The effect of music therapy on depression and physiological parameters in elderly people living in a Turkish nursing home: a randomized-controlled trial

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ABSTRACT

Objective: This study was carried out in an effort to determine the effect of music therapy on depression and physiological parameters in elderly people who were living in a nursing home. **Method:** The study was a randomized controlled trial. The study sample consisted of 64 elderly people who complied with the criteria of inclusion for the study. The data were collected using the 'Elderly Information Form' and 'Geriatric Depression Scale'. The music group listened to music three days in a

Information Form' and 'Geriatric Depression Scale'. The music group listened to music three days in a week during 8 weeks. The depression levels were assessed at baseline (week 0) and follow-up in the eight week.

Results: It was found that the difference between post-test depression scores of the two groups was found to be statistically significant (t = -2.86, p < .01). The mean scores of post-test systolic blood pressure in the music group were found to be significantly lower than those of the control group (t = -3.11, p < .05).

Conclusion: It was concluded that music therapy decreased the depression level and systolic blood pressure in elderly people. The study results implies that music therapy can be an effective practice for public health and home care nurses attempting to reduce depression and control physiological parameters of elderly people.

Introduction

Today, world population is increasingly aging and the life expectancy is increasing due to the developments in medicine and technology (Şahin & Yalçın, 2003). In 2014, 8.3% of the world population was composed of older people. In Turkey, the rate of individuals who are 65 years or over are 8% and it will be increased up to 10.2%, 20.8% and 27.7% in, respectively, 2023, 2050 and 2075 according to population projections (TUİK, 2015). Recently, health problems of elderly people are remaining and their health problems are observed in different contexts due to increasing number of elderly people in the population (Arslantaş & Ergin, 2011). Depression is one of the most important health problems in elderly people and it is one of the most frequent mental health problems during old age period (Arslantaş & Ergin, 2011; Üstün, Bahar, & Öztürk, 2008).

Depression is a very important health problem since it is observed frequently during the old age period, it cannot be entirely diagnosed and treated, it bears the risk of suicide in case it is not treated, it negatively affects the quality of life, and it leads to economic losses and workload (lang, Tang, Futatsuka, & Zhang, 2004). Approximately 7% of elderly people (older than 60 years) experiences depression throughout the world (WHO, 2015). In Turkey, depression rate changes between 10.5% and 48.1% (Dişçigil, Gemalmaz, Başak, Gürel, & Tekin, 2005; Sütoluk, Demirhindi, Savaş, & Akbaba, 2004; Şahin & Yalçın, 2003; Üstün, Bahar, & Öztürk, 2008). The reasons of depression in elderly people are loss of health, spouse, relatives and the social security, sleeping problems and disabilities (Cole & Dendukuri, 2003). However, living in a nursing home is one of the most important factors which can increase the risk of depression (Chow et al., 2004; Çifçili, Yazgan, & Ünalan, 2006; Hacıhasanoğlu & Yıldırım, 2009; Zincir, Taşçı, Erten, & Başer, 2008). The depression risks of elderly people who are living in a nursing home have been reported 3 or 4 times more than elderly people who are in the society (Jongenelis et al., 2004). Depression during the old age period leads to disabilities and adversely affects the quality of life (Hacıhasanoğlu & Yıldırım, 2009).

Medications are effective in the depression of elderly people; however, toleration, safety and drug interactions should be controlled cautiously (Cole & Dendukuri, 2003). Therefore, complementary therapies are tried to be applied in the elderly health care in order to control problems which can occur due to medications. Music, which is one of the complementary therapies, is used in the treatment of various diseases since it has multifaceted effects on human being (Brandes et al., 2010; Lee, Chung, Chan, & Chan, 2005; Solanki, Zafar, & Rastogi, 2013). Music therapy is a special type of psychotherapy where forms of musical interaction and communication are used alongside verbal communication. It has been defined as 'a systematic process of intervention wherein the therapist helps the client to promote health, using music experiences and the relationships developing through them as dynamic forces of change' (Bruscia, 1998). Music eliminates negative feelings and leads to physical and mental relaxation in individuals with depression (Gold, Solli, Krüger, & Lie, 2009; Solanki, Zafar, & Rastogi, 2013). Music decreases behavioral

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and psychological symptoms and depression levels of elderly people due to its psychological impacts (Guetin, Soua, Voiriot, Picot, & Herisson, 2009; Koelsch, 2009; Raglio et al., 2010). Furthermore, music affects the right hemisphere of the brain and thus leads to the secretion of dopamine, noradrenalin, enkephalin and endorphin which cause psycho-physiological responses via limbic system (Bernatzky, Presch, Anderson, & Panksepp, 2011). Music decreases the blood pressure, improves other measurements of heart and regulates the physiological parameters (Akın Korhan, Khorshid, & Uyar, 2010; Franco, & Bezerra Rodrigues, 2009; Shimizu et al., 2013; Takahashi, & Matsushita, 2006).

