



The Relationship Between Women's Satisfaction with Personnel's Support During Labor, Fear of Childbirth, and Duration of Labor Stages

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Abstract

Objectives: The main role of women's caregivers is to provide supportive care. This research aimed to determine the relationship between women's satisfaction with personnel's support during labor, fear of childbirth, and duration of labor stages.

Methods: Following a cross-sectional design, this study was performed on 301 women at Taleghani and Alzahra hospitals of Tabriz, Iran. Fear of childbirth was assessed using Delivery Fear Scale (DFS) at 3 - 4 cm dilatation, and satisfaction with the personnel's support was measured with Mackey's satisfaction scale within 12 - 24 hours after delivery. The partograph diagram was used to assess the duration of the labor stages. The Pearson correlation test, independent *t*-test, one-way ANOVA, and multiple linear regression were used for data analysis.

Results: The mean \pm SD score of satisfaction with personnel's support equaled 52.12 ± 13.9 (score range: 17 to 85), and the mean score of FSD equaled 40.2 ± 20.2 (score range: 10 to 100). Satisfaction with the personnel's support showed a significant negative correlation with the fear of childbirth ($r = -0.782$, $P < 0.001$), duration of the active phase of labor ($r = -0.14$, $P = 0.013$), and total duration of labor ($r = -0.14$, $P = 0.013$). The multiple linear regression model indicated that fear of childbirth ($\beta = -0.53$; 95% CI: -0.58 to -0.48; $P < 0.001$) and total duration of labor ($\beta = -0.007$, 95% CI: -0.013 to -0.001; $P = 0.029$) were inversely related with the women's satisfaction with the personnel's support.

Conclusions: This study demonstrated that the FOC and prolonged labor can decrease satisfaction with the personnel's support during labor.

Keywords: Support, Fear of Childbirth, Labor Duration

1. Background

The concept of fear of childbirth (FOC) is a negative feeling about childbirth. Also, the feeling of anxiety and fear during labor and tokophobia are described as the pathological fear and avoidance of childbirth (1). FOC is expressed in a spectrum ranging from logical fear to a severe fear of childbirth. Most women, especially those suffering from nulliparous, experience a logical and natural fear due to unfamiliarity with the process of labor. Naturally, this fear is controlled during pregnancy and childbirth (2). There are two types of FOC: The primary fear in the nulliparous women, and the secondary fear, which occurs after a traumatic childbirth experience or previous problems (3). According to the estimations, approximately 14% of pregnant women experience FOC (4). One out of every five pregnant women suffers from FOC, and 6-13% of preg-

nant women experience severe and debilitating fear (5). Besides physical problems, FOC can lead to psychological complications such as depression and anxiety, postpartum negative mood, and eating disorders (6).

Various studies stated that the most important reason for FOC is the fear of pain (7). In the research by Shariat et al., the reason for fear of vaginal delivery in 71% of pregnant women was the fear of its pain (8). If the fear of pain becomes illogical and pathological it may lead to the tendency to prevent the source of pain (9). In people with the FOC, choosing cesarean delivery (C-section) is a pain preventive behavior (10). FOC has a crucial role in women's request for C-section and increased rate of elective C-section. Furthermore, the severe FOC can lead to emergency C-section (11). Consequences of high C-section rates include increased maternal (12, 13) and neonatal mortality and complications (14), disruption in the process of

attachment and breastfeeding (10, 15), and a financial burden on the healthcare system (16).

It also increases the mothers' anxiety and fear during labor, their pain perception, the duration of labor, and catecholamine release, which translates into reduced blood flow in the uterus. In addition, it may result in reduced effects of uterine contractions and increased duration of labor (17).

A women's FOC is normally on account of her former negative labor experiences. An important factor is the unpleasant quality of the relationship with the caregivers. The optimal midwifery care is the best way to create a positive childbirth experience in women, plus a knowledgeable and understanding midwife with good communication skills is another crucial factor in this regard (18). The relationship between a midwife and the woman includes all aspects of midwifery services. Several studies demonstrated that a reliable relationship between the woman and midwife is quite crucial for the emotional aspect of labor experience (19).

Social support is an interpersonal relationship that can lead to emotional help if needed. People who offer this help include family, neighbors, colleagues, relatives, and medical teams that provide mothers with psychological and informative support by palliative care (20). Previous studies indicated that social support has a significant relationship with reducing stress during pregnancy (21). Lack of social support can result in a lack of tendency for breastfeeding (22), low intelligence in infants (23), post-partum depression (24), depression during pregnancy (6), and cleft palate (25). Some researchers reported contradictory results. The research by Martinez Garcia et al. revealed that sometimes the provided support is improper, untimely, and against the mother's will (26).

