

The effect of stress management training on stress and depression in women with depression disorders: Using cognitive-behavioral techniques

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ABSTRACT

Background: The present study aimed to investigate the effect of stress management training through cognitive-behavioral techniques on stress, social adaptability and depression in women with depression disorders. **Materials and Methods:** In this study, 40 patients diagnosed with depression who had referred to psychiatry and consultation clinics of Isfahan were randomly selected and assigned to intervention and control groups (20 patients in each group). The intervention group received eight 90-min sessions of stress training through cognitive-behavioral techniques. Data collection tools included Cooper's stress questionnaire, Bell's social adaptability questionnaire and Hamilton's depression scale questionnaire. The participants completed the questionnaires before the intervention and 1 month after the same. Data analysis was performed using covariance analysis. **Results:** Based on the results, considering variables of stress, social adaptability and depression, the equal variance hypothesis was confirmed. The relationship between pre- and post-test scores on stress, social adaptability and depression was statistically significant ($P < 0.001$). The modified mean difference was $F = 12.45$, $P < 0.001$ on stress; $F = 6.88$, $P < 0.01$ on social adaptability; and $F = 5.36$, $P < 0.02$ on depression, all of which were significant. **Conclusion:** Stress management training through cognitive behavioral techniques can play a main role in depression reduction and development of social adaptability through modifying inappropriate social information-processing patterns.

Key words: Cognitive-behavioral techniques, depression, stress management, stress

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INTRODUCTION

Depression is a psychological disorder with signs and symptoms such as loss of appetite or overeating, sleeplessness or oversleeping, concentration problems, recurring thoughts of death, sadness or lack of interest, psychomotor retardation, lack of energy and tiredness, feelings of worthlessness and guilt and difficulty making decisions.^[1] Women are twice more likely to experience depression, and 10-25% of women experience depressive periods during their lifetime. Natural events such as pregnancy, menopause, first menstrual period and delivery can each increase women's vulnerability to depression.^[2]

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Stress, adaptability and coping are interdependent concepts that we experience daily. In psychology, adaptability is defined as maintaining identity and self-confidence; all our responses that pressure our adaptability are called stress, and coping includes adaptive strategies.^[3,4] According to the American Psychological Association, social adaptation is “balancing behavior in order to meet environmental needs, which often requires attempts to control impulses, drives or attitudes.” Now, if, for any reason, an individual cannot establish communication with others in the social environment, in other words, if the adaptation process gets disrupted, maladaptive behavior or behavioral disorders occur.^[1]

Clinical research shows that with an increase of stress in society, the number of patients with psychological disorders, especially depression, increases. Once depression settles, factors such as weak social communication skills, extreme responses to lack of communication and defective relationships act as maintenance factors for depression. In addition to causing a decrease in social adaptability, these factors create feelings of rejection and more isolation.^[5] Because of the limitations and side-effects of antidepressant medications and also patients’ and healers’ preference for non-medicine treatments, psychotherapy has received much attention. On the other hand, in every treatment procedure, it must be possible to use a variety of treatments in case one method fails to cure the patient. Because the best treatment is the one with the fewest side-effects and the highest efficacy, investigating various treatment methods could increase the chances of cure.^[6]

Cognitive-behavioral stress management could be defined as a strategy used for stress prevention, stress control and, eventually, diminishing its harmful consequences.^[7] Many studies have shown that cognitive-behavioral stress management, in addition to reducing depression in depressed patients, can lead to increasing social adaptability.^[8,9] It appears that learning social and communicative skills, problem-solving skills, self-expression skills and emotion control skills such as anger management and relaxation therapy skills play an important role in the treatment of depression.^[10] Hegele *et al.* viewed cognitive-behavioral training as a short-term interventional treatment of depression.^[11] The cognitive-behavioral approach is a combination of cognitive and behavioral treatments. It helps clients recognize distorted thought patterns and inefficient behavior. To do so, regular discussion sessions and thoroughly organized behavior assignments are applied. Thus, the whole procedure is partly focused on behavior and partly on cognition.^[8]

Because many studies have been conducted on the effectiveness of cognitive-behavioral stress management training, the evidence is either inconsistent or too limited. In addition, many of these studies have focused only on biofeedback and relaxation techniques. Considering the above-mentioned factors and regarding social, economic and emotional consequences of depressive disorders, the importance of preventing the unpleasant side-effects of depression and

the study of the effectiveness of cognitive-behavioral techniques as one of the approaches of stress management training, the present study aimed to investigate the efficacy of stress management training through a cognitive-behavioral approach on women with depression disorders to develop and administer an educational program for stress control in women with depression disorders.

