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1 M.A. Student, Department of Psychology, Faculty of Medicine, Tehran Medical Sciences Branch, Islamic Azad University, Tehran, Iran.

2 Assistant Professor, Department of Psychology, Faculty of Medicine, Tehran Medical Sciences Branch, Islamic Azad University, Tehran, Iran.

3 Assistant professor, Department of Psychology, Faculty of Medicine, Tehran Medical Sciences , Islamic Azad University, Tehran , Iran.

Corresponding author email address:
sadat.kazemi@yahoo.com



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The Effectiveness of Compassion-Focused Therapy on Psychological Distress Individuals with Leprosy in Tabriz

Imaneh. Elbeigy Zanganeh¹, Ameneh. Sadat Kazemi^{2*}, Narges. Rasouli³

ABSTRACT

Objective: The present study aimed to determine the effectiveness of compassion-focused therapy on psychological distress in individuals with leprosy in the city of Tabriz. **Methods:**

Methods and Materials: The research method was quasi-experimental with a pre-test and post-test control group. The statistical population included all individuals with leprosy in Tabriz in 2024. After clinical interviews and considering the inclusion and exclusion criteria, 32 individuals were selected through convenience sampling and randomly assigned to experimental (16 people) and control (16 people) groups. Both groups were assessed using the Lovibond and Lovibond (1995) Psychological Distress Questionnaire. The experimental group underwent eight sessions of compassion-focused therapy over two months, each lasting 90 minutes and conducted weekly in a group therapy format. At the end of the treatment period, both groups completed the Psychological Distress Questionnaire again. Data were analyzed using multivariate covariance analysis by SPSS.26.

Findings: The results of the data analysis showed a significant difference between the experimental and control groups regarding psychological distress in individuals with leprosy ($P < 0.01$). After the therapy, psychological distress (stress, anxiety, and depression) in the experimental group significantly decreased compared to the pre-test and control group.

Conclusion: The findings of this study indicate that compassion-focused therapy affects psychological distress in individuals with leprosy. The results of this study also demonstrate some of the capabilities of this method in treating psychological distress and suggest its application as an effective therapy for individuals with leprosy.

Keywords: Compassion-focused therapy, Psychological Distress, Leprosy.

Introduction

Since the skin is the largest and most visible organ of the human body, skin patients often suffer from psychological tension and damage to their quality of life through visible symptoms (Li et al., 2024; van Dorst et al., 2020). Leprosy is a chronic infectious disease caused by the bacterium *Mycobacterium leprae*, which affects the skin and peripheral nerves, leading to skin lesions, loss of sensation, and nerve damage that, in turn, can result in secondary injuries or deformities of the eyes, hands, and feet (Siagian et al., 2022). Psychological problems for individuals with leprosy are a severe threat, as the consequences can extend beyond the disease itself (Gonzalez, 2021). Leprosy, with its unique characteristics, triggers negative emotional responses such as depression (24.6%), psychological problems (38%), and a risk of poor mental health, which is up to six times more prevalent than in the average population (van Dorst et al., 2020). Additionally, leprosy causes severe functional impairment, and thus, with treatment, there is a poor likelihood of recovery (Muniyandi et al., 2021). Given the costs and adverse outcomes associated with leprosy, research has focused on identifying risk factors for leprosy and treatment targets to understand the disorder better and develop more effective interventions.

Leprosy, historically recognized as one of the most destructive diseases in human society, remains challenging due to its long-term physical and psychological effects (Gonzalez, 2021). Psychological distress, which includes feelings such as depression, anxiety, and stress, is significantly observed in patients with leprosy. This distress is caused by a combination of factors such as physical disabilities, the social effects of the disease, and the social isolation that these patients often experience (Silva, 2019). Many patients with leprosy face psychological issues such as reduced self-esteem and increased depression, leading to a lower quality of life (Oliveira, 2020).

Given the destructive effects of leprosy on psychological distress, psychological interventions to improve the mental state of these patients seem necessary. One such intervention is compassion-focused therapy, which has gained attention as a novel therapeutic approach in recent years (Gilbert, 2014). Compassion-focused therapy focuses on developing

compassion for oneself and others, and meditation exercises and cognitive-behavioral techniques help alleviate negative emotions and increase self-compassion (Neff & Germer, 2013). Compassion-focused therapy has been studied as an effective intervention for reducing stress, depression, and anxiety in individuals with chronic diseases. For instance, studies have shown that compassion-focused therapy can help reduce psychological distress and improve the quality of life in patients with cancer, diabetes, and other chronic illnesses (Kirby, 2017). This approach can help individuals cope with the psychological challenges posed by physical illnesses and establish a positive connection with their bodies and their illness experience (Pauley & McPherson, 2010). In the context of leprosy, a rare and highly stigmatized disease, compassion-focused therapy can play a crucial role in reducing psychological distress and improving body image perception. Leprosy is not only a physical disease but also imposes a heavy psychological burden on patients, causing them to struggle with feelings of shame, isolation, and worthlessness (Weiss, 2018). Therefore, teaching self-compassion can help these patients better cope with negative emotions and experience more significant improvements in their mental and physical state (MacBeth & Gumley, 2012).

