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The effectiveness of dialectical behavior therapy (DBT) in reducing distress and increased life expectancy in patients with breast cancer

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Abstract. Cancer is one of the most common diseases of the modern era and is considered one of the biggest concerns for human. Along with the diagnosis of cancer, the role of psychological factors in the disease becomes more highlighted. The purpose of this study is to investigate on the effectiveness of dialectical behavior therapy (DBT) in reducing distress and increased life expectancy in patients with breast cancer. For this purpose, in a quasi-experimental design 30 women with breast cancer in Imam Khomeini Hospital, Tehran were randomly divided into two experimental and control groups through an available sampling method. Then the experimental group received 10 sessions of dialectical behavior therapy, each lasted for 90 minutes. Before and after training, both groups were tested with Kessler Distress Scale and Snyder hope questionnaire. The results of the analysis of covariance showed that the dialectical behavior therapy is effective on reducing distress and increased life expectancy of patients with cancer. Therefore it seems that this approach can be used with confidence in the treatment of stress associated with the disease and increases hope of recovery in these people.

Keywords: stress, life expectancy, dialectical behavior therapy, breast cancer

1. INTODUCTION

Cancer is a complex, debilitating and common disease that in many countries such as Iran, is considered to be as the second-highest for biomedical and death, after heart disease (Akbari, 2010). The findings of some researchers, including Zabora et al (2001) suggest that the prevalence of distress and in general psychological problems in cancer patients, is 25 to 30 percent. On the other hand, the results of Akhbardeh research under the title “Study of the etiology of chronic stress on the increased risk of types of cancer" showed that chronic stress directly affects the structure of genes in the "DNA" and destruction of them and indirectly, by affecting the decline in cognitive ability, puts the immune system is a high risk of different types of cancer, particularly, non-hormonal cancers (Ledesma, 2009). One of the most important factors that influence the psychological state of patients with cancer, is how to deal with the disease and ways to cope with the stress caused by cancer (Midtgard, Rorth, Stelter, 2005). It seems, one of the most important factors that influence the psychological state of patients with cancer, is how to deal with the disease and ways to cope with stress that is caused by cancer. In this situation, the meaning of coping is any response to the individual adaptation in the face of a harmful event. Coping strategies that a person uses may be followed by stress reduction and therefore can be recognized as an effective way to cope.

Nowadays, researchers believe that after cancer, surgery (removal of the tumor) and chemotherapy, attention must be paid to patient’s psychosocial issues particularly in relation to the variables such as coping with disease, attitude change in the style and quality of life, the patients return to the previous level of performance and to have a fruitful life in the community. Research shows that about 25% - 45% of cancer patients, have a long-term apathy and depression and their family organization is irrupted, the concern and anxiety of patient and family reaches its peak after discharged from hospital. High level of disturbance is in the

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profession of workers and those who are less educated or those who have more serious problems. Most patients in terms of sex and marital status do not return to their previous, the incidence of major depression raises the risk of death and states such as fear and anxiety continues in some patients (Akbari, 2008).

Supportive and Palliative Care reduces suffering caused by the disease and improves quality of life for patients and their families, with early detection, assessment and treatment of pain and other physical- psychological problems in patients with cancer (Akbari, 2008). One of the most effective approaches to reduce the distress in these patients is dialectical behavior therapy, which has proven its effectiveness. This treatment emphasizes on: enhancing client's capabilities through learning new skills or skills that are not used effectively, improving motivation of clients by helping to reduce the factors that interfere with the client's treatment progress, such as emotions, cognitions, overt behavior and environment, assuring generalization of the treatment to the natural environment and contribute to the functioning of these skills in various environments, structuring the environment through the development of professional and social networking that reinforces and confirms the development of new skills, also enhancing therapist capabilities and motivation by providing a possibility to increase their skills and motivation to continue working with the clients effectively and healthy through the continuous improvement of management stress and fatigue skills and Identifying clients efforts in shaping or modifying behavior (feigenbaum, 2007). As a matter of fact, the conceptualization of DBT on the basis of biosocial theory is a level of dysfunction and pervasive disorder in emotional regulation system. DBT treatment can be effective by the training of emotional regulation skills and strategies of cognitive - behavioral therapy (quoting Dimeff and Koerner, 2007). Research has shown that dialectical behavior therapy with depression and despair (Bateman and Fonagy, 2000, Garnefski, 2006, Liverant, 2002, Harley, 2008 Lynch, 2003 & Chew, 2003), stress, anxiety, dispair, suicidal thoughts and depression (Sinha, 2011), treatment of substance abuse and dependence (Dimeff and Koerner, 2007) Treatment of borderline disorders (Wagner, 2007, Lynch,2006) and reducing anger and improvement of the clients overall evaluation score (Oldham et al., 2001). According to what was said, the purpose of the present study is to investigate on the effectiveness of dialectical behavior therapy in reducing distress and increased life expectancy in patients with cancer.

