

The Effect of Spiritual Self-Care Education on the Distress Tolerance of Nurses in COVID-19 Intensive Care Units

Mehdi Dehghani Firoozabadi¹, Afzal Shamsi^{2*}, Sajjad Mirzaee²

¹Department of Anesthesiology, School of Medicine, Tehran Heart Center, Tehran University of Medical Sciences, Iran.

²Department of Anesthesia, School of Allied Medical Sciences, Tehran University of Medical Sciences, Tehran, Iran.

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ABSTRACT

Background: In addition to the serious physical health impacts on nurses, COVID-19 has brought about significant psychological distress. Considering that spirituality as a strong foundation can be a powerful factor in controlling stressful conditions, this study was conducted with the objective of determining the effect of spiritual self-care education on the resilience of nurses working in COVID-19 intensive care units.

Methods: We conducted this randomized clinical trial study on 128 nurses working in COVID-19 intensive care units. Samples were initially selected through convenience sampling and then randomly allocated to two groups: intervention (64 nurses) and control (64 nurses). The research group received a spiritually based educational program in 6 sessions of 45 minutes each, held as a one-day event. Five relevant faculty members and the research team examined and approved the validity of the educational content. Data were collected using demographic questionnaires and a standard questionnaire on distress tolerance, before and after the intervention in both groups. We conducted data analysis using SPSS version 25 software, employing independent t-test, paired t-test, Fisher test, and Chi-square test statistical analyses. A p-value of less than 0.05 was considered significant.

Results: The mean age in the intervention group was 34.95 ± 6.77 years, and in the control group was 35.23 ± 7.68 years. The independent t-test showed a significant difference between the average distress tolerance score and all its subscales (tolerance, absorption, evaluation, regulation) between the intervention and control groups after the implementation of spiritual self-care training ($P < 0.001$). The level of distress tolerance in the intervention group after the intervention (50.40 ± 5.71) increased significantly compared to before the intervention (44.39 ± 5.23) ($P < 0.001$).

Conclusion: Spiritual self-care education increases the distress tolerance of nurses working in COVID-19 intensive care units. Therefore, we recommend implementing a spiritual self-care program and planning for nurse participation in spiritual activities to enhance their psychological well-being.

Introduction

The COVID-19 pandemic and its associated health consequences are one of the most important events of the 21st century [1]. Healthcare workers are always on the front lines of particular epidemics, risking their lives to fulfill their duties [2]. Among

healthcare workers, nurses have the greatest involvement in the fight against COVID-19. In fact, they are in regular contact with patients from admission to discharge. Therefore, nurses are profoundly exposed to psychological distress compared to other healthcare workers during the pandemic [3].

The COVID-19 pandemic has caused many problems, such as severe fatigue, physical discomfort from long hours of wearing face masks and other protective

The authors declare no conflicts of interest.

*Corresponding author.

E-mail address: afzal_sh63@yahoo.com

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equipment, fear of infection, and psychological distress among nurses [4]. According to research, psychological problems like depression, anxiety, insomnia, and psychological distress are more prevalent among nurses directly caring for COVID-19 patients compared to other nurses [5-6]. The results of a systematic review showed that psychological problems such as post-traumatic stress disorder, depression, anxiety, stress, sleep disorders, and mental distress among healthcare workers, especially frontline nurses fighting against COVID-19 in various parts of the world, have significantly increased. Researchers considered rapid, continuous, and timely psychological preventive interventions essential to prevent the collapse of healthcare systems in response to the COVID-19 pandemic [7]. Distress tolerance is one of the characteristics and abilities to cope with problems and improve health [8].

The term distress tolerance refers to an individual's ability to withstand negative psychological states. Distress tolerance is a crucial framework in emotional and cognitive growth, as well as in the prevention and treatment of behavioral problems and mental disorders. By increasing distress tolerance and its dimensions, it is possible to reduce anxiety during the time of the coronavirus. Therefore, in anxiety reduction programs related to COVID-19, more attention to distress tolerance and its enhancement is essential [9]. Salari et al. [10] demonstrated in a study in this regard that the more a person can tolerate distress, the higher their tolerance for anxiety. Therefore, they face less anxiety with COVID-19 anxiety. The ability to tolerate distress also enables individuals to soothe their emotions and endure turmoil and stress during the coronavirus crisis. Such conditions lead to the ability to confront problems and solve them. In a study conducted by Mardani et al. [11] before the COVID-19 pandemic, most nurses in Malayer hospitals reported a moderate level of distress. While the COVID-19 disease has caused a decrease in the team's level of distress, especially among healthcare workers, for example, Sirati Nir et al. [12] reported in a study on Iranian nurses that the perceived level of mental distress among the majority of nurses who had direct contact with COVID-19 patients was severe and pathological. These researchers recommended prompt measures to reduce psychological distress among nurses, especially during the COVID-19 pandemic.

