression for use in Bangladesh. *Bangladesh Psychological Studies*, *15*, 25-44.

22. World Health Organization (2017). *Global tuberculosis report 2017*. Geneva: World Health Organization.

23. Yang TW, Park HO, Jang HN, Yang JH, Kim SH, Moon SH, Kang DH (2017). Side effects associated with the treatment of multidrug-resistant tuberculosis at a tuberculosis referral hospital in South Korea: A retrospective study. *Medicine*, *96*(28), e7482. https://doi.org/10.1097/MD.0000000000007482

24. Zaman K (2010). Tuberculosis: A Global Health Problem. *Journal of Health, Population, and Nutrition*, *28*(2), 111–113.

Appendix A: Psychosocial Support Module

Session 1: Team building

The first session introduced participants to the group so that they felt free to do therapeutic activities and share their feelings and thoughts with others on the team. There were three activities in this session:

Ice Breaking Activity

The objectives of this session were to:

- Help introduce participants to one another
- Encourage participants to share their thoughts and feelings with the group

Time: 20 minutes
Method: Group activity, large group discussion
Materials: Not required
Process: In this activity, participants shared their name, profession, residence, likes and dislikes, and daily routine. Participants listened attentively so that they could know, recognize, and understand other team members.

Observations during Expressive Art Therapy

The majority of participating patients were in physical pain and unhappy when they came to take part in the therapy session. None had any previous experience painting, but when they started, they became completely absorbed in it.

Participants discussed the geometrical forms with the other in the group and decided who would do which part of the painting. They also chose the color for each section of the canvas. This gave them the opportunity to share creative ideas with their partner, strengthen their decision making abilities, and value their own choices. Working in pairs also enhanced their ability to coordinate and cooperate. When one group finished their task, they helped others to finish. On completion of the painting work, participants provided feedback and praised one another's pieces. They worked in harmony with very little supervision or assistance from the facilitators and expressed satisfaction with their creative works.

Hand Print Activity

The objectives of the session were to:

- Understand and feel one's uniqueness and importance
- Help participants to develop self-esteem, feelings of uniqueness, and an empathetic attitude

Time: 15 minutes
Method: Group activity, large group discussion
Materials: Poster paper, marker
Process: This was a team building activity. Each participant made a hand print on paper and wrote his or her name on it. Participants discussed their feelings with the group. During the discussion, a facilitator (i.e., counselor) asked participants questions to explore and demonstrate their uniqueness and importance, such as, "What do you think about the handprints on the poster?" "Did you find any difference among the handprints?" and "What are you feeling seeing your own handprint and name among others on the poster?"

Support System Exercise

The objective of the session was to find a trusted person who is a source of motivation in one's life.
Time: 15 minutes
Method: Individual work and discussion

Material: Colorful scarf
Process: Participants held a scarf and closed their eyes. They thought about a person with whom they were very close and then took the role of that person. For example, Ruma thought about her sister Mita, who was very close to her. Ruma then said, "I am Mita, Ruma's elder sister. I have not seen Ruma for a long time. But I love her very much." After saying this, Ruma opened her eyes, smiled at her team members, and said hello to the group as Ruma.

Income-generation skills development workshop

Session 2: Stress

The second session was designed to help patients to deal with stress, which is felt as mental or emotional strain or tension in adverse or demanding circumstances. There were two activities in this session.

Stop Exercise

The objectives of this session were to:

- Know about stress and its triggers (i.e., stressors)
- Practice focusing on the present to delay a stressful situation

Time: 30 minutes
Method: Individual work and discussion
Process: The facilitator asked participants to think about a stressful situation and a solution. Then the facilitator initiated a group discussion about each participant's stressful situation and increased the intensity of the situation by purposefully provoking more negative thoughts. Suddenly, the facilitator said, "STOP" and challenged their thoughts by asking questions like, "What was the basis of your thinking?" "How realistic are your thoughts?" and "Was it actually happening now?" This exercise was followed by deep breathing, group discussion, and sharing of feelings.

Stress Management

The objective of this session was to practice a relaxation exercise with participants.
Time: 30 minutes
Method: Group work and discussion
Materials: Paper, colored pen
Process: This imaginary relaxation exercise used art as an expression. Participants drew a safe place they would like to visit. Then they were asked to close their eyes and imagine the safe place as if they were there. While conducting the exercise, the facilitator maintained a calm and steady voice. After completing the activity, the facilitator encouraged participants to share and describe their feelings with the group and explained the process and importance of the exercise to them.

