The effectiveness of mindfulness training on life expectancy in women with breast cancer in Gorgan

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Abstract
The aim of this research was to study the effectiveness of mindfulness training on life expectancy in women with breast cancer in Gorgan. The research was based on experimental studies with pretest - posttest design and with control group, for this purpose, out of 545 women with breast cancer who spent recovering in the hospital of Doctor. Mousavi in Gorgan, 30 people were selected as sample and they placed in both experimental and control groups (each group 15 persons). Members of the experimental and control groups responded to life expectancy questionnaire of Schneider as a pre-test. The experimental group was trained in mindfulness during eight weekly sessions (90 to 120 minutes), and then the control group received no training, after the sessions, all members of the experimental and control groups responded to the questionnaire as the post-test. After analyzing data through the test of covariance and SPSS software of version 20, the results showed that mindfulness training had led to an increase in life expectancy in women with breast cancer.

Keywords: Mindfulness, life expectancy, breast cancer.
Introduction
With growing urbanization, the spread of diseases such as cancer anxiety and eating disorders in humans have been attacked. One of these cancers is breast cancer. Breast cancer, an uncontrolled growth of abnormal cells which in various tissues of breast such as the ducts that carry milk, occurs in milk-producing tissue or non-glandular tissue. Breast cancer is the second most common cancer in women after skin cancer. But breast cancer is not only for women but men are also at risk. The role of hereditary and genetic factors as risk factors of breast cancer has been confirmed. One-third of all people have a history of breast cancer in one or more of their first or second degree relatives (Hanahan and Weinberg, 2008).

According to the country report, cancer registries in Iran during the past four decades, an increase of incidence of breast cancer has been put in the most malignancies among Iranian women and Iranian women a decade earlier than their counterparts in developed countries are affected. The incidence of cancer in women age 50 and older is rising rapidly. From January 1998 to December 2005, the incidence of breast cancer in Iranian women was 22 per 100,000 women which included age range of 85-15 years and the highest incidence was in the age range of 49-40 years (Eqtedar et al., 2008). The nature of this disease is such that it endangers people's identity and personality and they are faced with issues including anxiety, depression, hopelessness, feelings of social isolation, fear of the reaction spouse if married, marriage if concerns about celibacy, fear of death and fear and frustration etc., (Sicil, 2004).

Unfortunately, as mentioned above, disease causes mental health problems in patients a lot of that frustration is one of the most obvious problems.

Hope is one of features for life that compels us to search for a better tomorrow. The hope is success and a better future and a reason to live. When there is hope, joy and happiness in life will be present (Seligman, Mihalyi, 2000). According to Schneider, the disappointment is shocking state of affairs which becomes apparent with a sense of impossibility, powerlessness, lack of interest in life. One is severely disabled in the disappointment and cannot weigh and decide the different positions. Given the close relationship between physical and mental, cognitive and psychological factors are directly or indirectly involved in the development or growth of many physical ailments, especially the commonly used drugs to control their disease lead to significant changes in the mood of the people. Therefore, they consider efficient psychological- social support to improve public health and response to treatment of the patients (Mohammadi et al, 2011).

In this study, it is tried to a new therapy called mindfulness a psychological treatment and is determined with attention to the present and knowledge unfair to the inner and outer experiences (Crane, 2009; quoted by Mohammadkhani et al, 2013), increased life expectancy in these patients. Therefore, the aim of mindfulness is to change the style of thinking in the way of 'being'. In this therapy, the goal is that the method is taught to patients which they can behave differently thoughts and experiences (Karin, 2009; quoted by Mohammadkhani et al, 2013). This therapy which is a short-term and structured intervention (8 sessions), is made though the model of mindfulness-based stress reduction of Kabat-Zinn (2005) and the principles of cognitive therapy have been added. The goal of mindfulness meditation training is a different attitude or relation with thoughts, feelings and emotions that includes maintenance of full attention and time to time and also requirement of accepting and non-judgmental attitude (Wells, 2002). Training the mind follows consciousness, pain, anxiety (Zeidan et al., 2010) and psychological distress (Ostafin et al, 2006) and reduces symptoms of anxiety and depression (Evans et al, 2008) is effective in improving physical, mental,
emotional and spiritual well-being (Flugel Colle et al, 2010), improving sleep quality (Shapiro et al, 2003), high quality of life, enjoying life and low physical signs (Kieviet-Stinjnen et al, 2008). It has also been shown that mindfulness reduces diastolic blood pressure (Kingeston et al, 2007), the treatment of people with eating disorders, especially cancer patients Bulimia nervosa and mood change has had a positive effect (Kabat-Zinn, 2005; Carmod and Baer, 2008). Given the importance of the issue, the aim of this research was to study the effectiveness of mindfulness training on life expectancy in women with breast cancer in Gorgan. The hypothesis is:
1. Mindfulness training has an effect on life expectancy of women with breast cancer in Gorgan.
2. Method:

The research was based on experimental studies with pretest - posttest design and with control group.