MATERIALS AND METHODS

Participants

In this quasi-experimental study, 40 housewives with depression disorders were investigated. The study population included housewives referring to the consultation and psychiatric clinics of Isfahan (Isfahan, as the capital of Isfahan province, is one of central cities in Iran) during the time this study was being conducted. Those diagnosed with depression through interviews with psychiatrists were selected and randomly assigned to control and intervention groups based on their file numbers (odd or even).

Using the sample size formula for the two-group difference test and a probability rate of 0.05 for type one error and 20% for type two error, the group size was calculated to be 18, and finally 20 participants were assigned to each group. The inclusion criteria were a definite diagnosis of depression disorders by the psychiatrist, age range of 20-45 years, being married, being a housewife, no medication treatment received, less than 2 years’ history of depression and informed consent. Participants were not enrolled if they had disabilities, physical/mental complications or other diseases that could interfere with the interpretation of the results.

Data collection tools

The present study used Hamilton’s depression scale questionnaire, Bell’s social adaptability questionnaire and Cooper’s stress questionnaire as data collection tools. Cooper’s questionnaire, developed in 1983, contains 20 items and attempts to detect stress signs and symptoms. Twenty-five questions measure stressors on a 4-point Likert scale and four questions have yes/no answers. The score range is 0-79. Various studies have confirmed its reliability and validity, and Codron *et al.* have reported its reliability to be 0.87 using Cronbach’s alfa.^[12]

Bell’s social adaptability questionnaire contains 160 questions in five domains, including home, health, professional, emotional and social adaptability. There are yes/no questions, with scores ranging from 0 to 160. For each subscale question, the range of scores varies from 0 to 32. Reliability and validity of the questionnaire have been proven in various studies.^[13] Hamilton’s depression scale questionnaire, developed by Max Hamilton, includes 24 items. Each time has a score of 0-4 or 0-2. The range of scores for the whole test is 0-76. Themes included are physical health problems, behavioral disorders, cognitive problems and affection change symptoms. In a study by Ram, the validity of the questionnaire based on Cronbach’s alfa was reported to be 78%. Other evaluators have also reported it to be about 0.90.^[14]

Data collection

Before intervention, all the participants were informed about the aims of the present study and all individuals were presented permission form. Thus, all the Then the Participants received the three questionnaires and were briefed on how to complete them. The intervention group was exposed to the intervention. One month after the intervention, both groups completed the questionnaires again. At the end of the study, all participants in the control group referred to a psychologist or psychiatrist for treatment. All learning materials used in this study were taught to the control group.

Intervention

The training intervention a)was performed in eight educational sessions (each session of 90 min) during 8 weeks. Each session followed the objectives listed below.

- First session: Introduction, definition of stress, causes of stress, its signs and symptoms, effects
- Second session: Cognitive reconstruction
- Third session: Communicative skills
- Fourth session: Self-expression skills
- Fifth session: Anger management skill
- Sixth session: Breathing skills
- Seventh session: Relaxation skills
- Eighth session: Problem-solving and planning skills.

At the beginning of each session, the topic of the session would be written on the board, the previous session would be reviewed, assignments would be checked and questions answered and probable problems explained and solved. Then, the next topic would be taught and subjects' questions would be answered; they would practice the skills taught and be briefed on their assignments.

Data analysis

Data analysis was performed through SPSS 15 (SPSS Inc., Chicago, IL, USA) using covariance analysis. It was hypothesized that the dependent variables in both groups had equal variances, or the variance different between the two was zero in the population. Leven's test was used to test the hypothesis. A significance level of $\alpha = 0.05$ was considered for all tests.

RESULTS

All patients completed the study. Preliminary analyses compared the intervention and control groups at the pre-test. The findings showed that there were no significant differences between the two groups before the intervention in terms of age, depression history, education and depression severity ($P > 0.05$). Table 1 revealed that regarding stress, social adaptability and depression variables, equal variance hypothesis was confirmed ($P > 0.05$). In the present study, Analysis of covariance (ANOVA) was used to adjust the post-test means for pre-test differences between the two groups. The adjusted mean difference of the stress decreased in the intervention group ($P < 0.001$, $F = 12.45$). The effect of the stress management training was 27% and the power of

the test was 92%. Table 2 shows that there was a significant difference between the adjusted mean difference of the social adaptability between the two groups on post-test ($P = 0.01$, $F = 6.88$). The effect of the stress management training was 17%. A comparison of the adjusted mean difference of depression in the intervention and control groups showed a significant difference before and 1 month after the educational intervention ($P = 0.02$, $F = 5.36$). The effect of the stress management training was 14%.

