Original Article

Investigating the effectiveness of cognitive behavioral therapy on the occupational stress in midwives working in delivery wards

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ABSTRACT

Background and Objective: Midwives working in the delivery ward suffer from a great deal of stress that can have an unpleasant effect on both the individual and the professional dimensions. The purpose of this research was to determine the effectiveness of cognitive-behavioral group therapy on the occupational stress in midwives working in the delivery ward. Materials and Methods: In this clinical trial study, coded IRCT20190212042682N1, which was performed in 2009, 40 midwives working in the delivery ward of Mahshahr and Ganjavian hospitals of Dezful with the occupational stress in Khuzestan province were studied. Midwives with a score above 117 in the Rice Occupational Stress Questionnaire were randomly divided into two 20-individual experimental and control groups. The experimental group received 8 sessions of cognitive-behavioral therapy and the control group received no training. The tool used in this study were Rice job stress questionnaire and demographic data. Data were analyzed using mean, standard deviation, independent t-test, chi-square, and repeated measure ANOVA in Spss software version 22 at the significance level of $P < 0.05$. Findings: The mean and standard deviation of the stress scores for the intervention group were (181.05± 21.51) in the pre-test and (129.14±05.06) in the post-test and (130.90±14.29) in the follow-up after one month. For the control group, they were (181.15± 27.42) in the pre-test and (176.15±24.58) in the post-test and (174.05 ± 24.00) in the follow-up after one month, respectively. There was no significant difference in stress levels between the experimental and control groups before the intervention ($P = 0.990$), but after the intervention, there was a significant difference between the two groups ($p < 0.001$). Also, the difference between the two groups was significant one month after the intervention ($p < 0.001$). Conclusion: Cognitive behavioral therapy of stress management reduced the midwives' job stress. It is suggested that managers and midwifery officials organize stress management programs in the workplace, thereby enhancing the quality of midwifery services and client satisfaction.

Keywords: Job stress, Midwife, Cognitive behavioral therapy

Introduction

Job stress is so common and so pervasive that it affects people in all occupations, ranks, and socio-economic levels [1]. By definition, this type of stress involves harmful physical and emotional responses that occur in conditions or situations in which the occupational needs, abilities, and resources do not meet the employees' needs [2]. Various aspects of people's work-life such as overwork, lack of power, role ambiguity, role conflict, and a threat to career promotion can be stressful [3].

Job stress to the extent that it does not exceed one's abilities and capacities can increase motivation and improve performance, but if it exceeds one's coping capacity it can have a debilitating effect on the individual and organizational performance [4, 5]. Psychologists and researchers have studied the role of stress in various situations. In the meantime, the impact of stress on the health care staff due to the complexity of work is much more

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significant and is recognized as an important and influential factor [6].

Birth is the most glorious and at the same time the most critical moment in human life. This great event has made the midwifery profession an important one. Midwifery profession is one of the jobs that women have taken based on our country's religious and customary beliefs, with all the physical and psychological pressures that women have while having a significant role in the domestic affairs of families; the psychological pressures in their workplace, in addition to threatening the physical and mental health of the body, can lead to an increase in personal, family and social disorders [7]. Midwifery is, therefore, a stressful profession and the management, organizational, environmental and interpersonal issues and lack of midwifery support are among the factors causing stress and tension in the profession [8].

The research results on the midwives working in the maternity hospitals in Isfahan indicated that a part of the stress of working in midwifery and maternity hospitals is due to the heavy responsibility of the lives of two people, the mother and the fetus [9]. In research on the Japanese midwives, Aizuki et al. showed that 16% of them had emotional exhaustion, 12% had depersonalization, and 21% had personal failures [10]. In a study done by Skinner et al. in Australia, work-related factors, psychological problems, and job dissatisfaction were the main factors causing stress in midwives [11]. Pink believes that environmental issues such as exposure to blood and its products and the risk of disease are among the most important causes of stress in the midwifery profession [12]. According to Maxine's study, facing critical situations while at work and endangering the life of the mother and child and its related legal issues are the most important causes of stress in the midwifery profession [13].

