

## Original research

**Comparing the effectiveness of group therapy based on acceptance and commitment and motivational interview on health dimensions in women with breast cancer**

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**Abstract**

**Introduction:** Today, the treatment of the health problems of women with breast cancer is a health priority in families; therefore, the aim of the present study was to compare the effectiveness of group therapy acceptance and commitment treatment and motivational interview on health dimensions in women with breast cancer.

**Research method:** a semi-experimental type of pre-test - post-test with a control group with follow-up, the statistical population of this research included all women aged 30-50 with breast cancer who referred to Firouzgar Hospital in Tehran in 1401 for treatment. and received mastectomy surgery. The research sample was available and included 45 people. The research tools included health control dimension scale, motivational interview therapy protocol and acceptance and commitment therapy. The data was analyzed with SPSS version 26 using statistical test of mixed analysis of variance.

**Findings:** Two treatment intervention methods based on acceptance and commitment and motivational interview had a significant effect on the improvement of the internal health dimension in the post-test. Also, the scores of the dimension of health related to effective people and health related to chance decreased significantly. There was a difference between the scores of the research variables in the three stages of pre-test, post-test and follow-up regardless of the type of intervention. Among the two intervention methods of acceptance and commitment therapy and motivational interviewing, acceptance and commitment therapy was more effective in strengthening internal health and reducing health scores related to effective people and luck in women with breast cancer. Therefore, with both treatment methods based on commitment and acceptance and motivational interviewing, especially ACT, which was more effective, it is possible to speed up the recovery of women with breast cancer.

**Conclusion:** Therefore, it is possible to benefit from both acceptance and commitment treatment and motivational interviewing in order to increase the mental health of women with breast cancer.

**Keywords:** acceptance and commitment treatment, dimensions of health, motivational interview, women with breast cancer

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## Introduction:

Breast cancer is the third most common cancer in the world and the most common cancer in women. This disease includes about one third of all women's cancers and is the main cause of death in women aged 40 to 70. In Iran, the incidence of breast cancer varies from 15 per 100,000 people in urban areas to 34.6 in metropolitan areas, and it is expected to increase significantly in the coming years [1]. Breast cancer may be caused by several factors such as age, sex, race, previous benign disease in the breast, previous cancer history in the person, age of menstruation and early menarche, late menopause and early pregnancy. Emotionally and psychologically, it is the most influential and important health concern among women [2].

The theoretical and experimental evidence of the research showed that cancer patients with high self-efficacy find better adaptation after surgery and will experience less negative psychological consequences. According to the findings of this research, women with higher self-efficacy tended to underestimate the negative consequences of surgery on their appearance after mastectomy surgery. It seems that the patients' reaction to their body image after breast cancer is influenced by the dimensions of their health control. The dimensions of health control mean a person's beliefs about the role of internal or external forces in controlling his health [3]. The researchers concluded that when the locus of health control in patients is highly internal or external, the disease worsens. Also, the results showed that the internal health control center component is significantly related to positive health-related outcomes. Chance health control center also showed a correlation with negative health-related outcomes such as lower self-care and self-efficacy, lower self-esteem, and high levels of anxiety and depression [4].

Considering the importance of increasing health in breast cancer patients, one of the most essential components of cancer treatment is awareness, education and treatment of patients' psychological problems [5]. Treatment based on acceptance and commitment is one of the new and effective treatments for solving psychological problems and disorders. Its underlying principles include: accepting or willing to experience pain or other disturbing events without trying to control them and acting based on value or commitment combined with the desire to act as meaningful personal goals before eliminating unwanted experiences. Therefore, ACT treatment focusing on the existing conditions and the ways forward towards acceptance and personal growth is very appropriate in the crises caused by the disease, and according to the conditions created in the person's situation, acceptance is gradually created until the person feels for himself. achieve as a suitable person socially, sexually and professionally; At this stage, the feeling of readiness to invest in an effective life is created and the ability to accept others and be accepted by others is achieved. Treatment based on acceptance and commitment has been effective on self-concept and health control in women with breast cancer after mastectomy surgery. In other words, treatment based on acceptance and commitment in women with breast cancer after mastectomy surgery has increased treatment compliance [6 and 7].