Nurses who have symptoms of burnout or are distressed often turn to religion and spirituality to find meaning in stressors and threats [13]. In this regard, research results have shown that integrating spirituality and religion into medical care may be a key complement for providing comprehensive care and designing relevant cultural programs [14]. The results of a meta-analysis on 32,000 individuals indicated that those with higher levels of spirituality and who engage in self-care spiritual practices have better physical health outcomes [15]. Spiritual self-

care is considered the most important form of self-care, an action in which an individual uses their spiritual beliefs and teachings as a source of control to protect their own health. Spiritual self-care, through controlling negative thoughts and emotions and strengthening a sense of commitment to work, religious values, and the type of friendship, leads to increased compassion and moral courage in nurses. This not only benefits the nurses' health but also promotes the health of patients [16]. Bahramnezhad et al. [17] reported in a study that in the COVID-19 pandemic, spiritual self-care has a significant impact on increasing physical and mental resilience, reducing anxiety and depression, and instilling hope in the treatment team and patients with COVID-19. Talebian et al. [18] found in a study that low spiritual health among nurses results in harm to patients, especially exacerbated during the ongoing COVID-19 pandemic. Therefore, it is necessary to consider appropriate educational programs to enhance the spiritual health of nurses and remove obstacles to providing spiritual care so that nurses can offer better services to patients and their families.

Considering that discovering the factors contributing to distress tolerance can reduce anxiety and enhance adaptability in individuals experiencing anxiety due to the COVID-19 pandemic [19]. On the other hand, nurses as individuals with sensitive occupations, whose health directly affects the health of patients, and advanced research in existing studies indicate that no research has been conducted on examining the impact of spiritual self-care on the distress tolerance of nurses directly caring for COVID-19 patients. Therefore, the present study was conducted with the aim of determining the effect of spiritual self-care education on the distress tolerance of nurses working in COVID-19 intensive care units.

Methods

This randomized controlled clinical trial was conducted on 128 nurses working in the intensive care units for COVID-19 patients in the year 2021. The research population included all nurses working in the hospitals affiliated with Tehran University of Medical Sciences. The sample size, based on a previous study [20] and using the sample size formula in clinical trials, considering a confidence level of 93% and a power of 95%, was calculated to be 64 nurses per group.

Nurses were selected and assigned into two groups, intervention (64 individuals) and control (64 individuals), in a simple random manner. Inclusion criteria for the study included providing informed consent to participate in the study, having a nursing associate degree or higher, a minimum of one year of work experience in nursing, working in the COVID-19 intensive care unit, no previous participation in a similar study, being Muslim and Iranian, not having mental health problems, and not

taking antidepressants or any psychoactive substances. Exclusion criteria included lack of willingness to continue after the intervention, withdrawal from participation in spiritual care programs, absence in more than one session in the intervention group, or incomplete questionnaire completion. None of the participants dropped out of the study during the course of the research.

After completing the questionnaires in both groups, the nurses in the intervention group were placed under examination according to (Table 1), where a spiritual care training program was implemented in this group. In this study, the researcher used the standard spiritual care training package for nurses [21], prepared by Iranian researchers and validated for its validity. The content validity of the training material was examined and confirmed by 5 relevant faculty members and the research team. The training sessions, as per (Table 1), were conducted by the research team in the educational classrooms located at the hospital for the intervention group. These training sessions were conducted in person, consisting of 6 sessions lasting 45 minutes each day. The sequence and content of the training sessions, as recommended by the developers of the training package, are listed in (Table 1).

In the control group, no training was conducted by researchers. Completion of post-test questionnaires in the control group took place simultaneously with the intervention group, meaning two months after the intervention. After conducting the post-test phase, to comply with ethical standards in the research, educational materials were provided in writing to the control group.

