

# Comparison of the Effects of Attachment and Relaxation Instruction on the Third Trimester Depression and Postpartum Blues

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**Aims:** This study was conducted to compare the effects of attachment and relaxation instruction on the third trimester depression and post-partum blues.

**Methods:** Randomized controlled trial in three arms (teaching relaxation, maternal-fetal attachment skills and control) of 42 women each among 126 nulliparous women in a selected educational center (Hafez) affiliated to Shiraz University of Medical Sciences, Shiraz, Iran from January 2012 to February 2012. The patients filled out the demographic data sheet, Cranley maternal-fetal attachment test questionnaire, Beck depression questionnaire, Spilberger anxiety and written consent Questionnaires.

**Results:** The mean and standard deviation of the Beck depression test scores after the intervention were 20.5±3/10, 21.1±3.8, and 23.2±3.8 for the attachment, relaxation, and control group, respectively. The changes were statistically significant according to the one-way ANOVA test (P= 0.002). The post-hoc test was statistically significant for the decrease in the depression groups after delivery in the attachment (P = 0.01) and relaxation group (P = 0.01). The reduction in the depression scores before, and after the intervention in the attachment (P=0.001) and relaxation group (P = 0.002) was significant based on paired-t-test results. However, the control group showed an increase in the depression scores which were statistically significant (P= 0.04).

**Conclusions:** Prenatal educational program based on attachment and relaxation training can improve maternal identity role and reduce maternal depression. This study showed that preventing post-partum depression by simple, available and cost beneficial training programs skills.

**Keywords:** attachment, depression, postpartum blue, relaxation

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## INTRODUCTION

Depression is state of severe sadness which blunts apprehension, motion, and causes severe restlessness. Depression is a mood disorder diagnosed with feeling of inefficiency, disappointment, and with decrease in body motion. Depression can be a mental disorder or just part of other mental disorders. Depression is a common finding during pregnancy which affects 10-42% of women. Mood changes during pregnancy are so usual, and it is because of the women's controversial feeling about pregnancy. This change in mood during pregnancy, and near the delivery is more common in women suffering from PMS. Women in years of fertility are susceptible to anxiety and depression disorders. Factors like family history, mild anxiety,

history of postpartum depression, history of PMS, and history of depression during pregnancy can make a woman susceptible to mood disorder.<sup>1</sup> Along with the effects of depression on a pregnant woman, increase in the incidence of prematurity<sup>2</sup>, and low birth weight<sup>3</sup> in a depressed pregnant woman are one of the most important causes of mortality and morbidity of infants.<sup>4</sup> More than 20% of infants with low birth weight will suffer from delayed growth. Neglecting pregnancy depression without any concern for its treatment can be harmful to pregnancy outcome. The results of a survey revealed that leaving pregnancy depression without treatment can delay weight gaining of the infant, cause premature birth, increase the rate of drug abuse, and decrease the Apgar score and head circumference.<sup>5</sup> Therefore, paying attention to pregnancy depression is so important because of its effect on the mother, fetus, and infant. Recently, noticing and screening of pregnancy depression have increased. One of the most common ways to screen depression is Beck depression questionnaire.<sup>6</sup>

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However, violence, and mental crises during prenatal visits remains to be unknown<sup>7</sup> since most women are reluctant to report symptoms of depression<sup>8</sup> or they just simply attribute these signs to pregnancy and its physiologic changes.<sup>9</sup> Since pregnancy increases woman's contact to health centers, pregnancy period is the best time to diagnose depression, find the best way for intervention, and decrease the incidence of postpartum depression. Among the interventions for decreasing depression, those focusing on groups to prevent social conflicts, and anger control are more effective than individual interventions.<sup>10</sup> Group interventions are more acceptable and cost-beneficial to pregnant women. Field et al, in their three studies (1999, 2004, and 2009), reported that relaxation instruction and massage therapy can decrease the incidence of pregnancy.<sup>3,11,12</sup> Brown et al also reported that yoga can decrease pregnancy depression by decreasing the maternal cortisol level.<sup>13</sup> Attachment is a close and permanent relationship between mother and her baby that facilitates the mother-baby interaction and creates a close bilateral emotional relationship just after delivery. Attachment has a changing pattern. This emotional relationship is formed during pregnancy and can promote after delivery with olfactory, palpation, and eye contact.<sup>14</sup> Karter reported that women who had spent more time touching their belly and talking to their baby during pregnancy were more probable to pay more attention to their baby, and were less susceptible to postpartum depression and anxiety than the control group.<sup>15</sup> This study was conducted to compare the effects of attachment and relaxation instruction on the third trimester depression and post-partum blues.