In the studies, some factors such as permanent confrontation with patients, lack of adequate equipment or defects at work, dealing with unforeseen emergencies, high noise at work, work shifts, etc. were identified as professional stressors of hospital staff and especially maternity ward [14-16]. These factors can decrease the quality of patient care, reduce the proper and timely decisions, decrease the ability of skills, dissatisfaction with work, feeling inadequate, decrease job values, fatigue, absenteeism and delay in work, sick leave, etc. As a result, the effects of these stressors on the health care staff can disrupt the mental health of staff and, consequently, reduce the quality of health care and threaten patients [6].

Symptoms of experiencing stress in the workplace are manifested in the behavioral changes such as disinterest, maladaptation, anger, immature behavior, and absence from work [17]. People who are stressed and unable to cope efficiently with it, suffer from physical, psychological and behavioral problems [18]. The psychological domain of job stress is associated with job dissatisfaction. This dissatisfaction is one of the most common consequences of job stress that causes depression, anxiety, boredom, sexual disorders, frustration, isolation, and disgust. Some symptoms of job stress include cardiovascular, gastrointestinal, allergic and skin diseases, sleep disorder, headaches, and respiratory distress. Behavioral symptoms also include individual behaviors such as avoiding work, alcohol, smoking, using coffee and medication, bingeing or anorexia, hostile behaviors toward colleagues or family members, and organizational behaviors such as absenteeism, leaving work, increasing accidents and reduced productivity and performance [19].

There are different approaches to the intervention to improve job stress both at the individual and organizational levels. Organizational atmosphere and structure, providing social support, defining staff roles, determining role overload and work ease are ways of reducing stress in the workplace. Other methods include relaxation training, biofeedback, and behavior modification, exercise, proper diet and nutrition, medication, use of emotional intelligence and problem-solving approaches, coping skills-based methods, and stress immunization training and cognitive-behavioral approaches have been proposed to reduce the job stress [20].

In an article of Abedian et al., which examined the effect of exercise training on the midwives' stress, it was found out that eight weeks of aerobic exercise reduced stress significantly in all four domains of Calderon stress measurement (job stress, life health stress, personal life stress, and personality stress) [21]. In their study, Alanda et al. found that employees with moderate physical activity had perceived stress about half of the more passive ones [22].

In a study on faculty members in Yazd analyzing the effects of emotional intelligence on the job stress management techniques, it was shown that emotional intelligence has a significant effect on the results of stress reduction and mental health enhancement; because it reduces stress in times of crisis and in coping with difficult situations, it is one of the important factors for predicting one's effective performance in the work environment [23].

One of the effective psychological approaches in reducing job stress is cognitive behavioral therapy of stress management [24]. Cognitive-behavioral interventions are designed to help people live longer, feel better, and avoid negative thoughts. These interventions help individuals understand themselves and be more satisfied with their lives and existence [25]. This treatment is justified by showing the relationship between thinking, feeling, and behavior [26].

The goals of designing a cognitive-behavioral stress management program are: (a) collecting information for individuals about the sources of stress, the nature of stress responses in humans, and the types of coping strategies used in the face of stressors; (b) training anxiety reduction techniques, such as gradual muscle relaxation and calming imaging; (c) modifying and correcting maladaptive cognitive assessments using cognitive reconstruction; (d) promoting interpersonal and communication conflict resolution skills through expression training and anger management; (e) increasing access to and use of social support networks through modified interpersonal and communication skills [17].

The results of stress management interventions in health care employees have shown that the techniques of relaxation, meditation, or cognitive-behavioral training have led to a reduction in stress in health care employees [27]. In a meta-analysis aimed at identifying effective stress management interventions, 46 empirical studies using 6 different types of stress management interventions were compared. The results showed that the cognitive-behavioral method was of the most effect on the promotion of mental and social health of employees [17].

