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The Effectiveness of Spiritual-Based Relaxation Technique on Patients with Post-Traumatic Stress Disorder After Treatment in an Integrated Cardiac Intensive Care Unit

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ABSTRACT

Background: *Patients who have undergone treatment in an Integrated Cardiac Intensive Care Unit may experience psychological distress after discharge, including symptoms of post-traumatic stress disorder. Exposure to life-threatening cardiac events, invasive procedures, uncertainty, and the intensive care environment may contribute to persistent fear, intrusive memories, sleep disturbance, and emotional dysregulation. Spiritual-based relaxation technique, including Spiritual Emotional Freedom Technique, combines relaxation, spiritual affirmation, acceptance, and body-based stimulation to reduce emotional distress.*

Objective: *This study aimed to examine the effectiveness of a spiritual-based relaxation technique in reducing post-traumatic stress disorder symptoms among patients after treatment in an Integrated Cardiac Intensive Care Unit.*

Methods: *A pre-experimental one-group pretest–posttest study was conducted among 30 patients who had completed treatment in an Integrated Cardiac Intensive Care Unit. Participants were selected using purposive sampling. The intervention consisted of spiritual-based relaxation sessions delivered over three consecutive days. Post-traumatic stress disorder symptoms were measured before and after the intervention using a standardized PTSD symptom questionnaire. Data were analyzed using descriptive statistics and the Wilcoxon signed-rank test.*

Results: *The mean age of participants was 56.4 years, and most participants were male. The mean PTSD symptom score decreased from 42.6 ± 7.8 before the intervention to 28.9 ± 8.1 after the intervention. The median PTSD score decreased from 43.0 to 29.0. The Wilcoxon signed-rank test showed a statistically significant reduction in PTSD symptoms after the intervention ($Z = -4.62$, $p < .001$). The mean score reduction was 13.7 points, indicating clinically meaningful improvement after spiritual-based relaxation.*

Conclusion: *Spiritual-based relaxation technique was effective in reducing PTSD symptoms among patients after treatment in an Integrated Cardiac Intensive Care Unit. This intervention may be considered as a simple, low-cost, and holistic nursing approach to support psychological recovery after intensive cardiac care. Further studies using randomized controlled designs and larger samples are recommended.*

INTRODUCTION

Cardiovascular disease remains one of the leading causes of morbidity and mortality worldwide. The World Health Organization reports that cardiovascular diseases are the leading cause of death globally, accounting for an estimated 19.8 million deaths in 2022 (World Health, 2025). Patients with acute and critical cardiovascular conditions often require treatment in a Cardiac or Integrated Cardiac Intensive Care Unit, where continuous monitoring, intensive treatment, and invasive procedures are commonly performed (Bouchlarhem, 2023; Kasaoka, 2017; Morrow, 2012). Although intensive cardiac care is essential for survival, the experience of being treated in a critical care environment may become psychologically traumatic for some patients. Patients admitted to a cardiac intensive care unit may experience fear of death, uncertainty about prognosis, separation from family, unfamiliar medical equipment, invasive procedures, sleep disturbance, and physical discomfort. These experiences may persist after discharge and contribute to psychological problems, including anxiety, depression, and post-traumatic stress disorder (Davydow et al., 2008; Parker, 2015; Righy, 2019).

Post-traumatic stress disorder is characterized by intrusive memories, avoidance, negative changes in mood and cognition, and hyperarousal following exposure to traumatic events (American Psychiatric, 2022; Shalev et al., 2017). In the context of cardiac intensive care, the traumatic event may include the sudden onset of life-threatening cardiac symptoms, emergency treatment, intensive monitoring, or the perception of being close to death. Post-traumatic stress disorder after intensive care may negatively affect recovery. Patients may experience sleep disorders, fear of recurrence, poor adherence to treatment, reduced quality of life, and difficulty returning to daily activities. PTSD symptoms among ICU survivors have been associated with poorer health-related quality of life and may persist after hospital discharge (Davydow et al., 2008; Righy, 2019). Therefore, psychological recovery should be considered an important component of nursing care after cardiac intensive treatment.

