CRITICAL MEDICAL AND SURGICAL NURSING JOURNAL
Vol. 14, no. 2, September 2025
Journal Homepage: https://e-journal.unair.ac.id/CMSNJ

The Effectiveness of Spiritual Emotional Transcedence Care (SET Care) On Stress Levels of Pulmonary Tuberculosis Patients: A Quasi-Experimental Study

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ARTICLE HISTORY
Received: November 22, 2024
Accepted: September 3, 2025

KEYWORDS
Complementary therapy, psychological, stress, tuberculosis

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ABSTRACT

Introduction: Tuberculosis (TB) is a chronic infectious disease that can affect various organs and often leads to psychological stress. Spiritual Emotional Transcendence Care (SET Care), which integrates the SEFT approach with self-transcendence theory, is a relaxation technique aimed at reducing stress in TB patients.

Methods: This quasi-experimental study used a non-randomized pretest-posttest control group design. A total of 20 pulmonary TB patients were selected through purposive sampling and divided into treatment (n=10) and control (n=10) groups. Stress levels were measured using a modified DASS-42 stress subscale. Data were analyzed using the Wilcoxon signed-rank test and the Mann-Whitney U test with a significance level of $p \leq 0.05$.

Results: Demographic data showed equal gender distribution (50% male, 50% female), with most participants aged 44–55 years and educated up to senior high school. A significant reduction in stress levels was found in the treatment group after the intervention ($p = 0.004$), while the control group showed no significant change ($p = 0.655$). The Mann-Whitney U test confirmed a significant difference in post-test scores between groups ($p = 0.000$).

Conclusions: SET Care effectively reduces stress in pulmonary TB patients and can be considered a complementary nursing intervention. Its integration into nursing practice supports holistic care by addressing emotional and spiritual well-being, potentially enhancing treatment adherence and patient outcomes.

Cite this as: Hartono, H., Kusnanto, K., Wahyuni, E.D. (2024). The Effectiveness of Spiritual Emotional Transcedence Care (SET Care) On Stress Levels of Pulmonary Tuberculosis Patients: A Quasi-Experimental Study. Crit. Méd. Surgical. Nurs. J, 14(2),61-66.

1. INTRODUCTION

Pulmonary tuberculosis (TB) remains a significant global health concern, especially in countries like Indonesia, where it continues to affect a large portion of the population (WHO, 2023). TB is an infectious disease caused by Mycobacterium tuberculosis, with the lung parenchyma being the primary site of infection (Tiwari & Martineau, 2023). Stress and anxiety, often exacerbated by the physical and emotional toll of TB, are prevalent among patients, leading to a physiological stress response characterized by increased cortisol levels (Kant et al., 2024). 72% of the patients with TB have moderate-to-severe anxiety and depression according to Hospital Anxiety and Depression (Yang et al., 2022).

Previous research on stress management for TB patients has primarily focused on pharmacological treatments or conventional therapies. However, limited attention has been paid to complementary approaches like spiritual and psychoreligious interventions. The Spiritual Emotional Freedom Technique (SEFT), an emerging method, aims to alleviate stress and improve psychological well-

being through self-transcendence, enabling patients to find meaning and positivity in their lives despite their illness (Rachmawardany et al., 2024). Although research has explored various strategies for addressing TB's psychological impact, there is still a notable gap in the literature regarding the use of alternative therapies like SEFT in reducing stress and promoting emotional resilience in TB patients. This study seeks to address this gap by investigating the efficacy of SEFT as a stress management tool in patients with pulmonary tuberculosis (Setyowati & Rahman, 2020).

