



Role of Music Therapy in Reducing the Symptoms of Depression and Anxiety

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Abstract

Background and Objective: A variety of psychological factors can manipulate the severity of premenstrual syndrome. This study aimed to investigate the role of music therapy in reducing anxiety and depression in premenstrual syndrome.

Materials and Methods: This quasi-experimental study was conducted based on a pretest-posttest method with a control group. The statistical population of this study included 30 women with the premenstrual syndrome who were referred to Rah-e-Bartar Clinic, Tehran, Iran, in the first six months of 2019. They were then selected voluntarily and assigned randomly in two groups of experimental and control (15 cases per group). Subsequently, the participants were requested to complete Beck's Anxiety Test and Beck's Depression Test before and after the intervention. A researcher-made music-therapy program was used as the therapeutic intervention. The experimental group was then asked to participate in 12 sessions of music therapy each lasted for 45 min (two sessions per week). At the end of the intervention, the experimental group re-completed the tests at the posttest phase, and the data were analyzed using one-way analysis of variance.

Results: According to the results, after comparing the experimental and control groups at the posttest, the anxiety (Sig=0.06; F=0.12) and depression (Sig=0.09, F=0.10) scores were obtained greater than 0.05.

Conclusions: It can be concluded that music therapy was effective in reducing the psychological symptoms of premenstrual syndrome, two of the most important of which are anxiety and depression.

Keywords: Anxiety, Depression, Music therapy, Premenstrual Syndrome

Background

Premenstrual syndrome refers to a group of physical and behavioral symptoms that occur periodically in the second half of the menstrual cycle [1]. These symptoms are often associated with mood swings, breast tenderness, extreme fatigue, bad temper, depression, and cravings for foods, especially sweet foods [2]. It is estimated that three out of four women who experience menstruation suffer from this syndrome. Some females develop this syndrome at the age of 20 years, while others encounter this complication in their late 30s and 40s [3]. This syndrome usually appears in a permanent and predictable pattern. In some months, the symptoms may be very severe, and at other times, they are normal or even difficult to diagnose [4].

Premenstrual syndrome is often associated with anxiety symptoms and even anxiety disorders that

can be debilitating. Therefore, most women with premenstrual syndrome suffer from anxiety, and this has been the case in various studies [5]. Chompalova et al. [6] showed that most women with premenstrual syndrome in Bulgaria suffered from anxiety and stress. In a study on students, Choi, Lee, and Ahan [7] found that anxiety levels in the premenstrual period and the induced boredom were associated with students' perfectionism. Depression is a common symptom in females with premenstrual syndrome. However, it is important to distinguish between underlying depression (which often worsens before menstruation) and premenstrual syndrome or premenstrual disorder since their treatment is quite different [8]. Women with underlying depression often feel better during or after menstruation; however, their symptoms do

not disappear completely. On the other hand, at the onset of menstruation, these symptoms are eliminated in women with premenstrual syndrome or disorder [9]. Women may think that they have a premenstrual syndrome or premenstrual disorder; nonetheless, they are depressed or anxious [10].

There have been several studies on depression and premenstrual syndrome, which can be mentioned in this regard. According to a study conducted by Erbil [11], it was found that the relationship between premenstrual syndrome symptoms and depression depended on the socioeconomic status of women. In another study, Forrester-Knauss, Zemp Stutz, and Weiss [12] found that premenstrual syndrome could exacerbate depression in females with a history of deep depression.

One of the traditional methods of relieving psychological pain is music therapy. The use of music as a method of treatment has a long history. In ancient Egyptian, Greek, Chinese, Indian, and Roman inscriptions, music was mentioned as a healing instrument [13]. In general, there are two types of music therapy, namely active and inactive depending on the type of the participants' reactions. Active music therapy includes singing, playing, or composing. On the other hand, listening to music is regarded as an inactive type of music therapy. This type of music therapy can include listening to the recorded or live music. It is of significant importance that the participants in a study show their satisfaction with the music in the inactive type of music therapy [14].

According to various studies, music therapy, as psychological treatment, has affected premenstrual symptoms. Abdullahi, Sharifnejad, Hosseinpour, and Samiei [15] revealed that music therapy was effective in the symptoms of premenstrual syndrome. Similarly, Zadbagher Seighalani, Birshak, Hashemian, and Mir Hashemi [16] indicated that traditional music therapy affected anxiety, depression, and physical aggression in females with premenstrual symptoms. In the same line, Küçükkelepçe and Taşhan [17] concluded in a study that people who underwent music-therapy intervention looked happier and calmer, compared to the control group.

