

The Effectiveness of Music on Quality of Life and Anxiety Symptoms in the Post Traumatic Stress Disorder in Bustan Hospital of Ahvaz City

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Abstract

The present study aims at investigating the effectiveness of music on quality of life and anxiety symptoms of the veterans with post traumatic stress disorder in Bustan hospital of Ahvaz City. 40 persons were selected by simple random sampling method from the aforementioned population. The research design was an experimental one of type pretest-posttest with control group. Quality of Life inventory SF-36 (2005) and Spielberger Anxiety inventory (2005) were used for collecting the data. After selecting groups randomly, pretest was implemented on both experiment group (20 persons) and control group (20 persons). Then, music therapy intervention was implemented on the experiment group during 20 sessions each of which with 45 minutes. At the end of subject program, both groups were given posttest. Data were analyzed by using the multivariate covariance analysis. Results showed that presenting music can affect quality of life and anxiety symptoms of the veterans with posttraumatic stress disorders and this effect remained stable after one month of follow-up. Therefore, presenting music can be effective in treating the veterans with stress disorders after the accident.

Keywords: music, quality of life, anxiety symptoms, posttraumatic stress disorder

1. Introduction

War is one of the disasters created by human and one of the mental consequences of those people exposed to this disaster is PTSD. This disorder includes a set of anxiety symptoms which are created as a result of stressful factors and this confrontation can be in the form of witness, personal experience or hearing the accident to which person responses in terms of fear and distress (Sadock B. & Sadock A., 2007). When a person exposes to a traumatic event, witnesses a shocking event in a way that his and other's whole physical integrity and responses to the event together with fear and frustration, it can be said that he suffered PTSD (American Association of Psychologists, 2000).

On the basis of fourth diagnostic and statistical guide on mental disorders, person should have three main properties such as re-experience of painful event, abstinence pattern and over-irritability in order to diagnose this disorder and the aforementioned symptoms should last for one month (Kaplon-Saduk, 2003). War is an issue in the general health of society of which the losses and heavy destruction usually lead to stable and long-lasting effects on the people's mind and physics. From among these issues is the life of the veterans which has been exposed to risk due to long-lasting effects and carelessness on their therapeutic-health needs and rehabilitation (Behdani et al., 2009). On the basis of definition given by World Health Organization, life is an understanding that each person has from his life situation in cultural texture and a value system in which he lives (Developing the WHO quality from the tools for evaluating the quality of life). Hence, reducing stress and promoting health and quality of life of society's people, especially the veterans, are important issues which have been taken into account by healthcare experts (Najafi, Mohammadifar, Dabiri, & Karimi, 2011).

Anxiety is a situation that all people experience and it is a very unpleasant feeling and vague sense of concern which comes together with symptoms of autonomous system such as shortness of breath, heartbeat, headache, perspiration, low upset stomach and restlessness which are specified by inability in seating or standing up (Kalpan & Saduk, 2014). Anxiety disorder is the third type of the most typical mental disorders after major depression disorders and attachment to alcohol disorder. Experiencing the anxiety creates some problems in different stages of

life which in addition to the personal problems, may affect negatively on the daily and occupational performance. The veterans of Islamic Revolution and the Imposed War are vulnerable against the mental tension factors due to having special conditions. These factors create disorders in reaction of the veterans in social, psychological, physical and family areas. Psychological changes such as increase in irritability, anxiety, tension, nervous status and disability in controlling oneself disrupt the social and family relations (Masoudinia, 2009).

Throughout the history, art has been a means for consistency, flexibility, creativity, love, friendship and tranquility of human. Among the arts, music due to energizing and mobility attributes, possibility of high abstraction and innate attraction has been very pervasive and has attracted human extraordinarily. Since the old time, music has been applied as a tool for creating passion and motivation as well as a means for therapeutic goals. Avicenna said about understanding the music: music therapy and listening to the music as a healing factor and souls' healer has lasted throughout the history. There are different types of music each of which has a different effect on mind and body. In regard to these effects, music can be used for therapeutic activities in the areas of consultancy and psychotherapy (Zadehmohammadi, 2010).

Music therapy is applied in treating a lot of physics, emotional and mental issues among the people. The most important problems are pain, anxiety, sadness and sorrow, communication issues, etc. (Hilliard, 2001). Generally speaking, there are two types of music therapy, which based on the patient's activity, include active and passive. Active music therapy includes singing, playing or composing and passive music includes listening to the music (Kenyon, 2007).

