

Impact of Spiritual Care Based on the “Sound Heart” Model on Depression, Anxiety, and Stress of Major Thalassemia Adolescents

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Abstract

Aims: Thalassemia as a genetic disorder affects adolescents’ mental health. The impact of spiritual care on the clients’ health has been proved in different studies. The goal of the present investigation was to study the effect of spiritual care on depression, anxiety, and stress of adolescents with Thalassemia based on the “Sound Heart” model.

Materials & Methods: In this clinical trial, 64 adolescents suffered from major thalassemia selected through the permuted block technique. They were divided into control (32 samples) and intervention (32 samples) groups. Then, they completed demographic and 21-DASS questionnaires. The intervention group participated in 4 educational sessions individually every two weeks. Every session lasted 30 to 5 minutes and was based on the “Sound Heart” model. The control group received routine care. Then, the questionnaires were filled out, and the data obtained were analyzed using SPSS 21 software.

Findings: There was no significant difference between the control (34.59±10.68) and intervention groups (35.68±10.50) in the mean scores of depression, anxiety, and stress before the intervention (p=0.68). However, the mean scores of depression, anxiety, and stress were significantly different after the intervention between the control (33.21±9.8) and intervention (28.02±7.66) groups after performing spiritual care (p=0.02).

Conclusion: Providing spiritual care based on the “Sound Heart” model decreases the depression, anxiety, and stress of adolescents with major thalassemia who are under recurrent blood transfusion.

Keywords

Spiritual Therapy [<https://www.ncbi.nlm.nih.gov/mesh/?term=spiritual+therapy>];

Depression [<https://www.ncbi.nlm.nih.gov/mesh/68003863>];

Anxiety [<https://www.ncbi.nlm.nih.gov/mesh/68001007>];

Stress [<https://www.ncbi.nlm.nih.gov/mesh/68013315>];

Thalassemia [<https://www.ncbi.nlm.nih.gov/mesh/68013789>];

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Introduction

Chronic diseases are defined as disorders accompanied by physical changes with long-term therapy or even with no definite therapy, which involves the individual lifelong. Thalassemia is one of the chronic diseases. Around 3 percent of the world's population has the defective gene of beta thalassemia [1]. Annually, 60 to 70 thousand children with thalassemia are born, most of whom are in countries with poor health status [2]. Given the number of major thalassemia is so prevalent and includes various physical disorders that the patient faces during his therapy process, it is known as one of the physical chronic diseases in the world [3]. Baghiani Moghadam *et al.* found in their study that thalassemia reduced about 14 to 34 percent the life quality to physical, social, mental, and spiritual aspects [4]. Koutelos *et al.* revealed that depression was one of the most serious problems with which thalassemic adolescents are faced [5]. Roy *et al.* showed that anxiety was a challenging crisis among adolescents with thalassemia due to the social and educational limitations that this disease causes [6]. The problems related to chronic disease are described as a crisis, life-threatening, and stressful life experience [7]. As a result, the individual requires comprehensive care, including physical, mental, social, and spiritual dimensions, in order to resolve the aforementioned challenges. The investigations reveal that spiritual care positively impacted depression, anxiety, and stress in patients [8]. Seaward *et al.* found in their research that every crisis was a uniquely spiritual phenomenon affecting the patient's life's physical, mental, social, and especially spiritual dimensions [9]. Nelson stated that among poor health condition patients, faith was the most effective pathway to reduce anxiety [10].

Spirituality is a vital source of adjustment to critical situations, especially with regard to health-related issues [11]. People with high spiritual level experience higher well-being, happiness, self-confidence, life satisfaction, higher adaptation to mourning, and lower depression, suicide risk, anxiety, and psychotic disorders [12]. Spiritual interventions such as prayer and reading religious texts are influencing factors causing spiritual emotion and experience in therapist and client. In Iranian society, 98 percent of people are Muslims, among whom 90 percent are Shia, the main religious branch of Islam. Religion and culture are interwoven in Moslems' lifestyle, and religious beliefs are very important in their life, especially in critical conditions [13]. The “Sound Heart” model was designed for the first time by Asadzandi [14]. This model considers humans as creatures being affected by their environment and their own so that they can react against the environment, changes, and misfortunes. According to this model, health is a source of security, hopefulness, love, happiness, and cheerfulness. In the “Sound Heart” model, the main

core of care is patient and family [14]. Edraki *et al.* showed that this model reduced anxiety among mothers with immature neonates [15]. Fallahi *et al.* revealed in their investigation that spiritual care massively impacted the adjustment of adolescents with diabetes type one and two [16].

