Original Article

The Efficacy of Music for The Mind on Anxiety Sensitivity among Females with Uterine, Ovary, and Breast Cancer.

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Abstract

Introduction: The chronic and continuous aspect of anxiety can be seen as a source of failure, uncompromising, and widespread despair that deprives a person from a major part of his or her potential. This research aimed to study the effects of music on mind to reduce the symptoms of anxiety among women with uterine, ovary, and breast cancer.

Method: The statistical population of this study consisted of all women living in Tehran. Using a semi-experimental pattern and using the available sampling method among female volunteers, 28 women were selected with a standard deviation above the average score of perceived stress based on input-output criteria and randomized in two experimental and control groups (each Group of 14 people) were replaced. Initially, both groups by means of pre-exam were tested, then the music therapy intervention group (based on the music protocol for the mind) received. At the end, both groups responded to the research tool (post-test). Measurement tools in this study was Perceived anxiety control questionnaire (ACQ); Anxiety Sensitivity Index and (ASI-3) perceived stress scale (PSS).

Result: In this study, data analysis using the twenty-fourth version of the SPSS software and the use of one-way and multi-way analysis of variance showed that music intervention for the mind to reduce perceived stress and sensitivity to anxiety and Increased perceptions of anxiety control in people with cancer in the experimental group compared to the control group ($P < 0.05$).

Conclusion: Therefore, it can be concluded that music intervention for the mind with the aim of reducing sensitivity to anxiety, as well as increasing the perception of anxiety control can have a positive effect on women with breast, uterine and ovarian cancer.

Declaration of Interest: None

Keywords: Music for the mind, Sensitivity to anxiety, Perception of anxiety control, Uterine and ovarian and breast cancer.

Introduction

Cancer can be introduced as one of the major problems in medicine, which is one of the problems known all over the world (1). Unfortunately, 12.4 million people worldwide are diagnosed with the disease each year. According to studies, this figure will almost double in the next 20 years, with about 70% of this increase occurring in developing countries (2). As the second leading cause of death in the world, cancer has been introduced and among the types of cancer, breast and uterine and ovarian cancers are quite common among women (3). Breast cancer is the third most common cancer after lung and gastro cancer and the second leading cause of martality in women aged 35-55. The disease causes deep emotional and affective problems in patients and their families, and the stress of being diagnosed with cancer can lead to many mental disorders, ranging from depression, anxiety, maladaptation with the disease, to emotional disorders and fear of relapse and death (4). Among mental disorders, anxiety which is manifested as a vague sense of fear and worriness of unknown origin, which has behavioral, cognitive, social, and physiological components (5). When anxiety is excessive, it causes the loss of behavioral organization in the individual and after a while it becomes chronic and continuous, the person's resilience to the environment decreases and creates a wide range of anxiety disorders (6). One of the anxiety-related vulnerabilities is Anxiety sensitivity (AS), which is the fear of anxiety symptoms due to the perception of harmful social, cognitive, and physical consequences of a stressful situation (7). High levels of AS increases anxiety reactions and may trigger fear-related responses, which in turn leads to higher levels of avoidance. AS plays an important role in maintaining the symptoms of anxiety and depression (8). People with high AS engage in more avoidant behaviors to control the level of emotional anxiety (9). Due to the chronic nature of cancer, the patient must accept long-term treatment with toxic drugs and suffer from side effects such as nausea, hair loss, fatigue, muscle aches, skin burns, weight changes, and mental health problems. Multiple hospitalizations for treatment can prevent from continuing a normal life (10). Although current cancer therapies have valuable qualitative effects in controlling and preventing the progression of the disease, they are not devoid of stress (11). Therefore, the treatment of a cancer patient cannot be reduced to clinical dimensions alone. Cancer and its treatment have different dimensions, so it is necessary to consider complementary therapies in addition to clinical issues (12). Music has always played a calming and invigorating role in human life, and while creating vitality and strengthening the feeling of empathy, it also reduces heart rate, deepens breathing, reduces anxiety and depression, and relieves pain (12). (13) Results of a study showed that music therapy is effective in reducing pain in cancer patients. Music means more inner thinking and contemplation than anything else, and active listening helps one to remain calm in today's turbulent world and to have more energy and attention in daily activities. Accordingly, the program "Music for the Mind (MFM)" based on the discoveries of Dr. Alfred Tomatis in Psychoacoustics, a science that studies the effects of sound on the human psyche, is