In research, Davis, Jefler and Tat (2009) achieved this finding that listening to music is effective in creating calmness and reducing the tension and anxiety. Grak et al. (2009) investigated the effect of group music therapy on the quality of life and social anxiety among the patients with serious and stable mental disease of which the results showed that quality of life of those persons under study has improved significantly. In a research, Ben Giotin, Pertet and Pekut (2009) investigated the effect of music therapy on anxiety and depression among the patients with Alzheimer of which the results showed that music therapy has an effect on anxiety and depression of patients afflicted with slight to medium Alzheimer. Swansdoyter and Senidal (2006) found that music therapy is a reliable and effective way to treat the restlessness and anxiety among the patients. Hernandez (2005), in a research, examined the effect of music therapy on the level of anxiety and sleep patterns among the women abused. On the basis of findings, music therapy reduces the anxiety and improves the sleep quality. Music therapy can treat effectively the diseases resulting from stress and feelings among the human. In a research on people with serious mental illness, it became clear that music increase the quality of life of these people (Grouk et al., 2003). Therefore, based on the aforementioned, the aim of this study is whether the music is effective on the quality of life and anxiety symptoms among the PTSD patients?

2. Method

The present study is a clinical trial which has been carried out on 40 (20 in Control and 20 in Experiment Groups) psychiatric veterans of Khuzestan Province, in Bustan Psychiatry Hospital of Ahvaz City in which all veterans are admitted to hospital through diagnosis of posttraumatic stress disorder and by the order of the psychiatrist. Patients were selected by simple random method from among all file existing in the Department of Psychiatry all of which were 110 and then divided into two 20-person groups. For the experimental group, about 20 sessions for time duration of 45 days and 45 minutes in each session, music was played.

Measurement tools used in this research includes quality of life inventory SF-36. This questionnaire was developed by the International Organization for Examining the Quality of Life and consists of 36 questions in the area of physical-mental area and measures eight subscales of physical performance, role limitation due to physical problems, body pain, general health, energy and vitality, social performance, mental problems and mental health (Montazeri, Gashtasbi, & Vejdani, 2005). These eight dimensions altogether measure both general physical and mental dimensions of the quality of life. Validity and reliability of the inventory SF-36 has been examined firstly by Montazeri and et al. Nejad-Naderi reported the reliability coefficient of this inventory between 77% and 95%. In the present study, Cronbach Alpha was used to determine the reliability of Quality of Life Inventory that is 0.72 for the whole inventory and this digit indicates the acceptable reliability of the aforementioned questionnaire. Spielberger State-Trait Anxiety Inventory (STAI) was also used. Spielberger State-Trait Anxiety Inventory (STAI) includes separate self-measurement scales for measuring the state and trait anxiety. State anxiety scale, form 1, includes 20 sentences which evaluates the person's feelings in "this moment and at the time of responding". Trait anxiety scale, form 2, also consists of 20 sentences which measures the general and ordinary feelings of people. Sample of scales is given at the end of this part.

Mahram (1993) performed a study for standardizing the Spielberger test. He investigated the test reliability coefficient in two norm and criterion groups separately. The reliability for norm group (600 persons) in both state and trait anxiety scales, based on the Cronbach Alpha, is 0.9084 and 0.9025, respectively and this value in criterion group (130 persons) is 0.9418. Additionally, test reliability, through the ratio of real scores' variance to the observed variance was calculated and its value in norm group was registered as 0.945. Standard error of test measurement was calculated as 4.64. Also, correlation between the observed scores and real scores was equal to 0.972 and with error scores was equal to 0.234. In addition, this study has the validity of concurrent type. For validating, commensurate with the volume of criterion sample (130 anxious persons based on the psychiatrist's diagnosis), 130 persons were selected randomly from the norm sample (by observing the ration of gender and age groups of criterion sample' members) and then for studying the test validity, the means of state and trait anxiety and finally total anxiety were calculated in two levels of 0.95 and 0.99 separately of which the results of confidence calculation in 95% and 99% were significant. Normative indicators, separated by different jobs and educational degrees, in the areas of state, trait and total anxiety are another finding of this research (Bahdani, Sargolzaei, & Ghorbani, 2000). Kazemi-Malekmahmoudi (2003) and Rouhi (2005) in a preliminary study, calculated the reliability of Spielberger as 89% and 90%, respectively.