In this regard, the researchers conducted a research called the effect of motivational interviewing on self-management, psychological consequences in breast cancer, and found that the motivational interviewing program included a 60-minute interview during which the participants were allowed to talk about their thoughts and feelings about cancer. . It caused the participants in the motivational interview group to significantly improve their management, self-efficacy and quality of life[8]. Also, motivational interviewing is an effective technique to facilitate decision-making in the field of behavior change [9]. In the motivational interview, the therapist supports the client's self-sufficiency

and does not emphasize that the client should believe that he can change his behavior. The mentioned treatment also pays attention to their participation during the treatment. As researches have shown, participation during the treatment process helps clients to change their behavior [10]. Considering the increase in the prevalence of cancer and the importance of its impact on all aspects of the lives of people with cancer, and considering that in our society, the concept of health dimensions and related factors in breast cancer patients has been less discussed. Based on the review and review of the sources by the researcher, the studies that compare the treatment based on commitment and acceptance and motivational interviewing were very limited, on this basis, in order to clarify the conflict of opinions and reveal the more accurate effectiveness of these treatment approaches, as well Considering the difference in the theoretical approach of both types of intervention and in order to compare the effectiveness of each of these two approaches, this research was conducted. Also, since therapy training based on commitment and acceptance and motivational interviewing are two therapeutic approaches, each of them explains and describes the psychological issues and problems of patients in the field of cognition, emotion, behavior, and communication in a different way, and strategies unique to They present a person in order to solve them, the research problem was the question of whether the effectiveness of treatment based on commitment and acceptance and motivational interviewing is different on the health dimensions of women with breast cancer and which method was more effective.

### **materials and methods**

The current research was a semi-experimental design of pre-test-post-test type with a control group with a two-month follow-up, the statistical population of this research included all patients aged 30-50 years old with stage 3 breast cancer in 1401, who were diagnosed with breast cancer. And they were being treated at Shahid Firouzgar Hospital in Tehran. In this research, available sampling method was used; Among the people who were being treated at Shahid Firouzgar Hospital in Tehran, 45 patients were selected and randomly divided into three groups and 15 experimental (two groups) and control in each group. The criteria for entering the study were: 1- not using psychoactive drugs, narcotics and psychological training during the study, 2- being over 30 years old, 3- not suffering from acute or chronic mental disorders (according to the psychiatrist interview and in the file), 4- expressing consent for the subjects' participation and 5- suffering from the third stage of cancer. The exclusion criteria were: 1- Not attending intervention sessions for more than two sessions and unwillingness to continue attending intervention sessions.

After selecting the participants through demographic forms and consent forms and after selecting the sample, explanations were first given to the experimental groups regarding the intervention and they were asked to be actively present in all the meetings, the general principles, rules and the goals of the group were discussed in general. Treatment interventions based on acceptance and commitment and motivational interview were trained on both experimental groups separately, and no intervention was performed on the control group. The arrangement of the seats was semi-circular to facilitate group participation. The intervention sessions were conducted as a group, and each session lasted about 60 minutes. After finishing the last stage, the mentioned questionnaires were filled again by the participants. Also, to follow up on the stability of the treatment results after two months, the participants were asked to fill out the questionnaires again. The treatments were done at the Savalan counseling center, which is special for education, with the presence of a psychologist. It should also be noted that the educational information was provided to the control group after the end of the study.