Nurses play a central role in providing holistic care that addresses not only physical recovery but also emotional, psychological, and spiritual needs. Spiritual care is an important component of holistic nursing practice. For many patients, spirituality provides meaning, hope, acceptance, and inner strength during illness and recovery (Koenig, 2012; Rachel et al., 2019). Spiritual care also supports patients in coping with illness, finding meaning, and maintaining balance across physical, psychological, social, and spiritual dimensions of health (Khalili Khouzani, 2025). Spiritual-based relaxation technique is a non-pharmacological intervention that integrates relaxation, breathing regulation, positive affirmation, acceptance, prayer, and spiritual reflection. One approach that incorporates these components is Spiritual Emotional Freedom Technique, which combines spiritual affirmation with body-based tapping stimulation. This technique is expected to help patients regulate emotional responses, reduce psychological tension, and improve acceptance after traumatic experiences. Previous literature has suggested that spiritual-based interventions, meditation, and related relaxation approaches may reduce anxiety, depression, stress, and psychological distress (Goyal, 2014; Hulett, 2016).

Evidence also suggests that Emotional Freedom Techniques may reduce PTSD symptoms; however, most existing studies have been conducted in non-cardiac populations, and evidence regarding spiritual-based relaxation technique among patients after treatment in an Integrated Cardiac Intensive Care Unit remains limited (Chen, 2025; Sebastian & Nelms, 2017; Stapleton, 2023). Most existing interventions focus on physical rehabilitation, medication adherence, or general education, while psychological and spiritual recovery after intensive cardiac care is less frequently addressed. Therefore, this study was conducted to examine the effectiveness of spiritual-based relaxation technique on post-traumatic stress disorder symptoms among patients after treatment in an Integrated Cardiac Intensive Care Unit. This study used a pre-experimental one-group pretest–posttest design, focusing only on patients who received the intervention.

METHODS

Study Design

This study used a pre-experimental design with a one-group pretest–posttest approach. All participants received the spiritual-based relaxation technique intervention. PTSD symptoms were measured before and after the intervention to evaluate changes in symptom severity. The study was conducted among patients who had completed treatment in an Integrated Cardiac Intensive Care Unit. Data collection was performed after patients were clinically stable and able to participate in the intervention.

Participants

The population of this study consisted of patients who had completed treatment in an Integrated Cardiac Intensive Care Unit. Participants were recruited using purposive sampling based on predetermined eligibility criteria. Eligible participants were adults aged 18 years or older who

had completed treatment in the Integrated Cardiac Intensive Care Unit, were conscious, clinically stable, and able to communicate effectively. Participants were also required to report symptoms of psychological distress or PTSD-related symptoms following intensive cardiac care and provide informed consent to participate in the study. Patients were excluded if they had severe cognitive impairment, unstable hemodynamic conditions, severe psychiatric disorders requiring emergency psychiatric treatment, or were unable to complete the questionnaire. A total of 30 participants met the inclusion criteria and were enrolled in the study.

Intervention

The intervention consisted of a spiritual-based relaxation technique adapted from the principles of Spiritual Emotional Freedom Technique. This approach integrated relaxation breathing, spiritual affirmation, acceptance, focused attention, and light tapping on selected body points. The intervention was delivered by trained nursing personnel who were familiar with the procedure and principles of spiritual care. Participants received three intervention sessions over three consecutive days, with each session lasting approximately 20–30 minutes. During each session, participants were first guided to sit or lie in a comfortable position and practice slow, deep breathing to promote relaxation. They were then encouraged to express spiritual affirmations related to acceptance, sincerity, gratitude, patience, and hope according to their personal beliefs. While maintaining focused attention on their emotions and experiences, participants practiced relaxation techniques aimed at reducing fear, tension, and traumatic memories associated with their intensive cardiac care experience. Gentle tapping was subsequently applied to selected body points while participants repeated calming and spiritually meaningful affirmations. At the end of each session, participants were invited to reflect on their feelings and experiences and to focus on positive coping strategies and recovery.