4. Statistical Society:
The population included woman patients with breast cancer who spent recovering in the hospital of Doctor Mousavi in 2015-2016 and they were 545 patients.

5. Sample and sampling method:
The sample is selected available. 30 patients with the following conditions were chosen as samples.
Age over 18 years, having high educations, failure to receive a medical or psychological treatment period coincided with the presence in the study, not having any mental disorder diagnosed, not taking any drugs or alcohol, 15 patients in the experimental group and 15 patients in the control group have been placed.

6. Data collection tools:
Schneider life expectancy questionnaire:
This scale of 12 questions by Schneider (1995) is designed for ages 15 and older that they are discussed in a continuum of 8 degrees from 1 (very bad) to 8 (quite correctly) to assess the respondent's opinion. The range of scores can be placed between 8 and 64 (Schneider, 1995). In Iran, a study was performed by Golzari (2007), on 660 schoolgirls in Tehran, where the reliability of this scale using Cronbach's alpha was 0.89.

Summary of training sessions:
Training sessions were based on guide-books of mindfulness-based therapies, which consisted of eight sessions once a week for 90 to 120 minutes. The method of a targeted attention at the moment without judgment to understand wandering mind and the method of attention to body were taught in training sessions 1 to 4 and in sessions 5 to 8 acceptance and awareness of thoughts and feelings and that thoughts are not facts and knowing the symptoms of depression and having a plan to deal with depression and planning for using more practical strategies in future are educated (Karin, 2009; quoted by Mohammadkhani et al, 2013).

First session: identification of automatic direction and leaving it, mindfulness of daily activities, physical verification.
Second session: Dealing with obstacles, reacting to daily events, the activities of a pleasant, 10-minute sitting meditation.

Third session: Mindfulness or Awareness of breathing, maintenance of consciousness, breathing and 40-minute sitting meditation, physical and uncomfortable feel.

Forth session: staying in the present, attachment, aversion and malaise.

Fifth Session: allowing / permitting the acceptance of individual experiences.

Sixth session: thoughts are not facts, thoughts are only thoughts.

Seventh session: How we can best take care of ourselves: the list of enjoyable and tricky activities, list of unpleasant symptoms.

Eighth session: using practices for handling and creating the future.

7. Method of study:
After obtaining a referral from Azad University of Gorgan, it was referred to the hospital of Doctor Mousavi of this city and information was collected on patients after coordination with hospital security, 30 patients who admitted to hospital for treatment monthly and they had conditions for participation in the study and they were selected available as samples which they place after a pre-randomly in two groups of 15 participants of experimental and control group. For the experimental group, explanations were given about design, working principles, the importance of consistent attendance at meetings and doing homework. The experimental group received mindfulness training in 8 sessions (90 to 120 minutes) and the control group received with no treatment, after 8 weeks of treatment, again, the entire test members of experimental and control groups responded to questionnaires of life expectancy as Schneider as a post-test and data were extracted and analyzed through software statistical program.

8. Data analysis:
To analyze the variables were measured and also first, experimental data were collection of data to describe a systematic based on common methods in the descriptive statistics and then interpreting the results of the study were discussed. In order to analyze the data from the analysis of covariance was used.

Descriptive findings:

Table1: Mean and standard deviation of the pre-test and post-test scores of mindfulness training in study groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Experimental group (N = 15)</th>
<th>Control group (N = 15)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre-test</td>
<td>Post-test</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>Standard deviation</td>
</tr>
</tbody>
</table>

http://www.ijhcs.com/index.php/ijhcs/index  Page 1250
Life expectancy | 18.67 | 3.45 | 27.81 | 4.06 | 15.19 | 3.56 | 16.25 | 3.41

Figure 1: To compare the mean of pre-test and post-test research groups in life expectancy

Information Table and Figure 1 show that the mean of life expectancy for pre-test score in experimental and control groups has been 18.67 and 15.19. After the implementation of mindfulness training for the experimental group, it can be seen that post-test scores significantly increased and reached to 27.81. Post-test scores of the control group had no significant change and they reached to 16.25.

