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Effectiveness of mindfulness training on reduction of distress of patients infected by breast cancer

Dr. Hassan Baniasadi[a*], Dr. Farah Lotfi kashani[b], Zahra Jamshidifar[c]

Psychology Dept., Faculty of literature and Human science, Shahid Bahonar University of Kerman

Psychology Dept., Faculty of Psychology, Islamic Azad University, Roudehen Branch

MA, counseling, Islamic Azad University, Science and Research Branch of Kerman

Abstract

The cancer involves its infected people in all mental pressures; the pressures that affect their life, job and social relationships and if they are not solved, complicate the patient's status. Cognition therapy based on mindfulness is a method to reduce the distress. The objective of this study is to investigate the effectiveness of mindfulness training on reduction of distress of patients infected by breast cancer. For this purpose, 30 women infected by breast cancer hospitalized in Shohada Hospital of Tehran were selected through convenient method and processed randomly in two test and control groups. Before and after mindfulness training, the groups were tested with respect to the distress level. Mindfulness was trained to the test group during 8 sessions each 1 hour. The summary of ANCOVA between two groups of distress scores of testees in both pretest and posttest stages indicated that training the mindfulness has been effective on reduction of distress scores of trained patients. Thus, applying cognition therapy method based on mindfulness reduces the distress and defective thinking pattern of patients infected by cancer and this intervention method may be used independently or along with other treatment methods such as pharmacotherapy to reduce the distress of these sufferers.

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Keywords: Mindfulness, Distress, Breast Cancer

1. Introduction

The increasing incidence of cancer within the recent decades and its harmful effects on all physical, emotional, intellectual, social and economical aspects caused in addition to the people, even the specialists pay attention to this disease more than ever and introduce the cancer as the major health problem of century. According to the last statistics announced by cancer research center of Iran University of Medical Education, the rate of infection by breast cancer in Iranian women is 27.5 per 1000 persons it means more than 8000 new cases of breast cancer are annually diagnosed in Iran of which 7778 cases is occurred for women. This cancer involves all age ranges between 15 to 85, but the most prevalent age for its incidence is between 45 to 55 (Akbari et al, 2008).

The investigations indicated that the cancer involves its infected people in all mental pressures and may create different mental and social disorders in their life. The pain resulted from disease, concern about the future of family members, fear from death, complications caused by disease treatment, reduction of performances, disorder in mental image and sexual problems are considered as agents that disorder the mental health of patient infected by cancer.

Corresponding Author: Dr. Hassan Baniasadi
E-mail: zjamshidifar@yahoo.com

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The crises caused by cancer cause lack of balance and inconsistency of mind, physique and spirit. But the most moods appeared in the patient within this period are despair and hopelessness (Akbari, 2010). For reducing this distress that starts the other disorders and problems in their life, use of psychological therapies is very important. One of innovations in the psychological therapies particularly treatment of cancer is combination of eastern intellectual traditions such as mindfulness meditation to the traditional cognitive behavior therapy which is referred to as third wave of behavior therapy (Hayes, Follette & linehan, 2004) and is used to prevent distress and depression (Witkiewitz, K., Marlatt, A., and Walker, 2005). The researchers believe that applying of observational thought style due to mechanisms hidden therein such as acceptance, increase in consciousness, desensitization, presence at moment, observation without judge, confronting and releasing in combination with the techniques of traditional cognitive behavior therapy may reduce subsequent symptoms and consequences, moreover increases the effectiveness of treatment and helps welfare of people (Teasdale,Williams, Segal & Soulsby(2000).

