

The Effects of Music Therapy on Depression Among Students

Bibi Narjes Moasheri,¹ Gholamreza Sharifzadeh,^{2,*} Morteza Nahardan,³ and Khodamorad Soofi³

¹Social Determinate of Health Research Center, Birjand University of Medical Sciences, Birjand, IR Iran

²Infectious Diseases Research Center, Birjand University of Medical Sciences, Birjand, IR Iran

³Department of Public Health, Faculty of Health, Birjand University of Medical Sciences, Birjand, IR Iran

*Corresponding author: Gholamreza Sharifzadeh, Assistant Professor of Epidemiology, Infectious Diseases Research Center, Birjand University of Medical Sciences, Birjand, IR Iran. E-mail: rezamood@yahoo.com

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Abstract

Background: Depression is among the commonest mental disorders. Most students experience different levels of depression. Therefore, developing modern strategies, other than medication therapy, is of paramount importance to the prevention and management of depression among students.

Objectives: The aim of this study was to investigate the effects of music therapy on depression among male dormitory students of Birjand University of Medical Sciences, Birjand, Iran.

Methods: This pretest-posttest quasi-experimental study was done on 236 male dormitory students, who had been recruited in the study through systematic random sampling. Eligible students completed the Beck Depression Inventory before and two months after the study intervention. The intervention included music therapy by using pieces of light soft music. The students were asked to listen to music tracks twenty minutes per day for two consecutive months. During these two months, they were monitored weekly to ensure their adherence to the intervention. The SPSS software (v. 16.0) was employed to analyze the data through running the Wilcoxon and the independent-sample t tests as well as the one-way analysis of variance at a significance level of 0.05.

Results: About 37.7% of the students suffered from different levels of depression. There was a significant difference between the pretest and the posttest values of depression ($P = 0.001$). In other words, the study intervention significantly reduced the mean score of depression from 11.00 ± 9.32 to 8.43 ± 9.6 . The study findings also indicated that score of depression in the students did not differ significantly with marital status, place of residence, faculties and college semesters ($P > 0.05$).

Conclusions: The findings of the study indicated that music therapy is effective in alleviating depression. Therefore, it can be used to prevent and alleviate depression among dormitory students.

Keywords: Music Therapy, Depression, Students

1. Background

Depression is a common mental disorder, which causes both individuals and communities considerable psychological stress, reduces quality of life, and increases disability and mortality rates. The most serious mental disorder after World War II was anxiety. However, in the last two decades of the 20th century, depression substituted anxiety and thus, it is currently the commonest mental disorder among adults (1). The world health organization has predicted depression to be the second major cause of morbidity, only after cardiovascular disease throughout the world by 2020 (2).

The results of studies on the prevalence of depression in different communities and age groups are conflicting (3). For instance, the prevalence of depression among 1622 male and female students from the United States was respectively 25% and 26% (4), while its prevalence among Indian male and female students was reported to be respectively 53.7% and 46% to 76% in total (5). Studies conducted in our country, Iran, also revealed that around 15% to 25%

Iranians have mild to severe depression. Besides, the prevalence of depression among Iranians is increasing due to the pressures caused by social and environmental changes and increased prevalence of some physical health problems (6). Sarokhani et al. (2013) (7) performed a systematic review and meta-analysis on 35 studies conducted in Iran and reported that the prevalence of depression among Iranian students is 33%. The results of other studies performed at universities located in Iran also illustrated that the prevalence of depression among students ranged from 24.8% to 90% (3, 8, 9). Such a big difference in the prevalence of depression can be attributed to environmental factors, differences in the definition of depression, and instruments used for depression measurement in different studies.

Students are the creators of each country's future and constitute a considerable part of young adults. Due to increases in the number of universities and higher education centers, the number of students is also increasing. Factors such as education-related pressures and burdens, high levels of stress, unfamiliarity with academic environment

and immediate cultural context, separation from families, lack of recreational facilities, and disinterest in their fields of study can cause mental disorders (such as depression) for students, increase the severity of their mental disorders, and negatively affect their academic achievements (6).

Fortunately, depression is preventable and treatable (10). Although antidepressant medications are effective and useful, many people tend to use non-pharmacological therapies to manage their depression (11). Non-pharmacological therapies are also known to be effective in managing depression. For instance, studies have shown the positive effects of inhalation aromatherapy, spiritual interventions (such as saying prayers and fasting) and psychotherapy interventions (such as Quran-based training of life skills, short-term interpersonal group psychotherapy and mindfulness training) on depression (12-14).

