

# The Relationship Between Fear of Childbirth with Distress and Admission of Neonate in the Neonatal Intensive Care Unit in Nulliparous Women

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## ABSTRACT

*Pregnancy is a stressful event in a woman's life. Many women have a lot of fear during pregnancy and childbirth. This study aimed to investigate the relationship between fear of childbirth and neonatal outcomes. This was a cross-sectional study, on 255 nulliparous women who were admitted to Asali Hospital of Khorramabad in 2016 to give birth. Samples were selected among women who were admitted to the hospital for delivery. Data were collected using, a demographic questionnaire, questionnaire of fear of delivery, and a checklist for recording neonatal outcomes. Results showed that neonatal outcome (distress, admission of neonate in the Neonatal Intensive Care Unit) were not significantly associated with fear of childbirth ( $P > 0.05$ ). The findings showed that there were no negative effects between neonatal outcomes and fear of childbirth.*

**Keywords:** Fear of childbirth; Delivery; Distress

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## Introduction:

Childbirth is one of the major events in a woman's life and it is a unique moment for the mother and infant [1], so that though it is one of the most significant, exciting, and unique moments of the woman's life, it is also a period full of worry, psychological pressure [2], anxiety, and fear, which has been traditionally viewed as the miracle of life [3]. Some women stated that though they are afraid of delivery pain, they are more afraid of the way of administration of caesarian section, and thus prefer to have natural childbirth. Of course, it is fear of natural childbirth that in most cases makes the mother to consider caesarian section

[4]. On the other hand, childbirth fear is mostly equivalent to natural childbirth fear [5, 6]. However, it is also sometimes associated with other states such as fear of the hospital enrolment, personnel behavior, distrust to the skill and knowledge of midwives for natural childbirth, as well as distrust to common patterns of natural childbirth and their newborns [4, 7]. The maternal stress during labor increases adrenaline level, which can be useful for the fetus. The mild acid facilitates fetus adaptation outside the womb. However, increasing secretion of catecholamine rises body metabolism and energy dissipation in the

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fetus [8]. The embryo's hypoxemia results in meconium excretion through vascular contraction and increased intestinal movements and relaxation of the anal sphincter. Two percent of newborn infants born with meconium excretion may progress to aspiration syndrome and suffer from lung tissue damage and airway obstruction [9]. Findings by Dechernery et al. revealed that the fear and anxiety reported during delivery is positively related to plasma epinephrine, which in turn seems to cause an abnormal situation in the heart rate and low Apgar score [10]. Moreover, research indicates that anxiety of women during pregnancy may cause metabolic and cardiac problems in the infants [11].

Considering controversial studies in the world and ambiguous relationship between neonatal outcomes and fear, as well as lack of adequate research studies in this regard, the current study was conducted with the aim of investigating the relationship between childbirth fear and neonatal outcome.

## **Materials and Methods**

This is a cross-sectional descriptive and comparative study, which was conducted on 255 nulliparous women who referred to the delivery block for delivery. The research environment was Asali Hospital in Khoramabad.

Sampling was carried out continuously. The pregnant women were admitted to the ward if they had inclusion criteria such as gestational age of 37-42 weeks, nulliparous women, low risk pregnancy, age 18-35, single pregnancy, and being in the active phase of labor (Bishop as 4). Exclusion criteria included having recognized psychiatric disorders, taking psychiatric drugs and narcotics, infertility, having any prophylactic for natural childbirth, meconium excretion, placental removal, and fetal arrhythmias.

Demographic questionnaire, Wijma Delivery Expectancy Questionnaire (W-DEQ), and observation checklist were used for data collection. Demographic questionnaire

included questions related to personal information of mother such as age, weight, educational level, occupation, educational level of husband, and husband's occupation.

W-DEQ is a reliable 33-item questionnaire that contains items such as mother's feeling toward pain and childbirth phases, mother's feeling during long childbirth pain, mother's reaction during very severe childbirth pains, mother's feeling at the moment of infant birth, mother's dreaming within the last month about childbirth pain and childbirth itself, imagination of the infant's damage during childbirth pain and delivery. Participant responded to the items using "never" to "very high" options. Items 1, 4, 5, 9, 10, 13, 14, 16, 17, 18, 21, 22, 23, 26, 28, 29, and 30 were positive in the questionnaire, and their scoring was from zero (minimum score) to five (maximum score). That is, the option "very high" was scored as the highest and "never" scored as the lowest. Some other items were scored negatively (2, 3, 6, 7, 8, 11, 12, 15, 20, 19, 24, 25, 27, 31, 32, and 33), where the score five (very high) denoted the highest score and zero (never) denoted the lowest score in these items. Minimum sum of scores was zero and maximum sum of scores was 165. If sum of scores is equal or above 85, it implies the childbirth fear. Higher scores denote more severe fear of childbirth. Scores above 100 were considered as more severe childbirth fear.

