Effectiveness of Stress Management Intervention among Iranian Pregnant Women: a Randomized Controlled Trail

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Abstract: Pregnancy has one important and vulnerable course for women, the prevalence of anxiety disorders and stress in this time is more than any other course; that can be followed several side effects for mother and baby; the aim of this study was designing and implementing stress management educational program among Iranian pregnant women. Overall, 60 pregnant women participated in this study as intervention and control group. This was a longitudinal randomized pre-test - post-test series control group design panel study to implement a behavior modification based intervention to stress management. Cross-tabulation and t-test by using SPSS statistical package, version 16 was used for the statistical analysis. Our result show after intervention, the rate of pregnant anxiety was decreased among intervention group ($P<0.001$). Additionally It was found significant improvements in average response for social support among intervention group ($P<0.001$). Comprehensive implementations reduce the pregnant anxiety would be effective to improve women healthy behaviours. Therefore provide educational programs and psychological an intervention during pregnancy appears beneficial.

Key Words: Pregnant Women; Stress Management; Social Support; Pregnant Anxiety

1. Introduction

Stress is a mental or physical phenomenon formed through one's cognitive appraisal of the stimulation and is a result of one's interaction with the environment. The existence of stress depends on the existence of the stressor (1). Stressors as anything that challenges an individual's adaptability or stimulates an individual's body or mentality, stress can be caused by environmental factors, psychological factors, biological factors, and social factors. It can be negative or positive to an individual, depending on the strength and persistence of the stress, the individual's personality, cognitive appraisal of the stress, and social support (2). Throughout experience to a stressor, the entire organization of stress regulation, that is, the hypothalamus–pituitary–adrenal cortex system (HPA axis) and the sympathetic nervous system–adrenal medulla system, is activated. Various hormones, including corticotropin-releasing hormone (CRH), adrenocorticotropin-releasing hormone (ACTH), cortisol, and (nor) adrenaline, are released in large quantities to the blood. Though, persons may answer otherwise to a similar stressful stimulus. The grade of stress response depends likewise on genetic factors, personality characteristics, prior experience, support from the social environment, and the way of coping with stress (3). Furthermore, increasing stress intensity, quality of life decreases (4). In addition, Pregnancy is a one important and vulnerable period for women; which unfortunately the prevalence of anxiety disorders in this period is more than any other period. This anxiety could be one of the causes failure is the mother of their childcare; as well as anxiety cause to low child birth weight, premature birth,

irritability and restless child to be followed (5). Some evidence indicates that lack of social support at what may be the most stressful part of pregnancy- delivery- is at least partially responsible for lower birth weight among African American women (6). Relaxation training is a method of anxiety management; as one of the educational intervention, to reduce anxiety during pregnancy has been suggested (5). Several study showed beneficial effect of relaxation such as reduce pain, improved quality of life after stoma surgery, and decreased essential hypertension (7-9). The aim of this study was designing and implementing stress management educational program among Iranian pregnant women.

2. Methods

This was a longitudinal randomized pre-test - post-test series control group design panel study to implement a health education based intervention to stress management and prevent or reduce anxiety related pregnancy among a sample of pregnant women recruited from two randomly selected health centres in Hamadan, Iran, the west of Iran during 2010–2011. Sixty pregnant women enrolled participated in this study. Thirty participants as intervention and thirty as control groups were enrolled at the baseline survey, of who all were followed up after 2-month intervention. The intervention aimed to provide participants with Side effect of stress and anxiety, stress management methods education, Relaxation, Time management education, and teaching the role of social support in prevent stress for woman family. For achieving effective program, the five 1 hour-session was conducted based on health educational programs at the health centre. This study was conducted with approval from Hamadan University of Medical sciences' institutional review board. Informed assent and consent were obtained from participants.

Prior to conducting the main project a pilot study was carried out. Initially the relevant questionnaires were administered to 30 pregnant women who were similar to participants in the main study to obtain feedback about the clarity, length comprehensiveness, time of completion, and also internal reliability of the measures. Moreover, participants were instructed about how to fill questioners before gathering information.

Questionnaire included three sections that comprised of 43 questions: Seven questions for background factors; 10 questions for pregnancy-related anxiety scale; 14 item for perceived stress scale; and 12 questions for social support scale.

Background data collected in this research include: age, marriage age, husband age, husband job, literacy, socioeconomic status, doing physical activity in pregnancy.

The stress was measured by perceived stress Cohen (10).

