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THE EFFECTIVENESS OF MASSAGE THERAPY ON REDUCING DEPRESSION IN STUDENTS

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ABSTRACT

This study aimed to investigate the effect of massage therapy on reducing depression in students. In so doing, a quasi-experimental study of pretest-posttest with a control group design was undertaken among all male students of Allameh Tabataba'i University in Tehran. Of these, 30 student volunteers with depression (BDI cut of above 14) were selected and randomly divided into two experimental and control groups of 15 persons each. Then, Swedish massage therapy was performed for the experimental group for 8 weeks (3 sessions per week, for 30 minutes). The Beck Depression Inventory (BDI) was then administered to both groups. Univariate one-way analysis of covariance (ANCOVA) showed an improvement in the depressive symptoms after massage in the experimental group. So, massage therapy is effective in reducing depression levels in students. It seems that establishing measures in this field, especially in an educational environment, improves the mood disorder.

Keywords: *Massage Therapy, Depression, Students*

INTRODUCTION

Depression is a prevalent psychiatric disorder, often accompanied with debilitating and painful symptoms. The disorder causes the loss of function and the endurance of social costs (Kessler and Wang, 2009, cited in Everaert, Koster, Derakhshan, 2012). Since 80% of patients experience more than one episode throughout their life, it is argued that depression is a recurrent illness (Browning *et al.*, 2012).

Suffering from depression is possible at any age, but its symptoms appear in adolescence and early adulthood, and among individuals in this age range, students are those who are most prone to depression (Ildarabady *et al.*, 2004).

Depression has led to yearly failure or dropout on the part of approximately half of the students at universities throughout the world or on the part of students who cannot finish their studies within the stipulated time (Biabangard, 2001 cited in Hadavi and Rostami, 2012).

Issues such as a lack of familiarity with the university environment or culture dominated separation and distance from family, a lack of interest in the educational field chosen and incompatibility with other individuals at university or in the dormitory environment. All of these can be a cause of depression or of its exacerbation among students (Aghakhani and Baghaei, 2000).

In terms of non-pharmacological therapies and supplements, massage therapy is one way for reducing depression (Baumgart *et al.*, 2011). Massage has been defined as the systematic touch on soft body tissues by hands for therapeutic purposes in order to create relaxation and pain reduction (Pilevarzadeh *et al.*, 2002). Nowadays, there are more than 80 types of massage. What is used most commonly in Europe and America is Swedish massage (Brown, 2010).

Massage improves the lymph drainage by increasing the blood flow in arteries and veins, thereby inhibits the pain mechanism. Moreover, it results in an increase in the secretion of serotonin and dopamine, decreases cortisol and eliminates insomnia, and acts as a measure against stress factors (Field *et al.*, 2005). In addition, by increasing the activity of the parasympathetic autonomic nervous system, heart rate and breathing are reduced, and thus a relaxed feeling is created (Sherman *et al.*, 2005).

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In this regard, a systematic review (Coelho *et al.*, 2007) showed that in randomized clinical trials (RCT), Swedish massage was effective in treating depression. In a 4-year longitudinal study, Hamre *et al.*, (2006) showed an improvement in chronic depression as a result of massage therapy (anthroposophy treatment). Also, in a randomized clinical meta-analysis of 17 studies recorded in different databases until 2008, it was determined that massage therapy significantly reduces the symptoms of depression in experimental groups (Hou *et al.*, 2010).

So far, numerous studies have been conducted on the effects of massage therapy in various diseases in and out of the country however, none of the studies examined its effect on depression in students and the dearth of research in this area is quite obvious. Given the high prevalence of depression in students (over 50%) (Zohor and Mousakhani, 2001; Ildarabady *et al.*, 2004; Hadavi and Rostami, 2012), providing solutions for the prevention and treatment of these people is of particular importance. The need of the country for mentally healthy educated students, the highly cost of medical procedures and, in addition, the recent trend of the community to explore the use of alternative complementary medicine gives weight to the need to undertake the present study. Based on what was pointed out, the study hypothesis is that massage therapy is effective in reducing the symptoms of depression in students.