Previous research has shown that compassion-focused therapy can positively impact body image perception in individuals with various diseases. For example, a study found that compassion-based interventions can significantly improve body image perception in patients with anorexia nervosa and other eating disorders (Kelly et al., 2017). These findings suggest that compassion-focused therapy can be an effective intervention for improving body image perception in individuals with leprosy as well. Overall, this research seeks to provide a deeper understanding of the role of compassion-focused therapy in improving the mental and physical condition of patients with leprosy and aims to use scientific evidence to help improve the lives of these patients and reduce the psychological impacts of leprosy. Therefore, the present study was conducted to determine the effectiveness of compassion-focused therapy on psychological distress and body image perception in individuals with leprosy in the city of Tabriz.

Methods and Materials

Study Design and Participants

The research method used in this study was a quasi-experimental design with a pre-test and post-test control group. The statistical population of the present study included all individuals with leprosy in the city of Tabriz in the year 2024. Considering an effect size of 0.3, a confidence level of 0.05, and a statistical power of 0.8, with two experimental and control groups and two measurement times, the sample size was determined to be 32 individuals using the G-power software. To select the sample, first, the Baba Baghi Therapeutic Complex was visited, and the sample members were selected from the center's visitors who were suffering from leprosy. They were randomly assigned to either the control group or the experimental group. After selecting the sample from among individuals with leprosy, the sample members were randomly divided into two groups. The experimental group received compassion-focused therapy, while the control group received no intervention. The inclusion criteria included having leprosy, not having concurrent clinical disorders, not being addicted, and not having medical conditions. The exclusion criteria included absenteeism from the treatment program and sudden problems that could affect regular session attendance and completing session assignments. This study was conducted over eight sessions of compassion-focused therapy, with one 90-minute weekly session conducted in a group therapy format.

The implementation of this study was carried out by coordinating with the Baba Baghi Therapeutic Complex. Structured interviews were conducted to assess the inclusion criteria, and individuals with leprosy were selected and randomly assigned to either the control or experimental groups. After the sample was selected from among individuals with leprosy, the participants were randomly divided into two groups. Before the start of the intervention, both groups were given a pre-test and were asked to complete the required questionnaires. Following this, the experimental group underwent eight sessions of 90-minute compassion-focused therapy. After the completion of the sessions, a post-test was administered to both groups. The educational sessions were held once a week at the Baba Baghi Therapeutic Complex.

Instruments

The Psychological Distress Scale (Depression, Anxiety, and Stress) was used in this study. This scale, developed by Lovibond and Lovibond in 1995, contains 21 items with a 4-point Likert scale ranging from 0 to 3 (none, a little, sometimes, always). The scale includes three subscales: depression (items 3, 5, 10, 13, 16, 17, 21), anxiety (items 2, 4, 7, 9, 15, 19, 20), and stress (items 1, 6, 8, 11, 12, 14, 18), with higher scores indicating more severe symptoms. Lovibond and Lovibond (1995) administered this questionnaire to a non-clinical sample and obtained Cronbach's alpha coefficients of 0.91, 0.84, and 0.90 for the anxiety, stress, and depression subscales, respectively. Samani and Jokar (2007) examined the reliability of this questionnaire, reporting test-retest reliability coefficients of 0.80, 0.76, and 0.77 for the depression, anxiety, and stress subscales, respectively, and Cronbach's alpha coefficients of 0.81, 0.74, and 0.78. Amiri and Najafi (2021) reported Cronbach's alpha coefficients of 0.83, 0.84, and 0.78 for the depression, anxiety, and stress subscales, respectively (Afshar et al., 2015; Dargahi-Kafshgari et al., 2022). In this study, the Cronbach's alpha coefficients for the depression, anxiety, and stress subscales were 0.91, 0.88, and 0.86, respectively.

Intervention

The compassion-focused therapy sessions used in this study lasted eight sessions, one per week, each lasting 90 minutes. This therapeutic approach utilized the compassion-focused techniques developed by Gilbert (2010).