Objectives

This study aimed to investigate the role of music therapy in reducing anxiety and depression in premenstrual syndrome.

Materials and Methods

This applied study was conducted based on a quasi-experimental method using a pretest-posttest design with a control group. The study population included women with the premenstrual syndrome who were

referred to a midwifery office in Tehran, Iran, in the first six months of 2019. In total, 30 females were selected voluntarily. The sample size was estimated at 12 cases based on Cohen's formula, the first and second types of errors, and expected average difference in the study groups. The participants were then divided randomly into the experimental (music therapy) and control groups consisting of 15 cases per group regarding the sample size and attrition, as well as the methodology of the study.

The inclusion criteria were the fulfillment of the following three conditions for women based on the Premenstrual Syndrome Screening Questionnaire: 1) From options 1 to 4, at least one case is moderate or severe, 2) In addition to the previous case, from options 1 to 14, four cases must be at least medium or severe, and 3) In the section of the effect of symptoms on life, there should be a moderate or severe case (the last five options). Another prerequisite for the diagnosis of premenstrual syndrome by obstetricians is in the second place.

Accordingly, 15 women diagnosed with premenstrual syndrome completed the pre-menstrual screening questionnaire, as well as Beck's Anxiety and Depression Tests. The experimental group was requested to participate in 12 sessions to listen to the selected music pieces for depression and anxiety at the intervention sessions and home (home assignment). Subsequently, the participants performed activities after listening to a piece of music in each intervention session. These activities included discussion on the music, making music with mouth sounds (without listening to that song simultaneously), and the effects that songs have on them. The participants completed the questionnaires again after the end of the music therapy sessions.

The research procedure and objectives were explained to all participants, and written informed consent was obtained from them. Moreover, regarding the ethical considerations, they were assured of the confidentiality of their information. The data were collected using the following tools:

Premenstrual symptom screening questionnaire

This 19-item questionnaire consists of two sections, the first of which includes 14 items to evaluate mood, as well as physical and behavioral symptoms. The second part measures the impact of these symptoms on people's lives using five items. The items are rated based on a 4-point Likert scale of 0=not at all, 1=mild, 2=moderate, and 3=severe.

The following three conditions must be met for the diagnosis of moderate or severe premenstrual syndrome: 1) From options 1 to 4, at least one case should be moderate or severe, 2) In addition to the previous case, from options 1 to 14, at least four cases

should be moderate or severe, and 3) In the section of the effect of symptoms on life, there should be a moderate or severe case (the last five items).

The reliability of this scale was estimated at 0.90 using Cronbach's alpha coefficient in a study conducted by Siahbazi, Hariri, Montazeri, and Moghaddam Banaim in Iran [18]. Moreover, the content validity ratio and index were estimated at 0.70 and 0.80, respectively, which confirmed the content validity of this questionnaire. Additionally, the internal consistency of the premenstrual symptom screening questionnaire was obtained at 0.84 using a Cronbach's alpha coefficient in this study.

Back's Depression Test

The signs and symptoms of depression in this 5-item test include A) pessimism, feelings of failure, self-loathing, suicidal thoughts, indecision, and slowness of activities, B) feelings of guilt, as well as the expectation of punishment and blame, C) crying, changing one's self-image, dissatisfaction, and sadness, and D) weight loss, physical complaint, fatigue, premature ejaculation, insomnia, and anorexia [19]. Furthermore, this scale assesses a wide range of symptoms and 21 aspects of depression. Each dimension is rated using scores from 0 to 3, and the total score range varies between 0 and 63 [20]. The concurrent validity of this test was estimated at 0.79, and its retest reliability was reported to be 0.67 (Beck, 1988). In Iran, the reliability of this test has been estimated at 0.84 through the coefficient of internal consistency based on Cronbach's alpha; moreover, the correlation obtained from the method of halving the pair and individual questions was determined at 0.70 [19]. In this study, Beck's Depression Test obtained an internal consistency at 0.85 using Cronbach's alpha coefficient.

Beck Anxiety Test

This 21-item test was developed in 1988. The items are rated on a 4-point Likert scale of 0=not at all, 1=mild, 2=moderate, and 3=severe (3). Accordingly, the score range is from 0 to 63, and the total score varies between 0 and 63 [20]. The internal consistency of this scale was reported to be 0.92, and its retest reliability was estimated at 0.75 (Beck, 1988). Furthermore, the reliability of this test was determined at 0.78 using Cronbach's alpha in Iran, and a favorable validity was obtained in this regard. Psychometric characteristics of Beck's Anxiety Test regarding the age and gender of the Iranian population have revealed validity, reliability, and an internal stability alpha of 0.72, 0.83, and 0.92, respectively [21]. In this study, the internal consistency of Beck's Anxiety Test was obtained at 0.86 using Cronbach's alpha coefficient.

