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The effectiveness of group-based cognitive-behavioral stress management on somatic symptoms and satisfaction with therapy and therapist in obese females

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Abstract

Introduction: Today, obesity is one of the health problems and a risk factor in many diseases, such as diabetes, cardiovascular diseases, hypertension and various types of cancers. The purpose of this study was to investigate the effectiveness of group-based cognitive-behavioral stress management on somatic symptoms and satisfaction with therapy and therapist in obese females.

Materials and Methods: The statistical population of this clinical trial consisted of women referring to health centers in Zanjan city, Iran in 2018. Three centers were chosen and 30 obese women were selected by the convenient sampling method. They were randomly divided into two groups of experimental and control (n=15). Before and after the intervention and also 3 months later, the subjects completed Somatic Symptoms and Client Satisfaction Questionnaires. The experimental group received cognitive-behavioral stress management based on Michael, Anthony, Ironson and Schneiderman protocol and no intervention was carried out on control group during this period. Data analyzed through variance analysis and SPSS-24.

Results: The results of variance analysis with repeated measures showed that F value of somatic symptoms is 12.02 of satisfaction with therapy and therapist is 36.02 which are significant at the level of 0.001. These findings showed that the experimental and control groups were significantly different considering research variables in the three stages of pre-test, post-test and follow-up.

Conclusion: According to the results, it seems that cognitive-behavioral stress management approach improves somatic symptoms and satisfaction with therapy and therapist in obese females.

Keywords: Cognitive-behavioral therapy, Obesity, Satisfaction, Stress, Somatic symptoms

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Introduction

Obesity and overweight are now known as major health problems worldwide. Today, almost one-third of the world suffers from obesity and overweight (1). The World Health Organization has declared obesity a global health threat (2). Obesity is a serious problem with adverse effects on health and longevity and predisposes people to non-communicable diseases such as coronary heart disease, hypertension, hyperlipidemia,

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various cancers, and many emotional and psychological problems (3). Studies show that about 1.6 billion adults over the age of 15 are overweight, and at least 400 million people suffer from obesity (4). On the other hand, obesity is associated with several medical consequences affecting the physical system that may lead to physical symptoms or even daily health problems which affect the daily lives of obese people, including shortness of breath, increased sweating, snoring, inability to cope with sudden physical activity, feeling tired daily, back pain and joint pain, heart disease and cancer (5). Also, the frequency of metabolic diseases and common physical symptoms such as back pain, knee pain, and osteoarthritis have been reported to lower the life quality of obese people compared to normal weights (6).

A study entitled "improvement in the areas of pain, physical symptoms, and depression", after weight loss intervention in obese people, concluded that weight loss had improved joint pain and physical symptoms such as fatigue (7). On the other hand, one of the variables that can affect the effectiveness of our intervention and make the treatment process more efficient is the satisfaction of the client with the treatment and the therapist, which can be used as part of quality improvement plans to increase the care provided for the client and reduce poor treatment experiences. Shreds of evidence show that the features of clients (such as age, sex, and health status) and the results of treatment are predictors of satisfaction, and patient satisfaction is currently considered an important subject of study in health care centers (8). Most importantly, factors affecting patient satisfaction with a therapist are not limited to therapist empathy, intimacy, honesty, unconditional positive attention, respect and commitment, and factors such as patient expectations of how services are provided, rate of service, waiting time for appointments, and patient recovery, in general, can also be classified as elements that play a role in the method and process of treatment and treatment satisfaction. Patient satisfaction is a helpful indicator to prevent outcomes such as quality of life and psychological distress (9,10). In a similar perspective, there is an interaction between multiple factors as the patient evaluates his or her therapist. In one study, patient satisfaction with treatment strategies focusing on client support in controlling physical symptoms was reported to be successful (11,12). In another study, they observed that therapeutic relationship in cognitive-behavioral therapy, concerning the factors mentioned, includes an active and therapeutic environment and didactic by the therapist with a higher level of therapeutic satisfaction. In general, studies have shown that patients who tend to improve in interventions are more independent and express their problems in a supportive environment (13). Experts in examining factors involved in obesity, rather than focusing solely on weight loss, focus more on making positive psychological changes (14). Appropriate psychological interventions can strengthen patients' adjustment and progress to prevent their psychological problems. It is one of the practical approaches to stress management treatment based on cognitive-behavioral that includes a strong theory base (15). Cognitive Behavioral Therapy Stress management refers to a category that focuses on cognitive-behavioral approaches (16). The studies have shown that cognitive-behavioral stress management training leads to changes in interpersonal relationships in interaction with friends and family members and increases empathy in patients. Numerous studies have shown the effect of stress management training by cognitive-behavioral method on reducing symptoms and improving the quality of life of obese cases (17). Regarding the high prevalence of obesity and many problems that obese subjects face, it is better to look for ways to reduce obesity and psychological consequences. Therefore, according to the results of previous studies and lack of research in this field, this study aimed to evaluate the effectiveness of cognitive-behavioral stress management on somatic symptoms and the satisfaction with therapy and therapist in obese females.

