



## Research Paper: Comparison of Religious Teaching with Muscle Relaxation Methods on Anxiety Patients



Fateme Attar Ghasbe<sup>1</sup>, Naema Khodadadi-Hassankiadeh<sup>2,3</sup>, Shahrokh Yousefzadeh-Chabok<sup>2,3</sup>, Anita Reihanian<sup>2,4</sup>, Samaneh Ghorbani Shirkouhi<sup>3</sup>

1. Shafa Hospital, Guilan University of Medical Sciences, Rasht, Iran

2. Guilan Road Trauma Research Center, Guilan University of Medical Sciences, Rasht, Iran

3. Neuroscience Research Center, Poursina Hospital, School of Medicine, Guilan University of Medical Sciences, Rasht, Iran

4. Social Determinants of Health Research Center, Guilan University of Medical Sciences, Rasht, Iran



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**Running Title** Religious Teaching and Muscle Relaxation Methods in Anxiety

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### ABSTRACT

**Background:** Anxiety in psychiatric patients is more prevalent than the general population. Non-pharmacological methods for the treatment of anxiety are beneficial to the health of the patient, but it is not clear which of these approaches are more appropriate.

**Objectives:** The aim of this study is comparison of the effects religious teachings and muscle relaxation on reducing anxiety in patients hospitalized to psychiatric hospital.

**Materials & Methods:** This is a quasi-experipsychiatric study with pre and post-test with control group that was performed on patients hospitalized to the ward of psychiatric hospital during the period from March to June, 2016. Out of 100 patients under the Spielberger anxiety screening, 60 anxious patients were diagnosed and 45 subjects who entered the study were randomly assigned to three groups of 15. Univariate analysis of Variance was used to analyze the data.

**Results:** There was a significant difference between the post-training scores in the three groups ( $P=0.0001$  and  $F=19.11$ ). According to the Bonferroni test, there was a significant difference between the mean scores after the training in both groups of religious teachings ( $P=0.001$  and  $MD=8.03$ , and relaxation with control group ( $P=0.0001$  and  $MD=12.48$ ). However, there is no statistically significant difference between the mean scores after training in the groups of religious teachings with relaxation ( $P=0.094$  and  $MD=4.45$ ).

**Conclusion:** The use of the religious teaching module reduces of anxiety in psychiatric patients. Religious teachings and relaxation techniques are equally effective in alleviating the anxiety of psychiatric patients. Therefore, it is suggested that these complementary and low cost methods be used to reduce anxiety instead.

**Keywords:** Muscle Relaxation; Anxiety; Hospitals; Psychiatric

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#### \* Corresponding Author:

**Naema Khodadadi-Hassankiadeh**

**Address:** Guilan Road Trauma Research Center, Guilan University of Medical Sciences, Rasht, Iran.

**Tel:** +98 (911) 3378344, **Fax:** +98 (13) 33339842

**E-mail:** [n\\_khodadady@yahoo.com](mailto:n_khodadady@yahoo.com)

## Highlights

- The use of the religious teaching module reduces the anxiety in psychiatric patients.
- Religious teachings and relaxation techniques are equally effective in alleviating the anxiety of psychiatric patients.
- It is suggested that the complementary and low cost methods be used to reduce anxiety instead.

### Introduction:

**A**nxiety is a generalized unpleasant and often important emotion accompanied with one or multiple physical sensations such as palpitation, headache, and restlessness. Preparing the individual for facing threats, anxiety is an alarming symptom for peril [1].

About half of the beds in psychiatric hospitals are occupied by patients with schizophrenia [2] while other patients suffer severe psychiatric disorders [3]. Anxiety disorders comorbid with most of these psychiatric illnesses, affecting patients' functioning and recovery [4]. For instance, a meta-analysis showed that anxiety disorders had a significant risk in the group with bipolar disorder compared to the control group (45%) [5]. In another meta-analysis on 52 eligible studies, a 12.1% comorbidity existed for schizophrenia with obsessive-compulsive disorder, 14.9% with social phobia, 10.9% with general anxiety disorders, 9.8% with panic disorder, and 12.4% with post-traumatic stress disorder.

