



Comparison of the Cognitive Behavioral Therapy (CBT) and Mindfulness-Based Stress Reduction (MBSR): Reducing Anxiety Symptoms

Fatemeh Abbasi^{1*}, Kajal Shariati² and Fakhri Tajikzadeh¹

¹Faculty of Psychology & Education Sciences, Shiraz University, Shiraz, Iran

²Faculty of Psychology & Education Sciences, Kordestan University, Sanandaj, Iran

*Corresponding author: Faculty of Psychology & Education Sciences, Shiraz University, Shiraz, Iran. Tel: +98-9367390995, Email: fabbasi@shirazu.ac.ir

Received 2017 August 20; Revised 2018 June 30; Accepted 2018 July 01.

Abstract

Background: Social anxiety is a clinical pattern of self-protection social behaviors that coincides with severe anxiety regarding negative reactions such as critique, being ridiculed, miss-communication, or miss-behaviors against others.

Objectives: This research investigated the effect of cognitive behavioral therapy (CBT) and mindfulness-based stress reduction (MBSR) on the reduction of anxiety symptoms in females with social anxiety disorder.

Methods: The planning of this study was through a semi-experimental method of pretest and posttest type with two groups. The research population included the students of Sanandaj Payam-e-Noor University suffering from social anxiety disorder. The sample size was 40 women chosen by random sampling method and assigned to two groups of mindfulness-based stress reduction and cognitive behavioral therapy. The subjects participated were the students of Payam-e-Noor University of Kurdistan in the academic year 2013 - 2014. Data were collected by Liebowitz social anxiety scale (LSAS) and Minnesota multi-phasic personality inventory (MMPI). Data were analyzed by the analysis of covariance and dependent t-test.

Results: The results showed that both cognitive behavioral therapy ($P < 0.001, t = 2.40$) and mindfulness-based stress reduction were impressive in reducing the stress, while mindfulness-based stress reduction ($P < 0.001, t = 4.82$) was more effective than cognitive-behavioral therapy.

Conclusions: In order to improve and decrease the anxiety in these patients, it will be essential to consider these variables during designing appropriate interventions.

Keywords: Social Anxiety, Cognitive Behavioral Therapy, Mindfulness-Based Stress Reduction, Females

1. Background

Social anxiety disorder is a clinical problem characterized by anxiety about social situations in which people are faced with an assessment (1). Social anxiety disorder can be a very debilitating social relation. People suffering from this problem always feel the body symptoms associated with anxiety when encountering social situations (2). Projects have supported helpful treatments for social anxiety disorder (3).

The presence of mind to emphasize the attendance in present without interpretation and judgment is the symptoms of the disorder. One of the functions of the mind is in one's self-regulatory skills, including cognitive control of emotions and social situations (4). Research shows that the presence of mind by increasing self-regulation, cognitive, and emotional skills related to the frontal cortex increases

the individual's control over anxiety symptoms (5).

Mindfulness-based stress reduction is currently a training technique. Within the framework of the traditional medicine, this method is useful for people with this disorders related to stress. One of the aftermaths of mindfulness training is that the individuals would realize that majority of emotions, thoughts, and feelings are transient pulses. Mindfulness leads to the relief of pain, as well as increased welfare and reduced anxiety. Research shows that mindfulness by increasing self-regulation, cognitive, and emotional skills related to the frontal cortex leads to increased individual's control over anxiety symptoms (5). Therefore, being aware of the effectiveness of mindfulness-based stress reduction as a learning environment and interactions in the forehead can reduce anxiety as a new therapy (4).

Cognitive behavioral therapies of the social anxiety dis-

order are based on various cognitive models in cause and effect relationship of this disorder. Studies show the close cognition including understanding, memories, schema, evaluations, goals, and personal values play an important role in the complex skills occurrence such as problem-solving and adaptive strategies. In a distressed person, selection bias coincides with anxiety content, which proceeds against treating events confronting methods such as anxiety and inability. Because of the many problems in these patients, it is necessary to pay attention to reducing anxiety and other problems in people with social anxiety disorder. In addition, it is needed to conduct research in these areas.

2. Objectives

The present study aimed to investigate the effectiveness of the cognitive behavioral method and mindfulness-based anxiety reduction in social anxiety in order to choose the best method of reducing the anxiety symptoms.

3. Methods

The study was conducted through a semi-experimental method of pretest and posttest type with two groups. The research population included the students of Payam-e-Noor University suffering from social anxiety disorder selected by invitation and assigned to two treatment groups.