used. MFM is a program for training to hear through audio stimuli that is designed for home use. The goal of music for the mind is to naturally enhance the function of the ear and brain, and is the result of combining special listening techniques with improvisation, along with the sound of nature, practicing both the ear and the brain. These exercises improve the auditory processing of sound in the individual and help the individual to increase the level of communication skills, musical ability, and potential for learning. Therefore, in view of the above and considering that a lot of research has been done on the effect of music therapy on cancer patients, but no research has been done on the effect of music program for the mind; This study answers the question of whether a music program for the mind can be effective on the symptoms of anxiety sensitivity in women with uterine, ovarian and breast cancer.

Method

This is a quasi-experimental study with a pretest and posttest design with a control group. The subjects included women with uterine, ovarian, and breast cancer living in Tehran. Due to the unavailability of these patients consider the type of disease and the lack of cooperation of relevant specialist physicians, referred to associations and charities that are active in the field of cancer. Sampling method was available sampling.; Inclusion criteria included having uterine, ovarian and breast cancer, age range of women with cancer 20 to 50 years, having a diploma and higher, signing the ethical consent to participate in the study. Exclusion criteria included women undergoing chemotherapy because they could not participate in a music therapy program for one month due to physical weakness after chemotherapy, and women also improved. 28 participants were selected by available and voluntary sampling from all cancer patients and randomly entered the study in two experimental and control groups, after obtaining written consent. Upon arrival, participants answered the revised Anxiety Sensitivity Index: ASI-3 and the Perceived Stress Scale (PSS) (Cohen, Kamarak, Marmelstein, 1983) and demographic information in one session. Research data were analyzed using SPSS software and descriptive and inferential indicators. Both groups answered (pre-test) then the experimental group received music therapy and no intervention was provided for the control group. In the performance of this style of music, the therapy, which was based on the music of the professor Elahi, was stated in the performance order, the music should be listened in the morning and at night (before the start of the daily activities and at night at the end of the daily activities). The music is in the form of 4 CDs and in each of them there are 6 tracks, each track is 10 minutes long, and in fact one listens to this music twice a week and listens to the new CD from the new week. Due to the special music playing time, the music was sent to the people twice through the virtual network and the WhatsApp channel so that people could listen to them at the right time. Participants were asked to express their feelings about the music at each time to ensure that they were listening to the music being played. During these 4 weeks, people listened to music daily (except Fridays) and were given sheets to express their mood. At the end of the course, both experimental and control groups answered

the questionnaires as post-test. Data collection was done by using the following tools:

The ASI-3 Anxiety Sensitivity Index: (Taylor et al., 2007) is a self-report questionnaire with 18 items. This two-dimensional questionnaire was first developed by Reese and McNally (1985) with 16 items (14). Given the limitations of the original ASI, the revision led to the development of the current revised 18-item ASI3 questionnaire, which has a multidimensional structure with a high-order factor and three lower-order factors, these three sub-factors are of physical concern (fear of consequences of physical anxiety), cognitive anxiety (fear of lack of cognitive control), and social anxiety (fear of the negative social consequences of observing the anxiety symptoms of others) (15, 16). The highest score a person can get is 80 and the lowest score is 16. A high score close to 80 will indicate that the person has a high anxiety sensitivity, and a low score on this test will mean that the person is experiencing a low anxiety sensitivity. Studies of the psychometric properties of this scale have shown its internal stability. To evaluate the internal stability, Cronbach's alpha coefficient was calculated, which was obtained between 0.80 and 0.90.

The validity of the retest after two weeks was 0.75 and for three years was 0.71 that showed the anxiety sensitivity is a stable personality structure (17). Beyrami, Akbari, Ghasempour and Azimi in Iran studied the psychometric properties of this questionnaire. Its validity was calculated based on three methods of internal consistency, retesting and halving, which for the whole scale, the coefficients of validity were 0.93, 0.95 and 0.97, respectively. Simultaneous validity was performed through simultaneous execution with SCL-90 questionnaire with a correlation coefficient of 0.56. Correlation coefficients with the total score was satisfying and ranged from 0.74 to 0.88. The correlation between the subscales also ranged from 0.40 to 0.68 (18).