### **Questionnaire of dimensions of health**

The multidimensional scale of health dimensions was created in 1978 by Walston et al. in order to determine the health dimension of people. Whether the dimension of a person's health is internal or external is based on a set of specifications. This scale includes three components with a six-point Likert scale and the following words are abbreviated: 1-Dimension of health related to effective people (PHLC): includes the degree of a person's belief that his health is determined by other people, 2-Dimension of internal health (IHLC): includes the degree of a person's belief that his internal factors and behaviors are responsible for his illness and health, 3- dimension related to luck (CHLC): includes the degree of a person's belief that his health is dependent on luck, luck, fortune And it is fate. This questionnaire consists of eighteen statements and each component has six statements. This questionnaire is a self-report tool. The subject should express his agreement or disagreement with each of them on a six-point Likert scale from completely disagree (1) to completely agree (6). The scoring method is such that to get the score of each subscale, it is enough to add the score of all the statements related to the subscale in question. Internal health control source subscale questions: 17-13-12-8-6, health control source subscale questions related to effective people: 18-14-10-7-3-5 and health subscale questions related to luck: 16-15-11-9-4-2. The Koder-Richardson reliability coefficient for each scale of internal locus of control, locus of control related to important people, and locus of control related to chance has been reported as 0.50, 0.61, and 0.77 respectively [11]. Concurrent validity of health locus of control scale with internal-external scale of Rater has been determined. The correlation of the scores of this test with the health status of the subjects also indicates the validity of this test [12]. In the present study, internal consistency coefficients were obtained using Cronbach's alpha method for internal health of 0.81, health related to effective people 0.83, and health related to chance 0.79.

**Summary of the meeting plan of the act:** Act sessions were presented in 8 sessions and each session lasted for 60 minutes. A meeting was held every week. The training was conducted by the researcher. Its validity and reliability have been confirmed in previous studies [7]. Also, in order to confirm the validity of the content of the treatment package and its compatibility with the research objectives, its text was given to ten health psychology experts familiar with the subject in order to approve the treatment package. Then its text was presented to several people with breast cancer in the form of an informal class to confirm its correct understanding. And the researcher had already completed the specialized course of act therapy at Savalan Counseling and Psychological Services Center under the supervision of Dr. Buyuk Tajri.

**Table 1. Summary of ACT treatment sessions [7].**

SESSIONS	OBJECTIVES AND CONTENT
1	Introduction, getting to know and building relationships with the group members, explaining about informed consent to participate in the research and how to cooperate, obtaining consent from the participants, filling out the pre-test questionnaires. Familiarity with breast cancer, definition of three variables and the effect of emotions on cancer, familiarity with act
2	Examining methods of self-control by clients, teaching the concept of creative helplessness, metaphor of a well, teaching metaphor of a hungry tiger, eating with attention and awareness, receiving feedback and presenting homework
3	Help clients to recognize ineffective control strategies and realize their futility, accept painful personal events without conflict with them by using metaphors, receive feedback and provide homework.

4	Explaining about avoiding painful experiences and being aware of its consequences, teaching the steps of acceptance, changing language concepts using metaphors, teaching calmness, receiving feedback and providing homework.
5	Introducing the three-dimensional behavioral model in order to express the common relationship between behavior/emotions, psychological functions and observable behavior and discuss the challenge to change behavior based on it, receive feedback and provide homework
6	Explaining the concepts of role and context, observing oneself as a platform and contacting oneself using metaphors, awareness of sensory perceptions and separation from the senses that are part of mental content, receiving feedback and presenting homework
7	Explaining the concept of values, creating motivation for change and empowering clients for a better life, practicing concentration, receiving feedback and providing homework
8	Teaching commitment to action, identifying behavioral plans in accordance with values and creating commitment to act on them, summarizing meetings, implementing post-test

**Summary of motivational interview plan:** Motivational interview sessions [13] were presented in 5 sessions and each session lasted for 60 minutes. A meeting was held every week. The training was done by the researcher. Also, in order to confirm the validity of the content of the treatment package and its compatibility with the research objectives, its text was given to ten health psychology experts familiar with the subject in order to approve the treatment package. The researcher had previously completed the specialized course of motivational interviewing at the Savalan Counseling and Psychological Services Center under the supervision of Dr. Buyuk Tajri.

