

Metacognitive Therapy and Depression of Women with Breast Cancer

Mansure Elzami ¹, Bahman Bahmani ^{1*}, Tahereh Kermani Ranjbar ², Manuchehr Azkhosh ¹, Robab Anbiaee ², Fatemeh Karimnejad Azar ³

1. Department of Counseling, School of Behavior Sciences, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.

2. Cancer Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

3. Department of Psychology, Faculty of Psychology, Science and Research Branch, Islamic Azad University, Saveh, Iran.

Article info:

Received: 26 May 2014

Accepted: 18 Sep. 2014

ABSTRACT

Objective: This study aimed to examine the effectiveness of metacognitive therapy on decreasing depression in women with breast cancer. A single-case design was employed in this research.

Methods: An AB form of single-subject experimental design was used in this study with 3 baselines (every 10 days) before intervention stage and two measurements during intervention stage and one follow-up (after two month). Our statistical population was chosen from women who had referred to radiotherapy department of Imam Hussein Hospital in Tehran. Out of them, 3 patients whose age range was 20 to 55 years, with non-metastatic tumor, no prior history of psychiatric disorders before cancer, scored >20 (moderate depression) by Beck Depression Inventory, were selected through purposeful sampling. Intervention included 8 sessions of 60 minutes of metacognitive therapy once a week, which has been designed to suit of the patients with specific needs. Beck Depression Inventory (BDI), Ruminative Response Scale (RRS), and Depression Metacognitive Beliefs Scale (DMB-S) were employed to collect the data.

Results: The result of the analysis showed that the highest level of improvement in depression was 56% and the lowest level was 37%. In addition, the highest percentage of improvement in 'thought rumination' was 35%, while the lowest percentage of improvement was 21%. Finally, the highest percentage of improvement in 'depression metacognitive beliefs' was 87%, whereas the lowest percentage was 58%. In summary, the results indicated that metacognitive therapy would result in decrease of depression scores (in BDI scale), 'thought rumination' and 'depression metacognitive beliefs' (in DMB scale) and this effectiveness was persistent after two months follow-up.

Conclusion: It seems that metacognitive therapy can help women with breast cancer to reduce their depression and 'thought rumination.'

Keywords:

Metacognitive therapy,
Depression, Breast cancer

1. Introduction

Breast cancer is the result of irregular cell division and formation of malignant epithelial cells covering the ducts or lobules of breast tissue in women and rarely in men (Jemal et al., 2009). Breast cancer constitutes 10% of

all cancer incidences and 23% of cancer cases in women. According to the latest statistics released by Cancer Research Center of Shahid Beheshti University of Medical Sciences, the incident rate of cancer affliction in Iranian women is 27.5 per 100000 (Jemal et al., 2007). Depression is the most prevalent psychological consequence of cancer affliction due to the sex role identity of women

* Corresponding Author:

Bahman Bahmani, PhD

Address: Department of Counseling, School of Behavior Sciences, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran.

Tel: +98 (912) 5992685

E-mail: ba.bahmani@uswr.ac.ir

following the awareness or diagnosis of the disease. Depression in women with breast cancer results in gradual loss of psychological energy, increase of stress due to the disease and its treatment, decrease of immunity function, deteriorating of the quality of relationship with the physician, decrease in sexual drive, and failure in following the instructions given by the treating doctor (Moradimanesh et al., 2011). In a study conducted by Monny and associates (2004), it was found that 58% of the cancer patients showed minor signs of depression and more than 38% showed signs of major depression. Many researches adopt different approaches of interventions, including spiritual and semantic (Falah et al., 2011), cognitive-existential (Bahmani, 2011 & Kissan et al., 2004) and cognitive-behavioral therapy to treat depression in patients with breast cancer.