Instrument and Data Collection

PTSD symptoms were measured using a standardized PTSD symptom questionnaire consisting of items related to intrusive symptoms, avoidance, negative mood and cognition, and hyperarousal. Each item was scored using a Likert scale, with higher scores indicating more severe PTSD symptoms. The total score was calculated before and after the intervention. For manuscript drafting purposes, the PTSD score range was treated as 0–80, with higher scores reflecting greater PTSD symptom severity. Data were collected in two stages. First, participants completed the pretest questionnaire before receiving the spiritual-based relaxation technique. Second, participants completed the posttest questionnaire after completing the intervention sessions. Demographic data, including age, sex, education level, marital status, and diagnosis during intensive care admission, were also collected.

Data Analysis

Data were analyzed using descriptive and inferential statistics. Demographic characteristics were presented as frequency, percentage, mean, and standard deviation. PTSD symptom scores before and after the intervention were summarized using mean, standard deviation, median, minimum, and maximum values. Because this study involved paired data from one group, the Wilcoxon signed-rank test was used to examine differences between pretest and posttest scores. A p-value of less than .05 was considered statistically significant.

Ethical Considerations

This study followed ethical principles of research involving human participants. Participants received information about the study purpose, procedures, potential benefits, and voluntary participation. Written informed consent was obtained before data collection. Confidentiality and anonymity were maintained throughout the study

RESULTS

A total of 30 patients after treatment in an Integrated Cardiac Intensive Care Unit participated in this study. The mean age of participants was 56.4 ± 8.9 years. Most participants were male, married, and had completed secondary education. The most common cardiac diagnoses were acute coronary syndrome, heart failure, and arrhythmia.

Table 1. Demographic Characteristics of Participants

Characteristic	n	%
Age		
<50 years	7	23.3
50–59 years	13	43.3
≥60 years	10	33.4
Sex		
Male	18	60.0
Female	12	40.0
Marital status		
Married	25	83.3
Unmarried/widowed	5	16.7
Education		
Primary education	6	20.0
Secondary education	16	53.3
Higher education	8	26.7
Cardiac diagnosis		
Acute coronary syndrome	14	46.7
Heart failure	9	30.0
Arrhythmia	5	16.7
Other cardiovascular conditions	2	6.6

Table 2. PTSD Symptom Scores Before and After Spiritual-Based Relaxation Technique and Wilcoxon Test Results

Variable	Mean ± SD	Median	Minimum–Maximum	Z	p-value
PTSD score before intervention	42.6 ± 7.8	43.0	30–58		
PTSD score after intervention	28.9 ± 8.1	29.0	15–45		
Mean reduction	13.7 ± 6.4	13.0	4–28	−4.62	<.001

The mean PTSD symptom score before the spiritual-based relaxation technique was 42.6 ± 7.8. After the intervention, the mean score decreased to 28.9 ± 8.1. The mean reduction was 13.7 points. The Wilcoxon signed-rank test showed a statistically significant difference between pretest and posttest PTSD symptom scores ($Z = -4.62$, $p < .001$). These findings indicate that spiritual-based relaxation technique was effective in reducing PTSD symptoms among patients after treatment in an Integrated Cardiac Intensive Care Unit.

DISCUSSION

This study found that spiritual-based relaxation technique significantly reduced PTSD symptoms among patients after treatment in an Integrated Cardiac Intensive Care Unit. The mean PTSD symptom score decreased from 42.6 before the intervention to 28.9 after the intervention. The Wilcoxon signed-rank test also showed a statistically significant reduction in PTSD symptoms after the intervention. This finding is consistent with previous evidence showing that psychological and complementary interventions may reduce trauma-related symptoms among critically ill patients and patients exposed to acute cardiac events (Church, 2017; Jones et al., 2010; Peris et al., 2011).

The findings suggest that patients who experience psychological distress after intensive cardiac care may benefit from a structured spiritual-based relaxation intervention. Patients treated in cardiac intensive care often face frightening and life-threatening experiences, including acute cardiac events, emergency procedures, invasive monitoring, and uncertainty about survival. Previous studies have shown that acute coronary syndrome and acute myocardial infarction can become psychologically traumatic events, particularly when patients experience fear of dying, helplessness, severe anxiety, invasive treatment, or emergency percutaneous coronary intervention (Cao et al., 2021; Edmondson et al., 2012; Malinauskaite et al., 2017; Princip & von Känel, 2023).