In the current study, Cronbach Alpha was also used to determine the reliability of Anxiety Symptoms Inventory that for the whole inventory it was 0.78 which indicates the acceptable reliability of the said questionnaire. Sessions were conducted in groups and session framework was specified in regard to the treatment objectives and commensurate with it in such a way that four sessions are conducted in a week for 45 minutes in each session. Follow-up continued to the end of sessions. The objective of conducting these sessions was to investigate the effectiveness of music given in the form of music package (In accordance with the opinion of specialists of music therapy (Zadehmohammadi), Iranian traditional music instruments were used (Mahoor, Esfahan)). This music package was played in 20 sessions and in each session several parts of selected music were played for patients.

3. Findings

Table 1. Results of Levene test about assumption of equality of research variables score variances for both groups in population

Variable	Second Degree of Freedom	First Degree of Freedom	F	Significance level
quality of life	38	1	1.58	0.181
anxiety symptoms	38	1	1.68	0.0203

As seen in Table 1, null hypothesis for equality of scores' variances of both groups in the research variables is approved; i.e., assumption of equality of scores' variances in both control and experiment groups has been approved. However, when the volume of samples is equal, significance of Levene test has no considerable effect on the nominal alpha level.

Table 2. Results of Kolmogorov-Smirnovtest about assumption of normality of distribution of scores for both quality of life and anxiety symptoms

Normality of scores' distribution	Groups	Kolmogorov-Smirnov			Groups	Kolmogorov-Smirnov		
		Significance	df	Statistic		Significance	Df	Statistic
quality of life	experiment	0.200	20	0.068	control	0.200	20	0.118
anxiety symptoms	experiment	0.200	20	0.144	control	0.200	20	0.138

As seen in Table 2, null hypothesis for normality of distribution of scores for both quality of life and anxiety symptoms is approved; i.e., assumption of normality of distribution of scores in pretest and in both control and experiment groups has been approved.

Research hypothesis: Providing music is effective in increasing the quality of life and anxiety symptoms among the PTSD veterans.

Table 3. Results of multivariate covariance analysis (MANCOVA) on the means of posttest scores of quality of life and anxiety symptoms among the PTSD veterans for both experiments and control groups with controlling over pretest

Test	Statistical power	Eta Square	Significance level	F	Error DF	Hypothesis DF	Value
Pill's Trace	1	62	0.0001	12.74	31	4	0.662
Wilk's Lambda	1	62	0.0001	12.74	31	4	0.378
Hotelling's Trace	1	62	0.0001	12.74	31	4	4.64
Roy's Largest Root	1	62	0.0001	12.74	31	4	1.64

As seen in Table 3, it is observed that through controlling the pretest, the significance level of all tests show that there is a significant difference between veterans of both experiment and control groups at least in one of the dependent variables (quality of life and anxiety symptoms) ($P < 0.0001$ and $F = 12.74$).

Table 4. Results of one-way covariance analysis in MANCOVA context on the mean of pre-test of scores of quality of life and anxiety symptoms among PTSD in both control and experiment groups with controlling over pretest

Variable	Changes source	Eta square	Significance level P	F	Mean of squares	df	Sum of squares	Statistical power
quality of life	pre-test	0.48	0.0001	31.85	825.71	1	825.71	1
	group	0.44	0.0001	26.99	699.84	1	699.84	0.999
anxiety symptoms	pre-test	0.23	0.003	10.24	231.22	1	231.22	0.857
	group	0.28	0.001	13.17	279.29	1	279.29	0.941

As seen in Table 4, it is observed that through controlling the pretest, there is a significant difference between veterans of both experiment and control groups in terms of quality of life ($P < 0.0001$ and $F = 26.99$). In other words, providing music concerning the medium quality of life among the veterans of experiment group than the control group increases the quality of life among the experiment group.

Through controlling the pretest, there is a significant difference between veterans of both experiment and control groups in terms of anxiety symptoms ($P < 0.0001$ and $F = 13.67$). In other words, providing music concerning the medium anxiety symptoms among the veterans of experiment group than the control group decreases the quality of life among the experiment group. Therefore, hypothesis is approved.

Table 5. Results of one-way covariance analysis in MANCOVA context on the follow-up mean of scores for quality of life, depression, disorder in sleep quality and anxiety symptoms among the veterans of both control and experiment groups through controlling over the pretest

Variable	Changes source	Eta square	Significance level P	F	Mean of squares	df	Sum of squares	Statistical power
quality of life	pre-test	0.47	0.0001	30.33	852.29	1	852.29	1.00
	group	0.50	0.0001	34.06	957.17	1	957.17	1.00
anxiety symptoms	pre-test	0.36	0.003	19.33	343.65	1	343.65	0.990
	group	0.36	0.001	19.33	343.65	1	343.65	0.990

As seen in Table 5, it is observed that in follow-up stage, through controlling the pretest, there is a significant difference between veterans of both experiment and control groups in terms of quality of life and anxiety symptoms of the veterans ($P < 0.0001$ and $F = 34.06$).