One of the non-pharmacological therapies, which have received considerable attention during the recent decades, is art therapy, particularly music therapy (1). Music is a shared language by which all people can easily and conveniently communicate with each other. Music therapy is a simple and easily accessible treatment because its two main components, i.e. rhythm and melody, are among the innate qualities of human beings (15). Music is used to manage a wide range of health problems from pain to emotional and relationship problems (16, 17). Moreover, it plays a significant role in maintaining cognitive, physical, and emotional health. The order of different musical notes can also promote mental health (18). Meanwhile, it can protect the individual against sorrow, grief, loneliness, and feeling of guilt and can be used to manage depressed people's unpleasant feelings and loneliness (15, 18).

There are a few studies on the effects of music therapy on depression among students of Iranian universities. On the other hand, Rahmani Bidokhti et al. (2014) (19) reported a high depression score among students affiliated to Birjand University of Medical Sciences, Birjand, Iran.

2. Objectives

Given our easy access to this population of students, the present study was made to investigate the effect of music therapy on depression among male dormitory students of Birjand University of Medical Sciences.

3. Methods

This pretest-posttest quasi-experimental study was made on male dormitory students of Birjand University

of Medical Sciences. Based on the results reported by Sheibani Tazraji et al. (2010) (15), S_1 of 3.39, S_2 of 3.31, α of 0.05, β beta of 0.1, and d of 1, the sample size calculation formula for the comparison of two means revealed that 236 students were needed for the study. The students were recruited through systematic random sampling and by using a comprehensive list of all dormitory students affiliated to the study setting. They were included if they were in the second or higher college semesters, were not experiencing severe chronic physical or mental disorders, had no hearing problem, and were not drug abusers.

A two-part questionnaire was used for data collection. The first part included items on the students' demographic characteristics while the second part was the Beck depression inventory (BDI). The BDI has high diagnostic power among both healthy people and patient populations. It is a 21-item inventory, the items of which are scored on a four-point scale from 0 to 3, resulting in a total BDI score of 0 to 63. The BDI scores are interpreted as follows: 0 - 10: no depression; 11 - 16: mild depression; 17 - 20: borderline depression; 21 - 30: moderate depression; 31 - 40: severe depression; and 41 - 63: extreme depression (20, 21). The validity and the reliability of the BDI have been confirmed in Iran (3).

The study intervention was implemented as follows. Initially, necessary permissions were received from the cultural and student affairs administration of the Birjand University of Medical Sciences and the aim of the study was explained to the students. Then, eligible students were asked to complete the study questionnaires. Next, the students were provided with cool or compact disks containing pieces of light soft music (composed by Naser Chashm-Azar, Richard Clayderman 1997). The students were asked to listen to the music tracks twenty minutes per day for two consecutive months. During these two months, they were monitored weekly to ensure their adherence to the study intervention. At the end of this two-month period, they were invited to complete the study questionnaire for a second time. The intervention was started in September and ended in December, i.e. before the beginning of the students' final exams.

The questionnaires were coded numerically and the data were entered in the SPSS (v. 16.0) software. Frequency tables and mean and standard deviation measures were used for data description. Given the non-normal distribution of the pretest and the posttest scores of the BDI, Wilcoxon non-parametric test was used for within-group comparison of depression scores. Moreover, independent-sample t test and One-way analysis of variance (ANOVA) were run in order to compare the groups in terms of the pretest-posttest mean difference of depression score. Data analysis was performed at a significance level of less than

0.05.

This study was approved by the ethics committee of Birjand University of Medical Sciences with the following code IR.BUMS.1394.66. Moreover, confidential management of the participants' data was guaranteed and informed consent was obtained from them.

4. Results

This study was done on 236 students, aged 21.8 ± 2.5 on average. Most of the participants were single (88.1%) and non-native to Birjand (80.1%). In other words, 19.9% of the participants were native to Birjand and their families lived close enough to Birjand for them to visit them at least once a week. The findings revealed that before the intervention, 37.7% of the students had different levels of depression. After the intervention, this value decreased to 32.2% (Table 1).