Perceived Stress Scale (PSS) (Cohen, Kamarak, Marmelstein, 1983): The Perceived Stress Scale (PSS) was developed by Cohen et al. (1983) (19). This scale is one of the universal scales of perceived stress. PSS has 4, 10 and 14 question forms. In this research, a form of 14 questions has been used. The answer options are graded from nothing to very high and from 0 to 4 on the scale instructions. The range of scores varies from 0 to 56 and the higher score of the subjects in this scale indicates the high level of perceived stress (19, 20). Cohen, Kamarak, and Mermelstein (1983) calculated the reliability of the PSS test-retest to be 0.85 and the internal consistency of the test was calculated 0.84 to 0.86.

Results

The study was performed on 28 women with cervical, ovarian and breast cancer who referred to cancer associations and charities. In this study, the mean age of the women referred was the total mean age of getting cancer at 31.7143 years, which was a minimum of 19 years and a maximum of 54 years. The mean duration of cancer was 3.6429 years with a standard deviation of 3.79292 years and the subjects were from the first to the seventh child, of which 50% of the first child and 32.1% of the subjects' families had two children. Education level In total, 42.9% of the subjects had a bachelor's degree, 50% of the subjects

were housewives and 42.9% were employees; 50% of the subjects were single, 46.4% were married and 3.6% were divorced; 57.1% of the subjects reported no family history and 42.9% had a history of hereditary cancer; 78.6% of the subjects did not report such a history and 21.4% reported the recurrence of the disease other than cancer. The results of the Shapiro-Wilkes test to examine the normality of the distribution of perceived stress pre-test scores, sensitivity to anxiety, and its subscales indicate that the distribution of scores in the pre-test is normal (P>0.05).

Table 1 presents the descriptive characteristics of the pre-test-post-test perceived stress scores in the experimental and control groups. As can be seen, the perceived stress score in the experimental group decreased in the post-test compared to the pretest (26.85 vs. 34.07), but this score increased slightly in the control group (28.71 vs. 31.21).

Table 1: Descriptive characteristics of perceived stress scores of pre-test and post-test of experimental and control groups

variable	Experimental group				Control group			
	PRE-TEST		POST-TEST		PRE-TEST		POST-TEST	
	mean	Standard deviation	mean	Standard deviation	mean	Standard deviation	mean	Standard deviation
Perceived stress	34.0714	8.39839	26.8571	8.58314	28.7143	5.10548	31.2143	6.61209

The results of the Leven test to examine the homogeneity of variances between the two groups indicates the homogeneity of variance of perceived stress scores in pre-test and post-test (p>0.05).

Therefore, according to the results of Shapiro-Wilkes and Levene tests, the conditions for one-way analysis of variance are established; Therefore, Table 2 shows the ANOVA results for the difference between the mean scores of the perceived stress in the pre-test-post-test between the experimental and control groups, which shows that music for the mind significantly reduces the perceived stress in the group. The experiment was compared with the control group (p<0.05). Therefore, this hypothesis is confirmed.

Table 2: ANOVA results for the difference between the mean of perceived stress in the pretest-posttest of the experimental and control groups

source	Total squares type III	Df1	Df2	Mean square	F	P
group	660.571	1	26	660.571	21.58	0.0001

In Table 3, descriptive characteristics, i.e. mean and standard deviations of pre-test and post-test scores of sensitivity to anxiety and its three components, namely physical anxiety, cognitive anxiety and social anxiety of the research subjects by two experimental groups and Control is reflected. As can be seen, the mean of these scores in the post-test of the experimental group decreased in all components and the total score of sensitivity to anxiety, but in the post-test of

the control group compared to the pre-test, the mean of these scores increased.

