

## The Effect of Relaxation and Mental Imagery and Relaxation Therapy on Anxiety and Hopefulness in Women with Breast Cancer in Ahvaz

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**ABSTRACT:** Psychological factors have important role in etiology and treatment the cancer. The aim of this research was study the effect of mental imagery and relaxation training on anxiety and hopelessness in women suffering from breast cancer. The research method was experimental with pre-posttest, follow up and control group. The sample consisted of 30 women suffering from breast cancer who were selected based on age, educational status, duration of disease, acquiring one standard deviation above the mean in anxiety test and other criteria considered in this research. Then randomly divided into two groups as experimental and control. The instruments were Cattel Anxiety Questionnaire (CAQ) and Miller Hopefulness Scale (MHS). The experimental group administered 12 sessions of mental imagery and relaxation training but the control group didn't receive any intervention. The data were analyzed by multivariate analysis of variance (MANOVA). The results indicated that there was a significant difference between experimental and control group ( $p \leq 0.0001$ ). The rate of anxiety in experimental group in compare with pre-test and control group decreased but the rate of hopefulness increased. Also, these results significantly persisted after follow up period

**Keywords:** Mental imagery, relaxation, anxiety, hopefulness, breast cancer

### INTRODUCTION

Most of time, the breast cancer is in the form of a painless mass or solid mass in Upper and external parts of the breast, though other parts like the tip of the breast are not also safe from this disease. Cancers of the breast may progress to lymphatic glands of under-arm cavity area and then to all parts of body (Vellone et al., 2006).

For most of the people, the word cancer is considered as the worst possible misfortune that not only invades the body savagely, but also wastes it. The pains, the deformity resulted from mastectomy, skin-burns caused by radiotherapy, collapse of hair, general disorders, and conditions of patients in chemotherapy, are outcomes of this dangerous disease. Diagnosis of breast cancer of a lady scares her more than the fact of the disease itself, because the most suffering thing for her is the acceptance of losing one or both of her breasts. Concerning breast cancer, even with losing one or both breasts the problem will not be ended. The traces of removing her breasts affect her seriously (Wanacken, 2003).

Therefore, studying some strategies for reducing spiritual and physical suffering of this group of patients is very important and has led the attention of researchers. By using mental imagery you can create some variation of the unconscious intelligence. Mental imagery is the common aspect between things that we recognized as body and

memory. It can help you to find out what needs will be raised as the result of a disease. Mental imagery can affect the controlling system of the body. This is a technique that is performed through direct and positive inculcation. The eyes are closed, the body is in a relax state, you must breathe deeply and calmly, imagine that the immune system of your body is the fighter soldier and the pathogenesis agents are your enemies. Using this method you can communicate with unconscious memory and request your body to act in a sound and appropriate way. Mental agents like stress, long anxiety, depression, mourning, hopelessness and so on, have no direct on cancer (in fact these agents are not basic causes of cancer), but these mental agents can provide a context for affliction to it. If a person is under a long period of mental stress, the defense system of the body takes full fat and cellulose food with low vitamin that cause his/her obesity and if he/she have inheritance gene of cancer, and if a long time-period is passed, the possibility of affliction to breast, colon, stomach, and prostate cancer will be 10 times more than the others. Negative mental agents can have considerable prevalence on immune system of body. So, it is clear that there is a clear-cut and effective relationship between spirit and cancer theoretically (Rabinze et al., 2005).

Rodhaver by a research on cancerous patients that are under chemotherapy, concluded that using mental

imagery procedure will increase the ability against side effects of treatment (Rabinze et al., 2005). Menzies (2006) carried out a research on the patients afflicted by fibromyalgia (psychosomatic disease that causes pain in the different parts of the body) and found that functional state and sensual self-efficiency of the patient control the pain (Menzies, 2006).

Also some investigations argued that heart beating and speed of respiration of a group that performs mental imagery is significantly different comparing to the group in relaxation state (Rodehaver, 2007).

Other researchers studied the anxiety of children and old people with dislocation of joints and cardiac diseases. Their findings revealed that factors like relaxation and mental imaginary have a role in reduction of anxiety and increasing the hopefulness of patients (Rasman, 2001).