Data were collected using cognitive population information questionnaires (age, gender, marital status, employment status) and the standard Distress Tolerance Scale (DTS) questionnaire in two stages before and after the intervention in both the intervention and control groups. The Distress Tolerance Scale (DTS) questionnaire was developed in 2005 by Simmons and Gaher [22]. This scale consists of 15 questions and four subscales, including emotional distress tolerance, attraction to negative emotions, cognitive appraisal of distress, and efforts to regulate distress. The questionnaire is scored on a 5-point Likert scale (from strongly agree=1 to strongly disagree=5). Higher scores on this scale indicate higher distress tolerance. In the research by Simmons and Gaher [22], Cronbach's alpha coefficients for the emotional distress tolerance dimensions were as follows: tolerance of emotional distress, 0.72; absorption by negative emotions, 0.82; cognitive appraisal of distress, 0.78; and effort to regulate distress, 0.70. The total scale reported a Cronbach's alpha of 0.82. The intra-class correlation was also 0.61. This scale demonstrated good criterion validity and acceptable convergent validity [22].

This questionnaire has also been psychometrically tested by Iranian researchers. As an example of validity and reliability ($\alpha=0.72$), this questionnaire was examined and approved in the study of Rezapour et al. [23]. This study has been approved by the Ethics Committee of Tehran University of Medical Sciences with ethics code IR.TUMS.MEDICINE.REC.1400.544. Researchers were obligated to adhere to the Helsinki Declaration. All individuals entered the study voluntarily, with full awareness of the study details and personal consent. Before collecting data, informed written consent was obtained from all participants. Ensuring the confidentiality and preservation of their personal information, granting the right to not participate or withdraw from the study to the nurses, not imposing any financial costs on them, and not depriving nurses of the common and routine job benefits were among the ethical considerations to which researchers adhered.

Nurses were given the opportunity to ask their questions and clarifications to the researchers. The research findings were also made available to the relevant authorities upon request. Adherence to the Committee on Publication Ethics (COPE) was another commitment of the researchers in this study. Data analysis was performed using SPSS version 25 software and independent t-test, paired t-test, and chi-square tests. A P value less than 0.05 was considered statistically significant.

Results

The mean age in the intervention group was 34.95 ± 6.77 years, and in the control group was 35.23 ± 7.68 years. Independent t-test showed no significant difference between these two groups in terms of age ($P>0.05$). Also, there was no significant difference in other demographic characteristics between the intervention and control groups ($P>0.05$) (Table 2). The independent t-test showed a significant difference in the mean score of distress tolerance and all its subscales (tolerance, absorption, evaluation, regulation) between the two groups of intervention and control after implementing self-care spiritual education ($P<0.001$). While this difference was not significant at the beginning of the study and before the implementation of the training ($P>0.05$).

The mean distress tolerance score in the intervention group after the intervention (50.40 ± 5.71) increased significantly compared to before the intervention (44.39 ± 5.23) ($P<0.001$), and this significant increase was also seen in all subscales of the intervention group ($p<0.001$). It should be noted that in the control group, the mean scores of the total test and subscales did not differ significantly in the pre-test and post-test stages ($P>0.05$) (Table 3).

Table 1- Steps and content of training sessions

Session	Educational content
First	In this session, members were introduced and acquainted with each other, informed about the reasons for forming a group, and familiarized with group rules such as confidentiality, respect for each other, tolerating different views, the number and timing of sessions, and the need for continuous attendance until the end of sessions. Then the questionnaires were distributed among the nurses, and in addition to answering the questionnaire questions, they got to know each other. They were given the opportunity to talk about their main problems and exchange experiences and information.
Second	Familiarity with spiritual self-care methods focusing on topics such as (the role of trust and recourse in coping with stress caused by Covid-19 disease, familiarity with the theoretical foundations of trust, stages and effects of trust, the concept of recourse, familiarity with shrines, familiarity with pilgrimage books, the role of recourse in coping with stress, familiarity with stress, controlling life pressure, or effective recourse skills).
Third	In this session, the role of prayer and supplication in solving problems and knowing about the effect of prayer on one's relationship with God, oneself, and others others was taught.
Fourth	In this session, thanksgiving and its effect on reducing negative emotions and teaching effective beliefs on the effect of thanksgiving in reducing negative emotions were taught.
Fifth	Patience and training on the value of patience, the degree of patience and effective beliefs in patience, the existence of a merciful God, the effect of patience on changing thoughts, and patience as an effective solution to cope with the disease-related stress were taught during the fifth session. At the end of the session, an educational package including a booklet and an educational CD was provided to the nurses to help stick the content in their minds.
Sixth	This session was held two months after the intervention. In this session, previous topics were summarized, and solutions to follow up on what has been learned in the previous sessions were presented. Questionnaires (two months after the intervention) were completed by both intervention and control groups.