The first session introduced participants to the concept of compassion, highlighting its role in emotional regulation and psychological resilience, along with guided mindfulness exercises. The second session focused on psychoeducation about self-compassion and common self-critical thoughts among individuals with leprosy, using cognitive restructuring techniques. In the third session, participants were taught breathing exercises and soothing rhythm practices to regulate emotions and enhance physiological calmness. The fourth session emphasized developing compassionate imagery, encouraging participants to visualize an ideal compassionate figure and internalize supportive self-talk. The fifth session addressed shame and self-

judgment, helping individuals recognize and challenge negative self-perceptions through guided reflection. The sixth session introduced the "Compassionate Letter-Writing" technique, where participants wrote letters to themselves from a compassionate perspective, fostering self-kindness. The seventh session focused on cultivating compassion for others, promoting interpersonal empathy, and reducing feelings of isolation. Finally, the eighth session involved a review of progress, reinforcement of learned techniques, and the development of personalized strategies for maintaining self-compassion beyond the therapy period. Each session incorporated experiential exercises, guided meditations, and group discussions to facilitate emotional processing and behavioral change (Gilbert, 2014).

Data Analysis

In this study, descriptive statistical methods, including frequency calculation, percentage, mean, and standard deviation, were used, along with inferential statistics, multivariate covariance analysis, and the SPSS 26 software to test the research hypotheses.

Findings and Results

The age range of the study sample was between 45 and 74 years, with the experimental group having a mean (SD) age of 61.78 (22.89) years and the control group having a mean (SD) age of 59.96 (21.43) years. Overall, the mean age of the participants was 60.03 years, with a standard deviation of 21.76. The results in Table 1 indicate no significant difference between the groups regarding demographic variables based on the chi-square test results ($\chi^2 = 0.71$, $p > 0.05$), indicating that the groups were homogenous regarding demographic characteristics.

Table 1

Descriptive Statistics of Study Variables by Group and Stage

| Variable | Components | Group | Pre-Test | | Post-Test | |
|------------------------|------------|--------------|----------|------|-----------|------|
| | | | M | SD | M | SD |
| Psychological Distress | Anxiety | Experimental | 15.19 | 4.77 | 9.94 | 3.90 |
| | | Control | 14.88 | 4.64 | 13.81 | 4.02 |
| | Depression | Experimental | 15.69 | 4.04 | 8.75 | 3.21 |
| | | Control | 15.01 | 4.25 | 14.44 | 3.94 |
| | Stress | Experimental | 14.25 | 4.94 | 10.06 | 4.12 |
| | | Control | 13.75 | 3.67 | 12.81 | 3.56 |

Table 1 shows no significant difference between the two research groups in the pre-test stage. However, in the post-test stage, the experimental group's mean scores in the research variables showed noticeable changes. The non-significant M-Box test results for the research variables confirmed the homogeneity of variance-covariance ($p > 0.05$). Additionally, none of the variables in Levene's test were significant ($p > 0.05$), confirming the homogeneity of variances. Regression homogeneity, another assumption of covariance analysis, was also confirmed, as none of the scales were

significant in the regression homogeneity test ($p > 0.05$). Considering the analyses conducted, the essential assumptions for the parametric statistical method of covariance analysis were met. Subsequently, after controlling for the pre-test effect to compare the experimental and control groups based on post-test scores, a multivariate covariance analysis was used to determine the effectiveness of compassion-focused therapy on psychological distress in individuals with leprosy. The results of the multivariate covariance analysis test are shown in Table 2.

Table 2

Multivariate Covariance Analysis Test Results for Psychological Distress

| Variable | Value | F | Df Hypothesis | Df Error | P | Eta Squared |
|----------------|-------|-------|---------------|----------|-------|-------------|
| Pillai's Trace | 0.61 | 13.27 | 3 | 25 | 0.001 | 0.61 |

| | | | | | | |
|--------------------|------|-------|---|----|-------|------|
| Wilks' Lambda | 0.38 | 13.27 | 3 | 25 | 0.001 | 0.61 |
| Hotelling's Trace | 1.59 | 13.27 | 3 | 25 | 0.001 | 0.61 |
| Roy's Largest Root | 1.59 | 13.27 | 3 | 25 | 0.001 | 0.61 |

As shown in [Table 2](#), the results of the Wilks' Lambda test, the most commonly used test, indicate that there was a significant difference between the experimental and control groups in at least one of the dependent variables in the post-test stage, with 61% of the changes

related to group membership ($p < 0.001$). To further examine this difference, the results of the covariance analysis for the post-test scores of the dependent variables are presented in [Table 3](#).

Table 3

Multivariate Analysis of Variance Results for Comparing Groups on Study Variables

| Variable | SS | df | MS | F | P-value | Eta Squared |
|------------|--------|----|--------|-------|---------|-------------|
| Anxiety | 119.49 | 1 | 119.49 | 10.36 | 0.003 | 0.27 |
| Depression | 293.58 | 1 | 293.58 | 32.99 | 0.001 | 0.55 |
| Stress | 70.28 | 1 | 70.28 | 5.89 | 0.022 | 0.17 |

As shown in [Table 3](#), after controlling for the pre-test scores, there was a significant difference between the experimental and control groups regarding post-test psychological distress scores at the significance level ($p < 0.05$). Therefore, it can be said that psychological distress and its components (anxiety, stress, and depression) significantly decreased in the experimental group compared to the control group after the intervention. Thus, compassion-focused therapy led to a reduction in psychological distress in individuals with leprosy, and during this therapy, the psychological distress of individuals with leprosy improved.