The pregnancy-related anxiety scale was a standard questioner (11) and consisted of 10 questions. In order to facilitate respondents' responses to the items, all items were standardized to a 5-point Likert scale, ranging from 0 (strongly disagree) to 4 (strongly agree). Estimated reliability coefficients for pregnancy-Related Anxiety questionnaire were as (α = 0.72).

Social support was evaluated by 12-item standard scale (12). Each item was measured on an ordinal 5-point Likert-type scaling (1 = strongly disagree, 5 = strongly agree). Multidimensional scale of perceived social support, including three scopes (family, friend and other significant). Examples of the items are: There is a special person who is around when I am in need. The reliability coefficient for the social support scale in our study was 0.89, suggesting that the internal consistency was adequate.

Analyses were conducted by using SPSS-16 and a probability level of 0.05 was used throughout. Cross -tabulation and T-test were employed to determine comparability of the intervention in compare with control group.

3. Result

The mean age of respondents was 22.56 years [SD: 3.24], ranged from 15 to 29 years. Additionally table 1 shows frequency pretest equivalency results for intervention and control groups.

Table 1. Pretest Equivalency results for Intervention and Control groups

Variables		Intervention Group n (%), Mean (+_SD)	Control Group n (%), Mean (+_SD)	P-value
Age		22.80 (3.47)	22.33 (3.04)	0.582
Marriage Age		19.83 (2.47)	19.43 (3.26)	0.626
Husband Age		29.43 (3.75)	28.70 (6.72)	0.604
Education	Elementary	9 (56.2%)	7 (43.8%)	0.753
	Guidance	10 (55.6%)	8 (44.4%)	
	Diploma	9 (40.9%)	13 (59.1%)	
	Academic	2 (50%)	2 (50%)	
Physical Activity in Pregnancy	Yes	3 (60%)	2 (40%)	0.640
	No	27 (49.1%)	28 (50.9%)	

The same results were found for social support of and average response was improved from 30.45 to 36.22 after implementing educational program. Additionally average response to pregnant anxiety was 17.18 that it was decreased to 13.27 after intervention. But it was not found significant improvement for score of stress. Table 2 showed average responses for pregnant anxiety, stress and social support before and after educational program.

Table 2: average responses for pregnant anxiety, stress and social support before and after educational program

Independent Variables	Before Intervention Mean (+_SD)	After Intervention Mean (+_ SD)	P-value
Stress			
Intervention group	26.86 (6.34)	26.09 (4.37)	0.131
Control group	26.32 (4.91)	26.64 (4.62)	0.303
Pregnant Anxiety			
Intervention group	17.18 (6.12)	13.27 (7.07)	0.000
Control group	16.56 (5.51)	17.16 (5.30)	0.271
Social Support			
Intervention group	30.45 (13.01)	36.22 (11.33)	0.000
Control group	29.92 (10.26)	30.24 (8.57)	0.695

4. Discussion

The aim of this study was to assess the effectiveness of a stress management educational program among pregnant women in the west of Iran. Even though the duration of the educational intervention in this study was short, it was found significant improvements after manipulation. Analysis of the baseline and 2- months' follow-up clearly demonstrated significant intervention effects on the participants' social support and pregnant anxiety among intervention group.

Our findings showed that the applied educational program had significant effect to reduce pregnant anxiety among intervention group. It's similar to others studies (5, 13-14). Small et al reported after intervention depression among intervention group was reduce but not significant (13). In addition, Keogh in their study reported educational program can reduce stress in intervention group (14). Comprehensive implementations reduce the pregnant anxiety would be effective to improve women healthy behaviors. Therefore provide educational programs and psychological an intervention during pregnancy appears beneficial.

As well as social support, can be reduce or modification marital problems, and increase enjoy and higher satisfaction in life (14). Studies have emphasized the moderating role of social support on stress (15). In this regard, Dennis noted that development of social support can be reduce postpartum depression (16). Furthermore, Collins, noted low social support have a correlation with postpartum depression (17). These results are in line with our findings. Accordingly, besides learning to cope with stress during pregnancy, Importance of education for their husbands and their families, in order to enhance social support appear to be essential.

Concerning efficiency of intervention, in spite of decreasing the rate of stress after intervention it was not significant differences between intervention and control groups and these outcomes. Non-significant reduction in stress after intervention between both intervention and control groups could be because of low sample size, limitation of resource to design comprehensive educational program, and approach to the delivery time.

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Conflict of interest statement
The authors declare that they have no conflict of interest.

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