In literature, it has been stated that music therapy decreases depression level of elderly people (Castillo-Pérez, Gómez-Pérez, Velasco, Pérez-Campos, & Mayoral, 2010; Chan, Wong, Onishi, & Thayala, 2012; Cooke, Moyle, Shum, Harrison, & Murfield, 2010). The search of the literature revealed a related recent systematic review by Maratos, Gold, Wang and Crawford (2008) that investigated the effects of music therapy on depressed adults. Chan, Chan, Mok and Tse (2009) utilized repeated measures design and the duration of the study was 4 weeks. It was found that there was a difference between the music and control group in depression scores for week 3 and week 4. In a randomized controlled cross-over study, Cooke and colleagues (2010) indicated that participants with scores that were suggestive of increased depressive symptoms had fewer depressive symptoms over time. In a recent study, Werner, Wosch and Gold (2015) reported that the level of depressive symptoms improved significantly more in those assigned to music therapy than in recreational singing, both in the 6th and 12th week.

The aim of this study was to explore the effect of music therapy on depression and physiological parameters of elderly people living in a nursing home.

Methods

Trial design

This study was a randomized controlled, single-blind trial. The participants were randomly assigned to either music and control groups where the participants were blinded to intervention allocation. After allocation of the groups, data collection (Elderly Information Form) and depression scores of participants (Geriatric Depression Scale – GDS) took place at baseline (week 0). Changes in depressive symptoms and physiological parameters were observed in the eighth week.

Participants

The study population consisted of 105 elderly people who were living in nursing home. No sample size calculation was carried out and all elderly people at the nursing home were included in the current study. The sample included 64 elderly people (32 music and 32 control groups) who complied with the criteria of inclusion for the study. The eligibility criteria were all elderly people who had lived in a Turkish nursing home at the time of the study, who were able to communicate and cooperate, and who accepted to participate in the study. Exclusion criteria included elderly people who had any visual or hearing loss (Figure 1).

Study settings

The study was carried out in a nursing home, Ordu province in Turkey, between January and March, 2015.

Allocation to groups

At first, a specialist in psychiatric nursing field excluded noneligible participants by aforementioned criteria and prepared a list with the number of eligible participants (n = 64) for the study. After that we used this obtained list to allocate to the groups depending on the number of participants. For allocation of the participants, a computer-generated list of random numbers was used. Participants were then randomly assigned following simple randomization procedures (computerized random numbers) to music and control group. The first 32 elderly people were recruited as the control group; the subsequent 32 elderly people formed the music group. The study was completed with 64 older patients.

Ethical consideration

The study was approved by the ethics committee of Medical Faculty at Ordu University, and conducted according to the ethics guidelines set out in the Declaration of Helsinki. Written consents were obtained from the nursing home manager and governorship. Written consent was obtained from elderly people who agreed to enroll in the study. All participants were informed about the purpose and design of the study, and were guaranteed anonymity and confidentiality. Participation in the study was voluntary.

Instruments

Elderly Information Form: This form was prepared in accordance with the related literature (Castillo-Pérez et al., 2010; Chan et al., 2012; Cooke et al., 2010) in order to determine the demographic characteristics of elderly people. The questionnaire was composed of 11 questions including age, gender, marital status, educational status, area of residence, the presence or absence of chronic diseases, the visits of family members and relatives, participation in the social activities, number of diseases and medications and the length of stay in nursing home. This form took place at baseline (week 0).