Studies have shown that adolescents with thalassemia suffer from anxiety, depression, and stress. A number of surveys have demonstrated that thalassemia increases the risk of anxiety, depression, stress, and hopelessness; it also reduces their social skills. Thalassemia also threatens the individual's spiritual health. Meanwhile, nursing care mixed with spiritual care has led to diminishing or controlling anxiety, depression, and stress in adolescents. Some other research has shown the positive impact of spiritual care designed by the “Sound Heart” model on the anxiety and stress of the studied patients. However, the researcher found no investigation using the aforementioned model among adolescents.

Therefore, the present study aimed to investigate the impact of spiritual care based on the “Sound Heart” model on anxiety, depression, and stress of adolescents with thalassemia.

Materials and Methods

This is an interventional and clinical trial in adolescents with Thalassemia who were referred to a hospital affiliated with Shiraz University of Medical Sciences in 2020. The sample size was determined based on the goal of the study, its type, and the sampling method of a study conducted among women with breast cancer who received spiritual group therapy to decrease their depression, anxiety, and stress [17]. The difference between anxiety scores in the control and intervention groups was also a criterion to determine the number of samples. The studied population included 15 to 20-year-old adolescents suffering from thalassemia. The sample size was also determined using the following formula, 0.05 Alpha, 0.80 power. $(\mu_1 - \mu_2)$ was also considered 5. Initially, the sample size was estimated at 32 individuals, and 35 were selected, considering the 10% attrition rate. Muslim adolescents in the range of 15 to 20 years old suffering from alpha or beta thalassemia with the need to receive blood transfusion were enrolled as control and intervention groups using the permuted block technique. All samples had at least an elementary education level, could speak Persian, had no other disease except thalassemia, had no experience of any critical events in the six months to the experience, had no mental problems, and were administered no medication that affected mental health. Immigration of the studied adolescents and unwillingness to continue the investigation caused the exclusion. The Collection tools included a demographic questionnaire (age, gender, adolescent's education level, and his/her parents' education levels, family

monthly income, number of the adolescents' siblings, and the history of thalassemia in the samples' family members) and the DASS-21 scale [18]. Antony *et al.* reported the validity and reliability of this tool. The scores of stress, depression, and anxiety were obtained at 9.07, 2.89, and 1.23, respectively, and their alpha Cronbach was reported as 0.97, 0.92, and 0.95. The correlation results of their study were reported as 0.48 between depression and stress, 0.53 between anxiety and stress, and also 0.28 correlation between anxiety and depression [19]. The validity and reliability of this tool were measured by Samani & Jokar. The validity of depression, anxiety, and stress items were reported as 0.80, 0.76, and 0.95, and their alpha Cronbach was obtained as 0.81, 0.74, and 0.78, respectively [20]. Every sub-scale has seven questions, and their final score was calculated by summing the total number of each sub-scale. Each question is scored from 1 (never) to 4 (much) [18].

The study's objectives, its process, and the right of the participants to withdraw from the investigation whenever they wish were described to the studied adolescents and their parents. Then, the consent forms were signed by the samples and their parents because they were less than 18 years old. Confidentiality was regarded in the study, which was explained to the participants and their parents. The intervention group received four 30 to 45-minute educational sessions every two weeks for every sample individually based on an educational text, "The Spiritual Methods of Relieving Patients' Pains" which was presented by the researcher.

Every session was specified to one aspect of humans' four-dimensional relations. The pamphlet of each session was designed according to its issue, and the "Sound Heart" model was given to the studied samples before the commencement of the session. The researcher called the samples in the intervention group to remind them to utilize the educational materials. In the present study, the spiritual care included: 1) relationship with God by recommending to say the prayer, reading the Quran and whispering the holy words when they face fear, asking God to help them and the holy religious leaders to support them spiritually, 2) relationship with others: they were recommended to be kind, benevolent, optimistic to the life affairs and wish good events for others, especially their parents, 3) relationship with the environment: looking at the plants, smelling good odors, using light and happy colors, listening to the birds' song and water flow, and 4) relationship with themselves: reading the narrations of the great prophets to improve their attitude, using adjusting methods to resolve their problems, and encouraging them to express their feelings and emotions. One week after the fourth session, the DASS-21 questionnaire was given to the samples in both groups to be filled out. The educational pamphlets

were also given to the samples in the control group after finishing the intervention.

The collected data were analyzed in SPSS 21 software by Chi-Square, T-paired test, T-independent test, One-Way ANOVA Analysis, and Pearson correlation coefficient.

Findings

Family monthly income was the only demographic variable that showed a significant difference between the two groups ($p < 0.05$). The rest of the demographic variables had no significant difference between the two studied groups ($p > 0.05$).