## METHODS

This was a clinical trial study to assess the effects of relaxation and attachment instruction on depression during the third trimester and postpartum blues in 2012. 126 pregnant women were randomly divided into three groups of teaching relaxation, maternal-fetal attachment skills and control. Inclusion criteria included: nulliparous women aged 18-35, cephalic presentation; no history of mental, and anatomic disorders (psychosis, schizophrenia, uterus defects, and pelvic contraction; Ability to attend the training classes and no history of drug abuse.

Pregnant women were selected based on simple purpose based selection. They were randomly divided into three groups of teaching relaxation, maternal-

fetal attachment skills and control based on random numbers. The classes were carried on with at least 14 individuals attending. Before the intervention, the cases and controls were asked to fill the demographic data sheet, Cranley maternal-fetal attachment test questionnaire, Beck depression questionnaire, Spilberger anxiety questionnaire, and written consent. All the participants were asked to fill the Beck and Spilberger questionnaire first to evaluate the level of anxiety and depression. Those with high levels of anxiety and depression were excluded from the study. The data were analyzed as before-after intervention results.

Beck depression questionnaire consists of 21 questions. The answers are scored with 0, 1, 2, and 3.

The questionnaires used in this study were all standard tests, with reliability and validity verification (Beck, Copen 1990). Ghasemzade et al in a survey assessing 125 students of Tehran University applied Beck questionnaire, and reported a reliability of 0.87 using Cronbach and validity of 0.74.<sup>16</sup> The age and educational level was a part of the demographic sheet.

Maternal fetal attachment skills group interventions consisted of weekly 60-90 minute training classes. In the first session, the concept of attachment and the method of maternal-fetal attachment were introduced. In the second session, maternal-fetal attachment skills were elaborated. In the third session, physiologic, and psychological changes, along with the delivery process were explained. In the fourth sessions, the cases were asked to participate with their husbands since the aim of the last session was to introduce the role of husbands as supporters and to train the maternal-fetal attachment skills to them by their wives.

The topics of the relaxation training class were:

**The first session:** Introduction of anxiety, relaxation, and the rationales of relaxation exercises during pregnancy

**The second session:** Techniques of relaxation and introduction with the appropriate environment for relaxation

**The third session:** Introduction of breathing and aerobic exercises

**The fourth session:** Review of a complete relaxation. Each individual in the relaxation group was asked to do the exercises for at least once.

Maternal-fetal attachment sheet was filled by all the participants at the end of the fourth week. Beck depression questionnaire was filled in again one week after the delivery. To control confounding variables, women were asked to report any psychological and emotional changes (important arguments, bereavement) weekly.

The limitation of this study was lack of cooperation of several participants. However, the researcher tried to explain the importance of the study and to motivate them to do the home assignment they were assigned.

The data were statistically analyzed using SPSS V.17. Descriptive data were reported with frequency, mean, and standard deviation. To analyze the depression scores, one-way ANOVA, and the post-hoc (LSD) test, and to analyze the before-after intervention results paired t-test were applied.

**RESULTS**

The mean and standard deviation of the Beck depression test scores during the third trimester

before the intervention were 21.1±3/30, 21.2±4.03, and 21.5±3.95 for the attachment, relaxation, and control group, respectively. The one-way ANOVA test showed that the groups were homogeneous before the intervention (P= 0.31). The mean and standard deviation of the Beck depression test scores after the intervention were 20.5±3/10, 21.1±3.8, and 23.2±3.8 for the attachment, relaxation, and control group, respectively. The changes were statistically significant according to the one-way ANOVA test (P= 0.002). The post-hoc test was statistically significant for the decrease in the depression groups after delivery in the attachment (P= 0.01) and relaxation groups (P= 0.01).

