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The effect of pregnancy training classes based on bandura self-efficacy theory on postpartum depression and anxiety and type of delivery

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Abstract:

BACKGROUND: Postpartum depression and anxiety is one of the most common complications that women face and cause many problems for mother, baby, and family. Considering the effect of self-efficacy on women's adaptation to pregnancy and delivery conditions and their mental health during this period, the present study was designed to investigate the effect of pregnancy training classes based on Bandura self-efficacy theory on postpartum depression and anxiety and type of delivery.

MATERIALS AND METHODS: In this clinical trial study, 64 pregnant women were randomly divided into intervention and control groups. Mothers in the intervention group received pregnancy training in eight sessions (each session was 2-hour) from the 20th week of pregnancy. The classes were run by a trained midwife and the content of the training was based on Bandura self-efficacy components. The mothers in the control group received routine care. The demographic-reproductive information form, Beck Depression and Spielberger Anxiety Questionnaire were completed by pregnant women of both groups at several times, before the program, 1 week and 1 month after delivery.

RESULTS: The results showed that the training program significantly decreased the depression score in 1 week and 1 month after delivery in the intervention group compared to the control group. In addition, this training program decreased the mean score of apparent and hidden anxiety in the intervention group 1 month after delivery, although this decrease was not statistically significant. Furthermore, 80.55% of the intervention group and 58.33% of the control group had vaginal delivery, which were significantly different between the two groups in terms of the type of delivery.

CONCLUSION: The findings showed that pregnancy training classes based on Bandura self-efficacy theory decrease depression and anxiety and increases vaginal delivery rate.

Keywords:

Anxiety, depression, pregnancy, self-efficacy

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Introduction

Pregnancy is a special event for a pregnant woman and her family. This period is one of the important and vulnerable periods in women's lives that expose them to special physical, psychological, and social conditions which increase their physical and emotional needs. Hence, it provides a

unique opportunity for the occurrence of anxiety and depression.^[1]

Depression is one of the most common mental illnesses that can prevent a person from progressing in the performance of her duties by reducing her abilities. Postpartum depression is one of the most common complications of pregnancy. After

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childbirth, the mother waits for enjoyable events but experiences unpleasant situations such as worry, loss of ability, low self-esteem, and anxiety. These disorders have adverse effects on the mother's relationship with her husband and child and adversely affect the growth and development of the infant. Depressed mothers have less responsibility and accountability for the neonate and have complex problems interacting with the neonate. These psychological problems threaten the neonate severely and may lead to neglect and abuse.^[2,3]

Postpartum depression usually occurs in the first 6 weeks after delivery and its prevalence in different communities is between 5 and 43%. In a meta-analysis that summarized the evidence from 41 studies of Iran, the prevalence of postpartum depression is estimated about 25%.^[4] Anxiety disorders are more important in pregnancy and postpartum period. A lot of evidence show mental health problems, such as anxiety, during pregnancy and postpartum affect the outcomes of pregnancy like recovery, mental balance, mother attitude toward her baby, and adaptation to new role.^[5,6]

Based on studies numerous factors cause postpartum depression and anxiety such as a history of depression, low-income levels, primiparity, being not married, lack of jobs, low self-efficacy, and existence of pregnancy complications such as preeclampsia.^[7,8] Studies show that people with high self-efficacy can deal effectively with events and conditions because they expect success in overcoming problems. High self-efficacy decreases the stress of failure and improves problem-solving abilities. In other words, people who have high self-efficacy and independence usually face fewer barriers to meeting their health needs and experience fewer problems with their physical and mental health.^[9,10]

Bandura believes that perceived self-efficacy affects all aspects of behavior and it leads to the acquisition of a new behavior and even the control or cessation of existing behaviors. Self-efficacy also affects how people choose and the amount of effort they put into doing work and excitements are experienced such as anxiety, stress, and thought patterns.^[11] People with high self-efficacy are more likely to engage in challenging behaviors and offer better interpretations of health-related behaviors. Furthermore, they can easily control their behaviors. In addition, self-efficacy plays an important role in modulating the relationship between knowledge and behavior of individuals.^[12-14] Therefore, the self-efficacy structure can be used by health care professionals as a theoretical base in many health training programs to create and promote healthy behaviors.^[15,16]

In the study of Fathi *et al.* women with higher levels of self-efficacy and social support experienced less

postpartum depression than others.^[17] In addition, studies have reported that with different methods of training and counseling, the level of self-efficacy of pregnant women can be significantly increase. Other positive effects of these trainings are increasing the amount of physical activity, reducing the fear of delivery and labor pain, and reducing the need for invasive procedures such as episiotomy and emergency cesarean section.^[18,19]

During the past years, pregnancy training classes have been held in health centers. In these classes, it should be noted that to increase a woman's desire for vaginal delivery, it is not enough to give awareness and improve adaptation skills, but her belief in her own abilities must also be improved. Considering the effect of mothers "self-efficacy during pregnancy and delivery in accordance with the new conditions and their mental health during this period,^[18,19] it seems that training program can be useful to increase mothers' self-efficacy and mental health in the postpartum period. Therefore, the present study aimed to determine the effect of pregnancy training classes based on Bandura self-efficacy theory on postpartum depression and anxiety.