Materials and Methods

The present study was a clinical trial including a pretest-posttest design and a control group with follow-up after three months of intervention. According to the studied subject, the statistical population consisted of all obese women referring to health centers (3 centers) in Zanjan, Iran. In this study, available sampling was used so that one of the three health centers under the

supervision of the Ministry of Health was identified, and among the obese women referred to the center, 30 subjects were selected by available sampling. Subjects were randomly assigned into the control and experimental group (n=15). This research is experimental and considering that the sample size of 15 people is sufficient for this type of research (18). Inclusion criteria included female gender; age range of 20-45 years, Body mass index (BMI) ≥30, level of education primary school; Absence of acute psychological disorders (at the diagnosis of the research psychologist), not attending, any weight loss program before. Exclusion criteria included three sessions of absence in training sessions, non-cooperation and non-performance of tasks specified in the class, and unwillingness to participate in further research. The subjects' mental health was assessed based on the general health questionnaire. Based on the cut scores of the questionnaire, the lowest score was considered as mental health. The height of people without shoes was measured using a Seca wall gauge with an accuracy of 0.1 cm, and the weight of people without shoes and with at least clothes was measured using the Seca scale, with an accuracy of 0.1 kg. Body mass index (BMI) was calculated by dividing weight (kg) by height squared (m). Obesity criteria were considered based on body mass index with the first class of obesity 30.34. The ethics committee approved this study of Karaj Azad University with the code (IR.IAU.K.REC.1397.29). Subjective written consent to participate in the study was obtained from the subjects. Also, the registration number (IRCT20181214041964N1) was received from Iran Clinical Trials Registration Center. After selecting the final groups of the study, the subjects of the two intervention groups were asked to participate in a briefing session. In this meeting, the objectives of the research were explained to attract the necessary motivation and consent of the clients to participate in the research. The treatment consisted of 9 group sessions under the protocol of Michelle, Anthony, Ironson, and Schneiderman. In each session, the content and exercises of that session were used. Some task was given at the end of each session. In the last session, the post-test was performed. The topic and summary of the sessions are given in Table 1. The experimental group received cognitive-behavioral stress management treatment for nine sessions of 90 minutes; No intervention was performed on the control group during this period. Both groups completed the questionnaires of physical symptoms and client satisfaction before the treatment sessions of the experimental group and after the end of the treatment sessions.