Table 3: Descriptive characteristics of anxiety sensitivity and its three components in pre-post-test of two groups

Variable	Experiment Group				Control Group			
	Pre-test		Post-test		Pre-test		Post-test	
	mean	Standard deviation	mean	Standard deviation	mean	Standard deviation	mean	Standard deviation
Physical Worry	14.2857	5.1654	9.6429	2.89846	8.3571	4.7492	10.6429	5.017
Cognitive Worry	11.7143	6.43821	6.8571	4.32981	8.5	5.52964	10.2857	5.31223
Social Worry	13.2143	5.85962	8.5	4.29221	9.2143	3.49017	11.2143	4.93307
Sensitivity To Anxiety	39.2143	15.68526	25	10.31.56	26.0714	10.84481	32.1429	13.58085

According to the results of Shapiro-Wilkes test which showed that the distribution of scores was normal (P>0.05), as well as the result of Leven test examines the homogeneity of variances of the two groups (p>0.05); MANOVA test was used to evaluate the significant difference in the collective effect of the components of sensitivity to anxiety.

The results of the box test indicate the homogeneity of the variance-covariance matrices (p <0.05).

Table 4. shows the results of multivariate analysis of variance (for components of sensitivity to anxiety). Pilay statistical characteristic test shows that music intervention for the mind has a significant effect on changing the composition of variables (components of sensitivity to anxiety) (p <0.05).

Table 4: Multivariate analysis of variance of F ratios for the interactive effect of the intervention on the components of sensitivity to anxiety

Effect		lvalue	F	Df1	Df2	P	^{2} µ
	Pilay	0.512	8.385	3	24	0.001	0.512
	Wilks lambda	0.488	8.385	3	24	0.001	0.512
	Hoteling	1.048	8.385	3	24	0.001	0.512
	The largest root	1.084	8.385	3	24	0.001	0.512

Table 5. shows the results of univariate analysis of variance (ANOVA) for each of the components of sensitivity to anxiety. As can be seen, in the subscales of physical anxiety, cognitive anxiety and social anxiety, there is a significant difference between the experimental and control groups in pre-test and post-test (p <0.05), therefore this hypothesis is also confirmed in the subscales, i.e. music intervention for the mind caused a significant reduction of these three components in people with ovarian, uterine and breast cancer in the experimental group compared to the control group.

Table 5: Univariate analysis of variance for each of the components of anxiety sensitivity

Dependent variable	Total squares type III	Df1	Df2	Mean square	F	P	^{2} μ
Physical worry	336.036	1	26	336.036	19.586	0.0001	0.43
Cognitive worry	308.893	1	26	308.893	11.001	0.003	0.297
Social worry	315.571	1	26	315.571	18.868	0.0001	0.421

According to the results of Shapiro-Wilkes test which showed that the distribution of sensitivity to anxiety scores was normal (P >0.05), as well as the result of Leven test which examines the homogeneity of variances between the two groups (p>0.05).; ANOVA test was used to evaluate the significant difference of the mean total scores of sensitivity to anxiety.
Table 6. shows the results of univariate analysis of variance (ANOVA) for the total sensitivity score of anxiety. As can be seen between the experimental and control groups in pretest and posttest, there is a significant difference in the total score of sensitivity to anxiety (p<0.05), so this hypothesis in the total score is also confirmed it means that music intervention for the mind significantly reduced sensitivity to anxiety in people with ovarian, uterine and breast cancer in the experimental group compared to the control group.

Table 6: One-way analysis of variance test for sensitivity to anxiety

Source	Total squares type III	Df1	Df2	Mean square	F	P
Group	2880.571	1	26	2880.571	24.057	0.0001

Discussion and Conclusion

The aim of this study was to investigate the effect of music on the mind on improving the symptoms of anxiety sensitivity in women with uterine, ovarian and breast cancer. For this purpose, one-way and multi-way analysis of variance were used to test the research hypotheses after examining the hypotheses. The results showed a significant effectiveness of music intervention for the mind to reduce perceived stress and sensitivity to anxiety and its components in patients with cancer in the experimental group compared with the control group. The results of this research with the research of Tahan, Evari, Ahangari (12); Chirico et al. (21); Naderi and Qaisari (22); Brad, Potvin et al. (23); Jasemi, Azami, Zabihi (24); Chuang, Han, Young (25); Li, Zhang, Yan (26) Rosetti, Chadha, Torres (27); Li, Xing, Yan (28) are aligned. In explaining this hypothesis, we can refer to health psychology, which considers human beings as a complex being and believes that disease is not caused by one factor but is the product of biological, psychological and social factors. Recent research has placed great emphasis on the effect of psychosocial factors such as stress and how it responds to the onset and course of the disease (29). Cooper (30) stated in his study that there is a significant correlation between cancer and perceived stress; the disease is exacerbated by the death of a spouse, first-degree family, and close friends, in which the grief inherent in the individual causes or worsens the cancer. In another study, it was stated that cancer is associated with drug interventions that have many side effects and cause stress, negative self-perception, and the disease,