2. METHOD

This study was a quasi-experimental design with pretest, posttest control group. In this way that among female patients with breast cancer in Imam Khomeini Hospital in Tehran, 30 patients were selected through available sampling method and randomly divided into two 15 groups of experimental and control. Both groups before and after training were tested with Kessler Distress Scale and Snyder hope questionnaire. Then the experimental group received 10 sessions of dialectical behavior therapy, each lasted for 90 minutes, while the control group did not receive any training. Four major skills of dialectical behavior therapy that is interpersonal effectiveness skill, distress tolerance skill, emotion regulation skill, and mindfulness skill were held in a 90 minute group sessions on a weekly basis.

3. PERFORMANCE METHOD

The content of training sessions based on dialectical behavior therapy
First session: Welcoming, running the pretest, the aim of treatment.
Second session: Why you should learn these skills? , What are the correct views about emotions? , A review on primary and secondary emotions, all emotions help us.
Third session: labeling emotions, how emotions work? and performance analysis, discussions about the interpretation that each person has about his emotions (myths), paying attention to the role of emotional mind, logical mind and rational mind.
Fourth session: The role of positive self-talk about emotions, observing and describing emotions (self-observer)
Fifth session: Living in the moment life skill, or mindfulness training
Sixth session: Decisions to develop reduce vulnerability and distress tolerance skills (avoiding emotional mind and turn pain into suffering).
Seventh session: Dominate our world: training programs to increase positive experiences, Prepare a list of enjoyable activities.
Eighth session: Recognizing emotions and taking opposite action of of fear, feelings of guilt, shame, anger and depression.
Ninth session: using problem solving skill and taking opposite action of fear, anger, guilt and sadness.
Tenth session: Review of sessions, practice learned skills and running the posttest.

4. TOOL

Kessler Psychological Distress Questionnaire 10 (K10) was used to collect data. This questionnaire is to identify mental disorders in the general population that examines patient's mental status during the last month. This 10- item questionnaire was developed by Kessler et al. in 2002. Each item of the K10 has five response categories (all of the time, most of the time, some of the time, a little of the time, none of the time) and is scored from 0 to 4. The maximum score on (K10) is equal to 40 (Kessler, 2003). furukava, Kessler, Sleed, Androz (2001) have validated k10 questionnaire in a national survey. They concluded that K10 application has a high performance to identify mood and anxiety disorders (Victorian, 2001). Vaziri and Lotfi Kashani in one research study, have obtained the reliability of Kessler questionnaire k10 by using Cronbach's alpha (0.83) (Vaziri and Lotfi Kashani, 2011).

Snyder hope scale: This scale was constructed in 2000 by the Snyder's group that includes12 items: 4 items relating to the pathway, 4 relating to the agency, and 4 are misleading. The reliability coefficient of this scale have been reported, respectively as 0.89, 0.87 and 0.82 in some studies (From Bijar, 2007; Sotoude Asl al., 2007; Alaeddin, 2008). Cronbach's alpha for this scale was 79/0.

5. FINDINGS

Table 1. Descriptive index statistics of the experimental and control group participants in stress and life expectancy testing

Groups	Total	Mean		SD
Experiment	Distress pretest	15	9.80	1.37
	Life expediency posttest	15	7.46	1.50
Control	Distress pretest	15	10.13	1.95
	posttest	15	10.46	1.84
Experiment	Distress pretest	15	48.00	3.04
	Life expediency posttest	15	51.66	5.75
Control	Distress pretest	15	47.73	3.03
	Life expediency posttest	15	47.66	2.74

Table 2. Summary of levene's test of equality of error variances.

F	DF1	DF2	Significant risk
0.941	1	28	0.340

According to the obtained F (0.941) and significant risk that is greater than 0.05 homogeneity of variance assumptions are confirmed.