Tuberculosis is a disease that requires long-term treatment with many drugs. Given these facts, it is understandable that TB patients are likely to suffer from psychological stress (Verma & Singh, 2024). This aligns with the theory of chronic sorrow, which posits that pulmonary tuberculosis patients may experience persistent and cyclical feelings of sadness triggered by the ongoing presence of Mycobacterium tuberculosis (Nasir et al., 2024). Emotional stress is usually caused by thoughts of curing a relatively mild disease, the threat of death, medication rules, or complications from the disease that will come. This increasingly unstable emotional state worsens the patient's condition (Sutar et al., 2024). Individuals can mitigate or eliminate this stress through positive and effective coping mechanisms such as problem-focused strategies, social support, mindfulness, gratitude, optimism, and adaptive reframing which enhance psychological resilience and promote well-being (Aldbyani et al., 2025). Psychological stress plays an important role both as a trigger and a determinant in the disease process and control of the disease itself. Emotional changes and stress due to fear and anxiety stimulate the hypothalamus to release corticotropin-releasing factor (CRF), which then causes the pituitary gland to release corticotropin-releasing hormone (ACTH). ACTH stimulates the adrenal cortex to release cortisol (Mbiydzenyuy & Qulu, 2024). Increased cortisol secretion in tuberculosis patients can cause complications. According to (Hasenmajer et al., 2020), cortisol can cause a weakening of the immune system and excessive metabolism in the body. SET care includes relaxation techniques as an alternative additional treatment. SET Care is an emotional spiritual technique that combines the SEFT approach and Self-Transcen dence Care theory. The concept of self-transcendence allows nurses to carry out various activities to improve the individual's perspective and self-reflection activities, altruism, hope, and belief in death, which are related to increasing the well-being and well-being of patients with pulmonary tuberculosis. Happiness occurs when you feel that your existence means something to others and yourself. SET Care care can be used as a complementary treatment technique to manage emotional problems. Negative thoughts cause emotions such as worry, fear, anger, and sadness, which can lead to decreased immunity to disease (Renna, 2021; Vasile, 2020). Physical, mental, and spiritual problems, or blockage of energy flow, result in complaints and symptoms that reduce a person's quality of life (Pereira et al., 2023; Wagdy, 2024).

2. METHODS

Study Design

This study employed a quasi-experimental design with a non-randomized control group pretest-posttest design. The researcher provided a specific intervention to the treatment group while comparing stress levels before and after the intervention in both groups.

Population, Samples, and Sampling

This study employed a non-randomized sampling technique, specifically purposive sampling, due to the limited availability of eligible participants. In this study, Inclusion Criteria: This study included patients diagnosed with pulmonary tuberculosis (TB) who were undergoing anti-tuberculosis drug therapy. Since SET Care incorporates spiritual elements, only Muslim patients were included. Participants were required to have age range of 15 to 55 years.

Exclusion Criteria: Patients were excluded if they had severe mental disorders that could interfere with the intervention process. Additionally, those with tuberculosis complications were also not included in the study. Sampling was conducted using a non-probability purposive sampling technique. A total of 20 respondents were selected, with 10 assigned to the treatment group and 10 to the control group.

Instruments

The independent variable, SET Care, was administered according to a Standard Operating Procedure (SOP). The dependent variable, stress level, was measured using a modified version of the Depression Anxiety Stress Scale 42 (DASS-42), specifically the 14-item stress subscale. Modifications were made to enhance comprehension and clarity. The scale consisted of three sub-variables: Physical symptoms (items 1 and 4), Emotional/Psychological symptoms (items 2, 3, 6, 7, 8, 10, 11, 12, 13), Behavioral symptoms (items 5, 9, 13). Participants responded using a 4-point Likert scale: 0 = Never, 1 = Occasionally, 2 = Fairly often, 3 = Very often. The total score was categorized as follows: 0-14 = Normal, 15-18 = Mild stress, 19-25 = Moderate stress, 26-33 = Severe stress, ≥34 = Very severe stress.

The questionnaire was tested for validity using the Pearson correlation on 10 subjects with similar characteristics. The resulting r-values ranged from 0.64 to 0.76, exceeding the critical r-table value (0.63), indicating adequate validity. Reliability testing using Cronbach's Alpha yielded a score of 0.938, confirming strong internal consistency).

Procedure

This study was conducted in three phases: pre-intervention, intervention, and post-intervention. In the pre-intervention phase, participants meeting the inclusion criteria were selected, given informed consent, and assessed for demographic data and baseline stress levels using the DASS-42 stress subscale. The intervention phase took place from May 13 to May 20, 2015, at a community health center, with two 30-minute sessions per week over two weeks, following the SET Care Standard Operating Procedure. SET Care included three main techniques: Set-up (prayer-based relaxation), Tune-in (self-reflection and guided thought exercises), and Reinforcement to enhance emotional and spiritual coping. Participants were also instructed to practice SET Care independently at home after daily prayers, documenting their experiences in observation sheets. In the post-intervention phase, participants were reassessed using the DASS-42 stress subscale to identify changes in stress levels, and the data were analyzed using the Wilcoxon signed-rank test for within-group differences and the Mann-Whitney U test for between-group differences.