**Table 2. Summary of motivational interview sessions [13].**

SESSIONS	OBJECTIVES AND CONTENT
1	Acquaintance, introduction, norms and processes of the group, a brief explanation about the goals of the intervention and the benefits of creating motivation, learning the model of the stages of change, introducing the motivational approach based on self-efficacy, conducting the pre-test
2	Reviewing the previous session, practicing identifying emotions, practicing and completing the exercise of affect dimensions with emotional dimensions and homework
3	Practicing brainstorming, short and long-term profits and losses, describing and practicing alternative corrective options
4	Definition of values, practice of identifying and prioritizing first-class values, practice of definition of values and practice of matching value and behavior
5	Summary and summation of the exercises of the previous sessions in the form of perspective exercises and post-examination.

## Findings

The average age of the participants in this research sample is 43 and its standard deviation is 11.07. The range of age changes was from 30 to 49 years.

**Table 3. Distribution of frequency, percentage and mean of participants according to age**

age category	act	motivational interviewing	control	total	percentage
30-34	1	3	1	5	11.6
35-39	6	2	4	12	27.9
40-44	3	6	7	16	37.2
45-49	5	4	1	10	23.3
Average	42.75	43.04	41.23	42.22	

According to Table 1-4, 11.63 percent of all participants are in the age group of 30-34 years, 27.9 percent of them are in the age group of 35-39 years, 37.2 percent of them are in the age group of 40-44 years and 3.3 23% of them were in the age group of 45-49 years. There were 17 people equivalent to 37% of diploma and sub-diploma level participants, 19 people equal to 42% bachelor's degree, 6 people equal to 13% master's degree and 3 people equal to 6% of the subjects were in doctoral level. The results of the Shapiro-Wilk test showed that for the variable of health control dimensions in all three groups, which is greater than 0.05, the data of the groups are normal and parametric tests can be used. According to Levin's test, the F value was equal to 0.585, the variances of the three groups were equal and consistent. Therefore, the assumption of homogeneity of variances was fulfilled for this variable. Also, in the test of the homogeneity of the regression slopes, the F value equal to 1.302 was obtained, and since the significant level of interaction between the three groups was greater than  $p < 0.01$ , the assumption of the homogeneity of the regression slopes was confirmed. After the investigation, because the normality of the distribution and the assumptions of homogeneity of variance and the assumption of equality of error of variances and homogeneity of linear slopes were not questioned, the researcher is allowed to use analysis of variance.

**Table 4. The results of the mixed analysis of variance test in order to investigate the effect of group and measurement time on health scores**

Health	Changes Source	SS	DF	MS	F	Significance	Eta	Power
<b>internal</b>	group	6483.12	2	5920.38	26.12	0.001	0.34	0.66
	error	2491.54	42	2027.33				
	Within subjects							
	Time	3027.18	2	2711/37	40.43	0.001	0.31	0.79
<b>Effective people</b>	Time and group	10274.06	4	8021.44	28.73	0.001	0.39	0.83
	error	1983.25	39	65.06		0.001	0.37	0.59
	group	5938.17	2	4839.06	32.03	0.001	0.37	0.59
	error	2830.18	42	2763.04				
<b>Chance</b>	Within subjects							
	Time	4286.99	2	3982.55	36.16	0.001	0.29	0.56
	Time and group	10271.83	4	9820.11	33.63	0.001	0.33	0.72
	error	2017.53	39	61.72				
<b>Chance</b>	group	4829.44	2	5830.11	22.63	0.001	0.29	0.59
	error	1938.82	42	1862.25				
	Within subjects							
	Time	2011.40	2	1940.37	29.55	0.001	0.26	0.65
<b>Chance</b>	Time and group	7628.29	4	6892.34	23.04	0.001	0.22	0.62
	error	1174.62	39	59.48				