Recent studies show that cognitive-behavioral interventions are more effective than an organizational change in enhancing nurses' ability to manage stress. In a research, Malekzadeh et al. showed that the cognitive-behavioral intervention was significantly effective in reducing nurses' stress [28]. Also, the use of psychological stress management interventions and communication skills training have been described as a low-cost and effective method of promoting mental health of health care employees [17]. Shariatkhah et al. concluded that the cognitive-behavioral intervention reduces significantly nurses' job stress [29]. In a study conducted by Orly et al., it was found that the cognitive-behavioral intervention reduced the amount of stress in nurses [30].

Therefore, given that in many countries, midwives tend to leave their careers due to high workload, stress, poor management and lack of opportunities for improvement [31] and that midwifery aiming to maintain, promote community health and providing maternal and infant health is one of the most important disciplines of health, and that if people in this profession have adequate mental health and well-being, it will have a significant impact on their performance [32]. In this regard, cognitive-behavioral therapy with a set of cognitive skills and abilities seems to increase the ability to successfully cope with environmental stressors, especially job stress.

Since there have been several studies on the effect of cognitive-behavioral therapy on the job stress in different fields, but no study was done on these two components - job stress and cognitive behavioral therapy in midwifery profession; considering the importance of the subject and the role of counseling in presenting this important issue, this research was conducted by a researcher as a midwifery counselor to determine the effect of cognitive-behavioral therapy on the job stress in midwives working in the delivery ward.

Materials and Methods

This research (2019) is a randomized clinical trial with pre-test, post-test, and control group design. The statistical population of our study was midwives working in the maternity hospitals (including formal, formal-Trial , contractual, pseudo-contractual and project-based midwives) in the morning, evening, and night shifts that had the characteristics of the units under study and employed in the maternity ward of Mahshahr and Ganjavian Hospitals in Khuzestan province. Sampling was done by the Ethical Committee of Ahvaz University of Medical Sciences (coded 803) and registered at the Iranian Clinical Trial Center with code (IRCT20190212042682N1).

The inclusion criteria were: willingness to participate in the study, written consent to participate in the study, a score of 117 and above on the Rice Job Stress Questionnaire, having a midwifery high school degree and above, and full attendance at educational program sessions. The exclusion criteria included: unwillingness to continue participating in the research, receiving training in stress management and communication skills, absence of two training sessions in the experimental group, incomplete completion of questionnaires, history of mental disorders requiring medical interventions, the experiences of severe mental stress (death of loved ones, severe illness, divorce) over the past 6 months, and physical illnesses that affect mental health, such as thyroid disorder.

Using sample size calculation formula according to the similar article and considering the mean and standard deviation of job stress in the experimental and control groups, the sample size was calculated to be 20 individuals per group for 95% of confidence and power of 90%, with a probability of falling off by 10% [33]. The sampling was done through a convenience sampling method and based on a preliminary interview of the researcher with the midwives willing to participate in the study and the participants were invited. After obtaining the consent and justification of the participants for the study and the method of implementation as well as ensuring the confidentiality of the results, Rice demographic and job stress questionnaire was completed. The subjects with a score of more than 117 Rice job stress questionnaire were excluded [34]. Based on the obtained scores and inclusion and exclusion criteria, 42 subjects with inclusion criteria were selected and divided into two 21-individual (control and experimental) groups based on the tables of random numbers. The tools used in this study included Rice demographic and job stress questionnaire. Demographic data included age, marital status, education, and work experience.