Reliability of Wijma Delivery Expectancy Questionnaire was measured by Niegel, and it was calculated by Abedi et al. [13] in Iran. Structural validity was used for measuring reliability of questionnaire in the current work, and criterion validity (convergent and divergent) was used. Validity of W-DEQ was evaluated and compared with Beck Anxiety Inventory (BAI), and their overall correlation was compared. Criterion validity of W-DEQ with Depression-Anxiety-Stress Survey (D-ASS) was compared divergently, and their overall correlation was measured. Validity percentage was between 0.57-0.88. In the current study, reliability of W-DEQ was determined using Cronbach alpha coefficient, and it was calculated as 0.64, which is acceptable. The third part of data collection

tool was a checklist related to the observations of infant’s status including neonatal distress, newborn admission to the intensive care unit, weight, and gender of the infant.

In order to assess the validity of the observation checklist, the content validity by qualitative method was used. It was developed using books and articles, and then was given to 10 faculty members of the faculty of nursing and midwifery of Ahwaz, and the questionnaire was corrected and modified using their comments. Reliability of the observation checklist was calculated by the researcher and another person at the same time, which was at the same field of study and work experience. It was then calculated for pregnant women and as  $r = 0.90$  using coefficient of determination. The demographic questionnaire and Wijma Delivery Expectancy Questionnaire were completed at the point of entrance of the clients in the examination room in a face-to-face interview by the researcher. The observation checklist was completed during and following delivery. The researcher was present during delivery in the childbirth room, and the weight, gender, neonatal distress, and admission to intensive care unit were recorded in the observation checklist following the neonatal infant’s birth.

Descriptive statistics and indexes such as mean and standard deviation were used for calculations. Data normality was measured using Kolmogorov-Smirnov test. T-test was used for comparing numerical data, and chi-square test was used for classifying data.

## Results

Seventy nine percent of research samples had no childbirth fear, and 21% had childbirth fear in this study. Mean of childbirth fear was 64.43 in the research samples, and standard deviation was calculated as 23.94. Mean of childbirth fear in the no-fear group was 55.89, and the standard deviation was 18.43. It was 97.7 with standard deviation as 9.28 in the group with childbirth fear. In this research, average age in the no-fear group was 23.7(3.30), and it was 24.23(94.4) in the group with fear of childbirth. Mean IBM in the no-fear group was 22.16(3.29), and it was 23.53(87.2) in the childbirth fear group. Mean age was higher in the childbirth fear group than no-fear group, although statistical t-test showed no significant difference in this regard ( $p = 0.463$ ). Majority of women in two groups showed normal IBM, and there was no significant difference in this regard between the two groups ( $p = 0.185$ ).

No significant difference was observed between two groups in terms of factors such as mother’s occupation and husband’s occupation, mother’s educational level and husband’s educational level, using chi-square test ( $p > 0.05$ ). In terms of economic status, most individuals in the childbirth fear group were at the poor economic group, followed by moderate economic situation and a few of them had good economic situation, though statistical test showed no significant difference with no-fear group ( $p = 0.151$ ) (Table 1).

*Table 1. Demographic characteristics of nulliparous women in two groups referring to Khoramabad Asali Hospital*

Variable		With Childbirth fear (n=52) Frequency (%)	Without fear of childbirth (n=203) Frequency (%)	<i>p Value</i>
<b>Age (year)</b>		24.23(4.94)	23.71(4.40)	0.463
<b>BMI(Kg/m<sup>2</sup>)</b>		23.53(2.87)	22.86(3.29)	0.185
<b>Education of mother</b>	Illiterate	2(3.8)	12(5.9)	0.844
	High School, no degree	16(30.8)	59(29.1)	
	High School degree	23(44.2)	97(47.8)	
<b>Mother’s occupation</b>	Academic degree	11(21.2)	35(17.2)	0.549
	Employed	0.00(0.00)	8(3.9)	
	Housewife	52(100)	195(96.1)	