The sample was selected based on a pilot study that led to a sample size with 20 cases for each group (6). According to Delavar (6), there was one independent variable in the present study and based on one to 15 criterion, the sample size should be 15 or more. Then, people were selected based on the inclusion and exclusion criteria as shown in Box 1. They were also assessed by clinical interviews. Patients were randomly assigned into two groups to receive either MBSR or CBT.

3.1. Research Tools

In this study, the pretest was given to the group through the application of Leibowitz social anxiety scale (LSAS) (for the assessment of social anxiety) and Minnesota multi-phasic personality inventory (MMPI) (for synchronous disorders) and then the posttest was administered following mindfulness training.

3.1.1. Leibowitz Social Anxiety Scale (LSAS)

LSAS was gone forward by Leibowitz (7). Researchers (7) have shown its appropriate psychometric characteristics. This scale has 48 items and two subscales. Answers are

Box 1. Inclusion and Exclusion Criteria

Criteria
Inclusion criteria
Willingness to participate in the project
Ability to doing practice at home
Diagnosis of social anxiety based on DSM-V
The minimum education level of high school
Exclusion criteria
Unwillingness to participate in sessions
Disability to doing homework and being absent in more than 2 sessions
Having other treatment methods or having other illness or personality disorders or substance abuse

based on a Likert scale scoring from 1 to 4 for every question. The scores were summed and the scores beyond 38 were used for assigning to groups. The score of 65 is the cut-off point for this scale (7). The LSAS has demonstrated good psychometric properties for psychiatric outpatients in Iran (8). Internal consistency of LSAS with Cronbach's α of 0.97 is reported (8). Ghezlbash et al. (8) reported strong psychometric properties for LSAS (0.9 in the test-retest method).

3.1.2. Minnesota Multi-Phasic Personality Inventory (MMPI)

MMPI was proposed during the 1940s by Hathaway and McKinley, two researchers of the Minnesota University in the U.S. The test-taker in the MMPI must choose between three answers of "true", "false" and "cannot say"; when scoring of the test is carried out, the personality profile would be derived based on ten clinical scales each of which measuring an aspect of mental life. This was among one of the very first scales that its validity was determined through clinical scales by the diagnosis of psychiatrists. The initial form consisted of 565 questions applicable to all individuals aged above 16 with minimum 8 years of education. This test may be carried out in groups and the required time for completing is one hour. The new form comprises 567 questions, which was applied in this research (9). The MMPI-II has demonstrated good psychometric properties for psychiatric outpatients in Iran (10). Internal consistency of MMPI-II with Cronbach's α of above 0.80 is reported (10). Sadeghi et al. (10) reported psychometric properties for the subscales of MMPI (between 0.50 and 0.65 with test-retest method).

3.1.3. Exerting The Therapy Protocols of The Medical Intervention

For the group under cognitive behavioral therapy, the number of sessions ranged 8-13 in which each session lasted 45 min. The second group underwent the

mindfulness-based stress reduction in weekly intervals during 8 weeks in which each session lasted 2.5 hours. Behavioral-cognitive therapy of social anxiety was based on Clark and Beck (11) that used video and audio feedback in their therapy. It was attempted to give the assignment of voice tape when doing a social performance, which showed considerable results. Methodology: Mindfulness-based therapeutic method was in the form of an 8-10 week schedule, which in the case of this study included 8 weeks with one session held every week. Numerous meditation skills were taught during these sessions so that the participants learned how to concentrate on their own activities and be aware of their own state and to observe without making any judgments whenever emotions, feelings, or cognitions are being processed. Therefore, the participants would learn to know thoughts and feelings while not being taken away with their contents.

To analyze data, paired t-test and covariance analysis were used. Before running the statistical test of establishing the normality hypothesis, variances homogeneity and homogeneity of regression slopes were investigated.

4. Results

Patients were ranged from 18 to 30 years old. The mean age of the participants was 22.37 ± 2.13 years. Table 1 shows the mean and standard deviation in groups. Table 2 shows the results of the dependent t-test analysis of cognitive-behavioral therapy and mindfulness-based stress reduction.

Table 1. Mean And Standard Deviation of Social Anxiety in Pretest and Posttest in Groups^a

Group	Pretest	Posttest
Cognitive-behavioral therapy	73.66±20.67	54.16±36.02
Mindfulness therapy	129.60±17.78	91.00±18.94

^aValues are presented as mean ± SD.

Table 2 shows the results of the t-test. The mean difference of pretest-posttest in the CBT group was 19.50 showing that the significance level for pretest-posttest difference of anxiety in the CBT group is less than 0.001. Therefore, the results showed CBT has an effect on reducing anxiety.