Data Analysis

Data analysis was conducted using appropriate non-parametric statistical methods. To assess changes in stress levels within each group before and after the intervention, the Wilcoxon Signed-Rank Test was applied. This test evaluated whether the intervention led to a significant difference in pre- and post-test scores in both the treatment and control groups. Additionally, to compare the differences in stress levels between the treatment and control groups after the intervention, the Mann-Whitney U Test was employed. A significance level of $p \leq 0.05$ was established for all statistical tests. A p-value equal to or less than 0.05 was interpreted as statistically significant, indicating that the intervention had a measurable effect.

Ethical Clearance

This research upheld ethical standards to ensure the protection of respondent rights. Ethical clearance was granted by a university-level Health Research Ethics Committee under approval number 115-KEPK, dated April 13, 2015. Research was carried out from May 13 to May 20, 2015, with prior permission obtained from relevant local health authorities. Institutional names have been anonymized for confidentiality.

3. RESULTS

Table 1. Demographic Data of Respondents with Pulmonary Tuberculosis at the Perak Timur Community Health Center in Surabaya (n=20)

Characteristics	(f)	(%)
Age in demonstration group		
18-30 years	5	25
31-43 years	5	25
44-55 years	10	50
Gender in demonstration group		
Female	10	50
Male	10	50
Education		
Not attending school	4	20
Elementary School	4	20
Junior High School	2	10
Senior High School	9	45
College	1	5
Duration of TB Therapy		
1 month	3	15
2 month	17	85

Table 2. Stress levels before and after being given Spiritual Emotional Transcendence Care (SET Care) in Perak Timur Community Health Center

Characteristics	(f)	(%)
Stress Level (Treatment Group)		
Pre-test		
Normal	0	0
Mild Stress	1	10
Moderate Stress	6	60
Severe Stress	3	30
Very Severe Stress	0	0
Post-test		
Normal	9	90
Mild Stress	1	10
Moderate Stress	0	0
Severe Stress	0	0
Very Severe Stress	0	0
Stress Level (Control Group)		
Pre-test		
Normal	0	0
Mild Stress	1	10
Moderate Stress	7	70
Severe Stress	2	20
Very Severe Stress	0	0
Post-test		
Normal	1	10
Mild Stress	0	0
Moderate Stress	6	60
Severe Stress	2	20
Very Severe Stress	1	10

Based on Table 1, the characteristics of the 20 respondents in this study are summarized in the table above. Based on age distribution, most respondents were in the 44–55 years age group, accounting for 50% (n=10) of the total participants. The remaining respondents were equally distributed between the 18–30 years and 31–43 years age groups, each comprising 25% (n=5). In terms of gender, the respondents were evenly divided, with 10 males (50%) and 10 females (50%).

Regarding educational background, the majority of respondents (45%, n=9) had completed senior

high school. This was followed by 20% (n=4) who had not attended school and another 20% (n=4) who had completed elementary school. A smaller proportion had completed junior high school (10%, n=2), while only 5% (n=1) had attained a college-level education. As for the length of time undergoing treatment, most participants (85%, n=17) had been undergoing anti-tuberculosis therapy for two months, while only 15% (n=3) had been receiving treatment for one monthTable 2 shows that in the treatment group, most respondents initially experienced moderate (60%) or severe stress (30%). After receiving SET Care, 90% achieved normal stress levels and 10% mild stress, with no cases of moderate or severe stress ($p = 0.004$). In contrast, the control group showed minimal change, with moderate (60%) and severe stress (20%) persisting, and one case of very severe stress emerging ($p = 0.655$). Post-test comparison between groups revealed a significant difference ($p = 0.000$), indicating the effectiveness of SET Care in reducing stress.

4. DISCUSSION

This study demonstrates that the application of Spiritual Emotional Transcendence Care (SET Care) effectively reduces stress levels in patients with pulmonary tuberculosis. The findings are consistent with previous studies showing that psychological and spiritual interventions can improve mental well-being among patients with chronic illness (Montazeri et al., 2025). The reduction in stress observed in the treatment group is likely attributed to the integrative nature of SET Care, which combines prayer-based relaxation, emotional reflection, and cognitive reframing to promote a sense of spiritual surrender and emotional regulation.