In order to investigate the effect of the group factor and the time factor on internal health scores, a mixed analysis of variance test was implemented. In this regard, both ACT interventions and motivational interviews have a significant effect on increasing internal health scores in the post-test. Therefore, according to the findings of the above table, two methods of intervention, ACT and motivational interview, are significant on internal health scores in the post-test ( $F(2, 42) = 32.03, P < 0.001$ ). Also, the effect of the time factor on the health scores of the affected people in the follow-up phase was significant ( $F(2, 42) = 40.43, P < 0.001$ ). Therefore, there is a difference between the internal health scores in the three stages of pre-test, post-test and follow-up regardless of the group. Also, the interaction effect between group and time was significant ( $F(2, 42) = 28.37, P < 0.001$ ). Therefore, it can be concluded that the effect of the group was different according to the measurement time levels. Also, by considering the eta square of 0.34, it can be concluded that the experimental intervention led to changes in the experimental group, and 0.34 of the total changes were caused by the experimental procedure. So, treatment has an effect on inner health. Therefore, regarding the hypotheses related to the effectiveness of these two treatments in increasing the internal health of women with breast cancer, the null hypothesis is rejected and the researcher's hypothesis is confirmed, which means that both experimental approaches (act intervention and motivational interview) have been able to increase health be effective in women with breast cancer.

Also, both the act intervention and motivational interview have a significant effect on increasing the health scores of the effective people in the post-test. Therefore, according to the findings of the table above, the two intervention methods, ACT and motivational interview, are significant on the health scores of the effective people in the post-test ( $F(2, 42) = 26.12, P < 0.001$ ). Also, the effect of the time factor on the health scores of the affected people in the follow-up phase was significant ( $F(2, 42) = 36.16, P < 0.001$ ). Therefore, there is a difference between the health scores of effective people in the pre-test, post-test and follow-up regardless of the group. Also, the interaction effect between group and time was significant ( $F(2, 42) = 33.63, P < 0.001$ ). Therefore, it can be concluded that the effect of the group was different according to the measurement time levels. Also, the experimental intervention led to changes in the experimental group, which was 0.37 of the total changes caused by the experimental procedure. So, the treatments have an effect on the health of the affected people. Therefore, regarding the hypotheses related to the effectiveness of these two treatments, the researcher's assumption is confirmed, which means that both experimental approaches (act intervention and motivational interview) have been able to affect the health scores of women with breast cancer. To be effective for women with breast cancer.

In the case of the luck-related health variable, both the act intervention and motivational interview have a significant effect on increasing the chance-related health scores in the post-test. Therefore, according to the findings of the table above, the two methods of intervention, ACT and motivational interview, are significant on health scores related to chance in the post-test ( $F(2, 42) = 22.63, P < 0.001$ ). Also, the effect of the time factor on health scores related to chance in the follow-up phase was significant ( $F(2, 39) = 32.03, P < 0.001$ ). Therefore, there is a difference between the health scores related to chance in the three stages of pre-test, post-test and follow-up regardless of the group. Also, the interaction effect between group and time was significant ( $F(2, 39) = 32.03, P < 0.001$ ). Therefore, it can be concluded that the effect of the group was different according to the measurement time levels. Also, the experimental intervention led to changes in the experimental group, which was 0.29 of the total changes caused by the experimental procedure. So, treatments have an effect on health related to luck. Therefore, regarding the hypotheses related to the effectiveness of these two treatments, in the health related to the chances of women with breast cancer, the researcher's

assumption is confirmed, this means that both experimental approaches (act intervention and motivational interview) have been able to affect the health scores related to Chances of being effective in women with breast cancer.

Next, in order to compare the effectiveness of the two experimental groups with respect to each other by keeping the time factor constant, the average of the health control dimensions of the groups was compared using Bonferroni's follow-up test. In comparing the effectiveness of the two experimental groups regarding internal health, the difference in the averages is significant at the 99% confidence level, so the hypothesis of the difference in the effectiveness of the two intervention methods is also confirmed. Considering the positivity of the average differences and the fact that the average of the ACT group was higher than the motivational interview group, therefore, among the ACT intervention methods and the motivational interview, the ACT method was more effective in increasing the internal health of women with breast cancer.

The comparison of the effectiveness of the two experimental groups regarding the health of the affected people showed that the difference in the averages is significant at the 99% confidence level, so the difference in the effectiveness of the two intervention methods was also confirmed. Considering the negativity of the average differences and the fact that the average of the ACT group was higher than the motivational interview group, therefore, among the ACT intervention methods and the motivational interview, the ACT method was more effective in reducing the health scores related to effective people in women with breast cancer. The comparison of the effectiveness of the two experimental groups regarding health related to chance, showed that the difference in means is significant at the 99% confidence level, so the difference in the effectiveness of the two intervention methods was also confirmed. Considering the negativity of the average differences and the fact that the average of the ACT group was higher than the motivational interview group, therefore, among the ACT intervention and motivational interview methods, the ACT method was more effective in reducing health scores related to chance in women with breast cancer.

