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The Effect of a Training Package and Group Consultation on Pregnancy-Specific Stress

Katayoun Salehi[1], Khadije Seyed Kaboli[2], Kourosh Kabir[3], Mahrokh Dolatian[4], Zohreh Mahmoodi[5*]

Abstract

Objectives: Women are faced with numerous stresses during their lives. This study examined the effect of two approaches on pregnancy-specific stress, including a training package and a group consultation approach.

Materials and Methods: Using a parallel design, this randomized controlled trial was conducted in 3 phases, on 70 pregnant women who visited the selected medical centers in Alborz province in Iran during 2016. Eligible mothers were selected through the convenience sampling method and then were divided into intervention and control groups in random blocks of four. The control group was provided with routine pregnancy care and the training package on how to cope with pregnancy stress. In addition, the intervention group received the routine pregnancy care plus cognitive-behavioral consultation in six 90-minute sessions. The mothers in both groups were evaluated at baseline, at the end of the sessions, and three weeks later using the Pregnancy Worries and Stress Questionnaire (PWSQ).

Results: According to the obtained results, the 2 groups differed significantly in terms of the total score and the score of each dimension of the PWSQ except for the personal-occupational dimension. A comparison of the groups showed that the mean scores of the intervention group followed a decreasing trend in all three phases. However, the total score and the mean scores of all dimensions increased in the control group except for the mother-newborn bonding dimension ($P<0.05$).

Conclusions: The presence of a consultant and the practice of cognitive-behavioral consultation could further reduce pregnancy-specific stress and worries compared to the training package.

Keywords: Training package, Consultation, Pregnancy-specific stress, Cognitive-behavioral, Pregnancy

Introduction

Stress and tension are an integral part of the daily life of all humans and are proven to be involved in the incidence and prognosis of physical and mental disorders (1). Women encounter various stresses in their lives. For instance, menstruation, pregnancy, and childbirth are periods in a woman's life which create physical and mental changes that make them more vulnerable than men to different situations (2). Despite being a pleasant period for most women, pregnancy is often considered a stressful life event (3). In other words, pregnancy may be construed as the biggest stress or tension in a woman's life (2). Most pregnant women experience stress and worries when faced with and adapting to issues such as physical symptoms, as well as biological and biochemical changes. These experiences and changes are associated with pregnancy, potential changes in individual and family relationships, socioeconomic problems, pregnancy-related medical-midwifery complications, neonatal health, and pregnancy stages, which are referred to as pregnancy-specific stress and tension (4,5). Different studies have reported the presence of pregnancy-related stress and tension in 6%-78% of pregnant women (6-8).

No comprehensive studies have yet investigated this subject in Iran although its prevalence has been reported as 15%-26% in a number of studies conducted in Mashhad and Isfahan (2,9,10). Women have different biological reactions to these stressors, which may lead to unfavorable pregnancy and childbirth outcomes such as abortion, decreased fetal weight, as well as the increased levels of stress hormones, chronic hypertension, preterm birth, infant mortality, and the like (11). According to a number of previous studies, severe anxiety during pregnancy damages the mother-child relationship and decreases a woman's ability to perform her maternal role (12). Under such conditions, mothers show unusual behaviors such as indifference, the lack of trust in others, abnormal behaviors and the lack of effective communication with others, along with social and emotional isolation (13). Pregnancy-specific stress harms the health of both the mother and infant during the pregnancy and after childbirth (14). It is therefore very important to focus on strategies

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[1]Social Determinants of Health Research Center, Alborz University of Medical Sciences, Karaj, Iran. [2]Midwifery, Kurdistan University of Medical Sciences, Sanandaj, Iran. [3]Clinical Research Center Unit, Madani Hospital, Alborz University of Medical Sciences, Karaj, Iran. [4]Department of Midwifery and Reproductive Health, Shahid Beheshti University of Medical Sciences, Tehran, Iran. [5]Social Determinants of Health Research Center, Alborz University of Medical Sciences, Karaj, Iran.
*Corresponding Author: Zohreh Mahmoodi, Tel: +989125474495, Email: Zohrehmahmoodi2011@gmail.com

facilitating the reduction or elimination of such factors. Pharmacological and non-pharmacological treatments are both used to treat stress and help the patient cope with its sources. Selective serotonin reuptake inhibitors are the most widely used pharmacological approach to treat stress. In addition, non-pharmacological treatments include consultation and training through different techniques including cognitive-behavioral consultation provided by nursing and midwifery staff as healthcare providers (15). Cognitive-behavioral consultation trains mothers on using coping and problem-solving skills and helps them feel better about themselves and their children. In other words, consultation is a supportive process in which consultants try their best to enable individuals to make their best decisions (16,17). Given the noted issues and the need for paying attention to pregnant women's mental health, this study evaluated the effects of 2 approaches, namely, training package and group consultation, on pregnancy-specific stress.