Table 3. Test results of between subjects effects (dependent variable: distreass).

Sources of Change	Sum of squares	df	Mean square	F	Sig.
Groups	1.653	1	1.653	0.684	0.416
Pretest	14.906	1	14.906	6.165	0.020
Pretest Groups*	0.008	1	0.008	0.003	0.953
Error	62.863	26			

According to Table 3 (sig=0.953) assumption of homogeneity of regression slopes is confirmed.

Table 4. Test results of between subjects effects (dependent variable: distress).

Sources of Change	Sum of squares	df	Mean square	F	P	Squared eta.
Pretest	16.595+1	16.595	7127	0.013	0.209	0.020
Groups	60.220	1	60.220	25.861	0.001	0.489
Error	62.872	27	2.329			

According to Table 4 (P <0.001, F =25.861), It can be concluded that there is a significant difference between distress variables in the posttest of the two groups. Squared eta shows coefficient of determination and it can be seen that 48.9 percent (0.489) distress variance is explained by the independent variable, i.e., dialectical behavior therapy. Ultimately, by the evidence collected in this study it can be concluded that, generally, dialectical behavior therapy can reduce distress of the participants. Therefore, there is sufficient evidence for accepting the first hypothesis. Comparison of means indicate that the mean of distress variation in post-test in the experimental group were lower than control group.

Table 5: Summary of levene's test of equality of error variances.

F	DF1	DF2	Significant risk
0.933	1	28	0.342

According to the obtained F (0.933) and significant risk that is greater than 0.05 homogeneity of variance assumptions are confirmed.

Table 6. Test results of between subjects effects (dependent variable: life expectancy).

Sources of Change	Sum of squares	df	Mean square	F	Sig.
Groups	0.080	1	0.080	0.04	0.952
Pretest	2.491	1	2.491	0.115	0.738
Pretest Groups*	0.920	1	0.920	0.042	0.839
Error	565.268	26	21.741		

According to Table 6 (sig= 0.839) it can be concluded that assumption of homogeneity of regression slopes is confirmed.

Table 7. Test results of between subjects effects (dependent variable: life expectancy).

Sources of Change	Sum of squares	df	Mean square	F	P	Squared eta.
Pretest	2.479	1	2.479	0.118	0.734	0.004
Groups	121.321	1	121.321	5.785	0.023	0.176
Error	566.188	27	20.970			

According to Table 7 ($P < 0.05$, $F=5.785$) it can be concluded that there is a significant difference between life expediency variables in the posttest of the two groups. Squared eta shows coefficient of determination and it can be seen that 17.6 percent (0.176) Life expectancy variance is explained by the independent variable in dialectical behavior therapy. Ultimately, by the evidence collected in this study it can be concluded that, generally, dialectical behavior therapy can increase life expectancy of the participants. Therefore, there is sufficient evidence for accepting the second hypothesis.

6. DISCUSSION AND CONCLUSION

The purpose of this study was to investigate on the effectiveness of dialectical behavior therapy (DBT) in reducing distress and increased life expectancy in patients with breast cancer. Analysis of covariance showed that dialectical behavior therapy, is effective in reducing distress and increased life expectancy and this result corresponds to the data of Sinai (2011) and Bateman and Fonagy (2000) studies.

It seems that this combined method which is based on supportive therapy and cognitive-based learning, provides an appropriate context for the treatment of these patients by seeking to establish core mindfulness, distress tolerance, emotion regulation and interpersonal effectiveness in patients with breast cancer. In fact, dialectical behavior therapy has blended with Zen eastern philosophical techniques and teachings that are based on principle of acceptance and accordingly introduces four-component intervention in its method of group therapy: core mindfulness and distress tolerance as acceptance elements and emotional

regulation and interpersonal effectiveness as change elements. The four mentioned domains above, are known to be DBT inefficient areas. Therefore, it is based on the belief that presenting BPD in a treatment program which targets inefficiency in these domains, leads to the recovery of disease symptoms. In this treatment it is believed that effective regulation of emotional experience is determinant of psychological happiness, superior quality of life and high mental health. Several studies have shown that emotion regulation effects on the experience and expression of emotional experience. Emotional regulation has increasingly entered the psychological damage patterns and evidence has shown that people, who don't have the ability to manage emotional responses to everyday events, will experience a long and difficult period of disorders such as anxiety and distress.

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