MATERIALS AND METHODS

Methodology

This is a quasi-experimental study of pretest-posttest with a control group design. The study population included all male students of Allameh Tabataba'i University in Tehran, among which 30 male student volunteers with depression (BDI of above 14) were selected and randomly divided into two experimental and control groups. Swedish massage therapy was done in the case of the experimental group.

Instruments

Demographic Features Questionnaire: The questionnaire was prepared by the researcher in order to determine the demographic characteristics of the subjects, including age, sex, marital status and education level.

Beck Depression Inventory (BDI): This test was developed by Beck *et al.*, (1982) Depressive symptoms measured by this test include: emotional, motivational, cognitive, physical and vegetative symptoms. Beck reported the validity of the test as 0.93 using the Spearman-Brown test. The questionnaire is made up of 21 items, each of which has four alternatives (0, 1, 2, and 3). Subjects answer the questions by drawing a circle around the number that is most appropriate to their feelings in that week. Fata (1991) reported the correlational coefficient of the questionnaire between Beck Depression Inventory and Hamilton Depression Scale as being 0.66 in the case of Iranian subjects. In a study conducted at Tehran University of Medical Sciences (Roozbeh Hospital), the reliability and validity of this test was also indicated to be high and acceptable in healthy and clinical populations (Kaviani *et al.*, 2001).

Intervention

The five Swedish massage techniques are considered in the form of a classification system of various techniques applied in Western or Swedish massage. Johann (1838 – 1909) introduced the French terms which are still used to describe four of the whole five massage techniques: in order to stimulate the circulation of blood through the body there is effleurage (stroking); petrissage (kneading), tapotement (tapping) and friction (Salvo, 1999). Swedish massage uses five main strokes. In the late 19th Century, the fifth technique to be applied i.e. *vibration*, became popular (Tappan and Benjamin, 1998). Many scholars have altered the classification system so as to include additional variables: shaking, compression and touch.

A gliding manipulation of the superficial tissues is called effleurage. It is used as an introduction to touch at the beginning of the massage, and can be used as a transition stroke between the other four massage techniques. A group of techniques that repetitively lift, roll, grasp, stretch, compress or squeeze the underlying tissue goes under the rubric of *Pétrissage*. *Tapôtament* is a repeated, rhythmical, percussive firm-striking manipulation of the superficial and/or deep tissues which is followed by a quick rebound. Friction is a specific, repetitive, non-gliding technique where superficial tissues are moved over the

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underlying structures in order to improve the mobility of the tissue, increasing local blood flow and decreasing pain. A group of techniques consisting of rhythmic manipulations of the soft tissues is called vibrations. The rhythmic manipulation has a unique pattern of oscillation which is dependent upon the kind of applied vibration delivered, and enjoys a ‘vibratory’ signature. This signature can be either quick, light and rapid, or slow, heavy or coarse (Casanelia and Goldestine, 2010).

Massage therapy is typified by the manual manipulation of soft tissue which is performed by a person other than the recipient of the massage. The experimental group was given Swedish massage for a period of thirty minutes, three times a week for about two months by a trained therapist.

After intervention, the Beck Depression Inventory was re-administered for both groups.

Data Analysis

The results obtained are expressed as mean \pm SEM (standard error of mean). Analysis of covariance (ANCOVA) was used to test the efficacy of the Massage Therapy on reducing depression in students. Specifically, post-treatment scores for each dependent measure were examined, statistically controlling for pre-treatment scores.

P-values of less than 0.05 were considered to be statistically significant.

RESULTS AND DISCUSSION

Results

Table 1: Descriptive indices of depression in the groups in terms of the examined steps

Variable	Step	Experimental group		Control group	
		Mean	SD	Mean	SD
Depression	Pre-test	17.200	3.385	20.800	7.302
	Post-test	12.933	6.519	20.067	6.486

According to Table 1, it can be found that in terms of the depression variable, the mean scores of the experimental group has decreased at the post-test compared to the pre-test, while almost no difference was observed in the mean scores between the two tests with regard to the control group.