Philip L. Rice Job Stress Questionnaire is a self-report tool containing 57 items that provide us with information about job stress. The questionnaire consists of three subscales of interpersonal relationships, physical condition, and job interests. The preliminary sentences of the questionnaire are designed to measure problems in interpersonal relationships and job satisfaction or dissatisfaction. Subsequently, the physical conditions that cause daily exhaustion, are discussed, and the third part of the questionnaire is devoted to job interests [34]. This scale is a standard questionnaire that has been translated and standardized in Iran by Hatami (1998). In one study, the reliability calculated using Cronbach's alpha was 89% and validity for the whole questionnaire was 92.1% and for the three subscales of interpersonal relationships, physical status and job interests, 89%, 88%, and 88%, respectively. The validity and reliability of this questionnaire were also assessed by Racine on the female staff of the counseling center in 1992 [35]. This test is scored on a 5-option Likert scale (1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Frequently, and 5 = Mostly); using the key, the

final scoring is done and the job stress score is obtained from the sum of the total scores [34].

At first, all subjects in the experimental and control groups completed the demographic questionnaire and the pre-test (Rice Job Stress Questionnaire). After the pretest, the experimental group was exposed to an independent variable (cognitive behavioral therapy), but the control group did not receive any intervention. Experimental group sessions consisted of eight sessions of 90 minutes, once a week. All sessions were held in the maternity ward under the hospital training unit. Immediately and one month after the end of the intervention, the post-test and follow-up were performed again. Table 1 summarizes the content of treatment sessions [36].

Data were analyzed by SPSS software (version 22). Kolmogorov-Smirnov test was used to assess the normality of the data distribution. Descriptive statistics (mean, standard deviation, frequency) were used. Independent T-test was used to compare the quantitative variables between the two groups and Chi-square and ANOVA were used for the nominal qualitative variables. P-value <0.05 was considered as the significance level.

Table 1: The Structure and Content of the sessions

Session One: A: Welcoming, motivating, reviewing the structure of sessions and basic rules, understanding stress definition and how it affects physical, psychological and social performance and recognizing stress sources, cognitive distortions; B: How thinking and feeling work, saint, the criteria we set for ourselves and others, allegory of suitcase for cognitive therapy, relaxation, and diaphragmatic breathing exercises, and assignments for the upcoming sessions.
Session 2: Reviewing the first session task, problem-solving skill training, identifying and classifying beliefs, identifying the automatic thoughts, identifying potential resistances and methods of preventing them, familiarity with vertical arrow method, types, and classification of beliefs and the assignment for the next session.
Third session: Reviewing the tasks of the previous session, preparing the main list of beliefs, preparing cognitive maps, preparing the SUD rating, and assigning the task for the next session.
Session 4: Reviewing the task of the previous session, testing beliefs and how to change beliefs, lake monster allegory, reality analysis, analyzing criterion, and task for the next session.
Fifth Session: Reviewing tasks of the previous session, usefulness analysis, parity analysis, logical analysis and task for the next session.
Session 6: Reviewing tasks for the previous session, preparing the hierarchy and constructing dissenting beliefs and their characteristics, and assigning tasks for the next session.
Seventh Session: Reviewing assignments of the previous sessions, perceptual change, voluntary superficial inhibition, and assigning a task for the next session.
Eighth session: Reviewing assignments of the previous sessions, self-punishment, self-rewarding, retention methods, program review, and post-treatment follow-up and evaluation programs.

Findings

In this study, 42 midwives working in maternity hospitals were studied. In the experimental group, one person was absent for more than two sessions and in the control group one person was not able to do the post-test due to interruption of the research. There were 20 subjects in the test group and 20 in the control group (Fig. 1: flowchart of the study process). The data were analyzed using mean, standard deviation, independent t-test, chi-square, ANOVA with the repeated measures in software SPSS version 22 at the significance level of $P < 0.05$.

The statistical tests showed that the two groups were similar in demographic characteristics (Table 2). Comparison of the mean and standard deviation of stress scores in two groups of test and control before and after the group cognitive-behavioral intervention using independent and paired t-test showed that the mean and standard deviation of the pre-intervention stress score in test group was 181.05±21.51 and in the control group 181.15 ± 27.42; there was not any statistical difference between the two groups ($p = 0.990$). The mean stress score immediately after the intervention was 129.05 ±14.06 in the experimental group and 176.15 ±24.58 in the control group. There was a statistically significant difference between the two groups ($p < 0.001$). The mean stress score one month after the intervention was 130.90 ±14.29 in the experimental group and 174.05 ±24.00 in the control group which showed a significant difference between the two groups at the time of follow-up ($p < 0.001$) (Table 3).