*Table 2. Neonatal outcomes in with and without childbirth fear groups referring to Khoramabad Asali Hospital*

Variable	Childbirth fear (n=52) Men (SD)	No-fear of childbirth (n=203) Men (SD)	<i>p Value</i>
<b>1-minute Apgar</b>	8.90(0.29)	8.94(0.38)	0.519
<b>5-minute Apgar</b>	9.96(0.19)	9.96(0.27)	0.924
<b>Birth weight (gr)</b>	3149(536)	3193(470)	0.560
<b>Respiratory distress</b>			
Yes	3(5.8%)	4(2.5%)	0.225
No	49(94.2%)	197(97.5%)	
<b>Admission in the NICU</b>			
Yes	2(3.8)	4(1.98%)	0.429
No	50(96.2)	199(98.02%)	
<b>Newborn sex</b>			
female	27(51.9%)	100(49%)	0.708
male	25(48.1%)	103(51%)	

Although infant respiratory distress in the form of groin and nasal blade sprains and tachypnea breathing ( $P = 0.225$ ) and admission to infant intensive care unit ( $P = 0.429$ ) was higher in the childbirth fear group compared to no fear group, this difference was not statistically significant. There was no significant difference in the gender of newborn infants between the two groups ( $P = 0.708$ ). Weight of the newborn infants in both groups was not statistically significant ( $P = 0.560$ ). There was no significant difference between the first ( $P = 0.519$ ) and fifth ( $P = 0.524$ ) minute Apgar score (Table 2).

## Discussion

According to the results, 21% women had childbirth fear. This finding supports other research findings, which denote fear of childbirth among Iranian women [14]. Ericson et al. during 1997 – 1998 showed that 23% of women had severe fear [15]. Nystedt et al. found that 20% of women had childbirth fear [16].

Mean weight of infants in the no fear group showed no significant difference with the childbirth fear group. Rasouli et al. in Hamedan studied the relationship between anxiety and depression of third trimester of pregnancy with developmental indexes at birth and early delivery. There was no significant relationship between weight at birth and maternal anxiety in this work, which is consistent with the current work [17]. It can be justified in the way that since childbirth fear was investigated at

delivery stage, and fear in this stage cannot influence neonatal weight quickly, it can be suggested that research should be conducted to investigate fear at pregnancy period and its relationship with neonatal weight.

Another finding of this work was impact of childbirth fear on distress and neonatal admission to intensive care unit. Although neonatal distress was higher in no fear group compared to childbirth fear group in this work, the difference was not significant. Admission of newborn infants showed no significant difference at intensive care unit in each group. According to a study by Alipour et al. in Qom, anxiety in pregnancy was not a risk factor for neonatal physical outcomes, and this finding is consistent with findings in the current work [18]. In the study by Delaram et al. in Shahrekord, there was no significant relationship between fear and third quarter's anxiety and admission of infants at the intensive care unit, which is consistent with the present study [19]. From these findings, it can be argued that childbirth fear has no adverse effect on the infant.

Anderson et al. in Sweden also investigated the relationship between anxiety and fear and the Apgar score of 1 and 5 minutes after birth, which showed no significant relationship, which is consistent with the current study [21]. However, contrary to these findings, Dechernery et al. stated that anxiety during delivery has a positive relationship with plasma epinephrine level, which in turn seems to cause abnormal conditions in heart rate and low

Apgar score in infants [10]. More research in this area can help in clarifying the issue.

One strength of the current study is observation of outcomes in face-to-face manner. Limitation of the study was that the research was based on the questionnaires with closed items, and it seems that studies with open items or qualitative items may investigate childbirth fear more deeply. Thus, it is suggested that childbirth fear should be qualitatively studied in future works in pre-pregnancy stages, during pregnancy, and after delivery.

## Conclusion

Research findings showed that there was no significant difference in the with and without childbirth fear groups in terms of infants' weight, gender, neonatal distress, and admission in neonatal intensive care unit. Research findings can be used for training women, because their childbirth fear may adversely influence them and have consequences on their infants, and thus they may prefer cesarean section. However, there is no necessity for preferring it because of this worry and hence cesarean section in these women can be prevented.

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