As it was mentioned, depression in patients with breast cancer would lead to emotional (anxiety, anger), and obsessive thoughts (preoccupation about causes of disease, and concerns about the present and future). Finally, it results in gradual loss of mental energy and mood. Now, by considering negative consequences of breast cancer such as poor quality of life, fear of recurrence, high levels of anxiety and depression, and worries about low chance of survival, it seems that preparing professional psychosocial support to meet the patients' specific needs, is vital.

However, the ambiguities about appropriate and efficient intervention methods to reduce patients' distresses still remain. In this regard, it seems that, metacognitive therapy by focusing on metacognitive aspects such as positive and negative beliefs and rumination that are main components of depression may be an effective treatment in situations that time, due to whatever reasons, is limited. This method can modify evaluation of cognitions by metacognition changes, less direct manipulation on feelings and consequently lead to decrease in patients' depression.

In fact, cognitive view with respect to emotional disturbances, considers rumination as the main component of depression at its start and later on its persistence (MC et al., 2000). Rumination is defined as a persistent and exacerbating thinking that focuses on a subject. This thought focuses on consciousness involuntarily and divert the attention from a specific subject and goal (Joorman, 2006) toward other issues while trying to find answers to questions such as "why me?" that usually have no specific answer. Therefore, rumination results in persistence of ambiguity and disparity between what the person knows and what the person wishes to know (Mohammadkhani & Farjad, 2009).

Numerous research results have indicated that metacognitive therapy clearly has positive effect on depression disorder (Wells et al., 2008; Wakili, 2013; Sareh, 2014; Papageorgiou, 2003; Hasanvandi, 2013). Although according to the research reports, the majority of the patients are treated partially or completely (Sareh, 2014; Papageorgiou, 2003; Wells, 2009) as insufficient number of researches have been conducted worldwide or specifically in Iran, the effectiveness of this treatment model has not been studied in people with physical diseases. So this research was designed to examine the effect of metacognitive therapy on the depression in women with breast cancer.

2. Methods

An AB form of single-subject experimental method was used in this study as a basic research design with 3 baselines (every 10 days) before intervention stage and two measurements during intervention stage and one follow-up (two months after intervention).

For this research, first, an approval was taken from the University. Then, participants were selected according to inclusion and exclusion criteria.

The participants were assessed via 3 questionnaires (BDI scale) at the first baseline, 20 days before the intervention (A1), the second baseline, 10 days before the intervention (A2), and the third one at the first session (A3). If any participant got a high score (Beck Depression Scale > 20), she was enrolled in the interventions.

"Metacognitive" intervention was held in 8 sessions of 60 minutes long once a week, which has been designed to suit of the patients with specific needs.

Participants were assessed through questionnaires at the beginning of the fourth session (B1) and eighth session (B2). Follow-up measurements were conducted two months after intervention (F1).

Our statistical population was chosen from women with breast cancers who had referred to radiotherapy department of Imam Hussein Hospital in Tehran and were selected through purposeful sampling.

The inclusion criteria included married patients between the age of 20 to 55 years old, minimum degree of diploma education, diagnosed by a psychiatrist through Diagnostic and Statistical Manual of Mental Disorders - Fourth edition - Text revision IV-TR as symptom of severe depression but not major syndrome (severe; upper

than moderate but lower than major), with non-metastatic tumor, and no prior history of psychiatric disorders, and having upper than moderate score (> 20) with regard to BDI scale.

The exclusion criteria included metastasis and malignancy of the disease, affliction to other serious physical diseases other than cancer, any other psychotic and severe neurotic diagnosis of psychological disorders (DSM-IV-TR), and any history of participation in cognitive therapy intervention. Questionnaires that used in this study were Beck Depression Inventory-II (BDI-II), Ruminative Response Scale (RRS) and Depression Metacognitive Beliefs Scale (DMB-S).

Beck Depression Inventory-II (BDI -II)

This questionnaire is a common tool for self-assessment of depression that contains 21 questions, designed by Beck et al. (1979). The questionnaire has been psychometrically re-evaluated several times since its introduction. The result of a meta-analysis revealed that the internal consistency of the tool varied between 0.73 and 0.86. The internal consistency of the instrument for the Iranian students is 0.87 while its reliability is 0.73 through test-retest procedure. The questioner validity and its construct validity was examined and confirmed through factor analysis procedure through employing a sample of 353 subjects by Dobson and Mohammadkhani, 2006.