It is important to evaluate and treat anxiety disorders [3] that can create positive outcomes for patients [4]. Severe anxiety is also correlated with the onset of hallucination, which may prove dangerous for patients and their family. Most of these comorbid anxiety disorders with psychiatric illnesses remain undiagnosed and, therefore, untreated [6]. The high degree of comorbid anxiety in these patients increases the need for medications and the use of combination drugs will cause further problems. Moreover, comorbidity of two psychiatric disorders increases the risk of mortality and reduces functioning and quality of life [7].

Although medications can successfully treat anxiety, they have limitations for patients with psychiatric illnesses. Psychiatric medications alone or in combination with other medications have side-effects, and some patients do not comply [8] and find themselves at risk of medication dependence [9]. Therefore, medication adherence in these patients is of utmost importance. Compliance with medication is low among patients receiving antipsychotics, varying from 5% to 50% among those with psychosis, reach-

ing 75% about 12-18 months after discharge [10]. Lack of medication adherence in these patients may result in negative consequences such as increased risk of relapse and rehospitalization, increasing the clinical and economic burden. Therefore, non-medical techniques are important for treating comorbid anxiety disorders in these patients [11].

Relaxation technique, which reduces anxiety, is an acceptable non-medical alternative for treating anxiety [12]. First developed by Jacobson (1938), it is a systematic technique assisting deep relaxation, decreasing anxiety in psychiatric patients, and enhancing their quality of life. In fact, relaxation is taught to create an appropriate response to anxiety. Relaxation technique can be used to consciously think and change an individual's physical, emotional, and behavioral state affected by stress [13]. Based on various studies, relaxation effectively reduces anxiety caused by chemotherapy [14], anxiety in patients with endometriosis [8], pain and anxiety after abdominal surgery (restricting relaxation to the jaws) [15], anger and depression, [16] and premature birth and admission to the neonatal intensive care unit [17].

On the other hand, relaxation has lost its popularity as a non-medical therapy for treating anxiety on its own and, thus, combination methods are recommended. Comparing the effects of cognitive therapy and relaxation on anxiety, some studies concluded that cognitive therapy is more effective than relaxation, while other researchers found them equally effective [18]. Many religious teachings are somehow related to the stabilization of individual's inner peace. Although all the teachings of Islam focus on the health and success of human being in this and the other world, some specific teachings focus on the prevention of psychiatric problems and enhancement of psychiatric peace. Patience, belief in God, faith, remembering God, sincerity, repentance, prayer, altruism, hope, belief in the afterlife, human immortality, and remembering death are religious teachings which play a significant role in preventing psychiatric problems and anxiety [17]. This explains the increased interest in the effects of religious teachings on psychiatric adjustment [13].

Patience is a religious teaching that specifically decreases anxiety. Most importantly, patience secures physical and psychiatric health because it prevents impetuous and irrational acts, and invites individuals to reflect, thereby preventing many actions with irreversible physical and psychiatric harms [19].

In a meta-analysis, Coruh et al. (2005) reviewed studies from 1999 to 2003 on the effects of religious teachings on health. They concluded that prayer and religious interventions can improve the immune system, rheumatoid arthritis, intrauterine fertilization, and reduce the duration of fever in infectious diseases and the length of hospitalization. In addition, religious teachings decrease cardiovascular diseases, decrease tendency to addiction [20], improve depression [21], decrease psychiatric pressure and improve quality of life [22, 23], reduce dyskinesia [12], improve psychiatric status and quality of life [24], decrease anxiety, and increase hope [25].

The review of experipsychiatric studies on anxiety shows that limited information exists on the effect of religious teachings on anxiety in patients with psychiatric illness, especially those with a high level of comorbid anxiety disorders. The present study aimed to clarify the effects of religious teachings on anxiety in these patients and compare the effects of religious teachings with those of relaxation methods which has long been accepted as an elective method for reducing anxiety. We hope this study can help reduce using expensive invasive and medical therapies for anxiety, and demonstrate the priority of non-medical treatments.