The mean and standard deviation of stress score for the areas of job stress questionnaire in the experimental and control groups, before, immediately after and one month after the intervention has been shown in Table 3.

According to the results repeated measures ANOVA, two-by-two comparison of the steps of measuring job stress in the midwives of the experimental group, the mean difference of job stress score immediately after the intervention compared to pre-intervention was 51.85± 8.58 ($P < 0.001$) and one month after the intervention was 50.15 ±8.65 ($p < 0.001$) compared to before the intervention, which showed statistically significant changes in the mean score of job stress. But in the control group, the difference between the mean score of job stress immediately after the intervention compared to before the intervention was 5.0±1.72 ($p = 0.051$) and one month after the intervention compared to before the intervention was 7.1±1.49 There was no statistically significant difference ($p = 0.055$).

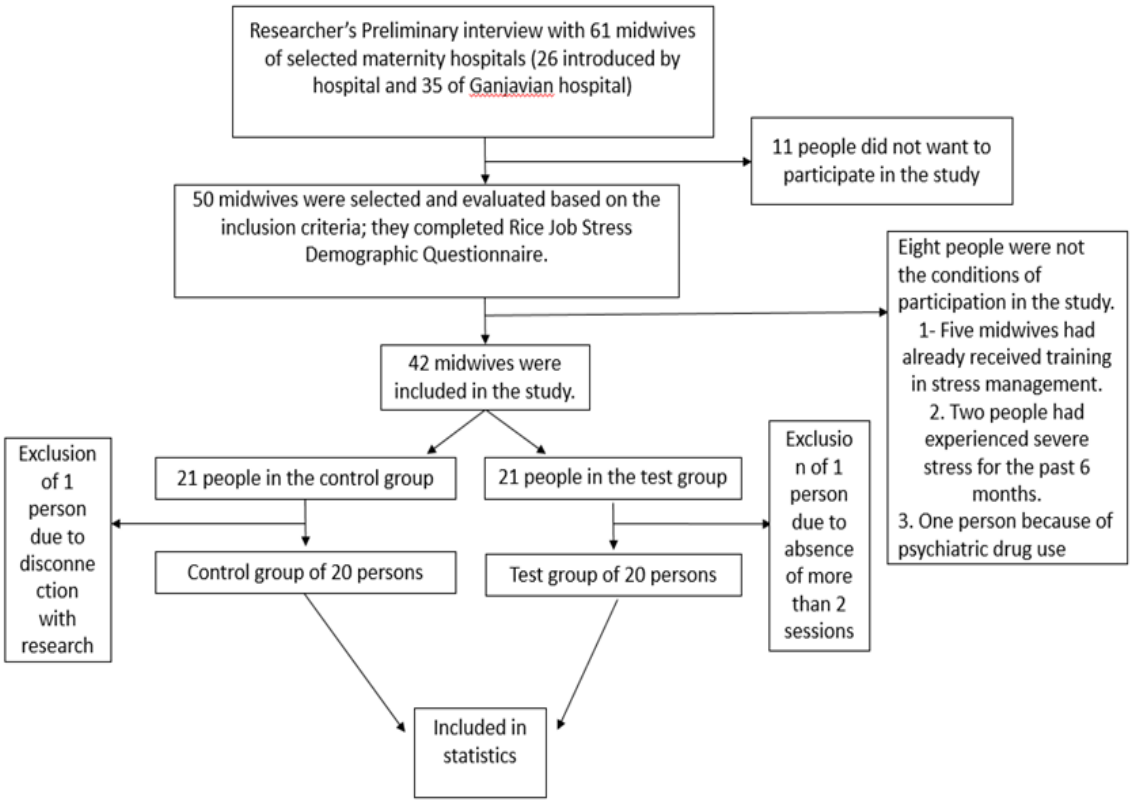

Figure 1: Study flowchart

Table 2: Comparison of demographic characteristics of midwives working in the maternity hospital in Cognitive Behavioral Counseling group and Control group