Ruminative Response Scale (RRS): This instrument was designed by Nolen-Hoeksema et al. (1993) and contains 23 question items rated on 4-point Likert scale. This instrument assesses the involvement of depressed person in ruminative behavior or thought. The score of this tool ranges from 22 to 88 (Alder, 2007). The α coefficient reported for this tool is 0.90 and its reliability was assessed through retest procedure as 0.67 (Yook et al., 2010). The α coefficient reported for the Iranian sample is 0.90 (Mansori, 2009).

Depression Metacognitive Beliefs Scale (DMB-S): This is a complementary clinical scale that is known as the basic depression scale. By completion of the questioner, the physician who treats the patient identifies his or her basic negative and positive beliefs and styles of thought, which need treatment. In addition, the questioner provides a general perception about all behaviors that the patient is involved during a low mood state. This questioner is designed based on metacognitive model of depression for the purpose of monitoring changes. It evaluates the metacognitive components involved in

persisting depression. The tool was designed by Wells (2009) and employed by them, but no report on its validity and reliability are available.

For interpreting the results, visual inspection was employed and for analyzing the data, clinical significance was employed.

Metacognitive treatment was followed according to session treatment manual for depression (Wells, 2009).

In the first session, a case formulation based on the metacognitive model for depression was prepared for each patient. Then, the patients were socialized to the model in which pervasive thinking and self focus maintain depressive symptoms. In the first session, Attention Training Techniques (ATT) was introduced as a method of enhancing awareness of attentional flexibility and during treatment sessions, ATT was practiced. The next 3 sessions comprised training with regard to further awareness of triggers for depressive rumination and challenging negative beliefs about the uncontrollability of rumination. This was achieved using techniques like 'detached mindfulness' and 'rumination postponement experiments.' When patients' negative beliefs about uncontrollability were below 10%, treatment was moved on to challenge positive beliefs about the usefulness of rumination. This was accomplished using Socratic dialogue and behavioral experiments evaluating the usefulness of rumination. When both negative and positive beliefs were at or below 10%, the final treatment sessions involved limiting avoidance and enhancing coping behavior such as social activities/interests and planning ahead. Finally, an individualized blueprint for relapse prevention was developed, which involved a diagrammatic formulation of the metacognitive model for depression and a plan for dealing with negative thoughts and feelings in the future. A complete session by session manual of Meta cognitive therapy for depression can be found in Wells study (Wells, 2009).

The therapist had a postgraduate degree (MA) in family counseling from University of Social Welfare and Rehabilitation Sciences, under supervision of Dr. Bahmani in Sina Counseling and Rehabilitation Clinic and received the certificate of metacognitive treatment for depression from Psychology and Counseling Organization in Iran.

All sessions were free and informed consent obtained from patients and ethical issues like confidentiality, privacy, and participant's right to leave intervention were taken into consideration.

Table 1. Percentage of depression improvement (in BDI scale) during metacognitive therapy.

	First participant	Second participant	Third participant
Baseline score	22.66	36.66	28
Final score	9.5	21	17.5
Percentage of improvement	56	42	37

PRACTICE in
CLINICAL PSYCHOLOGY

3. Results

The study data were collected at 6 times measuring the process of change in depression, basic rumination responding, and basic depression. It included 3 baseline measurements (first baseline, 20 days before the treatment (A1), the second baseline 10 days before the start of intervention (A2), and the third baseline in the introductory session (A3), 2 measurements during the intervention, that is, and finally two months after the end of treatment. The results are presented in the following Tables and Graphs. Data analysis proceeded by first calculating the percentage of improvement.