Table 1. Comparison of the Pretest and Posttest Values of Depression Among Students

Depression	Before No. (%)	After No. (%)
No depression	147 (62.3)	160 (67.8)
Mild depression	39 (16.5)	43 (18.2)
Borderline depression	15 (6.4)	15 (6.4)
Moderate depression	23 (9.7)	10 (4.2)
Severe depression	8 (3.4)	5 (2.1)
Extreme depression	4 (1.7)	3 (1.3)
Total	236 (100)	236 (100)

The results of the Wilcoxon test illustrated that the study intervention significantly reduced the mean score of depression from 11.00 ± 9.32 to 8.43 ± 9.6 ($P = 0.001$). On the other hand, the independent-sample t test also revealed that there was no significant difference between males and females as well as between native and non-native students (Table 2). Moreover, the results of the one-way ANOVA indicated that depression score did not differ significantly among the students of different faculties and college semesters (Table 2).

5. Discussion

According to the world health organization, depression will be the second major cause of morbidity, only after cardiovascular disease, throughout the world by 2020 (2). Different studies have been conducted so far on depression in different communities and age groups. The results of these studies are variable.

The present study showed that 37.7% of the participating male students had different levels of depression. This rate is greater than the depression rate reported by Padsar et al. (2013), Khoshkhati et al. (2014), and Rahmani Bidokhti et al. (2014) (8, 19, 20) and lower than the rate reported by Abedini et al. (2007), Baghiani Moghaddam et al. (2012), Hosseini et al. (2011) and Sheibani Tazraji et al. (2010) (3, 6, 9, 15). These conflicting results can be attributed to differences in the settings, instruments and depression scoring systems in these studies.

Rahmani Bidokhti et al. (2014) (19) found that in 2010, depression rate among medical students of Birjand University of Medical Sciences was 31.7%. However, this rate was greater in the present study. This difference can be attributed to differences in depression scoring systems of these two studies as well as the increases in the severity and the number of stressors affecting students (such as financial problems).

We also found a significant difference between pretest and posttest values of depression score. This finding denotes that our music therapy intervention was effective in alleviating depression among the students. Sedighi Arfaie et al. (2003), Sheibani Tazraji et al. (2010), and Albornoz (2011) also reported the same findings (1, 15, 22). Lai (1999) (23) also found that listening to music can positively affect depressed patients' mind and body. In addition, Erkkila et al. (2011) (24) reported lower levels of depression among patients with depression, who had received both standard care and music therapy compared with patients, who had solely received standard care. Besides, Thomson et al. (2014) (25) found that young adults with psychopathology experiences had greater tendency of listening to music to alleviate their depressive symptoms. The results of a study by Chan et al. (2012) (26) also illustrated that an eight-week music therapy intervention significantly reduced depression. They recommended music therapy as a simple non-invasive technique for depression alleviation.

The study findings also showed an insignificant difference between the depression score of married and single individuals as well as native and non-native students. In other words, music therapy intervention alleviated depression among both married and single as well as both native and non-native students. These findings confirm that the positive effects of music therapy are independent of factors such as marital status or place of residence. Sheibani Tazraji et al. (2010) (15) also reported that music provides individuals with the opportunity to collaborate with each other, sensitizes them to their surrounding environment, increases their awareness, and reduces their dependence on others.

We also found that the depression scores of the stu-

Table 2. Comparison of the Mean Differences of Depression Score Among Students Based on Their Demographic Characteristics

Statistical Measures Variables	N	Mean \pm SD	P Value (The Results of the Independent-Sample T Test or the ANOVA)
Marital status			
Single	208	-2.73 \pm 13.4	0.61
Married	28	-1.39 \pm 10.8	
Place of residence			
Native	47	-0.02 \pm 11.1	0.14
Non-native	189	-3.21 \pm 13.5	
Faculty			
Para medicine	80	-1.2 \pm 11.9	0.43
Medicine	69	-1.96 \pm 12.9	
Nursing	60	-4.71 \pm 15.5	
Health	27	-3.48 \pm 11.1	
College semester			
2 - 4	147	-3.43 \pm 13.8	0.21
5 - 8	78	-1.78 \pm 11.6	
Nine or higher	11	-3.27 \pm 13.1	

dents of different faculties and different college semesters did not differ significantly from each other. These findings also denote that the type of faculty and college semesters do not influence the effectiveness of music therapy in alleviating depression.

5.1. Conclusion

The findings of the study indicated that music therapy is effective in alleviating depression. Given the increasing prevalence of depression and the simplicity and cost-effectiveness of music therapy, this non-pharmacological intervention can be used as an appropriate and accessible strategy to prevent and alleviate depression among dormitory students.

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