Research instrument

A) Somatic Symptom—Adult Patient (Adapted from the Patient Health Questionnaire Physical Symptoms (PHQ-15): The DSM-5 Level 2—Somatic Symptom-Adult measure is an adaptation of the 15-item Patient Health Questionnaire Physical Symptoms (PHQ-15) that assesses the domain of somatic symptoms during the past seven days (19). This questionnaire is a valid tool that has been used in 40 studies in different health care settings. Each item on the PHQ-15 is rated on a 3-point scale (0=not bothered at all; 1=bothered a little; 2= bothered a lot). . The total score can range from 0 to 30, with higher scores indicating greater severity of somatic symptoms. The raw scores on the 15 items should be summed to obtain a total raw score. The score of the adapted physical health questionnaire for the patient is interpreted according to the severity of the physical symptoms. Internal consistency (Cronbach's alpha) of the questionnaire with values of 0.82, and the validity of the questionnaire structure with the correlations of the Depression Scale, the Quality of Life Scale, were measured as r= 0.75 and r= 0.64, $P< 0.001$, respectively (20). The standardization of this questionnaire in Iran has been done by Abdolmohammadi et al. Simultaneous validity of this questionnaire with SCL-90 questionnaire 0.74 and the internal consistency of this questionnaire by Cronbach's alpha method to be 0.76 reported. Also, Ghadiri et al. has validated this questionnaire in Iran, and the correlation coefficient of the scores of this questionnaire with SCL-90 is 0.77. Furthermore, the internal consistency of the scale using Cronbach's alpha coefficient has been calculated to be 0.76. (21). In the study, Cronbach's alpha coefficient for 15 questions was equal to 0.79.

B) Clients Satisfaction Questionnaire: It is an 8-item scale designed to measure clients' satisfaction with counseling and treatment

services. The client satisfaction questionnaire is one-dimensional and provides a homogeneous estimate of clients' overall satisfaction with clinical services. The scoring of the client satisfaction questionnaire is obtained by adding the scores of each question. Each question is rated 1-4, and questions 4, 5, and 8 are scored in reverse. Total scores range from 8 to 32, with the higher number indicating greater satisfaction. The client satisfaction questionnaire has been administered to various groups of clients. The most extensive study was performed on 3268 outpatients and in-patients of 76 clinical and counseling centers. Subjects of the study included 42 Mexican Americans, 96 non-Mexican Hispanics, 361 blacks, and 2605 whites. The mean scores of all four groups ranged from 26.35 to 27.23, which did not show a significant difference. The validity of the client satisfaction questionnaire with alpha scores 0.86 to 0.94 has excellent internal consistency in several studies (22). The standardization of this questionnaire in Iran has been evaluated in various studies, and Cronbach's alpha coefficient is reported to be between 0.86 Up to 0.94, and the client satisfaction questionnaire has a very good simultaneous validity. The scores of this questionnaire are correlated with clients' ranking of semiotics and overall improvement, as well as therapists' ranking of clients' progress or the probability of their progress (23). In the mentioned study, Cronbach's alpha coefficient for eight questions is 0.71. Furthermore, to the reliability of the questionnaire, we used the re-test method for 30 people with an interval of 15 days, for which a test-retest coefficient was measured to be 0.75.

Data were analyzed using SPSS 24 statistical software at the level of 0.001. Before covariance analysis of the data, the correlation between the scores was examined in terms of non-deviation from the normal distribution of scores based on Kolmogorov-Smirnov and Shapiro-Wilk tests. After confirming the hypotheses, multivariate analysis of covariance was used. The results of Pillai's trace, Wilks lambda, Hotelling's trace, and Royd's largest root tests were reported in the software outputs.

All four reported tests were used to evaluate the significance of multivariate analysis of covariance. The most widely used test in most reports is the Wilkes lambda, and the Play trace is the strongest test, and the sample size of the groups is equal. The results of all four tests are similar and close to each other.