Variable \ Group		Test (intervention) (standard deviation±mean)	Control (standard deviation±mean)	Significance level
Age (year)		(31/6±5/38)	(34/7±05/5)	0/196
Marriage	Single	(15%)3	(30%) 6	0/268
	Married	(85%)17	(70%)14	
		Number (percent)	Number (percent)	
Participants' education level	Of high school education	(00) 0	(05) 1	0/330
	BSc	(100) 20	(95) 19	
	MSc	(00) 0	(00) 0	
Economic status	Weak	(00) 0	(05) 1	0/246
	Moderate	(80) 16	(85) 17	
	Good	(20) 4	(10) 2	
Employment status	Design	(35%) 7	(10) 2	0/118
	Semi-contractual	(15) 3	(25) 5	
	Contractual	(20) 4	(15) 3	
	Formal-experimental	(05) 1	(05) 1	
	Formal	(25) 5	(45) 9	
Work experience	Less than 5 years	(50) 10	(50) 10	0/436
	5-10	(25) 5	(15) 3	
	10-15	(15) 3	(05) 1	
	15-20	(10) 2	(30) 6	

Table 3: Comparison of midwives' job stress scores working in the maternity hospital, before the intervention, immediately after intervention and one month after intervention in cognitive behavioral counseling group and control group

Intervention \ Group		Test (intervention) (standard deviation±mean)	Control (standard deviation±mean)	Significance level
Test score of Rice Job stress (pre-test)	Interpersonal relationships	(82/10±10/69)	(82/9±55/34)	0/888
	Physical conditions	(73/11±00/78)	(72/16±95/83)	0/991
	Job Interests	(25/2±95/28)	(25/3±65/41)	0/745
	Total	(181/21±05/51)	(181/27±15/42)	0/990
Test score of Rice Job stress (one week after intervention)	Interpersonal relationships	(59/7±75/51)	(79/10±60/05)	0/0001
	Physical conditions	(49/8±40/44)	(71/14±70/36)	0/0005
	Job Interests	(20/2±05/37)	(24/2±85/64)	0/0005
	Total	(129/14±05/06)	(176/24±15/58)	<0/001
Test score of Rice Job stress (one month after intervention)	Interpersonal relationships	(58/7±90/18)	(78/9±55/74)	<0/001
	Physical conditions	(51/8±15/69)	(70/14±75/29)	<0/001
	Job Interests	(20/1±85/69)	(24/2±75/73)	<0/001
	Total	(130/14±90/29)	(174/24±05/00)	<0/001

Discussion

The purpose of this study was to determine the effect of cognitive-behavioral therapy on the job stress in midwives working in maternity hospitals of Ahvaz University of Medical Sciences. After implementing this method and analyzing the results of the analysis of variance, it was shown that the difference between the two groups was statistically significant; this means that counseling was significantly effective in reducing job stress and that the effectiveness of counseling with the cognitive-behavioral approach on the midwives' job stress was confirmed.

Although no research has yet been found to directly assess the maternity midwives and the impact of a cognitive-behavioral intervention, other studies about the field of stress and the impact of cognitive-behavioral interventions on stress reduction are consistent with the findings of the present research [3, 20, 29]. Explaining this consistency can be due to the common points in the structure of the sessions and the emphasis on cognitive concepts that have had a significant effect on job stress.

In the study of Malekzadeh et al., conducted on the impact of a cognitive-behavioral intervention on the stress level of 30 nurses working in Shahid Beheshti hospital in Yasuj in the form of control and experimental group, it was shown that cognitive-behavioral intervention was significantly effective in reducing nurses' stress [28]. Also, Yazdani et al. showed that training stress management skills improved depression, anxiety, and stress in nursing students [37] whose results were consistent with our study.