In order to evaluate the effectiveness of massage therapy on depression in the male students due to the categorical independent variable on two levels (experimental and control groups), a continuous dependent variable (score of feeling of depression in the post-test) and a covariate (score of feeling of depression in the pre-test), one-way univariate analysis of covariance (ANCOVA) was used. Preliminary investigations were done to ensure the lack of violation of the normality assumptions, linearity, homogeneity of variances and regression slope and reliability of covariate measurement, and establishing the conditions of the above-mentioned test were demonstrated. Therefore, the results related to the above test are presented in Table 2.

Table 2: One-way univariate analysis of covariance for depression

Reference	Total of squares	Df	Square of squares	F	sig	Size of effect
Group	97.250	1	97.250	6.543	0.016	0.195
Error	401.293	27	14.863			
Total	1565.500	29				

As can be seen in Table 2, after excluding the effect of the pre-tests, the two experimental and control groups differed significantly from each other at the level of $P < 0.05$ in terms of depression score. By referring to the values of the means, we find that the difference is due to the reduction in the mean score on the post-test of the experimental group. The effect size is 0.195 for the above variable. Using Cohen’s guidelines (Cohen, 1988) in which he introduced the small, medium and large effect sizes equal to 0.01, 0.06, and 0.14; the above-mentioned effect size is large and indicates the high impact of the massage

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therapy. Since the reduction in the score of the above-mentioned variables indicates an improvement, it can be said that massage therapy has a positive impact on depression in male students and decreases its level.

Discussion and Conclusion

The results of this study showed that massage therapy has significantly reduced symptoms in individuals with depression over a period of two months. This result is consistent with the result of the study Hamre *et al.*, (2006), Hou *et al.*, (2010), Cassileth and Vickers (2004), and Kutner, *et al.*, (2008), whose studies have shown the decrease in depression through the massage therapy, while it is inconsistent with the study by AlbertGillinov *et al.*, (2009) in which massage has no effect on depression and anxiety. This may be because of the low number of massage sessions (Vafamand *et al.*, 2013).

As was noted previously, massage has a positive effect on the blood flow, immune, digestive and neuromuscular systems by increasing blood flow in the massage site (Zoriasatain and Bahrain, 2011). Also, by inhibiting pain impulses through stimulating large nerve fibers which are inhibitors of pain, it leads to closing the pain control valves in the dorsal horn of the spine and increasing endorphins and decreasing substance P (a chemical transmitter of pain), it can provide reduce pain and increase comfort (Field *et al.*, 2005). In addition, by increasing the activity of the parasympathetic system and reducing the secretion of cortisol, relaxation can dominate the body and nervous system through removing tension and signs of stress (Billhult and Maatta, 2009) and lead to the reduction in negative emotions and mood, and enhancing a positive mood. Since mental relaxation is possible in a relaxed body, the psyche becomes calm in conjunction with the relaxing body. In addition, it has been said that massage increases the secretion of serotonin and dopamine (two chemicals transmitters), which has been noted in depression. Consequently, this can raise mood and decrease the symptoms of depression (Field *et al.*, 2005).

In addition to the foregoing, the type, way, duration of implementation and environment of massage are effective in obtaining the desired result, because all these components lead to the elimination of tension, the creation of relaxation and the improvement in mood (Cassileth and Vickers, 2004; Kutner *et al.*, 2008). Meanwhile, proper communication between the giver and receiver of the massage, and the transfer of empathy and sense of security can, in turn, be effective in terms of the creation of wellbeing and a positive increase in mood (Kuter *et al.*, 2008; Wilkie *et al.*, 2000; Ernts, 2009).

According to what has been said, it can be concluded that massage can be considered and used as a therapeutic approach to the reduction of symptoms of depression, especially on the part of students. The limitation of the population and sample group to a university and to the city of Tehran, and the use of single-sex and non-random sampling are limitations of this study which are recommended to be considered in future studies. The replication of this study with regard to students in other universities and cities, and from both sexes by random sampling, would contribute to the confirmation of the results obtained and their generalization.

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