Table 1. Content of cognitive-behavioral stress management sessions (18)

Session	Content
1	Familiarity of group members with each other, acquaintances with the logic of stress management and treatment goals
2	Review assignments last week, introduce the concept of stress management, increase awareness about physical responses to stressful events
3	Review assignments last week, introducing ideas and starting to identify cognitive distortions
4	Review assignments last week, learning to replace rational thoughts Using stress management skills
5	Review assignments last week, coping styles (first section), introducing coping theory, increasing your awareness about different types of coping styles
6	Review assignments last week, coping styles (second section),learning and practice effective steps, relax practice/ acceptance overwhelming stress
7	Review assignments last week, identify the beneficial and harmful aspects of social support and learn new strategies for the development and expansion of support networks
8	Review assignments last week, identify of the anger patterns characteristic and learning new strategy for assessment and anger management
9	Summarizing the sessions, reviewing and discussing the programs and continuing assignments practice and preparing for the end of the treatment

The mean and standard deviation of the age of the cognitive-behavioral stress management group were 31.27 and 5.16, respectively, and the mean and standard deviation of the age of the control group were 30.00 and 4.33, respectively. The mean and standard deviation of the body mass index of the cognitive-behavioral stress management group were 32.38 and 1.77, respectively, and the mean and standard deviation of the control group were 31.98 and 1.69, respectively.

Table 2. Demographic characteristics of the research participants by study groups

Variables	**Cognitive-behavioral**		**Control**	
Education	Frequency	Percent	Frequency	Percent
Diploma and lower	9	20	10	22.3
Bachelor	5	11.1	4	8.9
Senior	1	2.2	1	2.2
Marital status				
Single	7	15.6	8	17.7
Married	8	17.7	7	15.6
Employment status				
Employed	10	22.22	8	17.7
Unemployed	5	11.11	7	15.6
Exercise status				
Always	4	8.89	3	6.67
Often	4	8.89	6	13.33
Low	7	15.56	6	13.33
History of family				
Yes	8	17.77	8	17.77
No	7	15.56	7	15.56
Sample size	15	33.33	15	33.33
	Mean	Standard Deviation	Mean	Standard Deviation
Age (year)	31.27	5.16	30.00	4.33
Height (cm)	159.13	5.85	157.73	6.33
Weight (kg)	82.53	8.23	81.73	7.52
BMI	32.38	1.77	31.98	1.69

The satisfaction with therapy and therapist in the study group are presented in Tables 3. In general, it is observed in the descriptive findings that the mean scores in the research variables in the post-test and follow-up stages in the experimental group had a greater improvement in compared to the control group.

The significance level obtained in Kolmogorov-Smirnov and Shapiro-Wilk tests of all data sets is greater than 0.05. In other words, the distribution of none of the data sets significantly deviate from the normal distribution, and the assumption of normal data distribution is established for all scores of these variables in two groups.

BOX M test is presented to check the default of homogeneity of variances in the multivariate model. The significance level of the BOX M index is not statistically significant, and the assumption of homogeneity of variance for the data of these variables is established (P> 0.803). The results of the homogeneity study of regression slopes showed that this assumption for

the somatic symptom ($P< 0.082$, F2.39= 2.66), The Satisfaction with therapy and therapist are established ($P< 0.155$, F.2.39= 2.27).

After reviewing and confirming the assumptions, repeated measures analysis of variance was used to evaluate the effectiveness of the cognitive-behavioral stress management approach on somatic symptoms and the satisfaction with therapy and therapist in obese people. In this study, there is an intra-subject factor that measured the research variables in three stages: pre-test, post-test, and follow-up, and there was an inter-subject factor that was group membership. Therefore, the design used is within a between-subject analysis of variance. Table 4 presents the analysis of the variance test with repeated measures for the groups. As can be seen, the value of F is the effect of the interaction of the stages with the group regarding the variables of somatic symptom (112.02) and the satisfaction with therapy and therapist (36.02), which is significant at the level of 0.001. These findings show that the experimental and control groups are significantly different in terms of research variables in the three stages of pre-test, post-test, and follow-up. In order to investigate the differences between the cognitive-behavioral stress management group and the control group in the research variables, the results of comparing the means of the control and experimental groups in three stages of pre-test, post-test and follow-up are reported in Table 5. As shown in Table 5, there is no significant difference in somatic symptoms in the pre-test. In the post-test, there is a difference of 11,133 points between the two groups, which is significant at the level of 0.001. The difference in the follow-up study is 12.86, which is significant at the level of 0.001. The difference in these stages is such that the somatic symptom in the experimental group was significantly reduced. Also, there was no significant difference in the satisfaction with therapy and therapist variable in the pre-test. In the post-test, there is a difference of 4.53 points between the two groups, which is significant at the level of 0.001. The difference in the follow-up study is 5.460, which is significant at the level of 0.001. The difference in these stages is that the satisfaction with therapy and therapist in the experimental group has significantly increased.