## Materials and Methods

This research was a controlled quasi-experipsychiatric study with a pretest-posttest design. Sampling began from March to June 2016 in different wards of Shafa Teaching Psychiatry Hospital in Guilan Province, Iran. Convenience sampling was used for the first stage, and the selected samples were assigned to different groups randomly in the second stage. Therefore, the research population comprised all 100 patients in seven wards of the hospital (except the pediatric ward). Based on the Spielberger's State-Trait Anxiety Inventory (STAI) administered via interviews, 60 patients showed symptoms of anxiety but only 45 patients met the inclusion criteria, and were randomly allocated to three groups (n=15) of religious teachings, relaxation, and control. These three groups were matched only in terms of anxiety, and it was not possible to match them for other psychiatric disorders. In other words, they all had anxiety at a moderate or high level (range of 32 to 80).

The researcher (an M.A. student of psychology) visited all wards to select the cases and examine their records to know them and their psychiatric disorders better. If the recorded diagnosis was a type of schizophrenia or other delusional disorders, consent was sought from the patients' psychiatrist, psychologists, and family. Coordination was made with the social work unit and the families were asked to receive the consent form, complete it, and return it to the researcher when they came to the hospital to visit the patient. If patients had other and less severe disorders, consent was received from the patients themselves.

The questionnaire was completed in the same way for all patients, i.e. through interviews, so that patients with limited literacy and illiterate patients could also participate in similar conditions. Inclusion criteria were age above 18 years, having a moderate or high anxiety level based on the STAI, and not taking sedatives or anti-anxiety drug medications during the course of the study. Exclusion criteria were patient's decision to stop the intervention for any reason, and the researcher's decision that the patient could not receive the intervention.

To determine the sample size, it was assumed that  $r$  is the number of intended pairwise comparisons (here,  $r=3$ ). Therefore, the sample size for each group would be:

$$n = \max\{n_{ij}, \text{for every intended comparison}\}$$

where

$$n_{ij} = \frac{2(Z_{1-\alpha/2r}) + Z_{1-\beta})^2 \sigma^2}{d_{ij}^2}$$

$$d_{ij} = \mu_i - \mu_j$$

Using the above-mentioned formula, type I error of 0.05, and power of 80, sample size was determined to be 15 in each group. In order consider ethics, patients and their families were briefed on research objectives, and were informed that the research would cause the patients no harm, that they could withdraw from the study at any stage, that their data would remain confidential, and that not participating in the study would not affect the treatment and care process.

The religious teaching module was taught twice a week (12 group sessions in total). This protocol was developed and used by Farshad et al. (2015) [26]. The content of these sessions is summarized in Table 1. Relaxation was taught twice a week (16 sessions in total) for two months, and the sessions lasted ~1 hour. Jacobson's method was used in which the patients were told to tense and then relax 16 muscle groups [27]. The con-

trol group received no training. STAI was completed again as the post-test through interviews.

### Data collection instruments

STAI inventory was developed by Spielberger (1983) as a self-report instrument with two separate forms and 40 items, allowing the respondents to express their level of anxiety with the score of 1 for no anxiety to 4 for severe anxiety [28]. In recent years, this scale has been used in Iran and other countries as the most common test for evaluating anxiety. STAI was standardized in Iran in 1993 by Gholami et al. (2017) who examined its reliability in case and normal groups (n=600). Results showed a Cron-

bach's alpha of 90.84 and 90.25 for state and trait anxiety, respectively. Reliability of the test was also calculated via the ratio of true scores to the observed variance, equaling 0.946 in the normal group. Responses were scored based on the test formula. Therefore, the scores of state and trait anxiety scales could fall within the 20-80 range. Scores 20-31 indicate mild anxiety, 32-42 low-to-moderate, 43-53 moderate-to-high, 54-64 relatively severe, 56-75 severe, and >76 very severe [29].

### Analysis

The data were analyzed in SPSS V. 18 using descriptive statistics including central tendency measures

**Table 1.** Contents of religious teaching sessions for reducing anxiety in patients with psychiatric illnesses

Sessions	Contents of Religious Teaching Sessions
1	Explaining research objectives and completing the questionnaire
2	Defining anxiety and religious teachings
3	Trust in God
4	Thanksgiving
5	Prayer (salah)
6	Prayer
7	Forgiveness and repentance
8	Patience
9	Reciting verses
10	Role of charity
11	Review of sessions
12	Conclusion

(Mean±SD) as well as Univariate Covariance Analysis (ANCOVA) with post-hoc test for testing the main hypothesis: the effect of religious teachings and relaxation on anxiety as compared against no intervention.