The mean difference between the pretest and posttest of social anxiety in the mindfulness group was 19.50. The significance level for pretest-posttest difference of social anxiety in mindfulness-based stress reduction group was 38.60. The significance level for pretest-posttest difference of anxiety in the mindfulness group was less than 0.001

($P < 0.01$, $t = 4.82$). Thus, the results showed mindfulness-based stress reduction has an effect on reducing anxiety in patients with this disorder. In total, the results showed CBT and MBSR have significant effects on reducing the anxiety symptoms.

5. Discussion

The present study aimed to compare the CBT and MBSR in women with social anxiety disorder. As shown, both methods of CBT and MBSR are effective in the reduction of stress. Nevertheless, regarding the stress reduction among the subjects with a social anxiety disorder, mindfulness-based therapy had a better therapeutic effect compared to the cognitive-behavioral therapy. The main cause may be related to the manner of the cognitive-behavioral therapy in the subjects with this disorder.

Not only previous studies have supported the application of mindfulness-based stress reduction in patients with this disorder (12-19) but also therapists have supported CBT in patients improvement (20-22). Furthermore, some studies have investigated MBSR versus CBT (23-26). The findings of the Stravynski et al. study (27) suggest that social phobia includes problems with cognitive functions. Their claim is that cognitive behavioral therapy is the treatment of choice for social anxiety. The research of Basaknezhad et al. (28), and Dadashzadeh et al. (29) showed the effectiveness of cognitive behavioral therapy on the reduction of social anxiety. In the neurobiological level, it is clear that mindfulness causes interactions between two hemispheres and between the limbic system and the cerebral cortex. It seems some therapeutic impacts in conditions including anxiety and depression resulted from the stimulation of tight brain hemisphere. The attention of mindfulness is paid to the body symptoms including the heartbeat, sweating, rapid breath, stiffness of the shoulders-brain cortex functions including empathy, compatibility with self and others, mental balance, and the stress flexible answer in situations to regulate the stress response and the ability of low regulation if fear into access. The result of Yan et al. (5) showed the anxiety reduction techniques based on mindfulness are significantly effective in anxiety. In addition, mindfulness practice and action can have positive and significant effects on the brain, the autonomic nervous systems, and health behaviors including eating sleeping. Therefore, the mindfulness through adhesion can reduce the rumination and psychological pain. As a fact, in social anxiety disorder, one of the problems caused by the subject avoidance of the situation or continuous anxiety is rumination, which appears in some situations. Therefore, mindfulness can cause a reduction in anxiety. In this research, the Clark method was used

Table 2. The Results of the Dependent t-Test Analysis of Cognitive-Behavioral Therapy and Mindfulness-Based Stress Reduction

Therapy	MD	SD	T	df	P Value
Cognitive- behavioral therapy	19.50	19.85	2.40	38	0.000
Mindfulness-based stress reduction	38.60	25.31	4.82	38	0.000

extracted from his articles. In this research, the therapist focused on both subject cognition and behavior, avoidance and reflectance from anxiety signs and attention was paid to the situation the subject exists in it. This task caused the subjects with low concentration could not decrease or suppress their anxiety in a suitable situation.

Limitations of this study consisted of the lack of a placebo group. Therefore, it is suggested using a control group in the future studies in order to increase the validity of results. Furthermore, the small sample size was another limitation of the study that prohibited the generalizability of the findings. In addition, some patients were not willing to take part in the treatment group. If therapists help to increase their willingness by confirming the usefulness of the technique in reducing anxiety, they can attract patients to participate in sessions.

Acknowledgments

The researchers wish to thank all persons who participated in the study.

Footnotes

Authors’ Contribution: Fatemeh Abbasi was corresponding author responsible for study concept and design, statistical analysis, and interpretation of data. Kajar Shariati was responsible for the acquisition of data. Fakhri Tajikzadeh was responsible for drafting and revision of the manuscript.

Funding/Support: No funding and support are reported.

References

1. Donovan CL, Cobham V, Waters AM, Occhipinti S. Intensive group-based CBT for child social phobia: a pilot study. *Behav Ther.* 2015;**46**(3):350–64. doi: [10.1016/j.beth.2014.12.005](https://doi.org/10.1016/j.beth.2014.12.005). [PubMed: 25892171].
2. American Psychiatric Association . *Diagnostic and statistical manual of mental disorders, (DSM-5)*. American Psychiatric Pub; 2013. doi: [10.1176/appi.books.9780890425596](https://doi.org/10.1176/appi.books.9780890425596).
3. Tavoli A, Allahyari A, Azadfalsh P, Fahi-Ashtiani A, Melyani M. A Comparison of the effectiveness of interpersonal and cognitive behavioral therapies for social anxiety disorder. *J Behav Sci.* 2013;**7**(3).
4. Sharma M, Rush SE. Mindfulness-based stress reduction as a stress management intervention for healthy individuals: a systematic review. *J Evid Based Complementary Altern Med.* 2014;**19**(4):271–86. doi: [10.1177/2156587214543143](https://doi.org/10.1177/2156587214543143). [PubMed: 25053754].