Table 2: Evaluation of variables for normality using the Kolmogorov-Smirnov test research on mindfulness technique (k-s)

<table>
<thead>
<tr>
<th>Positions</th>
<th>Variable</th>
<th>Z</th>
<th>The probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>life expectancy</td>
<td>0.65</td>
<td>0.521</td>
</tr>
<tr>
<td>Post-test</td>
<td>life expectancy</td>
<td>0.83</td>
<td>0.734</td>
</tr>
</tbody>
</table>

The figures in Table 2 show that the distribution of study variables in mindfulness training is normal. Since the distributions of the pre-test and post-test research were normal and a measure of variables were based on distance, parametric test of analysis of variance was used to analyze the data.

Table 3: F Levene test for equality of variance in mindfulness training

<table>
<thead>
<tr>
<th>Variables</th>
<th>The test statistic F</th>
<th>Degrees of freedom 1</th>
<th>Degrees of freedom 2</th>
<th>Significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life expectancy</td>
<td>61.34</td>
<td>1</td>
<td>28</td>
<td>0.000</td>
</tr>
</tbody>
</table>

According to Table 3, the value of F Levin for equality of variances of the variables in post-test in experimental and control groups shows that research variance between groups is unequal; therefore, another condition of the covariance analysis is established.
Table 4: Univariate analysis of covariance for test scores after mindfulness training with pre-test scores of covariate

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of freedom</th>
<th>Sum of squares</th>
<th>Mean of squares</th>
<th>Test statistic F</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>1</td>
<td>1476.311</td>
<td>1476.311</td>
<td>33.882*</td>
<td>0.12</td>
</tr>
<tr>
<td>Application of Mindfulness</td>
<td>1</td>
<td>13.75</td>
<td>13.75</td>
<td>0.315*</td>
<td>0.75</td>
</tr>
<tr>
<td>Error</td>
<td>27</td>
<td>1176.45</td>
<td>43.572</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>30</td>
<td>2666.511</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

<0.001P*

As it can be seen in Table 4, the effects of mindfulness training (F = 0.315, P<0.001) is statistically significant after adjustment based on pre-test score means of the two groups. Consideration of the means of the two groups (Table 1) shows that life expectancy score has increased in the experimental group tests in post-test than the control group. Hence, it can be concluded that education has increased life expectancy. Also, F calculated for the effect of the pre-test (F = 33.882, P<0.001) is statistically significant. So, post-test scores affected pre-test scores to some extent. However, the hypothesis is confirmed. The eta-squared values also show that about 12% of the variance in life expectancy by education is explained.

9. Discussion and conclusion:
The results of this study suggest that mindfulness training has led to an increase in life expectancy in the experimental group after a run of 8 meeting of mindfulness.

The results of the research are consistent with the results of Aqabaqeri et al (1392), Aqabaqeri et al conducted a study to increase the effectiveness of mindfulness-based cognitive therapy well-being and hope for multiple sclerosis patients that the results showed that mindfulness cognitive was based on therapy on mental well-being and hope in MS patients. Also, they are consistent with the study of Emrani et al (2012), Emrani et al conducted a study to increase the effectiveness of mindfulness-based cognitive therapy well-being and hope for multiple sclerosis patients that the results showed that mindfulness cognitive-behavioral therapy was based on has led to an increase life expectancy in patients with multiple sclerosis of the experimental group.

Chiyouns et al (2010) selected 32 participants who randomly were psychology clinic waiting list (none of the subjects had received a diagnosis of mental disorder), and the aim of the study was to evaluate the effectiveness of hope therapy treatment approach based on the components of hope, the meaning of life, self-esteem, depression and anxiety, and the results showed that intervention with statistical significance led to an increase of hope, the meaning of life, self-esteem and reduce symptoms of depression and anxiety.

Spiegel in (2003) in a longitudinal study for 10 consecutive years on cancer patients conducted, it was found that supportive therapy on a weekly basis, time significantly
increased patient survival. This treatment worked in a way that encouraged patients to express their feelings and emphasized on clarifying the relationship between them and the doctors. In explaining the hypothesis that mindfulness training has an effect on life expectancy of women with breast cancer in Gorgan, we can say, this treatment helps people to experience (whether pleasant or unpleasant) with a sense of openness and willingness to get involved, about the same way. The effect of being in a mental state (acceptance) increases approaching the experience in people which this experience provides more time to respond instead of reacting non-conscious aspects of internal and external events to people. Also, mindfulness exercises to increase awareness of people than the present moment, through techniques such as focusing on the breath and body awareness and focusing here and now has an effect on cognitive system and information processing and can lead to a reduction in the patient's negative experience that it tends to increase the living hope in him.
References

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