Mindfulness is a receptive consciousness without judging the current events (Ryan & Brow 2003); a consciousness that is created due to focusing on the goal in a current moment without moment by moment inference (Kabat Zihn, 2000). The mindfulness people perceive the internal and external realities freely and without falsification and have a great capability to encounter a wide domain of thoughts, emotions and experiences (pleasant or unpleasant) (Brown, 2007). Mindfulness has positive relationship with mental and psychological peace and mental health, whilst it is in connection with the low rate of psychological calmness (More, 2009). Mindfulness may be assumed as the capability in self-regulation of attention and leading it towards the task. Accordingly, the proper regulation of attention is the central part of mindfulness (Baer, 2003; Goldin, 2010). The mindfulness is observing the internal and external stimulants so they occur, without any judge and prejudice and in fact a skill that allows the people to accept the events at the present time lower distressingly (Kabat Zihn, 2002; Robins, 2002; Baer, 2003; Borkovec, 2002).

Training the mindfulness is effective on reduction of depression, anxiety and psychological adaption (Bohlmeijer, 2010). According to the applied researches, mindfulness training reduces the symptoms of anxiety and depression in patients infected by generalized anxiety disorde and causes the improvement of the quality of life and reduction of depression in the students and prevents the relapse and regression of depression and anxiety (Kavyani, 2008). The summary of studies applied by Kavyani (2008), indicates that training the cognition therapy based on mindfulness promotes the quality of life of depressed people. Therefore, in this study we are seeking for the answer of this question that if mindfulness training is effective on the distress of patients infected by breast cancer?

Methodology

This study is semi-experimental which has been applied as pretest – posttest and control group, so that out of woman patients infected by breast cancer hospitalized in Shohadaye Tajrish Hospital of Tehran, firstly 30 persons were selected through convenient method who were divided in two test group (18 persons) and control group (12 persons) and were tested by means of Kessler's Distress Assessment Scale (K10). The mindfulness was trained to the test group during 8 sessions, each 1 hour. But the control group didn't receive any training. At the end, the both groups were examined by distress test.

Distress scale (K10): This questionnaire is a 10-item scale which has been provided and normalized by Kessler et al (2002) that examines the mental status of patient within the recent month. The answer consists of 5 options including ever, most times, sometimes, seldom and never and is scored between 0 and 4. Thus, the maximum score in K10 equals to 40 (Kessler, 2003). Vaziri and Lotfikashani in a research study have obtained the reliability of Kessler's K10 scale in Iranian population equal to 0.83, according to Cronbach's alpha coefficient (Vaziri & Lotfikashani, 2011).

Table 1: Mindfulness training

1.1.1. Sessions	*1.1.2. Content of training sessions*
1.1.3. First	*1.1.4. Review on structure and purposes of sessions and main rules*
1.1.5. Second	*1.1.6. Performing meditation practice including physical examination, presence of mind through breathing, explanation of relationship between thoughts and sensations*
1.1.7. Third	*1.1.8. Practicing the "seeing" or "hearing" techniques, obtaining feedback, sitting meditation along with creation of pain sensation;*
1.1.9. Fourth	*1.1.10. Practicing "seeing" or "hearing" techniques, sitting meditation for 30min.*
1.1.11. Fifth	*1.1.12. Practice of walking with presence of mind, revising the practice, examination of testees' reactions*
1.1.13. Sixth	*1.1.14. Group discussion, practicing the breathing environment, physical meditation together with confronting the thoughts and breath control*
1.1.15. Seventh	*1.1.16. Presenting explanations about the relationship between activity and mood, practice of observing the relationship between activity and mood*
1.1.17. Eighth	*1.1.18. Presenting a protecting plan, practice of physical meditation*

Findings

To investigate the effect of applied treatment on reduction of testees' distress, after omitting the outliers, the descriptive elements of test and control groups are presented in pretest and posttest.