The results of some researchers showed the effectiveness of relaxation, diet, supportive psychotherapy and concept therapy on reduction of the intrepidity and the repetition of vomiting after chemotherapy, the reduction of mental disorder and increasing the hopefulness of woman afflicted by breast cancer (Fawzy et al., 2007). Eun-young and In-Chong (2006) believed that mental imagery and the reduction of the relaxation have an impact on the promotion of the moral of patients and the reduction of the hardness of chemotherapy (Eun-young et al., 2006). Hororyd and Blancard (2007) clearly showed the effectiveness of relaxation and expansion of muscles in chronic. In other research, relaxation procedures were accompanied by other mental procedures (behavioral-cognitive) like mental imagery and it became clear that its ability for treating has increased in relationship to chronic headache and other chronic pains (Holroyd et al., 2007).

Some researchers studied the relation of hopefulness with heart failure. The general consequence of this research was that hope has a strong relationship with duration of the disease and is one of the factors of monitoring and preventing the mental disorders (Papdelisa, 2007). Gordon (2007) showed that patients with double depression indicate a higher level of hopelessness, while people with basic depression show a middle level of hopelessness (Gordoet al., 2007).

In case study, Rosman (2008) found out that a forty-year old lady that was affected by breast cancer and underwent surgery and radiotherapy, after getting familiar with mental imagery and visualization could get control over her stress and anxiety, and also could challenge her cancerous disease (Rossman, 2008). Abbaspour (2007) investigated the effects of relaxation and mental imagery exercises on anxiety and tension of school children before their surgery in the hospital and their effects on patients with breast cancer and the heart failure that were hospitalized in cardiology ward. They concluded that these techniques reduced the anxiety and tension of

patients (Abbaspour, 2007). Erfani and Erfanian (2005) investigated the effects of mental imagery exercises as beliefs and inculcation tools in improvement of mental and spiritual conditions of patients. The results indicated th at the effect of mental imagery on learning kinetic skills affects cerebral central kinetic program (Erfani et al., 2005). Ghafari and poorghaznine (2003) in a research investigated the level of hope and its relationship to self-esteem in kidney transplant receiver help seekers that were hospitalized in kidney ward of Emam Reza (peace be upon him) hospital of Mashhad city. They found that kidney transplant receiver patients who had a low level of hope, by increasing the self-esteem and promoting the religious beliefs raised the level of their hope (Ghaffari et al., 2003). Shehni Yeilagh and Akbarian (2000) in a research, investigated the effect of consultation on hopelessness, and reduction of depressive toxemic youth in the hospital of medical school of Shahid Chamran University in Ahvaz. The results showed that after consultation, there was a significant difference between the level of depression and hopelessness of experimental and control groups (ShehniYeilagh et al., 2001). Koing (2001) conducted a research on breast cancerous patients. The results confirmed the prediction of Koeing (2001) that cancerous breast patients who have religious beliefs had lower anxiety and worry about death, and their behavior toward family, attendants and even toward the disease itself were properly good (Koing, 2001).

Parish and Rashid (2006) investigated the effects of two kinds of relaxation training on the level of anxiety and reducing the tension among female patients with breast cancer and concluded that these patients had lower anger and, more effort for removing cancer and reaching optimum life-level. In the light of the above evidence, the present research investigated the effects of mental imagery and relaxation training on anxiety and hopefulness among breast cancerous women in Ahwaz city in Iran (Parish et al., 2006).

**Research hypothesis:** Hypothesis 1: Imagery and relaxation training reduces the anxiety in women suffering from breast cancer. Hypothesis2: Imagery and relaxation training increases the hopefulness in women suffering from breast cancer.

## MATERIALS AND METHODS

Since this study intends to examine and determine the effect of inner-school factors on predicting the educational performance of the 3<sup>rd</sup> grade students of the public exemplary high school in their final exams and the relation between the variables have been examined and analyzes, correlational research method has been used. This method belongs to descriptive (non-experimental) research methods.

The statistical society includes the whole 3<sup>rd</sup> grade students of the public exemplary high schools in the province during the educational year 2010-2011. The statistical society includes 519 girls and 407 boys which totally makes 926 persons who have been studying in 16 public exemplary high schools. The statistical samples have been selected from the statistical society using stratified random sampling method which was appropriate for our selected group (girls and boys). With regard to the number of the predictive variables and the practical considerations of the research, to obtain a referent sample the final volume of the sample have been assumed 300 persons (including 160 girls and 140 boys) according to Morgan sampling table.