## **Discuss**

The present study was conducted with the aim of comparing the effectiveness of treatment based on commitment and acceptance and motivational interviewing on health dimensions in breast cancer patients and the findings showed that with both methods of treatment compared to the control group, the scores of health dimensions changed and Commitment and acceptance therapy was more effective in this case. Also, a similar finding that showed the effectiveness of these two types of treatment with regard to the interaction of two factors, group and time, was rarely found in Iran. Hassanzadeh et al. (1402), Avik et al. (2021), Kashdan and Rotberg (2020), Zahidnejad et al. (1400) are aligned. Women who had breast surgery, because they lack cognitive and behavioral skills to control stressful environmental events, usually doubt their ability and are always worried about others' negative evaluations of themselves and their behaviors. In fact, it can be said that health control is one of the most important factors associated with post-surgery problems. Therapy based on commitment and acceptance helps people to show them metaphorically in situations where people have had a lot of stress and they can learn ways to deal with it during the treatment process. In treatment based on commitment and acceptance, all the efforts of the therapist are to create and cultivate a life based on values, according to which he helps the clients to find the desired way of living and to do that way. Clarifying the values during this treatment gives the group members enough motivation to continue the treatment, and committed action takes place when the values are clarified [7]. In addition, the two important treatment processes of acceptance and commitment under the title of contact with the

present and self as a background cause the client's awareness of himself and current needs to increase, and this awareness helps the continuation of self-care behaviors in patients. At the same time, a person who performs committed actions in line with his values has an inner health dimension [16]. The process of commitment and acceptance therapy helps people to accept the responsibility of behavioral changes and to change or persist whenever necessary, and in fact, this therapy seeks to balance the methods appropriate to the situation. In areas that can be changed, such as obvious behavior, it focuses on change, and in areas where change is not possible, such as breast surgery, it focuses on acceptance and mindfulness exercises. This increase in the patient's flexibility under the shadow of mindfulness training is another reason for the continuation of treatment, which was also achieved in this study. A person who has psychological flexibility does not avoid unwanted events and does not try to control and change them, so instead of dealing with avoiding unwanted events, assigning problems to others and luck, he spends his energy on values and quality of life. [15]. Patients hoping to improve their health recover faster due to positive belief, and hope leads to positive physiological changes in humans. Treatment based on commitment and acceptance makes a person find his life rich, content and meaningful, which leads to the improvement of daily functioning, physical and psychological health. In the treatment process of commitment and acceptance, psychological flexibility is known as the basis of psychological health [14].

In explaining the effectiveness of the motivational interview method on the focus of health control of women with breast cancer, it can be said that in cancer, which requires the patient's participation in the treatment process, the outcome of the treatment depends on the patient's health beliefs and his understanding of the disease. One of the influencing factors on self-care behaviors is the center of health control. The use of motivational interviewing method has made them better understand their role in providing health and the role of external health factors has become less important. In motivational interviewing, it is assumed that the client is hesitant to change and the therapist supports him in the challenge of changing his behavior. Therefore, motivational interviewing allows clients to openly express their ambivalence and identify their conflicting motivations and resolve them satisfactorily, in this case, the psychological pressures that a person experiences and can lead to physical and psychological disorders [13]. Instead of dealing with external, environmental, genetic and heredity factors and childhood events, therapists focus on thinking and correcting the person's knowledge and interpretation and rationalizing and justifying his way of thinking. As a result, the patient learns that many of his beliefs about the factors that cause cancer in him and his control and prevention methods are irrational and should be reconsidered and considered realistically; Therefore, during the treatment period, patients consider themselves more responsible in controlling and treating their disease condition, and in this way, the center of internal control of health increases. Due to cognitive rethinking and accuracy in living conditions, interactions with others and the type of nutrition and lifestyle, the source of health related to effective people in this method was reduced well [11]. Research shows that people who have a negative attitude towards their disease and consider it serious, uncontrollable and chronic act very passively, have very poor social performance and show many disabilities. By reviewing their beliefs and thoughts and their correct methods, these people gain a better and more realistic understanding, and by this means, their sense of responsibility increases. Motivational interviewing is one of the methods that increases self-efficacy, the sense of empowerment and control in a person, so he does not consider the disease beyond his control and makes more efforts to follow the treatment [17]. Since the lack of motivation is one of the most important reasons for treatment failure, failure to do homework and other negative results, and motivating patients to continue treatment is one of the most important tasks of medical personnel, motivational interviewing has been able to change the It creates a change in people's attitude and