Table 6. Results of multivariate covariance analysis (MANCOVA) on the mean of follow-up of quality of life and anxiety symptoms among the PTSD veterans for both control and experiment groups with controlling over pretest

Test	Statistical power	Eta Square	Significance level	F	Error DF	Hypothesis DF	Value
Pill's Trace	1	0.71	0.0001	19.01	31	4	0.710
Wilk's Lambda	1	0.71	0.0001	19.01	31	4	0.290
Hotelling's Trace	1	0.71	0.0001	19.01	31	4	2.45
Roy's Largest Root	1	0.71	0.0001	19.01	31	4	2.45

As seen in Table 6, it is observed that in the follow-up stage, through controlling over the pretest, significance level of all tests indicate that there is a significant difference between veterans of both experiment and control groups in terms of at least one of the dependent variables (quality of life and anxiety symptoms) ($P < 0.0001$ and $F = 19.01$).

4. Discussion and Conclusion

On the basis of research objective, the following hypothesis was developed from which the results are given below: Presenting music affects both quality of life and anxiety symptoms among the PTSD veterans.

In regard to the obtained results ($P < 0.0001$ and $F = 26.99$), presenting music affects the quality of life among the PTSD veterans which are consistent with findings of researches by Grak et al. (2009) and Gruk et al. (2009). These researches also refer to the effect of music on the patients' quality of life.

In view of the results ($P < 0.0001$ and $F = 13.67$), presenting the music affected on reducing the anxiety symptoms among the PTSD veterans and they comply with the results obtained from the Davis researches, Jeffler and Tat (2009), Ben Giotin, Pertet and Pekut (2009), Esvansdoviter and Sindal (2006) and Hernandez (2005). Findings of these studies emphasize on reducing the anxiety symptoms as a result of presenting the music to the patients. In explaining these results, it can be said that music is the common language of all people around the world and its influence is beyond the geographical, cultural and racial boundaries. Although applying the music in treatment is growing, but its physiological and emotional dimensions on human body have not been specified. Music raises the concentration, but has different neurophysiologic dimensions that effectiveness of each depends on the personal preference. Lisik (2008) in his analysis showed that selecting the music can reduce the stress and when music excites a desired status, people act better. Music therapy can treat effectively the diseases resulting from stress and feelings in human. Maybe it can be said that music is effective in reminding the past events, providing a non-verbal opportunity for a wide range of unconsciousness feelings and cognitions, empowering the abilities, identity and self concept and transforming the creation. Due to these music features, it can be expected that the people's anxiety reduces following the music therapy (Department of American Seniors). Participating in sessions of music therapy creates situations for establishing social relations and positive changes in mental and physical conditions and consequently it increases the sense of control over the life, reduces the stress and enriches the self-confidence (Chio, 2008). It also affects the sensory and cognitive components (Back, 1991) and has clear influence in expelling the feelings, raising the insight and self-awareness toward the self and environment (Zadehmohammadi, 2010).

Along with order and innate structure, non-verbal connection power and mild desire, music can be used as a safe tool for creating an understanding from reality and non-verbal communication with serious mental patients. Those people who have more slight mental illnesses or behavioral disorders, for reducing the concerns and pressures and increasing the personal value feeling need to learn the way through which they can express their feelings properly and correctly and control their aggression and immediate provocation and empower their verbal communication skills and social collaborations. Music is an organized reality; a real reality which occurs in time and call for the moment-to-moment attention. Nowadays, music improved the physical, mental and cognitive problems among the patients and in different sections, especially in general and mental hospitals and rehabilitation centers; it is used as proper and appropriate nursery interference. In US, more than 5000 music therapists work (Alerd, Bierse, & Sool, 2010). From among the proper and economical methods is the relaxation and music therapy (Shaban et al., 2005). Relaxation changes the activity of automatic nervous system significantly and as a result affects the physiological reaction of patient than the tension in such a way that oxygen consumption and CO_2 production are reduced, heartbeat and respiration decreases, and desired and pleasant feelings are increased and concentration raises (Ilkhani, 2005). One of the other non-drug interventions which reduces the stress is the music therapy in which rhythmic sound is used for establishing the connection and achieving the calmness and improvement (Navidi &

Ghasemi-Soleimanieh, 2004). Results obtained from this study indicate the effectiveness of presenting music in treating the patients with posttraumatic stress disorder with less time and cost.

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