Table 3. The participants' somatic symptoms and the satisfaction with therapy and therapist in three measurement stages by group

Variables	Groups	Index	Pre-test	Post-test	Follow-up
Somatic symptom	Cognitive-behavioral	Mean	11.47	4.93	5.60
		SD	5.263	2.815	3.460
	Control	Mean	14.33	16.07	18.47
		SD	3.677	2.865	2.850
The satisfaction with therapy and therapist	Cognitive-behavioral	Mean	22.27	26.93	26.93
		SD	4.367	2.282	2.282
	Control	Mean	23.07	22.40	21.47
		SD	2.840	3.158	3.701

Table 4. Results of analysis of variance test to investigate the differences between groups in research variables

Variables	Source	Sum of squares	F	Mean squares	F value	P	ETA square or effect volume
Somatic symptom	Group	1804.5	1	1804.54	52.821	0.000	0.654
	Stages	11.3	1	11.27	3.37	0.077	0.107
	Interaction between groups with stages	375.0	1	375.00	112.02	0.000	0.800
The satisfaction with therapy and therapist	Group	211.6	1	211.60	8.49	0.007	0.233
	Stages	35.3	1	35.27	8.63	0.007	0.236
	Interaction between groups with stages	147.3	1	147.27	36.02	0.000	0.563

*group (intervention and control groups) **stages (pre-test, post-test, follow- up)

Table 5. Results of comparing the means of the experimental and control groups in three stages: pre-test, post-test, and follow-up

Variables	Stage	Cognitive-behavioral	Control	Group differences	Estimation Standard error	P
Somatic symptom	Pre-test	11.467	14.333	-2.867	0.445	0.740
	Post-test	4.933	16.067	-11.133	0.445	0.001
	Follow- up	5.600	18.467	-12.867	0.472	0.001
The satisfaction with therapy and therapist	Pre-test	22.267	23.067	-0.800	0.517	0.961
	Post-test	26.933	22.400	4.533	0.517	0.001
	Follow- up	26.933	21.467	5.467	0.522	0.001

Discussion

The results showed that cognitive-behavioral stress management treatment affected the variables of physical symptoms and clients' satisfaction with the treatment, not only in the post-test phase but also in the follow-up phase. One study looked at an Internet-based cognitive-behavioral therapy program with a supplemental drink that improved anxiety and somatic symptoms in Japanese workers, which included psychological stress management training, behavior activation, and cognitive reconstruction among 101 healthy workers. The results showed a significant improvement in mood profile and anxiety-stress after the intervention, but nothing was observed about the scores of depression and fatigue. In addition, a significant reduction in the severity of low back pain was reported (24).

In another study, a pilot study on telephone cognitive-behavioral therapy for obese patients six months post-bariatric surgery, 48 people who were ready for obesity surgery were categorized into cognitive-behavioral treatment and control groups. The results showed that cognitive-behavioral therapy, compared to the control group, significantly reduced the scores of overeating scale, emotional eating scale, and increased mental health (25). In a study, 151 cardiovascular patients aged 36 to 84 years were randomly assigned to stress management treatment for 12 weeks. Stress and biomarkers of cardiac patients were assessed before and after treatment. The results showed that cognitive-behavioral stress management effectively reduced cardiac symptoms for rehabilitation of heart patients; which is consistent with our study (26).

In another study, mindful cognitive-behavioral therapy and Internet interventions with obese and overweight people were performed by 9-week treatment sessions and 18-month follow-up; The results showed that cognitive-behavioral therapy, which includes mindfulness and online intervention, may be an effective method for weight loss and weight maintenance and may also be effective in prevention in obese and overweight people (27).