Materials and Methods

Study Type

This randomized controlled trial was performed on 70 pregnant women who visited selected medical centers in Alborz Province during 2016. Further, the study was conducted in 3 phases using a parallel design. The following equation was used to calculate the sample size:

$$n = \frac{(Z_{1-\frac{\alpha}{2}} - Z_{1-\beta})^2 (SD_1 + SD_2)^2}{d^2}$$

$\alpha = 0.05$, $\beta = 0.20$, $Sd_1 = 8$, $Sd_2 = 6$, $d = 5$

The minimum estimated sample size for each group was 31, which was increased to 35 to take account of the potential attrition of 10%.

The participants were selected from among the eligible pregnant women who visited the selected medical centers.

The inclusion criteria were: having Iranian nationality; being within the age range of 18-35; being in the gestational age of 20-32 weeks based on the last menstrual period; having a singleton pregnancy; being a primipara; holding a high school diploma or a higher degree; experiencing stress according to the Pregnancy Worries and Stress Questionnaire (PWSQ); suffering from no mental issues or depressive disorders based on self-report; having no history of using anti-stress, anti-anxiety, and anti-depression medicines based on self-report.

While the exclusion criteria were: not attending 2 or more consultation sessions; showing unwillingness to continue participation in the study; and experiencing adverse life events during the past 6 months (e.g., divorce, the death of the spouse or an immediate relative, and the imprisonment of the spouse).

Accordingly, 70 eligible women were divided into intervention (receiving cognitive-behavioral consultation and routine care) and control (receiving routine care plus a training package containing all the issues covered during the consultation in the intervention group) groups in random blocks of four. Over the course of the study, eight women were excluded due to preterm delivery or unwillingness to continue participation and thus the study was concluded with the data collected from 62 women.

Data Collection

This study used 2 questionnaires to collect data, including a personal demographic questionnaire and the PWSQ. The personal demographic questionnaire inquired about the mother's age, education and occupation, spouse's age, education and occupation, ethnicity, income, housing status, and living with either spouse's family or living alone. The PWSQ contained 25 items in 6 subcategories including maternal health (6 items), newborn's health (5 items), the experience of childbirth and motherhood (4 items), mother-newborn bonding (2 items), personal-family (5 items), and personal-occupational (3 items). All items were scored on a 5-point Likert-type scale ranging from zero (never) to four (always). The total scores of the PWSQ ranged between zero and 100. Navidpour et al examined the reliability and validity of the PWSQ in Iran and reported its Cronbach's Alpha as 0.89. In addition, they confirmed its test-retest reliability and showed that it is a proper tool for the evaluation of pregnancy stress in Iranian women (21).

Materials and Methods

In 2016, three medical centers in Alborz province were selected for this randomized controlled trial. The study was performed upon obtaining the required permissions from the ethics committee, the research council, the president of the university, and the director of the selected medical centers, and following registering the project on the Iranian Registry of Clinical Trials website. For data collection, the researcher identified the eligible women from the medical centers, provided them with a brief explanation about the research objectives, and asked them to sign an informed consent form if they were willing to participate in the project. The women were then assigned to intervention (consultation + routine care) and control (routine care + training package) groups in random blocks of four. Routine pregnancy counseling was offered to both groups by the researcher and in line with the protocol of the Health Ministry. The intervention group received 6 sessions of cognitive-behavioral consultation for pregnancy stress and tension based on Michelle G. Craske's treatment guidelines as well. As mentioned earlier, the control group received the routine pregnancy care, as well as the training package containing all the subjects discussed in the intervention group given the ethical consideration at the end of the session. The 2 groups completed the PWSQ in the first session, after the sixth session, and 3 weeks after the last session. The obtained data at the mentioned intervals were analyzed separately

in each group and compared between the groups using the repeated measures ANOVA in SPSS version 16.

Results

This study evaluated the data of 62 pregnant women who were divided into intervention and control groups. The mean age of women and their spouses was 26 and 30 years, respectively. Most of the women had associates and bachelor's degrees (58.1%) in the intervention group and high school diploma (61.3%) in the control group. Kolmogorov-Smirnov test was applied to assess the normality of the variables and the results indicated no significant differences between the 2 groups in terms of women's and their spouses' age and education, housing status, and living with the spouse's family. The test suggested the homogeneity of the 2 groups in terms of the above-mentioned variables (Table 1). Based on the obtained results, the 2 groups significantly varied in the total score and the scores of all dimensions of the PWSQ except for the personal-occupational dimension. A comparison of the groups revealed that the mean scores followed a decreasing trend in all 3 phases in the intervention group ($P < 0.05$). However, the total score and the mean scores of all dimensions increased in the control group, except for the mother-newborn bonding dimension. This finding suggests that cognitive-behavioral consultation has been more effective than the training package in reducing pregnancy-specific stress (Table 2).

Discussion

Nowadays, almost all people are familiar with the term stress because stress has become an integral part of modern life and individuals encounter stressful situations since childhood. The death of relatives, accidents, unemployment, multiple disappointments, and pregnancy are considered as some of the stressors that women may experience in their lives (18).