## Results

Based on the results, the majority of respondents (37.8%, n=17) belonged to the age group of 31-35 years, most of them (64.4%, n=29) were women, most had an education level of below high school diploma (46.9%, n=33), were single (71.1%, n=13) and unemployed (3.53%, n=24).

Based on the Kolmogorov-Smirnov test, STAI scores had a normal distribution. STAI scores were  $p=0.177$  and  $KS Z=1.1$  before the intervention, and  $P=0.744$  and  $KS Z=0.68$  after the intervention in the religious teaching group,  $P=0.353$  and  $KS Z=0.93$  before the intervention, and  $KS Z=0.577$  and  $P=0.894$  after the intervention in the relaxation group, and  $P=0.193$  and  $KS Z=1.08$  before the intervention, and  $P=0.375$  and  $KS Z=0.913$  after the intervention in the control group.

Table 2 shows that the Mean±SD of anxiety scores were significantly higher in the control group than in the other groups on post-test ( $p=0.036$  and  $F=3.59$ ) (Table 2). To eliminate the effects of pre-test scores and determine the difference across groups in terms of post-test scores, the

equality of variances among groups was first examined using Levene's test. Based on insignificant  $\alpha=0.01$ , it can be assumed that the variances are equal. Then, using ANCOVA, a significant difference was observed among the three groups after eliminating the effects of pre-test scores ( $p=0.0001$  and  $F=19.11$ ). Because  $\text{Eta}=0.483$ , this is a considerable effect (Table 3).

The post-hoc Bonferroni test revealed that a significant difference exists between post-test scores of the religious teaching group ( $p=0.001$  and  $MD=8.03$ ) and those of the control group, as well as relaxation and the control groups ( $p=0.0001$  and  $MD=12.48$ ). However, no significant difference was observed in mean post-test scores between religious teaching and relaxation groups ( $p=0.094$  and  $MD=4.45$ ) (Table 4). Thus, it can be concluded that religious teachings and relaxation are equally effective in reducing state anxiety.

## Discussion

The hypothesis that religious teachings can be as effective as a non-medical therapy and can reduce anxiety like relaxation was confirmed. Religious teachings can be used to easily decrease anxiety in patients with psychiatric illnesses without any side-effects and with minimum costs. In the study by Jafari et al. (2013), religious and spiritual teachings for six weeks reduced psychiatric pressure and anxiety in patients with cancer, leading to better adjustment with

**Table 2.** Comparing anxiety scores of three groups (religious teachings, relaxation, and control) before and after intervention

Time	Group	Number	Mean±SD	F	P
Before intervention	Religious teachings	15	51.4±10.09	1.8	0.177
	Relaxation	15	54.86±7.80		
	Control	15	48.6±9.09		
After intervention	Religious teachings	15	43.66±8.41	3.59	0.036
	Relaxation	15	41.73±8.12		
	Control	15	49.66±8.78		

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**Table 3.** Results of ANCOVA for three groups (religious teachings, relaxation, and control)

Group	Mean±SD	F	P	Partial Eta Squared
Religious teachings	43.66±8.41	19.11	0.0001	0.483
Relaxation	41.73±8.12			
Control	49.66±8.78			

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**Table 4.** Results of post-hoc test for the difference in means of the three groups (religious teachings, relaxation, and control)

Between-Groups Relationship	Mean Differences	P
Control vs. religious teachings	8.03	0.001
Control vs. relaxation	12.48	0.0001
Religious teachings vs. relaxation	4.45	0.094

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cancer [24]. Furthermore, according to Khatooni, the use of religious teachings, prayer, and listening to recitations of the Holy Quran effectively reduced anxiety, consistent with the present study [30].

Furthermore, based on psychoneurophysiologic theories, religious teachings create positive emotions. Through the autonomous nervous system, these emotions contribute to the optimal functioning of physiological systems including the cardiovascular, digestive, and immune system. The effect of psychiatric status on immune system has been extensively studied. People receiving religious teachings also experience anxiety, but can relieve themselves from the unpleasant psychiatric situation more quickly than others [31].