The research tool for this study was the short form of the educational motivation questionnaire with a 7-point Likert scale with choices ranging from 1 (strongly agree) to 7 (strongly disagree). Coutinho and Newman (2008) have used *Cronbach's Alpha* method to examine the reliability of this questionnaire. According to them, reliability coefficient of this questionnaire is 0.90. Rafiyan (2000) using Chronbach alpha method has calculated the reliability of this scale as 0.81. Alborzi and Samani (1999) using re-testing method have calculated its reliability as 0.76. For evaluating the validity of this scale, Rafiyan (2000) has used Scherrer self-efficiency instrument and calculated its validity coefficient as 0.64. In this study, the reliability of this questionnaire has been evaluated using Chronbach alpha method as 0.78.

The research method was experimental with pre-test, post-test, fallow up and control group. The statistical population of the research consisted of all women suffering from breast cancer in Ahvaz city that were studied in 2009-2010.

The sample of this research comprised 30 women with breast cancer who were matched from age, duration of disease, educational status, acquiring one standard deviation above the mean in anxiety and hopefulness and other criteria considered in this research. Then randomly divided into two groups as experimental and control. The experimental group administered 12 sessions of relaxation

and mental imagery but the control group did not receive any intervention. The age of the patients had a range from 26 to 50 years old

The measurement instruments were applied to both groups at the same time and under the same conditions in pretest, posttest and fallow up period.

Instruments: Cattle Anxiety Questionnaire (CAQ). There are two separate scales for scaling (evident), positional anxiety and (hidden) personal anxiety in this questionnaire, each containing 20 items. This questionnaire can be completed in about 5 minutes by writings the two words of "yes" or "no". Zargar obtained a reliability coefficient of 0.89 for the Cattel scale obtained a reliability coefficient of 0.86 through Chronbach ALPHA (Zargar, 2008).

In the present research the ALPHA Cronbach's values for all the questionnaires were between 0.84 and 0.88. To determine the validity of the anxiety questionnaire, it was correlated with the depression questionnaire which rendered a validity coefficient of ( $r=0.78, p \leq 0.000$ ). Miller Hopefulness Inventory (MHI). This test is a type of diagnostic tests. Samiei and Ashayeri (1989) used the method of content validity for evaluating the validity of this questionnaire, the obtained validity was completely satisfactory and its reliability coefficient was 0.75 (Samiei et al., 2009).

In the present research, the reliability coefficient of Miller hopefulness questionnaire was calculated using Chronbach ALPHA method which yielded the coefficients of 0.89 and 0.90. To determine the validity of hopefulness questionnaire, it was correlated with the Mark of Anxiety Questionnaire, yielding a validity coefficient of  $r=0.81, p < 0.001$ .

## RESULTS

The data were analyzed by using MANOVA and ANCOVA. Table 1 shows the multivariate analysis of anxiety and hopelessness of experimental and control groups.

**Table 1.** Results of the appropriateness of multivariate analysis of variance (MANOVA) for analyzing the difference scores of the variables of anxiety and hopefulness of the experimental and control groups

Name of test	Amount	Hypothesis D.F	Error D.F	F ratio	Significance level
Pillai's Trace	0.82	2	28	168.68	0.0001
Wilks' Lambda	0.097	2	28	168.68	0.0001
Hotelling's Trace	15.34	2	28	168.68	0.0001
Roy's Largest Root	15.34	2	28	168.68	0.0001

**Table 2.** Results of MANOVA on the difference between the pre-test and post-test scores on anxiety and hopefulness variables

Variables	Total sum of Square	Degrees of Freedom	Average sum of Square	F ratio	Significance level
Anxiety	207.34	1	207.34	135.41	0.0001
Hopefulness	2619.60	1	2619.60	451.35	0.0001

As it shown in Table 1, the difference between the means of experimental and control group, at least on one of the dependent variables (anxiety and hopefulness) is statistically significant. The results of the MANOVA testing the differences between the means of the difference scores (means of differences between pre-test and post-test scores) are shown in Table 2. As it is indicated in Table 2, there is a significant difference between the difference scores of the women with breast cancer in the control and

experimental groups regarding anxiety ( $P=0.0001$ ;  $F=135.41$ ) and hopefulness ( $P=0.0001$ ;  $F=451.35$ ). In other words, mental imagery relaxation training significantly decreased the anxiety and hopefulness in experimental group in compare with control group.

Table 3 shows the results of MANOVA on the difference between the pre-test and follow up scores of anxiety and hopefulness in experimental and control group.