Table 1 presents the percentage of improvement in BDI scale for every patient. The highest percentage of improvement occurred in patient 1 (56%) and the least percentage was observed in patient 3 (37%).

Table 2 shows the percentage of improvement in 'thought rumination' scale for every patient. The highest percentage of improvement occurred in patient 1 (35%) and the least percentage was observed in patient 3 (21%).

Table 3 demonstrates the percentage of improvement in depression metacognitive beliefs in DMB scale for every patient. The highest percentage of improvement occurred in patient 1 (87%) and the least percentage was observed in patient 3 (58%).

Depression score presented in Figure 1 for the 3 subjects showed that all the patients had scores above the baseline before the treatment (score 14 in BDI-II).

The depression score decreased in session 4 in all the patients. At the end of the treatment, the score is even decreased more and for the first patient is has dropped below the baseline, whereas for the second and third patients, it reached the baseline. At the follow-up state, the score for depression has remained below the baseline, indicating the effectiveness of the treatment.

Figure 2 shows that the score of 'thought rumination' for the all subjects has been above the baseline before the treatment (over 55). During the treatment, it has decreased in the fourth session in every patient. At the end of the treatment, this value has dropped to less than the baseline. In addition, the level has remained below the baseline during the follow-up test.

Figure 3 shows that the score of 'depression metacognitive beliefs' for all subjects has been above the baseline before the treatment (over 468). During the treatment, it decreased in the fourth session in every patient. At the end of the treatment, this value has dropped to less than the baseline. In addition, the level has remained below the baseline during the follow-up test.

4. Discussion

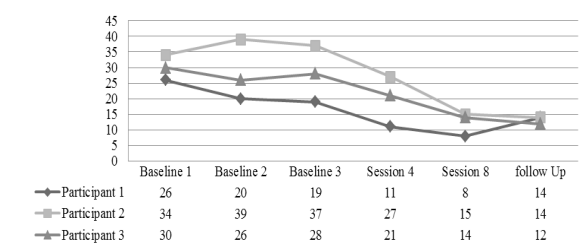
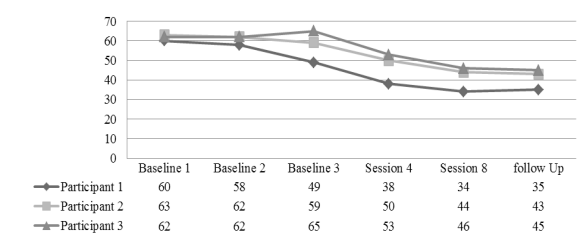
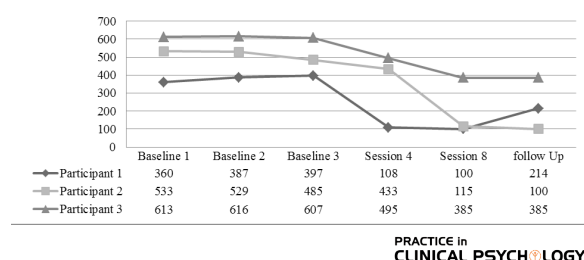
Results of our research and comparing participant's scores during each session indicate that metacognitive therapy can have a positive impact on patients with breast cancer, and patient's score was stable in the follow-up assessment.

Table 2: Percentage of improvement in 'thought rumination' after metacognitive therapy.

	First participant	Second participant	Third participant
Baseline score	55.66	61.33	63
Final score	36	47	49.5
Percentage of improvement	35	23	21

Table 3. Percentage of improvement in 'depression metacognitive beliefs' (DMB scale) after metacognitive therapy.