Outcome measures

Depression level was the primary outcome and assessed using the GDS in this study. This scale was developed by Yesavage to determine depression level of elderly people (Yesavage, 1993). It contains 30 items and based on self-reports of participants. However, the short version of this scale with 15 items was used in this study. The items of the scale were accepted negative, excluding five items of the scale (1, 5, 7, 11 and 13 items). In the assessment of the form, it was asked from participants to write 'no' for positive questions and 'yes' for negative questions. The scores of the scale were between 0 and 15. The scores above 5 were assessed as the presence of the depression. Turkish validity and the reliability of the scale was performed by Ertan, Eker, and Şar (1997)

STUDY PLAN



Figure 1. Study plan.

(test-retest consistency, r = 0.77; internal consistency $\alpha = 0.92$). The Cronbach's alpha value of the GDS was found to be 0.71 in the present study. This form took place at baseline (week 0) and the eighth week. Depression level was assessed by a lecturer who was one of the researchers in the study and specialist in psychiatric nursing field.

Physiological parameters including systolic blood pressure (SBP), diastolic blood pressure (DBP), heart rate (HR) and respiration rate (RR) were used as secondary outcomes.

Physiological parameters were recorded in Elderly Information Form. This form took place at baseline (week 0) and the eighth week. These parameters were assessed by lecturers who were the researchers in the study and experts in public health nursing and surgical nursing.

This study was single-blind and the participants were blinded to intervention allocation, but there was no blinding of assessors. After participants had been allocated to the groups, pre-test and post-test were administered to the control group. The music and control group received music therapy at the same time in order to both the ethical and to prevent interaction between two groups in the current study.

Music therapy intervention

Since it was shown that personal choices in music therapy were more efficient (Chan et al., 2009; Sung & Chang, 2005), a survey was primarily applied to elderly people and asked which music style they preferred to listen. It was determined that elderly people generally preferred to listen to the Turkish Traditional Music or Turkish Sufi Music. Turkish Traditional Music has reached to artistic excellence and it is a modern music (Özkan, 2000). Sufi music includes both a vocal and instrumental aspects and features a Turkish classical instrument called the 'ney' (a reed flute). It is a music type which affects the religious feelings and gives religious messages. Music compositions which had lyrics (folk songs) were selected in terms of Turkish Traditional Music, and Islamic hymns were selected in terms of Sufi Music (Yavaşça, 2002). During the selection of the type of music compositions, the choice of music was designated by a music therapist who was also a researcher in the study. Music therapist is a lecturer in the Music Department at the Faculty of Music and Performing Arts. The music therapist is a 47-years-old man, has PhD degree in music, and has conducted many studies on music therapy. Emotional states and the choice of participants were the main criteria for the music therapist's decision to choose music compositions. In order to increase motivation and compliance in elderly people, songs were cautiously selected as folk songs or instrumental songs (Altınölcek, 2013).

Elderly people listened to the music compositions that had been chosen by the music therapist before intervention, and the participants showed more intense emotional response to some kinds of music. It was also observed that this emotional effect was more prominent during the first 20 min. Accordingly music therapy sessions were limited to 20 min for each type of music. At the beginning of each therapy session every participant was greeted on a very kind level, and the music therapist and the researcher specializing psychiatric nursing carefully judged participants' emotional states. This would extremely influence the session and the choice of songs.

In the literature, it has been reported that music therapy sessions for 8 weeks are more effective (Chan et al., 2012; Cooke et al., 2010). Therefore, the music group listened to music three days in a week for 8 weeks (Monday, Wednesday, Friday). In order to increase the effectiveness of music therapy sessions, the participants in the music group were divided into two groups (16 elderly people in each group). Each group listened to the songs selected by the music therapist for 40 minutes (Turkish Traditional Music for 20 min, 10 min break, and Turkish Sufi Music for 20 min) (Figure 1).

Music therapy sessions were held in the morning in order to increase the motivation and emotional states of elderly people during the day. The music therapy was conducted as an open group in a lounge of the nursing home with seating arrangement in the form of U shape. Sound and music system of the nursing home was used for the music therapy. During the music therapy sessions, elderly people were suggested to close their eyes and to imagine their happy memories. Thus, the effectiveness of the music and attendance to therapy of participants were strengthened. For each group, there was no formal assessment of treatment fidelity (adherence, competence).