**Table 3.** Results of the appropriateness of multivariate analysis of variance (MANOVA) for analyzing the difference scores of the variables of anxiety and hopefulness of the experimental and control groups after follow up

Index	Amount	Hypothesis D.F	Error D.F	F Ratio	Significance level
Pillai's Trace	0.96	2	28	143.95	0.0001
Wilks' Lambda	0.065	2	28	143.95	0.0001
Hotelling's Trace	13.29	2	28	143.95	0.0001
Roy's Largest Root	13.29	2	28	143.95	0.0001

As it shown in Table 3, the difference between the means of the women with breast cancer in experimental and control group, at least on one of the dependent variables (anxiety and hopefulness) is statistically

significant. The results of the MANOVA testing the differences between the means of the difference scores (means of differences between pre-test and follow up scores) are shown in Table 4.

**Table 4.** Results of MANOVA on the difference between the pre-test and follow up scores of anxiety and hopefulness variables

Variables	Total sum of Square	Degrees of Freedom	Average sum of Square	F Ratio	Significance level
Anxiety	196.13	1	1959.85	121.59	0.0001
Hopefulness	2474.43	1	1862.50	338.76	0.0001

As it is indicated in table 4, there is a significant difference between the difference scores of the women with breast cancer in the experimental and control groups regarding anxiety ( $P=0.0001$ ;  $F=121.59$ ) and hopefulness ( $P=0.0001$ ;  $F=338.76$ ) in follow up period. In other words, mental imagery relaxation training significantly decreased the anxiety and hopefulness in experimental group in compare with control group after follow up period.

## DISCUSSION

In the light of the purpose of the research and based on the posited hypotheses the acquired findings are discussed and explained. Contents of tables 2 and 3 indicated that there was a significant difference between control and experimental groups, in relation to the effectiveness of the mental imagery and relaxation techniques based on the levels of anxiety and hopefulness. This result means that mental imagery and relaxation training is effective in mitigation of depression, and hopefulness of the woman with breast cancer.

Mental imagery and relaxation decreased the anxiety of the women with breast cancer in experimental

group in compare with pretest and control group ( $P=0.0001$ ;  $F=135.41$ ). This results, confirming the first hypothesis of the research and are consistent with the preview researchs (Rodhaver, 2004; Achenback, 2005; Menziez, 2009; Rustoen et al., 2005; Sharfi, 2010., Abbaspour, 2007; Kold et al., 2003; Davidson et al., 2007). Also, mental imaginary and relaxation training increased the rate of hopefulness in experimental group in compare with pretest and control group, therefore, the second hypothesis is confirmed as well. Moreover, obtained results from the second hypothesis is consistent with of Gordon (Godfrin et al., 2010; ShehniYeylagh et al., 2001). concerning the effects of consultation and psychotherapy in decreasing anxiety and depression in women with breast cancer (ShehniYeylagh et al., 2001). Furthermore, the mental imagery and relaxation training decreased the rate of hopefulness of women with breast cancer in experimental group. Referring to the present finding in table 2 and 3, it was evident that there was a significant difference between patients with breast cancer in the experimental and control groups in hopefulness, ( $p=0.0001$ ;  $F=451.25$ ). In other words, mental imagery and relaxation training decreased the hopefulness in the

experimental group. Therefore, the second hypothesis is also confirmed.

The obtained results of this hypothesis are consistent with the previous researches (Spiegel., 2004; Kalery., 2008), concerning the relationship of hope in the heart-failure disease (Kold et al., 2003; Hezarousy, 2005; Jaffary., 2008). Concerning the effects of relaxation in increasing the hope in women with breast cancer and also Derrani, concerning the signs and symbols within teenagers and Argayl (1999), regarding relationship between fun & happiness (Hollon, 2006; Baramin, 2007). Mackaferly et al. concerning the effect of mental imagery and psychotherapy in increasing the hope (Rahmani, 2008). Since relaxation procedure generally is a prerequisite to the introduction of mental imagery, it can be concluded that the results are concordant with the marginal studies in this group. It seems that the reasons for mitigation of tension and releasing from anxiety and depression are due to the taught procedures: The use of relaxation in the beginning. In addition, the procedure of mental imagery with raising the strength of the mind and body insures people that they have the ability to control terrible events. Therefore, it can play a role in mitigating depression, and increasing the level of hope among patients with breast cancer. Moreover, hope is more a mental state rather than a physical one. Therefore, it is affected by inspiration. While anxiety and depression are combination of both of them (physical & mental). So, when mental imagery and relaxation are used to mitigate the activity of sympathetic nerve and to release tension & depression, the final result will be the maintenance of moral and hope for living that is an important matter among patients, and specially patients with breast cancer. It is to be mentioned that repetition and practice of most of these methods and using other therapeutic behavioral-diagnostic procedures can be effective in reducing the level of anxiety and increasing the hope in the women with breast cancer.

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