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The effectiveness of Group therapy of mindfulness -based stress reduction (MBSR) on test anxiety and assertiveness of Dysthymia students

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Abstract

The purpose of this study is to examine the effectiveness of Group therapy of mindfulness -based stress reduction (MBSR) on test anxiety and assertiveness of Dysthymia students. The method of this study is experimental testing with pretest and posttest control group design. In which each group is selected by random sampling and are tested twice. The statistic population is selected from high school students with Dysthymia and these students with test anxiety and assertiveness, which had Dysthymia, participated in 10 sessions of mindfulness therapy based on MBSR. The results of the covariance analysis confirm the effectiveness of MBSR therapy on test anxiety and assertiveness of students with Dysthymia. The current study indicates that MBSR can reduce test anxiety and depression and increase the courageous behavior.

Keywords: mindfulness-based stress reduction, test anxiety, assertiveness, Dysthymia

Introduction

It appears that test anxiety is among most common stress types of students which has caused them tension during an exam (Dianna et al.). This kind of stress causes students to doubt their capabilities and reduces their ability to deal with exam situation (Johnson, 2007). A person who struggles with test anxiety, knows the course materials but the anxiety prevent that person from using that knowledge (Hancock, 2001). The intensity of articles and researches (Hefer 2009, Carter et al. 2008, and Wong 2008) in last 50 years illustrate the importance and the special attention that countries pay this issue and the necessity of

research on psychological therapies in reduction of it. Assertiveness is among the skills whose lack of causes stress and tension in this field; the concept of assertiveness was raised by Wolp and its application and training became popular.

Also, Dysthymia disorder is one of the most common psychological diseases all around the world that have a high spread; meaning that approximately 5% to 6% of the total people of the society are struggling with Dysthymia (Rusan, Shankman, Rose, 2006). This disorder is diagnoses by feeling of loss, sadness and frustration, excitement and stress and lack of interest in everything and, sometimes, everyone. MBSR is one of the useful techniques that its therapeutic effects have been proven. This method, first, was used by Kabat Zinn (Zinn, 2005) and mainly in this method the focus was on meditation techniques.

Accordingly, the purpose of this study is to determine the effectiveness of mindfulness-based stress reduction on decreasing test anxiety and Dysthymia and increasing courageous behaviors in Dysthymia students. The independent variable, in this study, is one of the features of the third wave treatment that is mindfulness (Labelle, Campbell).

The original source of this treatment is the teachings of the Orients that bring about spiritual materials and its essence is the undivided attention to the events in the present moment (Purser and Milillo, 2015). Accordingly, this is the answer to the spiritual thirst of a Muslim researcher who searches for a fundamental line to get one step closer to the dream of a treatment derived from Islamic teachings.

Researcher has some reasons for selecting the dependant variables. The reason of choosing test anxiety as one of the variables is that this kind of stress threats the students' mental health and wastes a lot of humans' potential resources and talents (Schnell, Ringeisen, Raufelder and Rohrmann, 2015). This issue is a universal phenomenon that every year millions of students experience it all over the world (Hill, 1984). Therefore, the study of the effectiveness of MBSR training on this variable, may lead to the cure and help for the people suffering from this problem. In other words, in order to help this group of people, this study searches to measure the effectiveness of this type of therapy and to determine whether the MBSR therapy has an effect on test anxiety.

Another dependant variable is assertiveness. Assertiveness means that our ideas, thoughts, beliefs and feelings are as important as others. In a way, all of us deserve to be respected by others and this only can be achieved when a people respect themselves and believe in their goals. From another perspective, researcher's working experiences and observations as a school counselor for several years, has confronted him with this problem that: it seems that students who have test anxiety don't have courageous behavior, therefore, this study seeks to examine the relationship between these two variables as well. But the main question is whether MBSR therapy affect the variable of courageous behavior.

Another important issue, which this study seeks to pursue, is to examine the Dysthymia population while Dysthymia causes some kind if disorder in work, educational and social performance (Castro-Rodriguez et al. 2015). People with Dysthymia show less severe symptoms of depression. The usually, due to increase of stress level or personal problems that are related to the issue of success, seek for help (Ji J X, 2015). Thus, does Dysthymia has a significant relationship with anxiety stress and courageous behavior? Or mindfulness therapy results in curing Dysthymia and increasing performance against test anxiety and courageous behavior? Another issue that has motivated this study is that it seems that MBSR therapy is more effective for curing stress disorders and depression than mindfulness- based cognitive therapy and Zen meditation (W R Marchand, 2012).