increasing their participation will increase their cooperation and increase their willingness to continue treatment. Therefore, motivational interviewing is used to increase intrinsic motivation and increase self-confidence in a person's ability to change behavior. Intrinsically created motivations shape self-efficacy; Therefore, the very important mechanism of this treatment is paying special attention to internal motivations, which leads to an optimal increase in internal health scores. On the other hand, in the motivational interview, the therapist supports the client's self-efficacy and does not emphasize that the client should believe that he can change his behavior. The mentioned treatment also pays attention to the client's participation during the treatment. As researches have shown, participation during the treatment process helps clients to change their behavior and, as a result, feel more inner health. This issue affects health-related behaviors, in other words, it affects the probability of various diseases and also the disease recovery process [16].

With both treatment methods based on commitment and acceptance and motivational interviewing, especially ACT, which was more effective, the recovery of women with breast cancer can be accelerated. The results emphasize the importance of using these interventions in increasing the mental health of women with breast cancer and providing a new horizon in the clinical interventions of patients.

**Limitations and suggestions:** The limitations of this research included the non-use of random sampling method and the statistical population being limited to women with breast cancer aged 30-40 in Tehran. Finally, to increase the generalizability of the results, it is suggested to carry out this research in other provinces and regions and communities with different cultures, and to use random sampling method to control disturbing factors. It is also suggested to train psychologists and specialists in this field during a specialized workshop, so that by applying these trainings to patients, they can take a practical step to improve the health aspects of these women.

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**Ethical considerations:** The researchers acted according to the ethical protocols of the Helsinki studies, and the information of the subjects remained anonymous, and all this information will remain protected after the study.

### References:

1. World Health Organization. Cancers. Available from: [http://www.who.int/uv/faq/skin\\_cancer/en/index1.html](http://www.who.int/uv/faq/skin_cancer/en/index1.html). 2022. <https://www.who.int/health-topics/cancer>
2. Grantzau T, Mellekjær L, Overgaard J. Second primary cancers after adjuvant radiotherapy in early breast cancer patients: a national population-based study under the Danish Breast Cancer Cooperative Group (DBCG). *Radiotherapy and Oncology*. 2020; 106 (1): 9-42. DOI: [10.1016/j.radonc.2013.11.002](https://doi.org/10.1016/j.radonc.2013.11.002)
3. Lam WWT, Chan M, Ka HW, Fielding R. Treatment decision difficulties and post-operative distress predict persistence of psychological morbidity in Chinese women following breast cancer surgery. 2023; *Psycho-Oncology*. 2020; 16 (10):904-12. doi:[10.1002/pon.1147](https://doi.org/10.1002/pon.1147)