Pieces of music used in this study

Pieces of music used in this study to ameliorate anxiety and depression included Master Lotfi's solo and Farhang Sharif spring, as well as Payvar's anger and reconciliation and Hossein Alizadeh's morning greeting

Arrangement of songs

The arrangement of the songs included 1) Lotfi's Tar solo, 2) Farhang Sharif spring, 3) Hossein Alizadeh's morning greeting, and 4) Master Payvar's anger and reconciliation.

The Waltz and Basel method was used to evaluate the content validity index of the music-therapy package.

Accordingly, all items related to the music therapy package obtained content validity. Table 1 tabulates the content of the intervention sessions.

Table 1. Summary of music therapy sessions

Sessions	Summary of music therapy sessions
1	Explaining music therapy to the participants; Asking the participants to complete the anxiety and depression questionnaires; Familiarize with the music therapy package and listening to all songs
2	Listening to music and talking to the participants about music and learning to listen to music
3	Discussing the mental aspect of music; Talking to the participants about their feelings
4	Performing music therapy by the participants in the form of music whispers; Training to focus on music
5	Remembering the memories by listening to music Talking about the participants' worries
6	Discussing the coincidence of the memories with the mental association of music; Focusing on the music by the participants; Talking about the participants' experiences
7	Listening to music; Writing feelings about each song by the participants
8	Writing memories associated with listening to music by the participants; Writing the outbursts and emotions
9	Creating a sense of calm with music and a sense of integration by the participant
10	Creating a sense of security by listening to music and evoking memories by the participant
11	Achieving ultimate peace, security, and happiness by listening to music and focusing on the music by the participant
12	Creating unity and vitality after listening to music by the participant

Results

According to the findings of demographic characteristics, the mean age of the participants was obtained at 32.93 years (age range: 28-40 years). In addition to descriptive data, one-way analysis of variance was used to investigate the role of music therapy in reducing anxiety and depression in females with premenstrual syndrome. A comparison between the scores before and after music therapy showed a decrease in the mean score of anxiety and depression at the post-test.

According to Table 2, the distribution of pre and posttest scores of participants in the experimental group (music therapy) regarding anxiety and depression, as well as various indicators of central tendency and dispersion show that the distribution

Table 2. Summary of statistical indicators of group scores

Statistical indicators	Variables	Groups	Pretest		Posttest	
			M	Sd	M	Sd
Anxiety	Experimental		45.13	5.23	32.06	6.47
	Control		43.65	3.27	41.29	5.08
Depression	Experimental		29.44	4.48	21.51	5.23
	Control		28.03	4.39	26.49	4.89

Table 4. Results of variance analysis of the effectiveness of music therapy on reducing anxiety and depression

Variables	Variable resources	MS	Df	MM	F	Sig	R
Anxiety	Pre test	16.58	1	16.58	0.002	0.22	0.09
	Posttest	827.84	1	127.84	0.12	0.06	0.04
	Error	6869.41	28				
Depression	Pretest	14.36	1	14.36	0.001	0.36	0.21
	Posttest	928.25	1	928.25	0.10	0.09	0.06
	Error	8763.21	28				

Discussion

This study aimed to determine the role of music therapy in reducing anxiety and depression in females with premenstrual syndrome. The results showed that traditional music therapy had a considerable impact on anxiety. Similarly, Zadbagher Seighalani et al. [16] indicated the considerable impact of traditional music therapy on anxiety in women with premenstrual symptoms, which was almost consistent with the results of a study carried out by Küçükkeleşçe and Taşhan [17] who demonstrated that music therapy reduced anxiety. Therefore, the evidence is sufficient to accept this hypothesis.

The most important aspect of music communication is due to its non-verbal nature. The music reflects a wide range of human emotions and since it is a global entity and does not belong to a particular group, it can overcome all cultural and linguistic barriers and provide a shared experience for human interaction. Accordingly, music is an organized reality [22], and complementary medicine is regarded as a type of treatment without the use of

Table 3. Summary of Lyon error variance equality test for variables

Variables	F	Df	Df ₂	Sig
Anxiety	2.17	1	28	0.16
Depression	1.29	1	28	0.41

of participants' scores is close to the normal distribution in the measured variables.