Table 2- Comparison of the intervention and control groups based on demographic variables.

Variable		Intervention		Control		Statistical test and P value
		N	%	N	%	
Sex	Male	43	33.6	36	28.1	Fisher
	Female	21	16.4	28	21.9	P= 0.275
Marital status	Single	5	3.9	8	6.2	Fisher
	Married	59	64.1	56	43.8	P= 0.280
Employment status	Permanent	26	20.3	36	28.1	$\chi^2 = 5.465$ df=3 P=0.141
	Contractual	5	6.2	10	7.8	
	conscription law's conscripts	20	15.6	14	10.9	
Shift type	Temporary-to permanent	10	7.8	4	3.1	$\chi^2 = 0.640$ df=3 P=0.887
	Fixed (Morning)	8	6.2	9	7	
	Fixed (Evening)	10	7.8	7	5.5	
	Fixed (Night)	8	6.2	8	6.2	
	Rotating	38	29.7	40	31.2	

* Frequency; ** Percentage

Table 3- Comparison of the mean scores of overall distress tolerance and its subscales in the intervention and control groups before and after intervention

Group	Variable	Stage	Intervention Mean \pm SD	Control Mean \pm SD	Independent test and P value
Tolerance	Paired t-test	Before	8.98 \pm 2.63	8.96 \pm 2.59	T=0.03, p=0.937
		After	9.98 \pm 1.89	8.65 \pm 2.04	T=3.80, p<0.001
Absorption	Paired t-test	Before	9.14 \pm 2.28	8.53 \pm 2.29	T=1.50, p=0.135
		After	10.56 \pm 2.32	8.34 \pm 1.80	T=6.02, p<0.001
Evaluation	Paired t-test	Before	18.29 \pm 3.67	17.48 \pm 3.54	T=1.27, p=0.205
		After	19.84 \pm 2.63	17.28 \pm 2.91	T= 5.21, p<0.001
Paired t-test			t=2.76, p=0.008	t=0.52, P=0.605	

Regulation	Before	7.96±1.95	8.81±2.46	T=2.14, p=0.225
	After	10.01±2.01	8.90±2.20	T=2.96, p=0.004
Paired t-test		t=5.79, P<0.001	t=0.37, P=0.707	
Overall Distress Tolerance Score	Before	44.39±5.23	43.79±4.97	T=0.65, p=0.512
	After	50.40±5.71	43.06±4.58	T= 8.01, p<0.001
Paired t-test		t=6.89, P<0.001	t=1.26, P=0.211	

Discussion

The present study examined the impact of implementing spiritual care education on the distress tolerance of nurses working in COVID-19 intensive care units. The findings of the present study indicated that the overall distress tolerance score of both groups of nurses was low before the intervention, indicating low distress tolerance of nurses working in COVID-19 intensive care units. In a study, Mardani et al. [11] reported that the stress level of most nurses in Mileyar city was moderate, which was related to the period before the COVID-19 pandemic. While nurses are currently in direct contact with critically ill COVID-19 patients, the low tolerance of nurses in the present study may be due to the widespread nature of COVID-19 and its ensuing challenges. Research findings have shown a significant increase in the prevalence of psychological problems such as anxiety, depression, suicidal thoughts, and psychological distress during the COVID-19 pandemic [19,24]. These psychological issues have been reported to be significantly higher among healthcare workers (physicians and nurses) than the general population during the COVID-19 pandemic [25-26].

The results of Qi et al. [27] in China showed that during the COVID-19 epidemic, healthcare workers were severely exposed to serious psychological issues in their work environment. Among healthcare workers, nurses have the highest participation in the fight against COVID-19. In fact, from admission to discharge, they regularly have contact with patients. Therefore, during the COVID-19 pandemic, psychological distress in nurses is much higher compared to other healthcare workers [25,28]. Melnyk et al. [29] showed in a study on nurses that over 50% of nurses experienced worse mental and physical health due to the COVID-19 pandemic. The negative impact of the coronavirus disease on the health of nurses directly caring for COVID-19 patients was greater than on other nurses. These researchers deemed urgent support measures for nurses necessary.