4. Schlenk EA, Hart LK. Relationship between health locus of control, health value, and social support and compliance of persons with cancer mellitus, *Cancer Care*, 2021; 7 (6): 566- 74. DOI: [10.2337/diacare.7.6.566](https://doi.org/10.2337/diacare.7.6.566)
5. Ali Shiri M, Tajri B, Kaveh V, Ahadi H. Comparing the effectiveness of mindfulness and self-care training on body image in women with breast cancer. *Journal of Psychological Sciences*. 2023; 22(123):572-557. (In Persian) URL: <http://psychologicalscience.ir/article-۱۷۵۶-۱-fa.html>
6. Keulen J., Matthijssen D., Schraven J. The effectiveness and cost-effectiveness of Acceptance and Commitment Therapy as a trans diagnostic intervention for transitional-age youth: study protocol of a randomized controlled trial. *BMC Psychiatry*. 2023; 23: 51. <https://doi.org/10.1186/s12888-023-04535-z>
7. Hayes S. C., Luoma J., Bond F., Masuda A., Lillis J. Acceptance and Commitment Therapy: Model, processes, and outcomes. *Behavior Research and Therapy*. 2023; 44(1): 1-25. DOI: [10.1016/j.brat.2005.06.006](https://doi.org/10.1016/j.brat.2005.06.006)
8. Chen Sh, Creedy D, Lin H, Wollin J. Effects of motivational interviewing intervention on self-management, psychological and glycemic outcomes in type 2 diabetes: a randomized controlled trial. *International Journal of Nursing Studies*. 2021; 49: 637–644. DOI: [10.1016/j.ijnurstu.2021.11.011](https://doi.org/10.1016/j.ijnurstu.2021.11.011)
9. Brodie DA, Inoue A. Motivational interviewing to promote physical activity for people with chronic heart failure. *J Adv Knurs*. 2022; 50(5): 518–27. DOI: [10.1111/j.1365-2648.2005.03422.x](https://doi.org/10.1111/j.1365-2648.2005.03422.x)
10. Heirich M, Ziadni M, Gross J, Manber R, Darnall B, Law C, et al. The impact of pain self-efficacy, Catastrophizing, and cognitive distortions on global health in patients with chronic lower back pain. *Pain*. 2019; 19(3): 534. doi: [10.1016/j.jpain.2017.12.088](https://doi.org/10.1016/j.jpain.2017.12.088)
11. Pourhoseinzadeh M, Gheibizadeh M, Moradikalboland M, Bahman Cheraghian. The Relationship between Health Locus of Control and Health Behaviors in Emergency Medicine Personnel. *Community Based Nurse Midwifery*. 2022; 5(4):397-407. (In Persian) PMID: [PMCID: PMC5635559](https://pubmed.ncbi.nlm.nih.gov/35635559/)
12. Moshki M, Ghafranipour F, Azadfallah P, Hajizadeh E. Validity and reliability of health locus of control in medicine Students. *Khanabad Medicinal Faculty*. 2018; 12(1): 33-42. (In Persian) DOI: [10.1186/1471-2458-7-295](https://doi.org/10.1186/1471-2458-7-295)
13. Miller WR, Rollnick S.. *Motivational interviewing helping people change*. Third edition. New York. 2019; USA: Guilford press; 2019. <https://psycnet.apa.org/record/2012-17300-000>
14. Awick EA, Phillips SM, Lloyd GR, McAuley E. Physical activity, self-efficacy and self-esteem in breast cancer survivors: A panel model. *Psycho-Oncology*. 2022; 26(10):1625-31. DOI: [10.1002/pon.4180](https://doi.org/10.1002/pon.4180)
15. KashdanTB, Rottenberg J. Psychological flexibilities a fundamental aspect of health. *Clinical Psychology*. 2022; 30(7): 865-78. (In Persian), doi: [10.1016/j.cpr.2010.03.001](https://doi.org/10.1016/j.cpr.2010.03.001)
16. Zahedenjad H. Pour Sharifi h. Babapour J.. The relationship between the health control center, memory and doctor-patient relationship with treatment satisfaction in type 2 diabetes patients.

Urmia Nursing and Midwifery Faculty bimonthly. 2022; 2(9): 67-75. (In Persian) URL: <http://unmf.umsu.ac.ir/article-1-304-en.html>

17. Qahramani Amir, Hemmati Maslak Pak, Masoumeh, and Ali Nejad, Vahid. The effect of Motivational interview based on self-efficacy on the outcome of diabetes mellitus type 2. Journal of Urmia's Society and Culture. 2023; 15(8): 688-695. (In Persian) <http://unmf.umsu.ac.ir/article-1-3332-en.html>