DISCUSSION

Based on the results of the study, stress management training through a cognitive-behavioral approach both decreased stress and increased social adaptability in the intervention group. Various studies have been conducted on the effects of stress on social adaptability. Kaplan *et al.* claim that stress rate could be used as a predictor of behavioral disorders and social adaptability.^[15] Based on the findings of the present study, and those of other studies on stress and social adaptability in patients with depressive disorders, it could be reckoned that a deficiency in adaptability, communication, sociation and problem-solving skills results in an increase in stress and depression and a decrease in social adaptability.^[16] Many researchers believe that inappropriate models play an important role in social information processing by people and, eventually, lead to an inability to develop social adaptation. Thus, attempts are made to solve stress problems through the application of cognitive-behavioral approaches. Findings of many similar studies indicate that cognitive-behavioral-based approaches affect social adaptability and mental problems.^[16-18]

Furthermore, as shown in this study, stress management

Table 1: Equal variance hypothesis of the stress, social adaptability and depression variables

Variable	F	df* 1	df* 2	P*
Stress	0.454	1	34	0.505
Social adaptability	2.13	1	34	0.15
Depression	5.21	1	34	0.141

*Degree of freedom, **Leven's test

Table 2: Covariance analysis of the effects of group membership on stress rate in patients with depression in post-test

Variable	Criterion	df	MD	F	P	η ²
Stress	Pre-test	1	1971.89	37.29	<0.001	0.531
	Group membership	1	658.67	12.45	<0.001	0.274
Social adaptability	Pre-test	1	1193.04	19.44	<0.001	0.371
	Group membership	1	422.26	6.88	0.01	0.173
Depression	Pre-test	1	978.997	39.43	0.001	0.544
	Group membership	1	133.245	5.36	0.02	0.140

MD=Adjusted mean difference η²: Percentage of variability

training through a cognitive-behavioral approach reduced the rate of depression in the intervention group. Gina Pistulka *et al.* have shown the strong effect of stress and traumatic experiences on the development of depression and the important role of stress control in reducing depression.^[19] Harvitz showed that stress, negative life experiences such as family conflicts and inefficient coping strategies had a direct relationship with depression and suicide.^[20] Depression reduction and adaptability increase in the participants of the study could be attributed to an indirect effect of stress reduction and a direct impact of stress management training due to the cognitive-behavioral techniques used in the training sessions. These techniques are focused on mental processes involved in aberrant behaviors. Through the consultant/psychiatrist's help, patients are encouraged to change their attitudes toward personal experiences and revise their behavior, which in turn changes their feeling about themselves. These techniques help patients rebuild their beliefs about stress, see their stressful situation better, rid themselves of their myths and equip themselves with more-efficient beliefs to fight stress. They will be able to apply the skills taught in training sessions in real-life situations. Patients are asked to continue practicing the skills at home too. This prepares them for real-life confrontations with stressful and challenging situations in their daily life. Furthermore, during training sessions, patients receive feedback from others in the group, sympathize with each other, share experiences and learn about stress management strategies that other people in the group have used.^[8]

Baomel believes that compared with tricyclic antidepressants and placebos, cognitive-behavioral techniques are more efficient.^[21] In their study of the efficacy of cognitive-behavioral therapies (relaxation, problem solving, autonomy) on single-parent teenagers, Ansborg and Dominowski concluded that these therapies significantly reduced depression.^[22] In another study comparing the effects of medicinal treatments and a cognitive-behavioral approach, Keller *et al.* showed that the cognitive-behavioral approach combined with medication treated depression efficiently.^[23] It should be noted that the efficacy of stress management training does not mean that it is the only favorable treatment. Each treatment procedure has its own merits and limitations. Choosing the right procedure is highly dependent on factors such as equipment and facilities, side-effects and patients' preferences. Yet, based on the findings of this study, it seems that stress management training could well be used as a complementary approach in depression treatment.

The present study faced a number of limitations, including a limited number of participants, impossibility of generalizing the findings to males, economically non-identical participants of the two groups and impossibility of patient follow-up due to the limitation of time and problems tracking the participants.

CONCLUSION

Regarding the findings, also the fact that most patients with mood disorders of depression also have difficulty

adapting themselves to their social, educational, familial and professional situations, and the role of stress and mental pressure in the recurrence of depression, developing stress management training programs for patients and their families is highly recommended. Through these programs, patients and their families learn how to cope with stressful situations and act efficiently. This, in turn, will prevent from depression recurrence or deterioration of the patients' condition.

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