Methodology

The research method of this study is experimental testing with pretest and posttest design of a controlled group. The statistic population if this study includes high school students of Tehran in the year 1393 (male and female) who have Dysthymia with the scores between 17-20 in 2 scale Beck Depression Inventory and are diagnosed with Dysthymia in Structured Clinical Interview (SCID). Since the statistic population should have been chosen from high school students with Dysthymia, the Beck 2 Depression Inventory questionnaire (BDI-2) was used to determine students with Dysthymia. 343 questionnaires were randomly distributed in boys high school and 248 questionnaires in girls high school.

To assess the mindfulness variable, Freiburg's mindfulness questionnaire was used. In order to measure the test anxiety, Spielberger test anxiety test (stat) was used. For behavioral, cognitive and physiologic assessment, Spielberger psychiatric clinical interview was used. In order to assess the subjects' test assertiveness, Gambrill and Ritchie (1975) assertiveness scale was used. Beck Depression Inventory was used to assess depression. Cronbach's alpha was more than 0.8 in all cases.

Results

Descriptive information of courageous behavior is presented in table1 separately in pretest and posttest in experimental groups and controlled groups. Based on the results presented in table1, it can be concluded that MBSR training on the controlled group has resulted in the increase of courageous behaviors in students.

Table1. Descriptive information of the amount of courageous behavior in each test stage in groups

Factors	statistic index	pretest	posttest
experimental group	Number	20	20
	mean	114.20	132.30
	standard deviation	35.50	34.24
Controlled group	Number	20	20
	mean	112.82	114.15
	standard deviation	30.81	31.26

As noted, the mean of the experimental group in the posttest stage shows increase compared to pretest stage. According the results shown in table1, it can be concluded that MBSR training on the controlled group has resulted in the increase of courageous behaviors in students.

Depression

Descriptive information of depression sub-scale is presented in table2 separately in pretest and posttest in experimental groups and controlled groups.

Table2. Descriptive information of depression in each test stage in groups

Factors	statistic index	pretest	posttest
Experimental group	Number	20	20
	mean	26.15	22.90
	standard deviation	4.42	5.58
Controlled group	Number	20	20
	mean	23.90	23.85
	standard deviation	5.98	4.95

As noted, the mean of the experimental group in the posttest stage shows reduction compared to pretest stage. According the results shown in table2, it can be concluded that MBSR training on the controlled group has resulted in the decrease of depression in students.

Normality test: the results of Single-sample Kolmogorov-Smirnov test indicated that none of the scores were significant, therefore, null hypothesis is valid and data of all variables are normal. Thus, for testing each variable, parametric tests can be used.

Variance coordination: To verify this assumption, Levin test was used and the equality of variance was true for all variables.

Homogeneity of regression slopes: This assumption means that the regression coefficient of the dependent variable from the covariate variables in the groups is similar. To verify this assumption for each of the components, variance analysis test (test F) was used.

The results show that the calculated coefficient of F for group's interaction and pretest is not significant in none of the variables ($p>0.05$). As a result, difference of regression coefficients' significance between the dependent variable and covariate variables in the two groups cannot be seen and the assumption of homogeneity of regression coefficients in both experimental and controlled groups for all variables is established. According to the presented pre assumptions, it appears that the data of this research have the ability to enter covariance analysis and that the differences of the two groups can be examined in dependant variable.

First hypothesis: mindfulness-base stress reduction therapy (MBSR) has an effect on test anxiety.

Table3. Covariance analysis test of the first hypothesis

Variables statistical indicator	SS	df	F	Sig	Amount of the effect	Test's ability
Pretest	2510.21	1	59.41	0.001	0.61	0.99
Group	327.58	1	7.75	0.008	0.18	0.77
Error	1563.35	37				
Total	81686.14	40				

With eliminating the effect of the pretest and according to calculated F coefficient, it is observed that between the adjusted mean of test anxiety scores based on the group membership (experimental and controlled), a significant difference is observed in the posttest stage ($p<0.05$), therefore, according to the justified means, it is concluded that the null hypothesis is invalid and MBSR has more effect on students' test anxiety of the experimental group than the controlled group. The amount of this effect (experimental significance) is 0.18, which means 18% of total variance or individual differences in students' test anxiety are related to MBSR. In addition, high power of the statistic test in this paper implies that the probability of 77%, the null hypothesis is correctly rejected.