thus affecting the quality of life. Because cancer is a threat and many people become anxious in response to this threat, the level of anxiety sensitivity plays an important role in dealing with cancer. Unfortunately, anxiety and high levels of anxiety sensitivity sometimes become a major clinical problem alongside cancer and cause many problems in the process of treatment and adaptation to cancer (31). People with high anxiety sensitivities have more difficulty to regulate emotional functions, therefore they are less able to recognize and accept their emotions and are more likely to show negative emotions in ambiguous emotional situations. New evidence for anxiety disorders suggests that difficulty in regulating emotion may be a major factor in these disorders; Emotional regulation is also said to be a psychological component that is often associated with anxiety sensitivity (32, 33). Schmidt et al. (2010) believe that anxiety sensitivity is more likely to exacerbate anxiety symptoms and experience increased symptoms in people with high levels of anxiety sensitivity. Higher anxiety sensitivity in people with cancer is due to the unexpected diagnosis of cancer as well as painful experiences and its signs and symptoms. Diagnosis of cancer, as well as its consequences, namely cognitive and physical signs and symptoms, stimulates the autonomic system and, consequently, hypersensitivity. (31). Thus, cancer patients have a high rate of anxiety sensitivity, and complementary therapies are needed to reduce the sensitivity. Domingo et al. (34) stated that music therapy has been shown to increase the quality of life of a cancer patient, for example by reducing pain, stress, and helping to regulate negative emotions such as depression, anxiety, and anger. Li et al. (28) also stated that music therapy in a period of one to two months could significantly affect patients' sensitivity to anxiety, depression and pain relief, and that the quality of life score in people with cancer has increased significantly. Also, in a study conducted by Fernando et al. (35), they stated that music therapy is effective in reducing pain, anxiety and increasing the mood of cancer patients, and also, along with the main therapies, music therapy has a positive effect on the treatment protocol. To explain this hypothesis, it can be said that people with cancer due to their difficult conditions, have a high degree of anxiety sensitivity, so therapies such as music therapy can well reduce the process of exposure to anxiety and help the patient to use it in difficult and anxious situations. Studies have shown that one of the strategies offered in the treatment of cancer is the use of music therapy during chemotherapy, which music with a distraction helps patients to minimize the pain caused by such treatments; This issue has also been studied in outpatients, which shows the effect of music therapy well; Therefore, it can be said that music therapy, more than any other treatment technique, is integrated with human daily life and is intertwined with its needs and feelings. The reason for people's tendency and interest in music is due to human nature, which in the human nervous structure naturally has important tendencies to tend to the harmonious world of sounds and music (36). Music for the mind (the music used in the above study), which is a beautiful combination of natural sounds and traditional music, showed a significant reduction in sensitivity to anxiety and perceived stress in patients and helps them to control their stress and

thoughts that are affected by the disease, during the day. According to Bradt et al. (23), music therapy can be a vision for a cancer patient to be more prepared to recognize their feelings and emotions about the disease and to take steps to reduce negative thoughts. It is suggested that music be used as a technic to reduce anxiety in places with more patients such as clinics, hospitals, and private and public clinics.

References

1- Siegel R, Nailshadham D, Ahmedin, J. Cancer statistics. CA Cancer J Clin; 2012. 62(1): 10- 29.

2- Moore MA, Eser S, Igisinov N, Igisinov S, Mohagheghi M, Jarrahi AM, et al. Cancer Epidemiology and Control in North-Western and Central Asia - Past, Present and Future. Asian Pac J Cancer Prev; 2010. 11(Suppl 2): 17-32.