Expressive art therapy sample

Session 3: Anxiety

The third session was designed to help patients to deal with anxiety, which is felt as negative emotions, including worry, nervousness, and unease, and is triggered by events with uncertain outcomes. Two activities were developed for this session.

Positive Quality

The objectives of this session were to:

- Assist participants to identify their own positive qualities
- Increase positivity and reduce anxiety by positive affirmation

Time: 30 minutes
Method: Group work, discussion
Materials: Paper, crayons
Process: Participants practiced positive affirmation. They were asked to think about their positive qualities, which they shared with the group. They received positive affirmation from one another and the facilitator. Then they drew the face of their favorite person and discussed how they got support from that person when they were in crisis. Participants shared their experiences in the group.

Expressive art therapy sample

Progressive Muscular Relaxation Exercise

The objective of this session was to assist participants to practice the progressive muscular relaxation (PMR) exercise, which helps to reduce stress and anxiety in everyday life.

Time: 30 minutes

Method: Group work, discussion

Materials: Not required

Process: Participants learned how to do the PMR exercise. They were taught the importance of PMR, and the facilitator guided them to follow and practice the steps of the exercise.

Session 4: Depression

People suffering from depression feel low; lose interest in life; and live with maladaptive thoughts, feelings, behavior, tendencies, and sense of well-being. To help patients to deal with depression, two activities were designed in this session.

Management of Depression

The objectives of this session were to:

- Help participants understand depression
- Assist them in practicing a depression management technique

Time: 30 minutes

Method: Group session and discussion

Materials: Not required

Process: The facilitator discussed depression and its causes. Participants were encouraged to share the causes and sources of their depression. The facilitator then instructed and assisted participants to do a mindfulness activity, which was followed by writing a script and discussing the feelings, thoughts, and views that the activity produced.

Psychosocial counseling session

Positive Self-Talk

The objective of the session was to reduce depression through positive self-talk.
Time: 30 minutes
Method: Group session and discussion
Materials: Not required
Process: Participants wrote or drew three negative statements about themselves and indicated their feelings cause by this negative thinking on a scale from 1 (*I am feeling ok)* to 5 (*I am feeling terrible*). After this, participants were asked to write or draw positive statements about themselves and were given a mirror to see their face and say the positive statements out loud. They measured the feelings of this activity on a scale from 1 (*I am feeling ok*) to 5 (*I am feeling pretty good about myself*). Finally, the usefulness and effects of the positive self-talk was discussed with the group.

Psychosocial counseling session

Appendix B: Income-Generation Activity Module

Participants went through three sessions over two weeks. They were trained in six activities (i.e., income-generating skills) in those sessions.

Session 1: Get to Know Each Other

At the beginning of the first session, participants were encouraged to meet each other to feel comfortable doing the activities and sharing their feelings and thoughts with the group. They were informed about vocational training and its importance. They also learned about recycling processes and their usefulness.

There were two activities in the first session: gift box and room bell. Participants learned how to make useful objects with monetary value from waste. It was expected that the activities and group learning experiences would strengthen their self-esteem.
Time: 15 minutes
Method: Group discussion
Materials: Not required
Process: This was an ice breaking activity. Participants shared their name, profession, residence, hobbies, and daily activities with the group. Everyone was encouraged to listen to one another attentively.

Activity 1: Gift Box

This exercise was designed to help participants be aware of their daily activities, technical skills, productivity, and importance to increase their self-confidence. They were also informed about recycling and its importance.
Time: 25 minutes
Method: Individual work and group discussion
Materials: Thick paper box, wrapping paper in various colors, red ribbon, glue, cutter, markers in various colors
Process: Participants sat on a comfortable floor mat. A trainer described the materials to be used in the task and demonstrated the project. The procedure involved wrapping the box with an opening on one side using wrapping paper so that any extra paper was invisible from the outside of the. Participants waited three minutes for their boxes to dry. They then shared and discussed their feelings about the product they made.

Expressive art therapy samples

Activity 2: Room Bell

This activity was expected to alleviate negative feelings about oneself.

Time: 40 minutes

Method: Group work and discussion

Materials: Paper, pen, used paper shopping bag, needle, multicolored yarn, multicolored crystal beads, glue, cutter, and match

Process: The trainer instructed participants on the materials and the project. Participants were asked to select a piece of colored paper and draw some small circles on it. Then they glued five spots on the paper, and let them dry. A paper shopping bag was cut and folded smoothly like a stick. The materials were connected following a specific design to make a room bell, which participants held in their hands and expressed their feelings and opinion.

Expressive art therapy samples

Session 2

This session was expected to make participants feeling enthusiastic about doing something.