Data analysis

Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS, Chicago, IL) for windows, version 21.0. The data were screened to confirm normality of distributions. Baseline characteristics were compared between the groups to examine the success of randomization, using chi-square tests and *t*-tests for independent samples. Changes in depression levels and physiological parameters were compared between the groups at baseline (week 0) and eighth week, using *t*-test for independent samples. Change in depression levels was compared within groups using GDS at baseline (week 0) and eighth week, using paired sample *t*-test. The statistical significance was accepted as p < 0.05 in the study.

Results

Demographic information

The demographic characteristics of participants are presented in Table 1. The mean ages of the participants were 75.0 (SD 8.19) and 77.7 (SD 7.57) years in the music group and control group, respectively. More than half of the participants in the music and control groups were males (62.6% and 68.8%, respectively). Of the participants in the music group, 90.6% were widowed or divorced, 46.9% were illiterate, 62.5% did not participate in social activities and 87.5% had chronic diseases. In the music group, the mean scores of chronic disease number, the number of medications and the length of stay in nursing home were 2.32 \pm 1.09, 3.60 \pm 1.80 and 5.88 \pm 4.96 years, respectively. Of the participants in the control group, 90.6% were widowed or divorced, 34.4% were illiterate, 56.3% did not participate in social activities and 81.3% had chronic diseases. In the control group, the mean scores of chronic disease number, the number of medications and the length of stay in nursing home were 2.04 \pm 1.15, 3.23 \pm 1.63 and 5.28 \pm 5.79 years, respectively. No significant differences were found between the two groups in terms of demographic characteristics (p > .05).

Depression and physiological parameters

There was no difference between the two groups with regard to pre-test GDS scores (p > .05). However, the difference between post-test GDS scores of the two groups was found to be statistically significant (t = -2.86, p < .01). It was also determined that the mean scores of pre-test and post-test GDS was found to be significant within the music and control groups (p < .001 and p < .01, respectively) (Table 2).

There were no differences in pre-values of SBP, DBP, HR and RR between the music and control groups (p > .05). The mean scores of post-test SBP in the music group were found to be significantly lower than those of the control group (t = -3.11, p < .05). However, the mean scores of post-test DBP, HR and RR in music group were not significantly different from the control group (p > .05) (Table 3).

Discussion

Music is becoming increasingly important due to its increased effect and benefits on elderly people. Music increases the independence feeling in elderly people and it plays a key role in the increment of self-confidence. This leads elderly people

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Table 1. Demographic characteristics of the participants.

Characteristics	Music group ($n = 32$)		Control group ($n = 32$)			
	N	%	N	%	Test	p-Value
Age (years) [mean (SD)]	$\textbf{75.00} \pm \textbf{8.19}$	(Min: 65; Max: 92)	$\textbf{77.72} \pm \textbf{7.57}$	(Min: 65; Max: 91)	t = -1.379	0.173
Gender						
Female	12	37.5	10	31.2	$\chi^2 = 0.277$	0.599
Marital status						
Married	3	9.4	3	9.4	$\chi^2 = 0.000$	1.000
Widowed/divorced	29	90.6	29	90.6		
Education status						
Illiterate	15	46.9	11	34.4	$\chi^2 = 2.415$	0.789
Literate	5	15.6	5	15.6		
Primary school	6	18.8	9	28.1		
Secondary school	3	9.4	2	6.2		
High school	1	3.1	3	9.4		
University	2	6.2	2	6.3		
Area of residence						
Urban	13	40.6	16	50.0	$\chi^2 = 3.011$	0.222
County	5	15.6	1	3.1		
Rural	14	43.8	15	46.9		
Visits of the family members and relatives						
Yes	12	37.5	18	56.2	$\chi^2 = 2.259$	0.133
Participation in social activities						
Yes	12	37.5	18	56.2	$\chi^2 = 3.473$	0.062
Presence of chronic disease						
Yes	28	87.5	26	81.2	$\chi^2 = 0.474$	0.491
Chronic diseases (number) [mean (SD)]	$\textbf{2.32} \pm \textbf{1.09}$	(Min: 1; Max: 5)	$\textbf{2.04} \pm \textbf{1.15}$	(Min: 1; Max :5)	<i>t</i> = .929	0.357
Medications (number) [mean (SD)]	3.60 ± 1.80	3.60 ± 1.80 (Min: 1; Max: 7)		3.23 ± 1.63 (Min: 1; Max: 6)		0.447
The length of stay in nursing homes (day) [mean (SD)]	5.88 ± 4.96	(Min: 1; Max: 20)	$\textbf{5.28} \pm \textbf{5.79}$	(Min: 1; Max: 25)	<i>t</i> = .441	0.661

 Table 2. The comparison of mean scores of GDS between and within groups.