	First participant	Second participant	Third participant
Baseline score	382.33	515.66	612
Final score	104	215	440
Percentage of improvement	87	58	28

PRACTICE in
CLINICAL PSYCHOLOGYPRACTICE in
CLINICAL PSYCHOLOGY**Figure 1.** Beck Depression InventoryPRACTICE in
CLINICAL PSYCHOLOGY**Figure 2.** Thought RuminationPRACTICE in
CLINICAL PSYCHOLOGY**Figure 3.** Depression Metacognitive Beliefs

The purpose of this research was to examine the effectiveness of metacognitive treatment on the decrease of depression in women with breast cancer. The findings of the research indicated that that metacognitive therapy would result in decrease of depression and 'thought rumination.' The highest level of improvement in measured depression by BDI-II scale was 56% and the lowest percentage was 37%. In addition, the highest percentage of improvement in 'thought rumination' was 35% while the lowest percentage was 21%. Finally, the highest percentage of improvement in basic depression assessed by DMB scale was 87%, whereas the lowest response to improvement was 58%. It should be noted that the highest and lowest changes were observed in the first and third patients in all 3 scales.

The result of this research with respect to the effectiveness of metacognitive therapy on depression and 'thought rumination' in all the patients at all stage of therapy is similar to the findings of Sareh (2014), Wakili (2013), Hosnavandi (2013), Parhoon (2013), Dargahian (2011), Wells and associates (2008), Wells and Comblor (2008), as well as Papjorior and wells (2000). These researchers showed that metacognitive therapy would result in considerable change in the rate of depression and metacognitive beliefs as well as 'thought rumination' in their experimental groups compared to the control group.

The main reason for the effectiveness of metacognitive therapy lies in the executive relation of self-regulation and depression on the decrease of negative and positive metacognitive beliefs. In fact, positive metacognitive beliefs regarding the 'thought rumination' behave as a maladaptive coping means against the low mood. When a person is drawn into 'thought rumination,' he or she feels like trapped in a no control situation that is dangerous, i.e., the negative beliefs that are created due to the 'thought rumination' lead to depression (Wells, 2009).

Based on this view, in order to decrease depression, it is necessary to cope with the negative metacognitive beliefs such as "uncontrollable thought rumination" and then challenge the positive beliefs of the person since excessive attention toward the inside will result in distancing from surrounding which in turn causes the recurring of the negative thought, especially about the past (Papageorgiou & wells, 2003). This condition traps the patient in the negative mood that result in depression and its persistence. At that time, through attention training, the patient learns to stop 'thought rumination.' As a result, Self-Regulatory Executive Function model stops at the starting point and even in case of recurrence of low mood, the likelihood of entering into the basic depression decreases. The result of this research confirmed our hypothesis and showed that depression in women with breast cancer decreased (Wells, 2009).

It is necessary however to point out the limitations of this study. One limitation is the small number of the sample. The other limitation was the lack of session by

session assessments because of limited time and special physical condition of the patients.

Authors suggest that for the future researches, metacognitive therapy be conducted in other diseases such as multiple sclerosis. Also, the study could be conducted on male subjects and the results could be compared to the results of the present study.

Also with regard to effectiveness of metacognitive therapy, it is a good idea to use this protocol in hospitals to reduce patient's depression symptoms.