According to the results in Table 3, the values of F for anxiety and depression are estimated at 2.137 and 1.063, respectively. Regarding their significant probability, which is greater than 0.05, the similarity assumption of variances was confirmed in this study.

As can be seen in the table above, the probability score of accepting the null hypothesis after comparing the experimental and control groups in terms of anxiety at the posttest is greater than 0.05 (Sig=0.06; F=0.12). Moreover, the comparison result of the experimental and control groups regarding depression at the posttest revealed a score of greater than 0.05 (Sig=0.09; F=0.10) (Table 4). Therefore, it can be concluded that there was a significant difference between the two groups regarding the obtained scores of anxiety and depression at the posttest.

chemical medications. Today, music therapy has found its place in complementary medicine since it results in relaxation as well as improved mental computation and reduces the mental effects caused by anxiety and stress [23].

This study attempted to provide women suffering from premenstrual syndrome and a high level of anxiety with soft music and a traditional theme as a way of sedation and meditation. The results of a study performed by Zadbagher Seighalani et al. [16] revealed the effect of traditional music therapy on the rate of depression in females with premenstrual syndrome. In the same line, according to the findings of a study conducted by Abdollahi et al. [15], it seems that music therapy was effective in ameliorating the symptoms of premenstrual syndrome. This finding is consistent with the results of previously conducted studies. Therefore, the evidence is sufficient to accept this hypothesis.

Music therapy was used to recover, maintain, as well as enhance physical, mental, and emotional health [24]. It can also be stated that this technique reduced depression in women with premenstrual

syndrome. It is noteworthy to mention that the type of music is also highly important. Classical and relaxing music led to the best results in improving the mood and reducing depression [25]. Accordingly, music has different effects on the human mind and health. Some types of music not only play no healing role but also are often detrimental to the various functions of the human brain and soul, and can cause problems for a person if they continue to be listened to or played [26].

Conclusions

According to the findings of this study, music therapy had a significant effect on reducing anxiety and depression; moreover, it can be used as a non-invasive treatment for acute symptoms of premenstrual syndrome. Regarding the limitations of the study, one can refer to the limited access to voluntary sampling and the cross-sectional nature of the study. Therefore, it is suggested that future studies be conducted on women with premenstrual syndrome utilizing a probabilistic sampling method at different time settings.

Compliance with ethical guidelines

Before conducting the study, ethical and institutional approval was obtained from the Ethics Committee of the University of Welfare and Rehabilitation Sciences, Tehran, Iran (IR.IAU.TMU.REC; 02.09.2019; 1398.094). Moreover, the research conforms to the provisions of the Declaration of Helsinki in 1995 (as revised in Brazil 2013).

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Authors' contributions

Study design, data collection, analysis, and manuscript writing: Maryam Zadbagher Seighalani, Malek MirHashemi. Behrooz Birashk, and Kianoosh Hashemian. Statistical analysis: Malek MirHashemi. Critical revision for important intellectual content: Maryam Zadbagher Seighalani and Malek MirHashemi. Contributed to the final version of the manuscript: Maryam Zadbagher Seighalani and Malek MirHashemi.

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Conflicts of Interest

The authors declare they have no conflict of interest.