	Music group $(n = 32)$	Control group $(n = 32)$	Tost and	
Geriatric Depression Scale	$Mean\pmSD$	$Mean\pmSD$	<i>p</i> -value	
Pre-test	8.13 ±2.43	$\textbf{8.50} \pm \textbf{3.08}$	$t^1 =541,$ p = 0.591	
Post-test	$\textbf{7.16} \pm \textbf{2.37}$	$\textbf{9.13} \pm \textbf{3.09}$	$t^1 = -2.861,$ p = 0.006	
Test and <i>p</i> -value	$t^2 = 4.888,$ p = 0.000	$t^2 = -2.918,$ p = 0.006		
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p < 0.01, $t^1 = t$ -test for independent samples.

to cope with feelings, such as helplessness and depression (Hsu & Lai, 2004). Music therapy can induce alpha waves in the brain which causes relaxation; it can lead to decrease in depressive feelings. Furthermore, it has also been stated that music therapy can also trigger the endorphin release which causes physiological responses, such as decrease in the HR and blood pressure (Bernatzky et al. 2011; Tjellesen, Yurkovich, & Gragert, 2001). Music therapy also helps reduce depressive symptoms in the adult population and may also be beneficial for depressed patients with disturbed sleep architecture as the effects were comparable to hypnotics in improving the quality of sleep in elderly people (Chan, Chan, & Mok, 2010; Chan et al., 2012). Many recent studies have explored the role of music therapy may be a useful adjuvant therapy facilitating better emotional control and emotional experience without drugs (Baker, Gleadhill, & Dingle, 2007), reducing depression, anxiety, stress and anger in such patients (Cevasco, Kennedy, & Generally, 2005), and lowering scores on psychosocial problem inventory (Gallant, Holosko, Gorey, & Lesiuk, 1997). In this study, we aimed to evaluate the effects of music therapy on depression and physiological parameters in elderly people.

It was found that there was a significant difference between the mean scores of pre-test and post-test GDS in the music group. Furthermore, depression levels of elderly people decreased compared to the pre-test values in this study. Similarly, Cooke et al. (2010) reported that music therapy, which was applied to older people for 40 minutes, three mornings a week for eight weeks, decreased depressive symptoms over time. Chan and colleagues (2012) also indicated that the music group had consistently reduced depression scores compared with the control group during the eight-week study. In another study by Castillo-Pérez et al. (2010), it was found that music therapy, which was performed for 50 min a day, every day, for eight weeks,

Table 3. The comparison of mean scores of physiological parameters between groups.

		Music group ($n = 32$)	Control group ($n = 32$)	
		Mean \pm SD	Mean \pm SD	Test and <i>p</i> -value
SBP (mmHg)	Pre-test Post-test	$\begin{array}{c} 124.38 \pm 18.13 \\ 114.69 \pm 11.07 \end{array}$	$\begin{array}{c} 127.50 \pm 20.16 \\ 124.38 \pm 13.66 \end{array}$	t =652, p = 0.517 t = -3.117, p = 0.003
DBP (mmHg)	Pre-test Post-test	78.44 ± 11.67 71.56 ± 8.84	$\begin{array}{c} 79.06 \pm 13.53 \\ 75.63 \pm 8.01 \end{array}$	t =198, p = 0.844 t = -1.927, p = 0.059
HR (bpm)	Pre-test Post-test	$\begin{array}{c} 80.25 \pm 9.21 \\ 79.81 \pm 8.85 \end{array}$	$\begin{array}{c} 84.38 \pm 11.33 \\ 79.94 \pm 8.98 \end{array}$	t = -1.598, p = 0.115 t =056, p = 0.955
RR (rpm)	Pre-test Post-test	$\begin{array}{c} 21.50 \pm 2.33 \\ 21.81 \pm 1.55 \end{array}$	$\begin{array}{c} \text{22.13} \pm \text{2.92} \\ \text{24.31} \pm \text{15.73} \end{array}$	t =948, p = 0.347 t =895, p = 0.374

p < 0.01, t = t-test for independent samples.

bpm, beats per minute; rpm, breaths per minute.