Results of the present study, like many similar studies, revealed that relaxation effectively decreases anxiety. Moreover, this technique reduces anxiety in patients after coronary bypass surgery [31], patients with Parkinson's disease [12], and those with schizophrenia [32]. Results of the study by Wels and Pals also showed that relaxation reduces anxiety, consistent with the results of the present study [33, 34]. In contrast, a study on patients with heart failure reported that relaxation did not decrease anxiety as measured with Hospital Anxiety and Depression Scale (HADS). Anxiety increases the serum level of catecholamines, adrenocortical hormones, prolactin, cortisol, and prostaglandins [35]. Relaxation technique reduces some chemicals in blood, including adrenal hormones, thereby decreasing the patients' anxiety [36]. Relaxation affects anxiety, probably through the stimulation of parasympathetic activity which decreases heart rate, breathing, and symptoms of state anxiety.

Lack of a significant difference between religious teachings and relaxation indicates that these two methods are equally effective in reducing anxiety. The main aim of this study was to compare the effectiveness of religious teaching and relaxation on the level of anxiety, and the hypothesis of the similarity of the two methods was confirmed. These results are in line with those of studies reporting the effects of non-medical combination therapies to be equal in reducing anxiety [18]. In the study by Hamid (2012), psychiatric

imagery and relaxation reduced anxiety and enhanced hope in Iranian women with breast cancer [25].

Some studies state that relaxation leads to physical and psychological improvement during and between sessions, while religious teachings improve psychological status only between sessions. An active method for reducing anxiety is repeated exercises during sessions (from the third and fourth sessions on). Moreover, patients may repeat these exercises several times a day, but listening to cognitive teachings is a passive method [18].

In contrast, some studies report that relaxation requires concentration, which may contradict relaxation. However, listening to cognitive teachings does not require an active response from the patients; therefore, the resulting relaxation is deeper [14]. Nevertheless, both methods had equal effects in the present study. Now, the question is which one is the most effective for patients, or which method must be chosen. This depends on the patients' request and type of disease. It can be assumed that relaxation validates listening to religious teachings. In the present study, patients with psychiatric illness with moderate and severe anxiety were sensitive to these interventions. We need more studies to examine different types of psychiatric illnesses.

One of the limitations of this study was failure to examine anxiety in every session, i.e. examining the effect through the process of intervention. The design of this study was quasi-experipsychiatric because it was impossible to control all confounding variables. Furthermore, the mean score increased in the control group after the intervention, while they had not officially received any instruction. Thus, hospitalization and receiving medical and non-medical therapies such as counseling, therapeutic communication, and occupation therapy routinely provided by psychiatrists, psychologists, and nurses had therapeutic effects on the control group.

This shows that confounding variables such as the interaction of patients in the control group with those in the experipsychiatric groups were not effectively controlled. Thus, it is recommended that the effects of treatment be followed

over time while examining the interaction or combination effect of relaxation and religious teachings on one group. A qualitative study is also recommended as a complementary study after the intervention to examine the experiences of patients. Also, longitudinal studies can be designed to compare the reliability of these two methods over time.

## Conclusion

Religious teachings and relaxation are equally effective in reducing anxiety in patients with psychiatric illness. Therefore, it is suggested that these complementary and cost-effective methods be implemented for decreasing anxiety.

## Ethical Considerations

### Compliance with ethical guidelines

All the study procedures were in compliance with the ethical guidelines of the Declaration of Helsinki 1957.

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### Authors contributions

The authors contributions is as follows: Conceptualization: Fateme Attar Ghasbe; Methodology: Naema Khodadadi-Hassankiadeh; Investigation: Naema Khodadadi-Hassankiadeh; Writing original draft: Anita Reihanian; Writing review and editing: Funding Acquisition: Shahrokh Yousefzadeh-Chabok; Resources: Samaneh Ghorbani Shirkouhi; and Supervision: Shahrokh Yousefzadeh-Chabok

### Conflict of interest

The authors declared no conflict of interest.

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