Based on the results of the mean total score of the PWSQ and the mean scores of its dimensions before, immediately after, and 3 weeks after the intervention, the higher effectiveness of group consultation was confirmed compared to the training package. The 2 groups differed significantly in all dimensions except for the personal-occupational dimension since most of the participants were housewives in both groups. In the control group, the mean score of stress increased in all dimensions except for the mother-newborn bonding dimension. This dimension showed a decreasing trend in both groups, suggesting that, as the pregnancy moved along, the score of stress decreased in the mothers in both groups due to their increased love for the unborn child. This decline highlights the important role of mother-newborn bonding in reducing the stress in pregnant women.

Different studies evaluated the effect of cognitive-

Table 1. Demographic Characteristics of Participants in Intervention and Control Groups

Variables and Levels		Control Group n=31		Intervention Group n=31		*P*
		No.	%	No.	%	
Mother's age	18-24	10	32.3	9	29	0.50
	25-29	15	48.4	14	45.2	
	30-35	6	19.4	8	25.8	
Husband's age	2420-	0	0	1	3.2	0.13
	25-29	14	45.2	7	22.6	
	3430-	13	41.9	14	45.2	
	35-39	3	9.7	8	25.8	
	40-44	1	3.2	1	3.2	
Mother's education	High school diploma	19	61.3	12	38.7	0.09
	Associate or bachelor's degree	11	35.5	18	58.1	
	Master's degree and above	1	3.2	1	3.2	
Husband's education	Below high school diploma	5	16.1	0	0	0.36
	High school diploma	18	58.1	23	74.2	
	Associate or bachelor's degree	7	22.6	8	25.8	
	Master's degree and above	1	3.2	0	0	
Income	Weak	7	22.6	1	3.2	0.02
	Average	22	71	25	80.6	
	Good	2	6.5	5	16.1	
Housing status	Owner	8	25.8	13	41.9	0.18
	Renting	23	74.2	18	58.1	
Living with the husband's family	Yes	4	12.9	1	3.2	0.16
	No	27	87.1	30	96.8	

Table 2. The Assessment of the Total and Mean Score of Stress and Anxiety and its Domains in Intervention and Control Groups Before, Immediately After, and 3 Weeks After the Intervention

Pregnancy-Specific Stress		Before Intervention (n=31)	After Intervention (n=31)	Two Weeks After Intervention (n=31)	F	*P* Value
		Mean±SD	Mean±SD	Mean±SD		
Experience of childbirth and motherhood	Intervention group	8.9±3.4	5.2±4.2	4.6±2.9	6.48	<0.001
	Control group	9.03 ±3.6	10.1±3.7	11.4±4.7		
Newborn's health	Intervention group	6.5±4.2	3.7±3.4	2.1±2.3	16.96	<0.001
	Control group	6.8±4.7	6.2±4.7	7.1±4.7		
Mother-newborn bonding	Intervention group	0.61±0.95	0.19±0.74	0.12±0.34	5.95	0.012
	Control group	0.64±1.7	0.19±0.47	0.35±1.2		
Mother's health	Intervention group	9.4±4.9	5.5±4.7	4.2±3.9	13.59	<0.001
	Control group	9.6±6.1	10.6±6.1	10.2±5.5		
Personal-family	Intervention group	6.6±3.4	4.5±3.6	3.3±3.1	9.77	<0.001
	Control group	8.4±4.9	8.3±4.8	8.72±4.8		
Personal-occupational	Intervention group	2.7±2.4	1.8±2.3	2.3±2	1.57	0.215
	Control group	3.1±2.9	3.4±2.9	4.1±3		
Total score	Intervention group	34.96±13.89	21.12±15.06	15.90±11.23	20.1	<0.001
	Control group	37.84±3.49	39.10±3.51	42±3.4		

SD: Standard deviation.

behavioral group therapy on pregnancy-related psychological issues and reported similar results to those obtained in the present study (19,20). For example, Navidpour et al compared the effect of cognitive-behavioral consultation and fluoxetine on anxiety and depression in pregnant women and found that consultation was more effective in reducing these women's anxiety and depression (21). Likewise, Shulman et al reported the effectiveness of cognitive-behavioral group therapy in alleviating the symptoms of anxiety and depression (22).

Mahdi et al performed a literature review on the effects of various methods of postnatal depression and anxiety prevention and confirmed the benefits of rational-emotive behavioral therapy during the antenatal period (23).

Cognitive-behavioral therapy follows simple principles and particular objectives. The first and probably most important principle of cognitive-behavioral consultation is to show how the behavior of each individual is determined by direct (unmediated) situations and her interpretation of these situations. Therefore, cognitive consultation precisely focuses on these situations and specific issues rather than the general ones.

Conclusions

In general, the presence of a consultant and the practice of cognitive-behavioral consultation reduced pregnancy-specific stress and tension more effectively compared to the training package. Thus, this type of therapy can be used as an effective non-pharmacological method for reducing or improving these disorders in women of childbearing age in order to guide them through a safe pregnancy and childbirth.

Conflict of Interests

Authors have no conflict of interests.

Ethical Issues

This study was extracted from a master's thesis approved by the Ethics Committee of Alborz University of Medical Sciences and Health Services on April 23, 2016 (ID: Abzums.Rec.1395, 19). The study protocol was registered in the Iranian Registry of Clinical Trials (identifier: IRCT2016052527728N2).

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