Second hypothesis: mindfulness-base stress reduction therapy (MBSR) has an effect on courageous behavior.

Table4. Covariance analysis test of the second hypothesis

Variables statistical indicator	SS	df	F	Sig	Amount of the effect	Test's ability
Pretest	20560.81	1	36.23	0.001	0.49	0.99
Group	2728.61	1	4.81	0.003	0.12	0.67
Error	20995.60	37				
Total	654744	40				

With eliminating the effect of the pretest and according to calculated F coefficient, it is observed that between the adjusted mean of test anxiety scores based on the group membership (experimental and controlled), a significant difference is observed in the posttest stage ($p<0.05$), therefore, according to the justified means, it is concluded that the null hypothesis is invalid and MBSR has more effect on students' courageous behavior of the experimental group than the controlled group. The amount of this effect

(experimental significance) is 0.12, which means 12% of total variance or individual differences in students' courageous behavior are related to MBSR. In addition, high power of the statistic test in this paper implies that the probability of 67%, the null hypothesis is correctly rejected.

Third hypothesis: mindfulness-base stress reduction therapy (MBSR) has an effect on the amount of depression.

Table5. Covariance analysis test of the third hypothesis

Variables statistical indicator	SS	df	F	Sig	Amount of the effect	Test's ability
Pretest	580.30	1	42.51	0.001	0.53	0.99
Group	83.32	1	5.21	0.002	0.13	0.70
Error	592.05	37				
Total	23137	40				

The results of this table show that with eliminating the effect of the pretest and according to calculated F coefficient, it is observed that between the adjusted mean of students' depression scores based on their group membership (experimental and controlled), a significant difference is observed in the posttest stage ($p<0.05$), therefore, according to the justified means, it is concluded that the null hypothesis is invalid and MBSR has more effect on students' depression of the experimental group than the controlled group. The amount of this effect (experimental significance) is 0.13, which means 13% of total variance or individual differences in students' depression are related to MBSR. In addition, high power of the statistic test in this paper implies that the probability of 70%, the null hypothesis is correctly rejected.

Discussion and conclusion

One of the discoveries of this study is that mindfulness-based stress reduction is effective on increasing the assertiveness of students. Assertiveness is one of the concepts that is effective on improving an individual's compatibility with the environment and causes the subject to be satisfied with his/her performance. Also, one of the healthy interpersonal communication tools is assertiveness. The findings of this study are in line with the research results of some researchers who have concluded that MBSR therapy is effective on assertiveness. The results of covariance analysis with respect to justified mean indicates that the null hypothesis is rejected and MBSR has more effect on students' courageous behavior of the experimental group than the controlled group. The amount of this effect (experimental significance) is 0.12, which means 12% of total variance or individual differences in students' courageous behavior are related to MBSR. In addition, high power of the statistic test in this paper implies that the probability of 67%, the null hypothesis is correctly rejected.

Another result of this study is that MBSR is effective on students' Dysthymia. The obtained results confirm the studies' results of Ownce, Frando, Fendler, Stowl, Smart and Haglin who claim that mindfulness therapy brings about the reduction of stress and depression symptoms. Also this study is in

line with a researchers study who claims that our mind often interpret the events that happen and causes consistent reactions and feelings. People who are entitled to depression, mind often move towards upsetting an negative thoughts. Also the current study is line with Rammel et al. research which illustrates the effectiveness of mindfulness therapy on depression reduction while, mindfulness is a process through which the subject maintains his/hers performance consistency and provides flexibility in new circumstances (Rammel, 2004).