Materials and Methods

Study design and setting

The present study is a two-group clinical trial (intervention and control) with three-stage evaluation. The study population was pregnant mothers referring to selected comprehensive health centers in Isfahan. The research environment was two comprehensive health centers of Nawab Safavi and 18 Khajou, according to the number of clients and holding pregnancy training classes.

Study participants and sampling

The intervention group was randomly selected among pregnant women who expressed their desire to participate in pregnancy training classes and met the inclusion criteria. Mothers in the control group were also randomly selected from mothers who did not want to participate in pregnancy training classes and met the inclusion criteria.

Inclusion criteria include being 18–35 years old, having 20 weeks' gestational age, being literate, singleton pregnancy, no history of cesarean section, low-risk pregnancy (no diseases such as heart disease, lung disease, hypertension, diabetes, no cervical cerclage in the current pregnancy, etc.), no contraindications for vaginal delivery, no history of attending in pregnancy training classes, no history of mood disorders and pregnancy complications that may cause symptoms of depression and anxiety. Mothers were excluded from the study if any complications occurred during

pregnancy (such as placenta previa after 27 weeks of pregnancy, persistent bleeding in the second and third trimesters, symptoms of preterm delivery and neonate hospitalization in the neonatal intensive care unit, etc.) and being absent in more than one session of pregnancy training classes (for the intervention group). The number of samples with 95% confidence interval, test power of 0.80, and the minimum difference of mean variables between two groups about 0.7 standard deviation, were 32 people in each group.

The mothers in the intervention group received pregnancy training based on Bandura self-efficacy theory in 8 sessions (each session was 2-hour) from the 20th week of pregnancy. The content of the training program was the components of self-efficacy, which include attention to physiological states, performance attainment, vicarious experiences, verbal persuasion, and attention to emotional states. In the first session, after introducing people to each other, each of the mothers expressed their ideas and concerns about vaginal delivery and asked their questions in this regard. Based on the results of this meeting and by studying reliable sources, the answers to the questions were determined and a pamphlet with the content of common questions about pregnancy and vaginal delivery was designed (attention to physiological states).

In the next sessions, trainings included personal hygiene and awareness of pelvic anatomy, practical demonstration of exercises for pregnancy and delivery, relaxation techniques during pregnancy and delivery, become familiar and adapted with the physiological changes of pregnancy and delivery, unavoidable problems and complications of pregnancy, nutrition during pregnancy, mental health, benefits of vaginal and physiological delivery, techniques for coping with labor pain and how to use these techniques, stages of vaginal delivery and how to deal with each one (performance attainment). At the end of the sessions, a pamphlet containing frequent questions and answers about vaginal delivery, how to take care of oneself and the baby and expressing the experiences of mother who have had a vaginal delivery and parenting (vicarious experience) was provided to mothers. In all sessions, mothers encouraged to exercise and relax at home (Verbal persuasion). In addition, mothers' concerns about their ability to vaginal delivery were addressed and after identifying the cause of each concern, a solution was offered to decrease the anxiety, if possible. The researcher also examined and emphasized the performance of exercises and relaxation techniques by mothers at home and investigated the readiness of mother to perform these techniques when labor pains begin (attention to emotional states). At the end of the eighth training session, a training CD was given to mothers. All classes were administered by a

trained midwife with a bachelor's degree in midwifery. The classes held in Nawab Safavid Comprehensive Health Center. Mothers in the control group were also randomly selected from mothers who were reluctant to attend pregnancy training classes and met the inclusion criteria, they received routine prenatal cares.

Data collection tool and technique

The questionnaires of demographic-reproductive information, Beck's depression, and Spielberg anxiety were used to collect data and were completed by the samples of the intervention group before the intervention and in 20th week of pregnancy in the control group. In addition, these questionnaires were completed by the samples of both groups 1 week and 1 month after delivery. Demographic-reproductive information form includes questions about age, educational level, and job of the pregnant woman and her husband, gestational age (by week), previous pregnancy and delivery number, number of children, access to other information sources, and personal or family history of depression.