References

- Alder, M. W. (2007). *The Role of Social Support and Optimism in Predicting Life Satisfaction among Urban Youth*. Doctoral Thesis: Loyola.
- Bahmani, B. (2012). [Cognitive-existential and cognitive-treating education oriented in breast cancer patients (Persian)]. *Developmental Psychology: Iranian Psychologists*, 23.
- Beck, A., A. J. R., Shaw, B., Emery, G. (1979). *Cognitive Therapy of Depression*. New York: Guilford.
- Conway, M., Csank, P. A., Holm, S. L., & Blake, C. K. (2000). On assessing individual differences in rumination on sadness. *Journal of Personality Assessment*, 75(3), 404-425.
- Dargahian, R., Mohammadkhani, S., Hasani, J., Shams, J. (2011). Effectiveness of cognitive therapy on improvement of metacognitive beliefs, thought rumination and depression signs. *Quarterly Journal of Clinical Psychology*, 3, 81-103.
- Dobson, K., Mohammadkhani, P. (2006). [Psychoanalysis characteristic of Beck Depression inventory (Persian)]. *Rehabilitation Journal*, 29, 82-88.
- Falah, R., Golzari, M., Dastani, M., Zahiraldin, A., Mosavi, S. M., Akbari, M. (2011). [Effectiveness of group spiritual intervention on improvement of hope and mental health of women with breast cancer (Persian)]. *Journal of Thinking and Behavior*, 19(5), 65-76.
- Hasanvandi, S., Valizadeh, M., Honarmand, M. (2013). [Effectiveness of cognitive therapy in group therapy on depression sign and thought rumination (Persian)]. *Principle of Health Journal*, 1(15), 432-42.
- Jacobsen, P., Jim, H. (2011). Consideration of quality of life in cancer survivorship research. *Cancer Epidemiology, Biomarkers & Prevention*, 20(10), 2035-41.
- Jemal, A., Siegel, R., Ward, E., Hao, Y., Xu, J., Thun, M. J. (2009). Cancer Statistics. *Ca: A Cancer Journal for Clinicians*, 59(4), 225-49.
- Jemal, A., Siegel, R., Ward, E., Murray, T., Xu, J., Thun, M. J. (2007). Cancer Statistics. *Ca: A Cancer Journal For Clinicians*. 57(1),43-66.
- Joormann, J. (2006). Differential effects of rumination and dysphoria on the inhibition of irrelevant emotional material: Evidence from a negative priming task. *Cognitive Therapy and Research*, 30(2), 149-160.
- Kissane, D. W., Bloch, S., Miach, P., Smith, G. C., Seddon, A., & Keks, N. (1997). Cognitive-existential group therapy for patients with primary breast cancer – techniques and themes. *Psycho-Oncology*, 6(1), 25-33.
- Mansori, A. (2009). [Comparing the worries, thinking obsession and thought rumination in patients afflicted to anxiety disturbances and depression and normal individuals (Persian)]. Thesis of Tabriz University.
- Mohammadkhani, S., Farjad, M. (2009). Relationship between the metacognitive beliefs and control thinking strategies with obsession signs in non-clinical population. *Clinical Psychology Journal*, 3, 35-51.
- Moradimanesh, F., Ahadi, H., Jomhori, F., Rahgozar, M. (2011). Relationship between psychological helplessness with quality of life in women with breast cancer. *Quarterly Journal of Zabol University of Medical Sciences*, 4(2), 51-59.
- Nolen-Hoeksema, S., Morrow, J., & Fredrickson, B. L. (1993). Response styles and the duration of episodes of depressed mood. *Journal of Abnormal Psychology*, 102(1), 20.
- Papageorgiou, C., & Wells, A. (2003). An empirical test of a clinical metacognitive model of rumination and depression. *Cognitive Therapy and Research*, 27(3), 261-273.
- Sareh, H., Dowlatshahi, M., Kahani, M. (2014). Effectiveness of group cognitive therapy on improvement of metacognitive belief and thought rumination of patients suffering from basic depression disorder. *Quarterly Journal of Sabzevar University of Medical Sciences*, 21(1), 216-227.
- Wakili, Y., Fata, L., Habibi, M. (2013). Effectiveness of metacognitive therapy on decrease of depression signs and anxiety in patients with post-accident syndrome. *Clinical Psychology Journal*, 4, 99-104.
- Wells, A., Fisher, P., Myers, S., Wheatley, J., Patel, T., & Brewin, C. R. (2009). Metacognitive therapy in recurrent and persistent depression: A multiple-baseline study of a new treatment. *Cognitive Therapy and Research*, 33(3), 291-300.
- Wells, A. (2009). *Practical guide to metacognitive therapy of anxiety and depression*. Varay-E Danesh, pp:203-214
- Yook, K., Kim, K. H., Suh, S. Y., & Lee, K. S. (2010). Intolerance of uncertainty, worry, and rumination in major depressive disorder and generalized anxiety disorder. *Journal of anxiety disorders*, 24(6), 623-628.