Discussion and Conclusion

The present study aimed to determine the effectiveness of compassion-focused therapy on psychological distress in individuals with leprosy in the city of Tabriz. The results indicated that there was a significant difference between the experimental and control groups in terms of psychological distress and its components. In other words, compassion-focused therapy, considering the average levels of stress, anxiety, and depression in the experimental group compared to the control group, led to a significant reduction in these variables in the experimental group. These findings are consistent with the results of prior studies ([Hayatifar & Irvani, 2022](#); [Karami et al., 2024](#); [Kavousi et al., 2021](#); [Sadeghi Nisiani et al., 2022](#); [Saidi et al., 2024](#)), which reported that compassion-focused therapy can be effective in reducing psychological distress.

To explain these findings, it can be said that psychological distress is one of the most significant issues that individuals with leprosy experience, and various studies have shown that individuals with leprosy are at a higher risk of psychological distress compared to others. Those who suffer from psychological distress experience issues such as sadness, hopelessness, lack of motivation, reduced appetite, impaired social, occupational, and academic functioning, lack of pleasure and interest in related activities, lack of sexual desire, sleep disorders, and decreased energy. These symptoms can be mild but can lead to severe disability, potentially accompanying anxiety disorders ([Sadeghi Nisiani et al., 2022](#)). Compassion-focused therapy is a powerful tool that can, by itself, create emotional and perceptual changes in individuals. The exercises in this therapy can help individuals with leprosy positively change their feelings and experiences in behavioral, emotional, cognitive, and physiological contexts and reduce their stress and anxiety ([MacBeth & Gumley, 2012](#)). Additionally, compassion-focused therapy increases self-kindness in individuals with leprosy, leading to higher self-confidence, more energy, lower levels of depression, and greater control over anxious behaviors. This therapy helps individuals learn to love themselves and teaches clients to change negative attitudes toward their beliefs and adopt a non-judgmental perspective. Compassion-focused therapy teaches individuals that thoughts are merely thoughts, not facts, and they learn to ignore negative thoughts about themselves and not get entangled in these thoughts when they arise (Prasko et

al., 2016). For example, in one of the exercises of this intervention, titled "compassionate meditation," individuals learn to have a kinder and more forgiving view of themselves, as this is a prerequisite for loving their loved ones.

On the other hand, the exercises used in compassion-focused therapy play an important role in reducing the levels of depression in individuals with leprosy and improving their personal and social functioning (Gonzalez, 2021; MacBeth & Gumley, 2012). It can be said that compassion-focused therapy, through the techniques it provides to individuals with leprosy, has opened a new path in the treatment of psychological distress. In general, to explain the effectiveness of compassion-focused therapy, it can be said that this intervention focuses not on problems but on changes and how to manage emotions. It also emphasizes positive aspects and strengths that can accelerate these changes. Since this approach is more focused on change-oriented and meaning-centered psychotherapy, it provides the ground for change and reduction of negative feelings and psychological turmoil in individuals with leprosy; thus, the experience of psychological pressure was reduced, and turmoil decreased.

One of the limitations of this study is the lack of control and study of the impact of demographic variables such as gender, socio-economic status, education level, and literacy, which could have influenced the variables under study. Additionally, this study was only conducted on individuals with leprosy in Tabriz. Therefore, the possibility of comparing the effectiveness of this method is limited. The research population and sampling method pose limitations in generalizing the findings, interpretations, and causal attributions of the studied variables, which should be considered. Due to time constraints, this study lacked a follow-up period, so no results were obtained regarding the persistence of the therapy's effects, which can also be considered a limitation of the present study. It is recommended that studies using single-subject designs be conducted to assess effectiveness. Then, process studies should be conducted to examine the mechanisms of change or the mechanisms of the effects of compassion-focused therapy.

It can be concluded that compassion-focused therapy affects psychological distress in individuals with leprosy. The results of this study also demonstrate some of the

capabilities of this method in treating psychological distress and suggest its application as an effective therapy for individuals with leprosy.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Ethical considerations in this study were that participation was entirely optional. The ethical considerations of this study included the following: Participants were fully informed about the research objectives, the therapeutic process, potential benefits, and risks. Written consent was obtained from all participants, and it was ensured that their participation was entirely voluntary. This research has an ethical code IR.IAU.TMU.REC.1403.101 from the Faculty of Medicine, Tehran Medical Sciences Branch.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contributed to this study.

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