The Beck Depression Questionnaire is a diagnostic tool that developed in 1961 to measure depression and consists of 21 items. Each question has four options that are scored on a scale of 0–3, which is a sign of mental health to acute disorder in each aspect. The sum of the scores for each person can be from 0 to 63. The reliability and validity of the Persian version of this questionnaire were confirmed in the study of Rahimi with Cronbach's alpha coefficient of 0.87.^[20]

The Spielberg apparent and hidden anxiety questionnaire includes separate self-assessment scales to measure apparent or hidden anxiety. The apparent anxiety Scale (Part I) consists of twenty sentences that assess a person's feelings at "in the present moment." The Hidden Anxiety Scale (Part II) also includes twenty sentences that measure a person's general feelings. Each test phrase is assigned a score between 1 and 4. A score of 4 indicates a high level of anxiety. The sum of the scores of each apparent or hidden anxiety can be in the range of 20–80. Apparent or hidden Anxiety score from 20 up to 40 is considered as low, 41–60 as moderate, and 61–80 as high. The validity of the Persian version of the Spielberg Anxiety Questionnaire has been confirmed.^[21]

SPSS software version 20 (IBM Corp., Armonk, NY, USA) and descriptive and analytical statistics (Mann-Whitney, independent *t*-test, and paired *t*-test) were used to analyze the data. In all tests, a significance level of 0.05 was considered.

Ethical consideration

The research was approved by the ethics committee of Isfahan University of Medical Sciences with the code

IR.MUI.RESEARCH.REC.1398.241 and registered with the code IRCT2015112223657N2 in the Iranian Clinical Trial Center. In addition, written consent was obtained from the study participants regarding their willingness to participate in the study, and mothers were allowed to leave the study at any stage of the study if they wished.

Results

A total of 64 samples participated in the study (32 in the intervention group and 32 in the control group). About 53.5% of women had a university degree and 40.9% had a diploma. Most women (87.1%) were housewives. In the number of deliveries, 61.2% were primiparous and the rest were multiparous. The mean age of participants was 28.97 ± 4.25 years. The results showed that the two groups did not have a significant difference in demographic characteristics such as age, educational level and job of mother and her husband, and number of pregnancies.

The analysis of pretest data showed that the mean scores of apparent and hidden anxiety and depression were not significantly different between two groups. One week after delivery, the depression score in the intervention group was significantly decreased while in the control group was increased [Table 1].

Also, the analysis of means in pretest and 1 month after delivery for both groups shows that the decrease in depression mean score occurred in both intervention groups (6 score) and control group (1 score) and this decrease was statistically significant in the intervention group [Table 2 and Figure 1].

The results of paired *t*-test showed that 1 week after delivery, the mean score of apparent and hidden anxiety

increased in the control group, but these means remained unchanged in the intervention group. In other words, the training program prevented the increase of postpartum anxiety in the intervention group [Table 1]. In addition, compared to the pretest, training decreased the mean score of apparent and hidden anxiety of the intervention group 1 month after delivery, but this decrease was not statistically significant [Table 2].

Also, the results of the study showed that in the intervention group, 80.55% of mothers had vaginal delivery and 19.45% had a cesarean section. In the control group, these frequencies were 58.33% and 41.67%, respectively. The results of Chi-square test showed that the two groups were significantly different in the method of delivery ($\chi^2 = 4.18, P = 0.04$).

Discussion

The aim of this study was to investigate the effect of pregnancy training classes based on Bandura self-efficacy theory on postpartum depression, apparent and hidden anxiety and type of delivery. The results of the study showed that the apparent and hidden anxiety scores of the mothers in the intervention group did not change, while the mean anxiety score in the control group increased. In other words, the training program has been able to prevent the increase of apparent and hidden anxiety of women in the postpartum period, to some extent. These results are consistent with the evidence presented by Misri *et al.* They reported that psychological interventions had no significant effect on reducing postpartum anxiety and depression.^[22] While the study of Sanaati *et al.* showed that lifestyle-based training decreases depression and anxiety during pregnancy and postpartum. It seems that participation of the pregnant women accompanied by their husband in this training

Table 1: Comparison of apparent and hidden anxiety and depression in the intervention and control groups before training and 1 week after delivery (paired *t*-test)

Variables	Intervention group			Control group		
	Before, mean±SD	1 month after delivery, mean±SD	Paired <i>t</i> -test result (<i>t</i> , <i>df</i> , <i>P</i>)	Before, mean±SD	1 month after delivery, mean±SD	Paired <i>t</i> -test result (<i>t</i> , <i>df</i> , <i>P</i>)
Apparent anxiety	54.21±9.97	54.96±10.12	0.40, 31, 0.688	52.80±9.70	55.45±10.30	1.60, 30, 0.118
Hidden anxiety	56.58±14.12	56.93±11.13	0.143, 30, 0.888	51.68±7.85	54.65±9.09	1.57, 31, 0.126
Depression	10.46±8.92	7.25±6.87	3.332, 31, 0.002	8.73±5.76	9.66±6.32	1.48, 29, 0.150