The other hypothesis of this study is that mindfulness-based stress reduction therapy is effective on test anxiety. The results of this study, which are in line with the research hypothesis of this study, indicate that MBSR group therapies result in considerable reduction in students' test anxiety. Thus the performed intervention of this study on students with test anxiety in experimental group has caused a significant reduction test anxiety level after completing the intervening program compared to the controlled group and to the anxiety level of pretest. The result of this research is consistent with another study on the effectiveness of therapy method of attention control training and confirms its results. The results of this study indicating that mindfulness-based stress reduction therapy is effective on test anxiety, is in line with the researches of Ferando (2005), Bushmein, Hutchins and Peterson (2008), Linden (1973) and Peter Nettie (2007). The intervention of MBSR in this study, regardless of the effect of scores, has significantly reduced the scores of the posttest, compared to the pretest. The obtained result of this study is consistent with the research of Riktes and Galoway (1984) in test anxiety reduction which Seud and Sharma (1990) and Sup (1999), in their meta-analysis, have referred to.

It appears that MBSR training with encouraging people to focus their attention on the neutral motivators and intentional knowledge on the body and mind, free the stressful people from preoccupation and threatening thoughts and worries about their performance in tests and bring out their minds from automatic gear. This means that these techniques increase one's awareness of the experience of the present moment and to focus on more efficient information processing system and reduce cognitive anxiety and stress in a person's physiological dehumidified.

The current findings suggest that mindfulness training techniques are preventive effective strategy in reducing test anxiety, increase of courageous behavior and reduction of Dysthymia. Based on the results of this study, it seems that equipping students with these skills (MBSR) enables them to reduce their stress when having a test.

According to Little and Jackson (1974) a combination of the attention and relaxation training (attention control training) is more effective in reducing students' test anxiety than either of them alone (according to Hues, 1998). Bayer (2003) believes that it is only sick attention that is the basis of stress symptoms such as test anxiety and that the increase of attention control should be effective in reducing anxiety. The mindfulness techniques are mainly attention increasing techniques that are helpful with curing patients who are struggling with anxiety and depression (Sample et al. 2005).

According to Kabat Zinn (2003), attention control training moves toward clarity and seeing clearly that acts none habit and sublime. Inclusive attention means that we, in all moments, realize extensively that, who we are, what we do and why we do it.

In addition, the project is in line with the assumptions of research in this study which suggests that no significant difference exists between pretest and posttest controlled group that received no intervention. According to literature of this study, it seems that the effectiveness of MBSR on assertiveness, test anxiety and Dysthymia, Zinn suggests, is that in this method in order to control and manage emotions, physical and mental dimensions should be considered simultaneously and that the person learns to have

full awareness of one's thoughts and emotions and accept them without judgment and look at them with broader view. When a person has full awareness of thoughts and feelings and accepts them without judgment, is placed in a state of relaxation and concentration, earns the ability to control thoughts, anxiety and excitements. These capabilities will make that person feel more in control of all aspects of one's life and instead of giving negative automatic responses in anxiety and stressful situations, respond with control, comfort and greater awareness and cope better with problems (Kabat Zinn, 1990).

Lack of follow up measures to assess the survival rates of these interventions' effects and also lack of knowledge about the amount of educational performance improvement and courageous behaviors and lack of these changes' stability in real situations should be consider cautiously when interpretation and generalization of these results. In future researches, in addition to the elimination of the constraints cited in the study, the effectiveness of this program on clinical and normal population should be tested.

One of the limitations of this study is that there is no difference between assertiveness types that are stated in this research's literature.

According to the theoretical literature of this study and obtained results, it appears that the common aspect of the people with depression, test anxiety and low courage, is low self-steam and confidence. Therefore, it is suggested that the researchers of this field pursue, this issue in their future studies; is mindfulness therapy effective on increasing self-steam? And will the increase of self-steam result in improvement of assertiveness, test anxiety and depression?

According this study's literature on assertiveness, the researchers should investigate this issue that mindfulness therapy is more effective on which assertiveness components, revealing or hidden components?

The applicable point that can be achieved from this study, is that considering the high prevalence of test anxiety among students and its negative effects on educational performance and its high costs, with identifying these people and participating them in training groups of techniques based on mindfulness, their educational performance level and mental health can be improved. Thus, it is recommended that the people involved in education, pay attention to teaching the attention training and stress reduction techniques to students. Teachers can use MBSR and change their traditional believe that suggests some students cannot learn what they have thought. People involved in education system should provide more suitable environment for developing assertiveness and reducing anxiety through mindfulness therapy in order to provide opportunities for students' more efficient learning. It is recommended that group therapy, while it is more efficient from financial aspects and is more effective in the scale of time than the individual methods, be considered by schools' therapists and counselors.

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