3- Jonathan S., Berek. Berek & Novak's Gynecology. Lippincott Williams & Wilkins; 2012.

4- Elahi Nejad Sanaz, Makond Hosseini Shahrokh, Sabahi Parviz. Comparison of the effectiveness of group reality therapy and neurofeedback on anxiety and depression in women with breast cancer: A clinical trial study, 2016. 11, (4); 39 - 52. (Persian)

5- Seligman M, Schulman DP. Penn Positive Psychology Center Annual Report.2018.

6- Guido, R.Z. Anxiety Disorders: Real Disease, Real Treatment. Published Online: Friday, March 14, 2014, See more at: http://www.pharmacytimes.com.

7- Reiss, S., McNally, R. J. The expectancy model of fear. In S. Reiss, & R. R. Bootzin (Eds.). Theoretical issues in behavior therapy. Book Section, London, England: Academic Press;1985. p. 107–121.

8- Ouimet AJ, Kane L, Tutino JS. Fear of anxiety or fear of emotions? Anxiety sensitivity is indirectly related to anxiety and depressive symptoms via emotion regulation. Cogent Psychology. 2016 Dec 31;3(1):1249132.

9- Kearns NT, Villarreal D, Cloutier RM, Baxley C, Carey C, Blumenthal H. Perceived control of anxiety as a moderator in the relationship between anxiety sensitivity and problematic alcohol use among adolescents. Journal of adolescence. 2018 Feb 1;63:41-50.

10- Corner J, Baily C. Cancer nursing: Care in contex

11- Lechner SC, Antoni MH, Lydston D, LaPerriere A, Ishii M, Devieux J, Stanley H, Ironson G, Schneiderman N, Brondolo E, Tobin JN. Cognitive–behavioral interventions improve quality of life in women with AIDS. Journal of psychosomatic research. 200

12- Tahan M, Akherati Evari M, Ahangri E. The Effect of Music Therapy on Stress, Anxiety, and Depression in Patients With Cancer in Valiasr Hospital in Birjand, 2017. Journal of Clinical Nursing and Midwifery. 2018; 7 (3) :186-193.(Persian)

13- Elliott M, Worrall-Carter L, Page K. Factors contributing to adverse events after ICU discharge: a survey of liaison nurses. Australian Critical Care. 2013 May 1;26(2):76-80.

14- Reiss S, McNally RJ. Expectancy model of fear.. S. Reiss, RR Bootzin (Eds). Theoretical issues in behavior therapy inside.1985.

15- Wheaton MG, Deacon BJ, McGrath PB, Berman NC, Abramowitz JS. Dimensions of anxiety sensitivity in the anxiety disorders: Evaluation of the ASI-3. Journal of Anxiety disorders. 2012 Apr 1;26(3):401-8.

16- Poli A, Melli G, Ghisi M, Bottesi G, Sica C. Anxiety sensitivity and obsessive-compulsive symptom dimensions: Further evidence of specific relationships in a clinical sample. Personality and Individual Differences. 2017 Apr 15;109:130-6.

17- Reiss S, Peterson RA, Gursky DM, McNally RJ. Anxiety sensitivity, anxiety frequency and the prediction of fearfulness. Behaviour research and therapy. 1986 Jan 1;24(1):1-8.

18- Beyrami, Mansour; Akbari, Ibrahim; Qasempour, Abdullah; Azimi, Zeinab; Evaluation of Anxiety Sensitivity, Transcendence and Emotional Regulation Components in Students with Normal Social Anxiety Syndrome. 2012. 8 (28) ;43 – 70.(Persian).

19- Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. Journal of health and social behavior. 1983 Dec 1:385-96.

20- Cohen, S., & Williamson, G. Perceived stress in a probability sample of the U.S. In S. Spacapam & S. Oskamp (Eds.), The Social psychology of health: Claremont Symposium on Applied Social Psychology. (1988). pp. 31-67.

21- Chirico A, Maiorano P, Indovina P, Milanese C, Giordano GG, Alivernini F, Iodice G, Gallo L, De Pietro G, Lucidi F, Botti G. Virtual reality and music therapy as distraction interventions to alleviate anxiety and improve mood states in breast cancer patients during chemotherapy. Journal of Cellular Physiology. 2020 Jun;235(6):5353-62.