SET Care operates based on the self-transcendence theory, where individuals are guided to move beyond immediate suffering by accessing deeper personal meaning and purpose (Vargas-Uricoechea et al., 2024). The Set-up and Tune-in phases facilitate this transformation by helping patients acknowledge emotional pain and reframe their perceptions toward hope, patience, and spiritual acceptance. These mechanisms are similar to contemporary mindfulness-based interventions, which have been shown to modulate the hypothalamic-pituitary-adrenal (HPA) axis, reducing cortisol secretion and improving emotional stability.

Recent evidence strengthens the biological explanation for these outcomes. For example, a large study in middle-aged and older adults showed that higher levels of spirituality such as daily spiritual experiences and religious coping were linked with lower levels of inflammatory markers like IL-6 and C-reactive protein (Vagnini et al., 2024). While newer clinical trials directly testing yoga, meditation, or cognitive therapies on immune markers such as NF-κB, glucocorticoid receptor signaling, IL-6, or TNF-α are still limited, reviews of mind–body research suggest these approaches can help regulate inflammation and stress responses (Sutar et al., 2024). In tuberculosis patients specifically, a meta-analysis revealed that over 50% experience clinically significant stress, and interventions that include spiritual and psychological elements have been shown to significantly alleviate these symptoms.

From a psychosocial perspective, SET Care empowers patients by addressing internalized stigma, social isolation, and existential concerns common among TB sufferers. Patients who practiced SET Care showed greater self-awareness and emotional resilience, which may enhance treatment adherence and quality of life. These findings align with Eka Ratnasari et al. (2021), who observed a very strong negative correlation ($r = -0.806$, $p < 0.001$) between spiritual intelligence and stress levels in patients with pulmonary tuberculosis

However, despite these promising results, the present study has several limitations. First, the sample size was small ($n = 20$) and may not reflect the broader population of TB patients. Second, randomization was not applied, which could introduce selection bias and limit internal validity. Third, the study only included Muslim participants, restricting its generalizability to other religious or spiritual backgrounds. Additionally, the intervention period lasted only two weeks, which may be insufficient to assess long-term psychological or physiological changes. Finally, while the study relied on the validated DASS-42 stress subscale, it did not include objective biomarkers such as cortisol levels or heart rate variability, which would have strengthened the biological interpretation of the results.

Future studies should consider a larger, randomized controlled trial, extended intervention periods, and the inclusion of biomarkers to comprehensively evaluate both psychological and physiological responses to SET Care. Moreover, adapting the intervention for multi-faith or secular formats may help expand its applicability in diverse healthcare contexts.

5. CONCLUSION

Spiritual Emotional Transcendence Care (SET Care) has a meaningful impact on both nursing practice and patient health outcomes, particularly in the context of pulmonary tuberculosis (TB) care. From a nursing perspective, SET Care enhances holistic, patient-centered care by integrating spiritual and emotional components into conventional treatment. This aligns with the principles of holistic nursing, which emphasize treating patients as whole beings physically, emotionally, and spiritually. Nurses become facilitators of not only biomedical care but also emotional resilience and spiritual well-being, expanding their role in therapeutic communication, patient empowerment, and psychosocial support.

In terms of health outcomes, SET Care contributes to stress reduction, which has physiological benefits relevant to TB recovery. The SET Care techniques such as prayer-based relaxation (Set-up) and self-reflection (Tune-in) act as positive stimuli processed via the sensory and limbic systems, influencing the hypothalamic-pituitary-adrenal (HPA) axis. This neuroendocrine regulation leads to reduced levels of corticotropin-releasing factor (CRF), adrenocorticotropic hormone (ACTH), and cortisol, all of which are associated with the body's stress response. Lowering these biomarkers may result in enhanced immune function, improved emotional regulation, and better adherence to TB treatment regimens.

Moreover, SET Care supports the implementation of stress management strategies in public health nursing. Reduced stress levels can positively influence treatment effectiveness and patient outcomes, as chronic stress is known to suppress immune responses and hinder recovery. Patients who experience emotional calmness and spiritual reassurance are more likely to face their illness with hope and optimism, improving overall quality of life.

Finally, SET Care promotes patient autonomy and engagement through techniques such as self-suggestion and self-hypnosis, encouraging patients to actively participate in their healing process. This aligns with contemporary nursing goals of fostering self-efficacy and promoting behavioral change. When patients feel empowered and supported emotionally, they are more likely to adhere to long-term treatments like TB therapy, which require sustained motivation and psychological strength.

In summary, SET Care enriches nursing practice by fostering holistic engagement and enhances health by reducing stress, improving immune regulation, and promoting positive patient behaviors.

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