In a research investigating the effect of a cognitive-behavioral intervention on the stress reduction in nurses, Orly et al. showed that nurses who participated in the study of a cognitive-behavioral intervention to reduce stress had a higher sense of solidarity, greater strength, and less stress and fatigue after the intervention [30].

In a research, Siloxemia and Lalisa examined the effect of stress management program on the stress perception of nurses working in the psychiatric center and showed that the level of stress in nurses was decreased significantly after the stress management intervention [38]. In their study, Cravitz et al. reported that stress management training affected nurses' emotional exhaustion [39]. Lai Funk Mac et al. found that cognitive-behavioral interventions were effective in reducing nurses' stress [40], which was consistent with our study.

In explaining the results, it can be said that cognitive-behavioral treatment approaches are based on the concept that cognitive assessment of stressful events and the coping measures associated with these evaluations play an important role in determining the stress response. The purpose of cognitive-behavioral therapy is to modify maladaptive ways of thinking, feelings, and behavior to benefit from cognitive-behavioral techniques. Stress management helps individuals identify situations in which they are stressed and then seek coping strategies to deal with these situations. Modifying cognitive appraisals and improving coping skills and exercises offered to integrate techniques learned with real-life situations can also reduce perceptual stress. The

program provides the participants with a variety of integrated techniques that they can use to reduce stress [3].

In the stress management training program, one employs the effective coping style and problem-oriented techniques to use problem-solving cognitive skills. Accordingly, the ways to deal with the problem are examined directly, and psychological satisfaction is usually found by finding appropriate solutions to the problem. On the other hand, this condition causes a mental order and reduces emotional distress. In light of intellectual cohesion and emotional relaxation, the source of stress is also better recognized and may be controlled and evaluated. Understanding the source of control on the one hand and evaluating it as controllable on the other hand helps increase mental health [41].

In therapeutic sessions, the cognitive reconstruction, which is a component of cognitive-behavioral stress management therapy, along with training problem-solving skills, was led to increasing active coping, positive reassessment, counteract dysfunctional automatic thoughts, and as a result of the planned problem solving; it then leads to both a reduction in stress and an increase in effective skills. Also, the training of relaxation techniques helped increase the control and restraint of the participants. In the group sessions, through stress management training the participants learned what their problems were and learned strategies for coping with them. This increased their self-esteem and psychological competence, which meant that they were able to make more use of their abilities and become more resistant to life stressors, and eventually reduced their job stress.

In this research, the researcher was confronted with limitations such as the lack of collaboration of some hospitals, the lack of participation of some midwives for reasons such as fatigue and the lack of time, the inconsistency of the group members' work schedules with each other due to the time and location constraints. They were controlled with the phone follow-up and briefing before classes and participation of individuals in discussions and fun classrooms. Another limitation was the method of conducting this research, which was carried out in a group setting and could influence the results. Also, the lack of a specific validated midwifery stress questionnaire that can more accurately measure midwives' job stress is another limitation of this study.

Given the important role of cognitive-behavioral therapy techniques in reducing midwives' stress levels in the maternity hospitals, as well as considering midwifery as one of the most stressful occupations, all health authorities should pay more attention to this important issue. Therefore, it is recommended to establish a unit called psychology and counseling in all hospitals for all employees including midwifery staff and to regularly assess and measure stress, anxiety, depression and other psychological components of midwifery staff. The effective interventions should be applied then for mentally challenged personnel. This will improve both the quality of midwifery services and considerably increase patient satisfaction.

Conclusion

According to the findings of this research, the group cognitive-behavioral intervention has a significant positive effect on the midwives' stress working in maternity hospitals and this intervention can be effective in reducing midwives' stress level along with other stress management methods.

Appreciation

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IRCT20190212042682N1

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