Table 2: Descriptive of scores distress in two groups

1.1.19. Groups	*1.1.20. Mean value*	*1.1.21. Standard deviation*	*1.1.22. Number*
1.1.23. Pretest (Experimental)	*1.1.24. 15.28*	*1.1.25. 3.707*	*1.1.26. 18*
1.1.27. Pretest (control)	*1.1.28. 13.83*	*1.1.29. 6.365*	*1.1.30. 12*
1.1.31. Posttest (Experimental)	*1.1.32. 12.89*	*1.1.33. 3.324*	*1.1.34. 18*
1.1.35. Posttest (control)	*1.1.36. 13.75*	*1.1.37. 6.002*	*1.1.38. 12*

To compare the distress scores before and after mindfulness test, firstly the hypotheses of analysis of covariance was examined. The results of Lone test F=750.0 indicated that whereas the significance levels obtained for each one of

factors is more than 0.05, the data has not questioned the hypothesis of covariance error equity. Furthermore, considering that the interaction between pretest of distress elements and group is not significant, the data supports the hypothesis of regression gradients uniformity. Therefore, the covariance should be applied for testing the main variables of distress and group posttest. The results of ANCOVA by controlling the pretest and analyzing the posttest of test and control groups' distress factors indicate that a significant difference exists between two groups (F(25 and 7)=5.372, p=0.001).

Table 3: Summary of ANCOVA between two groups

1.1.39. Source	*1.1.40. Ss*	*1.1.41. Df*	*1.1.42. Ms*	*1.1.43. f*	*1.1.44. Sig.*	*1.1.45. Eta.*
1.1.46. Pretest	*1.1.47. 558.718*	*1.1.48. 1*	*1.1.49. 0.718*	*1.1.50. 0.020*	*1.1.51. 0.001*	*1.1.52. 0.957*
1.1.53. Group	*1.1.54. 33.205*	*1.1.55. 1*	*1.1.56. 0.205*	*1.1.57. 35.422*	*1.1.58. 0.001*	*1.1.59. 0.567*
1.1.60. Error	*1.1.61. 25.310*	*1.1.62. 27*	*1.1.63. 0.937*	*1.1.64.*	*1.1.65.*	*1.1.66.*

So, the hypotheses required for performing ANCOVA were accepted. The summary of analysis of covariance has been provided in table 4. Thus, as it is observed in the above table, the calculated f is significant within the alpha range ($p<0.0001$). After adjusting the pretest scores, a significant effect exists between two groups. ($F_{(1,20)}=18$, $P<0.0005$, Partial Eta=0.957) and $R^2=0.957$ (adjust $R^2=0.954$), ultimately it is concluded that by fixing the pretest scores in both groups, posttest scores in two groups are different significantly. Hence, the effect of mindfulness training in test group was more significant on reduction of distress comparing to control group.

Discussion and conclusion

The findings show that incidence of distress and in general psychological problems in the patients infected by cancer is 25% to 30% (Zabora, Korba et al, 2001) and one of the most important agents affecting the psychological status of these patients is how to deal with disease and confront the stresses resulted from infecting by cancer. The objective of this study was effectiveness of mindfulness training on reducing the distress of patients infected by cancer. Summary of data analysis by covariance method indicated that mindfulness training was effective on reducing the distress of trained group more than control group; in other word, the mindfulness through combining the vivacity and clearly experiencing, may make positive changes in happiness and welfare that these findings are corresponding to the findings of Monti, Peterson, Shakin, Kunkel, Hauck,Pequignot (2005) Ledesma and Kumano (2008) and Zainal Booth, Huppert(2012) . According to the findings of this study, it is concluded that distress of women infected by cancer is often mental and cognitional, because in this method the person learns how to give up his/her attitude and beliefs which rooted in the past and affected by future fears and concerns temporarily by means of techniques related to experiencing the present moment (Kabat Zihn, 2002). Also, this perspective is created for them to accept all affairs (pleasant and unpleasant) without judging. Adopting such a policy is useful particularly for the patient suffers from cancer that experiences painful sensations such as hopelessness, failure and sadness. Ledesma, Kumano (2008) believe that the mechanism of mindfulness is effective on excitement by centralized breathing. Ultimately, it is concluded that using cognitive therapy based on mindfulness results in reduction of distress and defective thinking pattern of patients infected by cancer. Therefore, this therapeutic method may be used independently or along with other treatment methods such as pharmacotherapy and so improve the psychological and behavioral problems caused by distress.

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