References

- Biggs WS, Demuth RH. Premenstrual syndrome and premenstrual dysphoric disorder. *American Family Physician*. 2011; 84(8):918-24. [PMID]
- Rapkin AJ, Lewis EI. Treatment of premenstrual dysphoric disorder. *Women's Health*. 2013; 9(6):537-56. [DOI:10.2217/whe.13.62] [PMID]
- Ford O, Lethaby A, Roberts H, Mol BW. Progesterone for premenstrual syndrome. *Cochrane Database of Systematic Reviews*. 2012; 3:CD003415. [DOI:10.1002/14651858.CD003415.pub4] [PMID] [PMCID]
- Armour M, Ee CC, Hao J, Wilson TM, Yao SS, Smith CA. Acupuncture and acupressure for premenstrual syndrome. *Cochrane Database of Systematic Reviews*. 2018; 8(8):CD005290. [DOI:10.1002/14651858.CD005290.pub2] [PMID] [PMCID]
- Reid RL. *Premenstrual dysphoric disorder (formerly premenstrual syndrome)*. South Dartmouth (MA): MDText.com, Inc.; 2017. [PMID]
- Chumpalova P, Iakimova R, Stoimenova-Popova M, Apatlidis D, Pandova M, Stoyanova M et al. Prevalence and clinical picture of premenstrual syndrome in females from Bulgaria. *Annals of General Psychiatry*. 2020; 19(1):3. [DOI:10.1186/s12991-019-0255-1] [PMID] [PMCID]
- Choi HS, Lee ED, Ahn HY. Relationships among premenstrual syndrome, perfection and anxiety among the college student. *Korean Journal of Women Health Nursing*. 2013; 19(4):265-74. [DOI:10.4069/kjwhn.2013.19.4.265]
- Miller KJ, Rogers SA. *The estrogen-depression connection: the hidden link between hormones and women's depression*. California: New Harbinger Publications; 2007.
- Soares CN, Phillips SD. Hormones in the treatment of depression. *Women's Health*. 2006; 2(3):435-45. [DOI:10.2217/17455057.2.3.435] [PMID]
- Rapkin A. A review of treatment of premenstrual syndrome & premenstrual dysphoric disorder. *Psychoneuroendocrinology*. 2003; 28(Suppl 3):39-53. [DOI:10.1016/s0306-4530(03)00096-9] [PMID]
- Erbil N. Prevalence of depressive symptoms among Turkish women experiencing premenstrual symptoms and correlated factors. *Alexandria Journal of Medicine*. 2018; 54(4):549-53. [DOI:10.1016/j.ajme.2017.10.003]
- Forrester-Knauss C, Stutz EZ, Weiss C, Tschudin S. The interrelation between premenstrual syndrome and major depression: results from a population-based sample. *BMC Public Health*. 2011; 11(1):795. [DOI:10.1186/1471-2458-11-795] [PMID] [PMCID]
- Rafieeyan Z, Azarbarzin M, Safaryfard S. The effect of music therapy on anxiety, pain, nausea and vital signs of caesarean section clients in Dr. Shariateh hospital of Esfahan in 2006. *Medical Science Journal of Islamic Azad University-Tehran Medical Branch*. 2009; 19(1):25-30.
- Kenyon T. Effects of music therapy on surgical and cancer patients. *Breast Care*. 2007; 2(4):217-20. [DOI:10.1159/000105380]
- Abdullahi AN, Hosseinpour MR, Samiei L. The effectiveness of music therapy on premenstrual syndrome in female students. *First National Conference on Art and Health*, Neishabour, Iran; 2018.
- Zadbagher Seighalani M, Birashk B, Hashemian K, Mirhashemi M. The effectiveness of traditional Iranian music therapy on depression, anxiety, aggression in PMS patients. *Journal of Psychological Studies*. 2019; 15(3):55-72. [DOI:10.22051/PSY.2019.27794.1998]
- Küçükkeleşçe DŞ, Taşhan ST. The effect of music on the results of a non-stress test: a non-randomized controlled clinical trial. *European Journal of Integrative Medicine*. 2018; 18:8-12. [DOI:10.1016/j.eujim.2018.01.002]
- Siahbazi S, Hariri FZ, Montazeri A, Banaem LM. Translation and psychometric properties of the Iranian version of the Premenstrual Symptoms Screening Tool (PSST). *Payesh (Health Monitor)*. 2011; 10(4):421-7.
- Fathi ashtiani A. *Psychological tests: the evaluation of personality & mental health*. Tehran: Besat; 2009.
- Kaviani Hossein MA, Mohit A. *Book Introduction: Interviews and Psychological Tests*. Canada: Cognitive Science News; 2001.
- Kaviani H, Mousavi AS. Psychometric properties of the Persian version of Beck Anxiety Inventory (BAI). *Tehran University Medical Journal*. 2008; 66(2):136-40.
- Tseng PT, Chen YW, Lin PY, Tu KY, Wang HY, Cheng YS, et al. Significant treatment effect of adjunct music therapy to standard treatment on the positive, negative, and mood symptoms of schizophrenic patients: a meta-analysis. *BMC Psychiatry*. 2016; 16:16. [DOI:10.1186/s12888-016-0718-8] [PMID] [PMCID]
- Zade Mohammadi A. *Music therapy applications*. Tehran:

- Asraar of knowledge Publications; 2009.
24. McCaffrey T, Edwards J, Fannon D. Is there a role for music therapy in the recovery approach in mental health? *The Arts in Psychotherapy*. 2011; 38(3):185-9. [DOI:10.1016/j.aip.2011.04.006]
 25. Levitin DJ. *This is your brain on music: the science of a human obsession*. London: Penguin; 2006.
 26. Li HC, Wang HH, Chou FH, Chen KM. The effect of music therapy on cognitive functioning among older adults: a systematic review and meta-analysis. *Journal of the American Medical Directors Association*. 2015; 16(1):71-7. [DOI:10.1016/j.jamda.2014.10.004] [PMID]