SD=Standard deviation

Table 2: Comparison of apparent and hidden anxiety and depression in the intervention and control groups before training and 1 month after delivery (paired *t*-test)

Variables	Intervention group			Control group		
	Before, mean±SD	1 month after delivery, mean±SD	Paired <i>t</i> -test result (<i>t</i> , <i>df</i> , <i>P</i>)	Before, mean±SD	1 month after delivery, mean±SD	Paired <i>t</i> -test result (<i>t</i> , <i>df</i> , <i>P</i>)
Apparent anxiety	54.21±9.97	53.68±7.74	0.22, 31, 0.824	52.80±9.70	53.37±9.63	0.00, 28, 1.00
Hidden anxiety	56.58±14.12	55.48±12.24	0.16, 28, 0.869	51.68±7.85	52.43±9.05	0.21, 29, 0.834
Depression	10.46±8.92	4.84±4.53	5.16, 31, 0.000	8.73±5.76	7.60±6.11	1.41, 29, 0.168

SD=Standard deviation

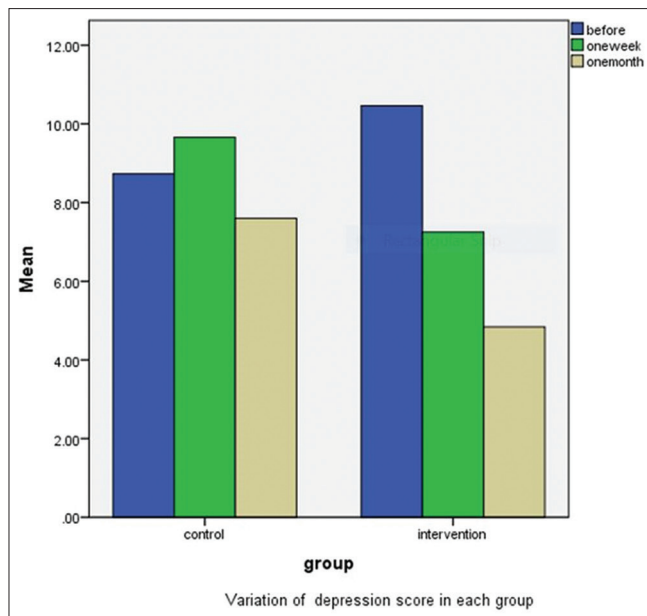


Figure 1: Comparison of depression score changes in intervention and control groups before training, 1 week and 1 month after delivery (blue, green and yellow, respectively)

program is one of the important reasons for the difference between the results of the Sanaati study and the present study.^[23] In contrast, in another study, the results showed that cognitive-behavioral training methods for stress management significantly decreases anxiety and stress of pregnant women.^[24] To justify this difference, it can be pointed out that studies show that psychological training has decreased anxiety during pregnancy, but has not been able to decrease postpartum anxiety that may be due to the addition of maternal role, caring of neonate and breastfeeding.^[25,26]

Also, the results of the present study showed that training based on Bandura self-efficacy theory during pregnancy decrease the average score of depression from 10 to 7 in 1 week and to 4 in 1 month after delivery in the intervention group and this decrease is statistically significant. On the contrary, in the control group, the mean score of depression increased from 8 to 9 in 1 week and returned to the mean of 7.6 1 month after delivery. In the study of Alipour *et al.* the results showed that relaxation techniques training based on Bandura self-efficacy theory significantly decreases depression, anxiety and stress in pregnant women at the beginning and 1 month after the intervention.^[27] In the study of Mousavinejad *et al.* cognitive skills training, using lecture method, decreased depression in pregnant women referring to health centers in Khorramabad 2 months after the intervention.^[28]

In the present study, the rate of vaginal delivery was significantly higher in the intervention group compared with the control group. This indicates that one of the ways

to promote vaginal delivery rate, according to the policy of encouraging fertility in Iran, is utilization of Bandura self-efficacy theory in training classes of pregnancy. In Khanzadeh *et al.*'s study, cognitive-behavioral training caused a significant difference between the intervention and control groups in terms of choosing the type of delivery, and participation in the training course increased desire to vaginal delivery in the intervention group.^[29]

One of the strengths of the present study is the use of Bandura self-efficacy theory in pregnancy training classes. The implementation of this training method for a small number of mothers is the limitation of the present study and it is suggested that this method be used to educate more mothers with different cultures.

Conclusion

Findings of the study showed that holding pregnancy training classes based on Bandura self-efficacy theory decreases postpartum depression and anxiety (apparent and hidden). In addition, the training program increased the rate of vaginal delivery in the intervention group. Given the policy of encouraging fertility in Iran, and the impact of using Bandura self-efficacy theory in pregnancy training to promote maternal mental health and promote vaginal delivery, it is suggested that health care providers be encouraged to use this method.

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Conflicts of interest

There are no conflicts of interest.

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