reduced the depressive symptoms in patients with depression. On the other hand, in Guetin et al. (2009), patients with traumatic brain injury received 1-hour music therapy sessions weekly over a period of 20 weeks and the results showed that music therapy led to a significant reduction in depression from week 10 onwards and up until the end of the study. Similar findings were noted in other studies exploring the effect of music therapy in patients with major depression and dementia (Hsu & Lai, 2004; Raglio et al., 2010). In another study conducted with the caregivers of cancer patients, Lai, Li and Lee (2012) stated that music intervention with nursing presence and recorded music decreased depression. We assume that the scheduling of music sessions three times a week increased the intensity of the therapy and thereby contributed to positive outcomes in this study and literature. The length of the current study was extended to eight weeks mainly because we wanted to address the accumulative effect of music listening by older people on depression levels. Music listening over a period of time helps reduce depressive symptoms in the adult population. Chan et al. (2012) have recently observed that daily intervention does not seem to be superior over weekly intervention and it is recommended that music listening session be conducted repeatedly over a time span of more than three weeks to allow an accumulative effect to occur. The current study finding could be associated with these results.

The mean scores of post-test SBP in the music group were found to be significantly lower than those of the control group while DBP were not statistically different between the groups. In a meta-analysis of 42 randomized-controlled trials, Nilsson (2008) evaluated the impact of music on a patient's vital signs and reported that music intervention had significantly reduced blood pressure in 22 of these studies. In a recent study by Shimizu et al. (2013), to examine the effects of movement music therapy on psychological, physical and physiological indices among elderly females, it was found that music therapy significantly decreased SBP in elderly females. Similarly, Takahashi and Matsushita (2006) reported that the SBP levels were significantly lower in participants who received music therapy than in others. Lai et al. (2012) stated that music intervention reduced SBP and DBP in family caregivers of cancer patients. In the literature, it has been determined that music therapy may help physiological parameters such as blood pressure, pulse and respiratory rates to become normal by activating the parasympathetic neural system and decreasing catecholamine secretion (Engwall, 2009). In this study, music therapy possibly reduced the catecholamine levels, and accordingly decreased SBP in elderly people.

It was shown that HR and RR were not statistically different between the groups in this study. Akın Korhan et al. (2010) and Aktas and Karabulut (2016) reported that music therapy had no effect on HRs in patients with mechanical ventilation support. Liu and Petrini (2015) found that music therapy following thoracic surgery decreased SBP and HR, whereas DBP and RR were not affected. Franco and Bezerra Rodrigues (2009) found that music therapy decreased HR and RR in cancer patients. In contrast, Raglio et al. (2010) observed an increase in HR variability in dementia patients receiving music therapy. Sample size, different population, settings and duration of music therapy in aforementioned studies may explain the contradiction between the results of this study and others in the literature.

Study limitations

This study has several limitations. Primarily, the study was conducted in only one nursing home, and the study sample reflects only one area of Turkey. Therefore, our findings cannot be generalized to all elderly people living in nursing homes. Another limitation was that the investigation included depressive symptoms, without measuring effects in other areas such as cognitive levels and instrumental activities in elderly people. Similar studies with a larger sample size and longer duration of music therapy are recommended to validate and generalize the findings. Different types of music compositions should also be applied in order to explore the effects on the depression levels in elderly people.

Conclusion

In this study, music therapy decreased the depression level and SBP in elderly people who were living in a nursing home. However, there were no significant differences between the two groups with regard to DBP, HR and RR. In line with these results, this study suggests that music has an influence that can be used as a therapeutic tool for lowering depression level and blood pressure in elderly people.

These points can be suggested as results of this study: Nurses can apply the music therapy particularly to elderly people who have chronic diseases and receive health care from an institution in order to manage with symptoms of chronic diseases (especially, physiological parameters and depression). The use of active music and music therapy approach in the management of depressive symptoms to standard care as the direct music therapist and patient interaction appears may be the most effective. Comparative studies on the effects of music therapy versus music may be conducted. Researchers may also conduct studies in which they can compare the cultures by using different kinds of cultural folk music. Adding such measurement outcomes including cognitive levels and social functioning may complete an evaluation of the effectiveness of music therapy as possible treatment of depression.

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Disclosure statement

The authors declare no conflicts of interest.

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