Nurses who have low distress tolerance have difficulties in regulating and controlling their emotions when exposed to stress, and are more prone to resorting to maladaptive behaviors and strategies [30]. Mohammadpour et al. [9] showed in a study that individuals with lower distress tolerance have lower anxiety tolerance, thus facing more anxiety with COVID-19. Sirati Nir et al. [12] demonstrated in a study on

Iranian nurses during the COVID-19 pandemic that individuals in healthcare professions such as medicine and nursing have higher levels of stress and psychological distress compared to non-healthcare professions. Moreover, the perceived levels of stress and psychological distress in most healthcare staff, especially nurses who have been directly in contact with COVID-19 patients, have been of a severe and pathological nature. Psychological distress was reported to be lower in nurses working on the frontline in the fight against COVID-19 in studies [31-34] as well as with the results of the present study.

The findings of the present study showed that the mean total scores of distress tolerance and its subscales in the two intervention and control groups did not differ significantly in the pre-test stage, indicating homogeneity of the groups before the intervention. While the mean scores in the post-test phase showed a significant difference between the two groups, in other words, the implementation of spiritual care training led to a significant increase in the overall scores of distress tolerance and its subscales in nurses, which indicates the desirable effectiveness of implementing spiritual care training in nurses working in COVID-19 intensive care units. Meanwhile, the mean total distress tolerance scores in the control group did not show a significant change before and after the intervention. Given the absence of similar studies to the present study, studies close to the present study were used to develop the discussion. Researchers found that spirituality, especially spiritual self-care, leads to better tolerance of mental and physical stress, and better ability to cope with serious illnesses [16,35]. Roberto et al. [14] showed in a study that spirituality in participants as an important dimension had a positive impact on their tolerance of distress, hope, optimism, calmness, and comfort. The faith and spirituality of the participants helped them deal with the daily life experiences during the COVID-19 pandemic and also gave them hope for the future. The growth of spirituality creates a new perspective on oneself and enhances self-confidence, helping us reduce our worries and anxieties [9]. In the study by Safouraei et al. [36], a significant negative relationship between spirituality and death anxiety caused by COVID-19 was reported. Mirhosseini et al. [28] also demonstrated that spiritual health and religious coping can predict death anxiety in patients with COVID-19, and enhancing spiritual dimensions can reduce death from disease-related anxiety in COVID-19 patients. Liu et al. [37] concluded in a study that given the impact of the stress-inducing

COVID-19 disease on healthcare workers, especially nurses, timely and effective psychological interventions such as spiritual education and therapy are necessary.

Pourmovahed et al. [38] demonstrated in a study on parents of premature infants that educational programs can increase parents' ability to cope with distress, facilitate communication between them, and lead to improved quality of infant care. Baldacchino deemed spiritual care education essential for nurses in a study as it promotes the mental and physical well-being of nurses, ultimately leading to quality care for patients [39]. According to the results of Salamizadeh et al. [40] spiritual care education resulted in increased distress tolerance and self-efficacy among patient caregivers. The results of several studies, including a study conducted in Iran, have shown that teaching spirituality increases the tolerance for distress in participants. For example, Ameri et al. [41] demonstrated in a study on blood cancer patients that spiritual therapy significantly reduced death anxiety and increased distress tolerance in patients. In the study by Reyhani et al. [20], teaching spiritual self-care reduced maternal psychological distress and increased distress tolerance in mothers with premature infants in the neonatal intensive care unit. Hashemzadeh et al. [42] reported in a study on mothers of newborns hospitalized in the respiratory intensive care units of hospitals in the city of Sari that self-care spiritual education led to increased distress tolerance and reduced maternal caregiving distress. These researchers recommended its application for all caregivers. The results of Lotfi Kashani et al. [43] also indicated the effectiveness of spiritual intervention in reducing distress among mothers of children with cancer, which aligns with the findings of the present study.

Strengths and Limitations

Considering the COVID-19 pandemic and the cultural and religious context of Iran, conducting research in line with the religious and spiritual background of nurses is considered one of the strengths of this study. Among the limitations of the present study, some nurses did not show much inclination to participate in the study due to the conditions of the pandemic. However, by selecting appropriate timing (early morning) for conducting educational classes, providing sufficient information, and answering their questions satisfactorily, they engaged in the study willingly and consciously.

Conclusion

Finally, the results of this study show that the level of distress tolerance among nurses working in COVID-19 intensive care units is low. Also, spiritual self-care training increases the distress tolerance of these nurses. Therefore, it is recommended to implement a spiritual self-care program and plan for involving nurses in

spiritual activities to improve their psychological well-being. Further research is suggested to be conducted on nurses in other regions of Iran as well as in other countries. Performing similar research on other healthcare team members is also recommended.

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