The decrease in the depression scores before, and after the intervention in the attachment (P=0.001) and relaxation groups (P= 0.002) was statistically significant applying paired-t-test. However, the control group showed an increase in the depression scores which was statistically significant (P= 0.04)

**Table 1: Distribution of cases by age group in three arms**

Group	Group1 (Attachment)		Group 2 (Relaxation)		Control		Total	
Age	Frequency	%	Frequency	%	Frequency	%	Frequency	%
18-20	3	7.1%	7	38.9%	7	38.9%	18	14.2%
21-25	22	52.4%	11	26.2%	11	26.2%	51	40.5%
26-30	15	35.7%	24	57.1%	24	57.1%	55	43.7%
31-34	2	4.8%	0	0%	0	0%	2	1.6%
Total	42	100%	42	100%	42	100%	126	100%
Mean	24.5		25.3				23.9	
SD	3.85		3.33				3.25	

**Table 2: Distribution of cases by education level in three arms**

Group	Group1 (Attachment)		Group 2 (Relaxation)		Control		Total	
Education	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Guidance school	6	14.6%	6	14.6%	6	14.6%	26	20.8%
High school	7	17.1%	7	17.1%	7	17.1%	30	24%
Diploma	15	36.6%	15	36.6%	15	36.6%	39	31.2%
Higher education	13	31.7%	13	31.7%	13	31.7%	30	24%
Total	42	100%	42	100%	42	100%	126	100%

**Table 3: Result of before and after intervention**

Group	Group1 (Attachment)		Group 2 (Relaxation)		Control		p-value
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
Before intervention	21.1	3.30	21.2	4.03	21.5	3.95	0.31
After intervention	20.5	3.10	21.1	3.8	23.2	3.8	0.007
p-value	0.03		0.04		0.004		

## DISCUSSION

Depression is one of the most common mood disorders during pregnancy.<sup>1</sup> The results of this study revealed that maternal-fetal attachment training and relaxation skills can be effective in reduction of depression scores in the third trimester and postpartum. The decrease in the depression scores before and after the intervention in the attachment ( $P = 0.001$ ) and relaxation groups ( $P = 0.002$ ) was statistically significant, based on paired-t-test results. This means that maternal-fetal attachment skills could decrease the symptoms of depression in pregnant women. In order to understand the mechanism by which the maternal-fetal attachment forms, it is better to keep in mind that one of the causes of pregnancy depression is lack of appropriate family relationship which can affect the attachment process. Cogill et al reported that sincere close relationship between family members, specially the pregnant woman and her husband, plays an important role in maternal-fetal attachment.<sup>17</sup> Therefore, we can expect that the better the relationship with the infant, the fewer the signs of depression.

Decrease in the depression scores in the relaxation group was statistically significant ( $P = 0.04$ ). The most important mechanism which can best explain how relaxation decreases physical signs of anxiety and depression is sympathetic tone reduction. It seems that relaxation, with the same mechanism, can both reduce anxiety and depression. Studies report that infants with prematurity was 75% and infants with the low birth weight was 80% lower in depressed pregnant women who experience massage therapy during pregnancy. Besides, anxiety and depression scores showed a decrease, too.<sup>18</sup>

The control group showed an increase in the depression scores which were statistically significant ( $P = 0.04$ ). This means that without any intervention, depression scores showed increase in the third trimester. Results of a study revealed that pregnancy depression was most prevalent in the second and the third trimester if no intervention was performed.<sup>19</sup>

There are documents which reveal that maternal-fetal attachment formation is a predictive factor for postpartum attitude, maternal-fetal relationship, and attachment pattern after birth.<sup>20</sup> Mothers with lower scores of attachment test would show greater levels of anxiety and depression, and would have less concern about their hygiene.<sup>21</sup> As the maternal-fetal attachment increases, the mother would experience higher levels of self-confidence, more compatibility with delivery conditions, and would show a better reaction to her infant.<sup>22</sup> Leifer et al. reported that women with better maternal-fetal attachment had fewer problems accepting the maternal role and were more compatible with the delivery conditions.<sup>23</sup> Depression during pregnancy can make the mother unable to take care of her baby. The results of a survey revealed that different kinds of relaxation exercises during pregnancy can reduce the prevalence of postpartum depression.<sup>24</sup>

## CONCLUSION

Prenatal educational program based on attachment and relaxation training can improve maternal identity role and reduce maternal depression. So, depression during pregnancy is directly related to the increased incidence of postpartum blue. This study showed that pregnancy visits are important for screening maternal depression and preventing post-partum depression by simple, available and cost-beneficial training programs like relaxation and maternal-fetal attachment skills.

Conflict of interest: None

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