Activity 1: Pen Box

Objective: Participants learned to make a pen box, which was supposed to give them the opportunity to evaluate the self as in control of the outcomes of their actions.

Time: 25 minutes

Method: Individual work and group discussion

Materials: Tube from a roll of toilet tissue, colorful wrapping paper, colorful plastic tape, glue, hinge, sturdy cartoon paper, and pen

Process: The cartoon paper was cut to make a small circular opening. Participants applied glue and wrapped it with colorful wrapping paper according to the final shape of the box and trimmed the excess paper. At the end of the exercise, participants shared their feelings with the group.

Activity 2: Wall Mat

This activity demonstrates how to make use of waste objects and was expected to give participants a sense of self-satisfaction.

Time: 45 minutes

Method: Individual work and discussion

Materials: Paper, cotton balls, rope, colored yarn, white beads, glue, ribbon, cutter, pencil, scale, and powder of various colors

Process: The trainer showed how to use the materials to make a wall mat. Participants cut the colored paper 12 inches long by 7 inches wide. Each cotton ball was then cut into three pieces, and their sides were soaked in different powders and dried. Participants then made a seven-piece flower. The colorful yarn and thin rope were arranged in rows, and the flowers were placed to finalize the wall mat.

Expressive art therapy samples

Session 3

Activity 1: Beaded Brooch

Participants were expected to learn how to use beaded brooches to decorate things and their potential monetary value. It was also expected that this training would facilitate self-reliance and induce positive changes in thinking.

Time: 20 minutes

Method: Individual work and discussion

Materials: Plastic string, colored crystal beads, white pearl beads, and scissors

Process: The facilitator explained the materials to the participants. Each participant had to cut the string. The two ends of the string were placed in the right hand with a crystal bead. In the left hand, the same colored crystal bead and three white pearl beads were attached to the right side bead, which made a bud. This was repeated six times. A white pearl was added to the sixth bead, released, and tied up. This forms a brooch, and a safety pin was placed on the opposite side of the glue. Participants shared their ideas and thoughts about the activity.

Expressive art therapy samples

Activity 2: Tissue Flower

Participants learned how to make tissue flowers and had an opportunity to assess their creativity and strengthening self-esteem.

Time: 15 minutes

Method: Individual work and group discussion

Materials: Toilet tissue (pink and white), colored paper, glue, and scissors

Process: Participants followed the instruction and cut the toilet tissues into flowers.

Activity 3: Wheel Flowers and Masks

This practice helped participants to make financially valuable decorative products and was expected to give them a sense of self-worth.

Time: 45 minutes

Methods: Group work and discussion

Materials: Colored offset paper, stapler, pastels

Process: Each participant cut one part of a tissue roll into a flower. The facilitator drew different positive faces (smile, ecstasy, joy, and surprise) with participants. Participants painted their own faces to express their positive feelings. After completing the task, participants shared their feelings with their colored hands.

Expressive art therapy workshop participants

Appendix C: MHFA Training Module for Nurses

The following key messages were highlighted during the sessions:

- Mental health and mental illness exist on a spectrum/continuum.
- The difference between poor mental health and mental illness relates to duration and severity of symptoms.
- Mental illness is common.
- Mental illness is as disabling as any other illness.
- There are many interventions to help recovery.
- Stigmatizing attitudes can make it difficult to seek help.

After the training, participants were expected to:

- Have a deeper understanding of the issues that impact and relate to the mental health of DR-TB patients
- Learn practical skills to assist a psychologically disturbed person with empathy
- Identify the symptoms of mental illnesses among DR-TB patients and feel confident guiding them toward appropriate support
- Understand the importance of their own well-being
- Identify how to help colleagues who are stressed or burned out

The structure and content of the course are described in the following sections.

Session 1 (Day 1)

Mental Health

- Know about the prevalence and impact of mental illnesses among DR-TB patients
- Understand the risk factors associated with mental illness
- Understand the spectrum of interventions for recovery from mental illnesses

Depression

- What is depression
- Sign and symptoms of depression
- Risk factors for depression
- First aid for depression

Session 2 (Day 1)

Suicide

- How to talk about suicide
- First aid for suicidal crisis

Session 3 (Day 2)

Stress

- What is stress and stress-related symptoms
- How to manage stress

Anxiety-related disorders

- What is an anxiety disorder

- Different types of anxiety disorders
- Risk factors for anxiety disorders
- First aid for anxiety disorders

Session 4 (Day 2)

Psychosis

- What is psychosis
- Risk factors for psychosis
- First aid for psychosis

Nurses trained in the expressive art therapy workshop