5. Yan H, Hong-Fu Z, Jing-Y L; Yang. Effectiveness of mindfulness-based stress reduction and mindfulness-based cognitive therapies on people living with HIV: A systematic review and meta-analysis. *Int J Nurs Sci.* 2015;**2**(3):283–94. doi: [10.1016/j.ijnss.2015.07.003](https://doi.org/10.1016/j.ijnss.2015.07.003).
6. Delavar A. *Research Methods in psychology and educational Sciences*. Tehran: Edited Press; 2007.
7. Heimberg RG, Horner KJ, Juster HR, Safren SA, Brown EJ, Schneier FR, et al. Psychometric properties of the Liebowitz Social Anxiety Scale. *Psychol Med.* 1999;**29**(1):199–212. [PubMed: 10077308].
8. Ghezlbash S, Peyrovi H, Inanloo M, Haghani H. Relationship between Social Anxiety and Some Demographic Characteristics among Nursing Students. *J Health Care.* 2015;**17**(1):19–29.
9. Lufi D, Awwad A. Using the minnesota multiphasic personality inventory-2 to develop a scale to identify test anxiety among students with learning disabilities. *Learn Disabil Q.* 2013;**36**(4):242–9. doi: [10.1177/0731948712471199](https://doi.org/10.1177/0731948712471199).
10. Sadeghi M, Mirzamani SM, Kamkari K, Shokrzade S. [Investigation of personality profile of addicted women with emphasis MMPI- 2]. *J Couns Psychother.* 2014;**3**(12):25–37. Persian.
11. Clark DA, Beck A. T. *Cognitive therapy of anxiety disorders: Science and practice*. New York: Guilford Press; 2010.
12. Serpa JG, Taylor SL, Tillisch K. Mindfulness-based stress reduction (MBSR) reduces anxiety, depression, and suicidal ideation in veterans. *Med Care.* 2014;**52**(12 Suppl 5):S19–24. doi: [10.1097/MLR.000000000000202](https://doi.org/10.1097/MLR.000000000000202). [PubMed: 25397818].
13. Song Y, Lindquist R. Effects of mindfulness-based stress reduction on depression, anxiety, stress and mindfulness in Korean nursing students. *Nurse Educ Today.* 2015;**35**(1):86–90. doi: [10.1016/j.nedt.2014.06.010](https://doi.org/10.1016/j.nedt.2014.06.010). [PubMed: 25066651].
14. Hjeltnes A, Moltu C, Schanche E, Jansen Y, Binder PE. Both sides of the story: Exploring how improved and less-improved participants experience mindfulness-based stress reduction for social anxiety disorder. *Psychother Res.* 2018;**28**(1):106–22. doi: [10.1080/10503307.2016.1169330](https://doi.org/10.1080/10503307.2016.1169330). [PubMed: 27093373].
15. Hjeltnes A, Molde H, Schanche E, Vollestad J, Lillebostad Svendsen J, Moltu C, et al. An open trial of mindfulness-based stress reduction for young adults with social anxiety disorder. *Scand J Psychol.* 2017;**58**(1):80–90. doi: [10.1111/sjop.12342](https://doi.org/10.1111/sjop.12342). [PubMed: 27929608].
16. Freedenberg VA, Hinds PS, Berul CI, Friedmann E. Mindfulness based stress reduction and group support decrease stress, anxiety and depression in adolescents with cardiac diagnoses: A randomized two-group study. *Circulation.* 2016;**134**(1).
17. Lenze EJ, Hickman S, Hershey T, Wendleton L, Ly K, Dixon D, et al. Mindfulness-based stress reduction for older adults with worry symptoms and co-occurring cognitive dysfunction. *Int J Geriatr Psychiatry.* 2014;**29**(10):991–1000. doi: [10.1002/gps.4086](https://doi.org/10.1002/gps.4086). [PubMed: 24677282]. [PubMed Central: PMC4136987].
18. Arch JJ, Ayers CR, Baker A, Almklov E, Dean DJ, Craske MG. Randomized clinical trial of adapted mindfulness-based stress reduction versus group cognitive behavioral therapy for heterogeneous anxiety disorders. *Behav Res Ther.* 2013;**51**(4-5):185–96. doi: [10.1016/j.brat.2013.01.003](https://doi.org/10.1016/j.brat.2013.01.003).
19. Jazaieri H, Lee IA, Goldin PR, Gross JJ. Pre-treatment social anxiety severity moderates the impact of mindfulness-based stress reduction and aerobic exercise. *Psychol Psychother.* 2016;**89**(2):229–34. doi: [10.1111/papt.12060](https://doi.org/10.1111/papt.12060). [PubMed: 25684277]. [PubMed Central: PMC4537407].