In another on experience and client satisfaction among people who referred to psychological services, the results showed that client's satisfaction is multidimensional, and the satisfaction is among the clients who are actively involved in the treatment courses between the client and the counselor, which is consistent with our study (28). Therefore, patient satisfaction appears as an essential factor in the patient's treatment level and plays a role in the effectiveness of treatment results, and client satisfaction is directly related to their needs, and the extent to which these needs are met depends on the satisfaction of needs or frustration with them. Satisfaction begins with clients' expectations and ends with the relationship with the experience gained (29).

The present study, like other studies, had some limitations. Among the samples of this study, there were obese women without health problems in Zanjan and due to the single-sex of the participants in this study, generalizing the findings to other age groups (children and adolescents), men, obese people with Other health problems (mental-physical) should be taken with caution. It should be noted that obesity is one of the diseases that affect people's health and leads to obesity-related diseases, and also stress is one of the variables associated with weight gain and not losing weight. People resort to various methods to lose weight, which not only does not benefit them but even lead to many problems; Therefore, it is recommended that

nutrition clinics that offer diet programs use experienced people trained in cognitive psychotherapy, including cognitive-behavioral stress therapy for obese people, and even clinical psychologists and psychotherapists can use these treatments, depending on the various cause of obesity. Different obesity people use these treatments.

Conclusion

This study showed that cognitive-behavioral stress management group therapy based on physical symptoms and clients' satisfaction with treating obese people had a significant effect that improved both variables. The teaching-learning strategies can reduce stress by affecting physical symptoms.

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References

1. van den Akker K, Schyns G, Jansen A. Altered appetitive conditioning in overweight and obese women. Behav Res Ther 2017; 99: 78-88.
2. World Health Organization. Obesity: preventing and managing the global epidemic. Report of a World Health Organization Consultation. Geneva: WHO Obesity Technical Report Series; 2017.
3. Godfrey KM, Juarascio A, Manasse S, Minassian A, Risbrough V, Afari N. Heart rate variability and emotion regulation among individuals with obesity and loss of control eating. Physiol Behav 2019; 199: 73-8.
4. Hruby A, Manson JE, Qi L, Malik VS, Rimm EB, Sun Q, et al. Determinants and consequences of obesity. Am J Public Health 2016; 106(9): 1656-62.
5. Busutil R, Espallardo O, Torres A, Martínez-Galdeano L, Zozaya N, Hidalgo-Vega Á. The impact of obesity on health-related quality of life in Spain. Health Qual Life Outcome 2017; 15(1): 197.
6. Schrepf A, Harte SE, Miller N, Fowler C, Nay C, Williams DA, et al. Improvement in the spatial distribution of pain, somatic symptoms, and depression after a weight loss intervention. J Pain 2017; 18(12): 1542-50.
7. Lal S, Malla A. Service engagement in first-episode psychosis: current issues and future directions. Can J Psychiatry 2015; 60(8): 341-5.
8. Knuuttila V, Kuusisto k, Saarnio P, Nummi T. Early working alliance in outpatient substance abuse treatment: Predicting substance use frequency and client satisfaction. Clin Psychol 2012; 16(3): 123-35.
9. Fortin M, Bamvita JM, Fleury MJ. Patient satisfaction with mental health services based on Andersen's behavioral model. Can J Psychiatry 2018; 63(2): 103-14.
10. Lin FH, Tsai SB, Lee YC, Hsiao CF, Zhou J, Wang J, et al. Empirical research on Kano's model and customer satisfaction. PLoS One 2017; 12(9): e0183888.
11. Tryon GS. Goals and psychotherapy research. In: Cooper M, Law D. (editors). Working with goals in psychotherapy and counseling. Oxford: Oxford University Press; 2018: 87-109.
12. Geller J, Iyar M, Srikameswaran S, Zelichowska J, Dunn EC. Social support satisfaction in adults with eating disorders: Does stance matter? Int J Eat Disord 2017; 50(7): 842-46.
13. Kwakkenbos L, Willems LM, van den Hoogen FH, van Lankveld WG, Beenackers H, van Helmond TF, et al. Cognitive-behavioural therapy targeting fear of progression in an interdisciplinary care program: a case study in systemic sclerosis. J Clin Psychol Med Settings 2014; 21(4): 297-312.
14. Petroni ML, Caletti MT, Calugi S, Dalle Grave R, Marchesini G. Long-term treatment of severe obesity: are lifestyle interventions still an option? Expert Rev Endocrinol Metab 2017; 12(6): 391-400.
15. Poorgholami F, Rahmanian Koshkaki A, Kargar Jahromi M, Parniyan R. A study of the influence of group-based learning of stress management on psychology symptoms levels of hemodialysis patients. Glob J Health Sci 2016; 8(11): 62-8.
16. Riley KE, Park CL, Wilson A, Sabo A, Antoni MH, Braun TD, et al. Improving physical and mental health in frontline mental health care providers: Yoga-based stress management versus cognitive behavioral stress management. J Workplace Behav Health 2017; 32(1): 26-48.
17. Kazantzis N, Luong HK, Usatoff AS, Impala T, Yew RY, Hofmann SG. The processes of cognitive behavioral therapy: A review of meta-analyses. Cognit Ther Res 2018; 42(4): 349-57.
18. Antoni MH. Stress management intervention for women with breast cancer. Washington. D.C.: American Psychological Association; 2017.