The paired t-test showed a significant difference in the control group before (34.59 ± 10.68) and after (33.21 ± 9.82) the intervention in the mean scores of depression, anxiety, and stress ($p = 0.027$). Also, there was a significant difference in the intervention group before (35.68 ± 10.50) and after (28.06 ± 7.66) the intervention ($p = 0.001$). Independent t-test showed no significant difference between the control (34.59 ± 10.68) and intervention (35.68 ± 10.50) groups before the intervention ($p = 0.688$). However, there was a significant difference between the control (33.21 ± 9.82) and intervention (28.06 ± 7.66) groups after the intervention ($p = 0.023$).

After the intervention, a significant difference was reported between the two groups just in the stress scores (Table 1).

Table 1. Comparison of depression, anxiety, and stress mean scores between the control and intervention groups

Parameter	Before Intervention	After Intervention	p-Value
Depression			
Control	11.90±4.84	11.43±4.39	0.383
Intervention	11.63±4.13	9.96±3.89	0.025
p-Value	0.813	0.133	
Anxiety			
Control	10.06±3.40	9.84±2.98	0.44
Intervention	10.93±3.83	8.65±2.40	0.0001
p-Value	0.338	0.085	
Stress			
Control	12.62±4.12	11.93±3.79	0.013
Intervention	13.10±4.23	9.50±3.07	0.0001
p-Value	0.653	0.007	

Discussion

This study was conducted to investigate the impact of spiritual care based on the "Sound Heart" model on anxiety, depression, and stress in adolescents with thalassemia. The obtained results revealed that the mean scores of depression, anxiety, and stress of the control and intervention groups were significantly different between the two groups after the intervention. The significant differences in the control group can be attributed to the fact that both studied groups were in the same ward. Also, the studied adolescents in both groups tended to talk to others, especially their peers, about educational materials. Babamohammadi *et al.* found that spiritual

care based on the “Gable Salim” model could effectively improve the spiritual health of patients with myocardial infarction [21]. Torabi *et al.* revealed that spiritual care was able to increase the adjustment abilities of adolescents who suffered from cancer [22]. Bolheri *et al.* concluded that spiritual group therapy could affect the anxiety and stress of women with breast cancer [17]. The findings of this study are not in the same line as those of the present investigation due to the difference between the applied intervention and the studied people.

The comparison of the mean scores of depression, anxiety, and stress in the two control and intervention groups showed that the mean scores of the studied adolescents decreased in the intervention group compared to the control group after the intervention based on the “Sound Heart” model. Tajbakhsh *et al.* found that the patients’ depression after bypass heart surgery decreased by spiritual care [23]. Fasihzadeh *et al.* revealed the impact of spiritual care on reducing the anxiety and pain of removing a chest tube inserted in open heart surgery [24]. Seibari *et al.* indicated that religious and spiritual care could decrease the depression of women with Multiple sclerosis [25]. The review of studies has shown no investigation with results inconsistent with the present research.

The comparison of the mean scores of depression, anxiety, and stress between the two studied groups before and after the intervention showed that providing spiritual care based on the “Sound Heart” model led to a decrease in the mean score of stress in the intervention group compared with the control group after the intervention. However, this significant difference was not seen in depression and anxiety variables. Asadzandi *et al.* indicated that the level of preoperative anxiety of patients who were operated on through coronary bypass surgery decreased after being educated through the “Gable Salim” model ($p < 0.05$) [13]. Zafarian Moghadam *et al.* found that the depression, anxiety, and stress of children with Leukemia reduced, and their spiritual health was promoted after receiving spiritual care education [26].

Given the fact that various data collection tools were used in the mentioned studies, the impact of spiritual care on depression, anxiety, and stress seems to be different. Bolhary *et al.* showed that spiritual group therapy did not affect the anxiety and stress of the receivers of this type of care [17]. This is inconsistent with the results of the present study because their objectives and interventions differed.

There were some limitations in the current investigation. Since COVID-19 was prevalent during this study, all adolescents could not be referred to the hospital weekly, and the present study interventions were held every two weeks accompanied by their blood transmission session. However, the researcher's contact with the samples was not disconnected, and they were in touch through

telephone calls. The strong point of this investigation was the effectiveness of spiritual care based on religion on depression, anxiety, and stress of adolescents with major thalassemia. Therefore, it is recommended that spiritual care should be included based on religion as a part of nursing care programs for adolescents with major thalassemia to develop their mental health.

Conclusion

Providing spiritual care based on the “Sound Heart” model decreases the depression, anxiety, and stress of adolescents with major thalassemia who are under recurrent blood transfusion. This comprehensive care improves the mental health of adolescents with major thalassemia and helps them control their disease and its complications.

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Ethical Permissions: This study was conducted based on the ethical code (IR.SUMS.REC.1398.659) provided by the Ethics Committee of Shiraz University of Medical Sciences. It has also been registered in the Iran Clinical Trial Center with the following code: IRCT20190908044725N1.

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