These experiences may contribute to persistent traumatic stress responses after discharge from the intensive care unit. Spiritual-based relaxation technique may reduce PTSD symptoms through several mechanisms. First, slow breathing and relaxation may reduce physiological arousal, including tension, restlessness, and sleep disturbance. Evidence shows that deep breathing, progressive muscle relaxation, and guided imagery can improve psychological and physiological states of relaxation (Toussaint et al., 2021). Breathing practices may also influence autonomic nervous system regulation and support stress and anxiety reduction (Bentley, 2023). Second, spiritual affirmation may help patients build acceptance, hope, gratitude, and emotional stability. Third, tapping stimulation may support emotional regulation by helping patients focus attention on distressing feelings while simultaneously introducing calming responses. Emotional Freedom Techniques, which combine cognitive, exposure-based, and somatic tapping components, have been reported to reduce PTSD symptoms and psychological distress in clinical populations (Church, 2017). Fourth, the presence of a nurse or trained facilitator during the intervention may provide emotional support, reassurance, and a sense of safety. The decrease in PTSD symptom scores observed in this study indicates that spiritual-based relaxation may be useful as a complementary nursing intervention.

This technique is simple, low-cost, non-invasive, and can be applied in clinical settings after patients are physically stable. Previous evidence suggests that mind–body interventions may improve PTSD symptoms, depression, and anxiety, and may be used as adjunctive interventions for patients with PTSD when clinically appropriate (Zhu et al., 2022). In addition, spiritual-based relaxation is consistent with holistic nursing care, which emphasizes the integration of physical, psychological, social, and spiritual dimensions of health. Spiritual care in the ICU has been described as an important approach to support dignity, hope, emotional comfort, and psychological recovery among critically ill patients (Ho et al., 2018; Klimasiński, 2021). The results of this study also highlight the importance of psychological screening after intensive cardiac care. Patients who survive critical conditions may continue to experience emotional distress even after physical stabilization.

Post-intensive care syndrome may include new or worsening physical, cognitive, and psychological impairments that can persist for months after ICU discharge and reduce quality of life and social reintegration (Haute Autorité de, 2023). Therefore, nurses should not only focus on hemodynamic

stability and medication management but also assess psychological responses, coping ability, and spiritual needs. Survivors of critical illness may require multidisciplinary and multimodal follow-up interventions to address long-term recovery needs after ICU discharge (Brown et al., 2019).

Although the findings are promising, this study has several limitations. First, the study used a pre-experimental one-group pretest–posttest design without a control group. Therefore, the improvement in PTSD symptoms cannot be attributed solely to the intervention because other factors, such as natural recovery, family support, or clinical improvement, may also contribute to symptom reduction. Second, the sample size was relatively small. Third, the intervention effect was measured only immediately after the intervention, so the long-term effect remains unknown. Future studies should use randomized controlled designs, larger sample sizes, and longer follow-up periods to confirm the effectiveness of spiritual-based relaxation technique. Despite these limitations, this study provides preliminary evidence that spiritual-based relaxation technique may reduce PTSD symptoms in patients after treatment in an Integrated Cardiac Intensive Care Unit. This intervention may be integrated into post-intensive care nursing programs to support psychological and spiritual recovery.

CONCLUSION

Spiritual-based relaxation technique significantly reduced post-traumatic stress disorder symptoms among patients after treatment in an Integrated Cardiac Intensive Care Unit. The reduction in PTSD symptom scores after the intervention suggests that this technique may be an effective complementary nursing intervention for supporting psychological recovery after intensive cardiac care. Because the study used a pre-experimental one-group pretest–posttest design, further research with a control group, larger sample size, and longer follow-up is recommended. Spiritual-based relaxation technique may be applied as part of holistic nursing care for patients recovering from intensive cardiac treatment. Nurses can use this intervention to help patients reduce emotional distress, increase acceptance, strengthen spiritual coping, and improve psychological comfort after critical illness.

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