20. Gregory B, Peters L, Abbott MJ, Gaston JE, Rapee RM. Relationships between probability estimates, cost estimates, and social anxiety during CBT for social anxiety disorder. *Cognit Ther Res*. 2015;39(5):636-45. doi: [10.1007/s10608-015-9692-6](https://doi.org/10.1007/s10608-015-9692-6).
21. Zalta AK, Dowd S, Rosenfield D, Smits JA, Otto MW, Simon NM, et al. Sleep quality predicts treatment outcome in CBT for social anxiety disorder. *Depress Anxiety*. 2013;30(11):1114-20. doi: [10.1002/da.22170](https://doi.org/10.1002/da.22170). [PubMed: [24038728](https://pubmed.ncbi.nlm.nih.gov/24038728/)]. [PubMed Central: [PMC4043139](https://pubmed.ncbi.nlm.nih.gov/PMC4043139/)].
22. Gordon D, Wong J, Heimberg RG. Cognitive-behavioral therapy for social anxiety disorder: The state of the science. In: Weeks JW, editor. *The Wiley blackwell handbook of social anxiety disorder*. Wiley; 2014. p. 477-97.
23. Thurston MD, Goldin P, Heimberg R, Gross JJ. Self-views in social anxiety disorder: The impact of CBT versus MBSR. *J Anxiety Disord*. 2017;47:83-90. doi: [10.1016/j.janxdis.2017.01.001](https://doi.org/10.1016/j.janxdis.2017.01.001). [PubMed: [28108059](https://pubmed.ncbi.nlm.nih.gov/28108059/)]. [PubMed Central: [PMC5376221](https://pubmed.ncbi.nlm.nih.gov/PMC5376221/)].
24. Faucher J, Koszycki D, Bradwejn J, Merali Z, Bielajew C. Effects of CBT Versus MBSR Treatment on Social Stress Reactions in Social Anxiety Disorder. *Mindfulness*. 2016;7(2):514-26. doi: [10.1007/s12671-015-0486-4](https://doi.org/10.1007/s12671-015-0486-4).
25. Goldin PR, Morrison A, Jazaieri H, Brozovich F, Heimberg R, Gross JJ. Group CBT versus MBSR for social anxiety disorder: A randomized controlled trial. *J Consult Clin Psychol*. 2016;84(5):427-37. doi: [10.1037/ccp0000092](https://doi.org/10.1037/ccp0000092). [PubMed: [26950097](https://pubmed.ncbi.nlm.nih.gov/26950097/)]. [PubMed Central: [PMC4837056](https://pubmed.ncbi.nlm.nih.gov/PMC4837056/)].
26. Arch JJ, Ayers CR. Which treatment worked better for whom? Moderators of group cognitive behavioral therapy versus adapted mindfulness based stress reduction for anxiety disorders. *Behav Res Ther*. 2013;51(8):434-42. doi: [10.1016/j.brat.2013.04.004](https://doi.org/10.1016/j.brat.2013.04.004). [PubMed: [23747582](https://pubmed.ncbi.nlm.nih.gov/23747582/)].
27. Stravynski A, Arbel N, Bounader J, Gaudette G, Lachance L, Borgeat F, et al. Social phobia treated as a problem in social functioning: a controlled comparison of two behavioural group approaches. *Acta Psychiatr Scand*. 2000;102(3):188-98. [PubMed: [11008854](https://pubmed.ncbi.nlm.nih.gov/11008854/)].
28. Basaknezhad S, Nyazy Z, Davoudi I. Effectiveness of cognitive-behavioral group therapy on anxiety Kendall method teenage girls. *Behav Sci Res*. 2011;9(4).
29. Dadashzadeh H, Yzdandust R, Gharai B, Asghrnezhad AA. Compared the efficacy of cognitive-behavioral group therapy for social anxiety disorder. *J Psychol Univ Tabriz*. 2009;4(15):103-31.