22- Naderi, Farah and Qaisari, Razieh, The effectiveness of music therapy on anxiety, sleep quality and perceived stress in depressed pregnant women, Fifth National Conference on Strategies for Development and Promotion of Educational Sciences, Psychology, Counseling and Education in Iran, Tehran .2017.(persian) https://civilica.com/doc/686867

23- Bradt J, Potvin N, Kesslick A, Shim M, Radl D, Schriver E, Gracely EJ, Komarnicky-Kocher LT. The impact of music therapy versus music medicine on psychological outcomes and pain in cancer patients: a mixed methods study. Supportive Care in Cancer. 2015 May 1;23(5):1261-71.

24- Jasemi M, Aazami S, Zabihi RE. The effects of music therapy on anxiety and depression of cancer patients. Indian journal of palliative care. 2016 Oct;22(4):455.(Persian)

25- Chuang CY, Han WR, Li PC, Young ST. Effects of music therapy on subjective sensations and heart rate variability in treated cancer survivors: a pilot study. Complementary therapies in medicine. 2010 Oct 1;18(5):224-6.

26- Li XM, Zhou KN, Yan H, Wang DL, Zhang YP. Effects of music therapy on anxiety of patients with breast cancer after radical mastectomy: a randomized clinical trial. Journal of advanced nursing. 2012 May;68(5):1145-55.

27- Rossetti A, Chadha M, Torres BN, Lee JK, Hylton D, Loewy JV, Harrison LB. The impact of music therapy on anxiety in cancer patients undergoing simulation for radiation therapy. International Journal of Radiation Oncology* Biology* Physics. 2017 Sep 1;99(1):103-10.

28- Li Y, Xing X, Shi X, Yan P, Chen Y, Li M, Zhang W, Li X, Yang K. The effectiveness of music therapy for patients with cancer: A systematic review and meta-analysis. Journal of Advanced Nursing. 2020 May;76(5):1111-23.

29- Heidari Pahlavian, A., Gharakhani, M., & Mahjub, H. A comparative study of stressful life events and stress coping strategies in coronary heart disease patients and non-patients. *Avicenna Journal of Clinical Medicine*. 2010; *17*(3), 33-38. (Persian)

30- Cooper CL, Cooper R, Faragher EB. Incidence and perception of psychosocial stress: the relationship with breast cancer. Psychological Medicine. 1989 May;19(2):415-22.

31- Ahmadi Farsani, Heshmati, Hashemi Nosratabad, Reza Zadeh, Shohreh. Comparison of attitudes toward death and anxiety sensitivity in adolescents with

cancer and healthy adolescents. Journal of Cancer Nursing. 2019 Sep 10; 1 (3): 29-37.(Persian)

32- Bakhshaie J, Kulesz PA, Garey L, Langdon KJ, Businelle MS, Leventhal AM, Gallagher MW, Schmidt NB, Manning K, Goodwin R, Zvolensky MJ. A prospective investigation of the synergistic effect of change in anxiety sensitivity and dysphoria on tobacco withdrawal. Journal of consulting and clinical psychology. 2018 Jan;86(1):69.

33- Erozkan A. Understanding the Role of Dimensions of Perfectionism on Anxiety Sensitivity. Universal Journal of Educational Research. 2016;4(7):1652-9.

34- Domingo JP, Matamoros NE, Danés CF, Abelló HV, Carranza JM, Ripoll AI, Garcia SM, Rossetti A. Effectiveness of music therapy in advanced cancer patients admitted to a palliative care unit: a non-randomized controlled, clinical trial. Music and Medicine. 2015 Jan 31;7(1):23-31.

35- Fernando GV, Wanigabadu LU, Vidanagama B, Samaranayaka TS, Jeewandara JM. "Adjunctive effects of a short session of music on pain, low-mood and anxiety modulation among cancer patients"–A randomized crossover clinical trial. Indian Journal of Palliative Care. 2019 Jul;25(3):367.

36- Viega M. Exploring the discourse in hip hop and implications for music therapy practice. Music Therapy Perspectives. 2016 Jan 1;34(2):138-46.