19. Kroenke K, Spitzer RL, Williams JB. The PHQ-15: validity of a new measure for evaluating the severity of somatic symptoms. Psychosom Med 2002; 64(2): 258-66.
20. Kroenke K, Spitzer RL, Williams JB, Löwe B. The patient health questionnaire somatic, anxiety, and depressive symptom scales: a systematic review. Gen Hosp Psychiatry 2010; 32(4): 345-59.
21. Abdolmohammadi K, Ghadiri Sourman Abadi F, Sadat Seyed Pourmand N, Falsafinejad MR. The validation of somatization inventory in the students of Tabriz universities (Iran). Journal of Qom University of Medical Sciences 2018; 11(12): 61-67.
22. Attkisson CC, Greenfield T. The client satisfaction questionnaire (CSQ) scales. Outcome assessment in clinical practice. Baltimore, MD: Williams and Wilkins; 1995: 2-10.
23. Sanaei B, Hooman A, Alaghmand S. [Family and marriage measurement scales]. Tehran: Besat ; 2008. (Persian)
24. Shirotsuki K, Nonaka Y, Takano J, Abe K, Adachi SI, Adachi S, et al. Brief internet-based cognitive behavior therapy program with a supplement drink improved anxiety and somatic symptoms in Japanese workers. Biopsychosoc Med 2017; 11(1): 1-7.
25. Sockalingam S, Cassin SE, Wnuk S, Du C, Jackson T, Hawa R, et al. A Pilot study on telephone cognitive behavioral therapy for patients, six-months post-bariatric surgery. Obes Surg 2017; 27(3): 670-5.
26. Blumenthal JA, Sherwood A, Smith PJ, Watkins L, Mabe S, Kraus WE, et al. Enhancing cardiac rehabilitation with stress management training: a randomized, clinical efficacy trial. Circulation 2016; 133(14): 1341-50.
27. Ogata K, Koyama KI, Amitani M, Amitani H, Asakawa A, Inui A. The effectiveness of cognitive behavioral therapy with mindfulness and an internet intervention for obesity: a case series. Front Nutr 2018; 5: 56.
28. Berkowitz B. The patient experience and patient satisfaction: measurement of a complex dynamic. Online J Issues Nurs 2016; 21(1): 1.
29. Diegmann P, Basten D, Pankratz O. Influence of communication on client satisfaction in information system projects: a quantitative field study. Project management journal 2017; 48(1): 81-99.