In accordance with the research, the constant support during labor provided by the midwife, can improve the childbirth results. Women who receive constant support during labor are more likely to deliver spontaneously, suffer from no childbirth complications, and be satisfied with their childbirth experience; besides, they are unlikely to use analgesics and have shorter childbirth stages. Furthermore, supportive care during labor reduces the fear and anxiety of childbirth, which reduces complications. In addition, it reduces labor induction by oxytocin (27).

According to the reports, FOC is the most common cause of elective C-sections in Iranian women. FOC is directly related to the longer duration of labor (6), and increased rates of unnecessary C-section impose a variety of complications and financial burdens on the families and the healthcare system of the country (16). Furthermore, FOC is among the important reasons for women's unwillingness to bear children (28). In addition, ongoing mater-

nity support provided by midwives is very important to improve delivery outcomes. Based on our knowledge, merely one research has been carried out in Iran regarding the relationship between social support and FOC on nulliparous women, and the duration of labor has not been measured (6).

2. Objectives

The present study aimed to assess the relationship between women's satisfaction with personnel's support during labor, fear of childbirth, and duration of labor stages.

3. Methods

3.1. Study Design & Participants

Following a longitudinal, descriptive-analytical design, this study is conducted on 301 women admitted to the delivery room at Taleghani and Alzahra Medical Centers from May 2020 to November of 2020.

The inclusion criteria of the research were 38 - 42 weeks gestational age, singleton pregnancy, cephalic presentation, intact amniotic sac, and low-risk pregnancy (no history of third trimester bleeding, placental abruption, placenta Previa, fetal growth restriction, preeclampsia or eclampsia, gestational diabetes, oligohydramnios or polyhydramnios, etc.). The exclusion criteria were a history of physical or mental illness, addiction to drugs, C-section indication, fetal anomaly, a history of infertility, and death among the relatives within the last four weeks.

3.2. Sampling

After approval of the study protocol and obtaining permission from the Ethics Committee of the Department of Research of Tabriz University of Medical Science (code: IR.TBZMED.REC.1399.331), sampling was carried out in Taleghani and Alzahra Medical Centers of Tabriz. The researcher went to the delivery ward of the above-mentioned centers and selected women with 3 - 4 cm dilatation through convenience sampling. Then, the researcher introduced themselves to the parturient women, explained the objectives of the research, examined the patients in regard to the inclusion and exclusion criteria, and in case of meeting the eligibility criteria, the women were asked to hand over a written informed letter of consent and consequently, included in the study.

3.3. Data Collection Tools

In the present research, the socio-demographic and obstetrics characteristic questionnaire, the Modified Mackey Satisfaction Rating Scale (MCSRS), Delivery Fear Scale (DFS), and partograph chart were employed for data collection.

The socio-demographic and obstetrics characteristic questionnaire includes items regarding age, marital status, education, job, a record of abortion, gestational age, etc., which was filled when participants entered the research. The validity of this questionnaire was assessed by the content validity, i.e., the questionnaire was handed over to eight faculty members of the faculty of Nursing & Midwifery of Tabriz University of Medical Sciences and their feedback were received to make necessary modifications.

The satisfaction with the support of the personnel during labor was measured using the MCSRS within 12 - 24 hours postpartum. This scale is designed by Goodman et al. (2004) to measure the satisfaction rate of the parturient women with their childbirth experience (29). This scale contains 34 items and six subcategories: Total satisfaction with childbirth (3 items, including items 1, 2, 34), self-satisfaction (9 items, including items 3-11), neonatal (3 items, including items 14 - 16), nurse or midwife (9 items, including items 17, 19, 21, 23, 25, 27, 29, 31, and 33), physician (8 items, including items 18, 20, 22, 24, 26, 28, 30, and 32), husband (2 items, including items 12 and 13). This scale is designed based on a five-point Likert scale (1 = strongly dissatisfied, 2 = dissatisfied, 3 = neither satisfied nor dissatisfied, 4 = satisfied, and 5 = strongly satisfied). The score range of this scale varies from 34 to 170. In Iran, the validity and reliability of this scale are assessed by Moudi and Tavousi (2016). In the Persian version, face and content validity have been assessed following a qualitative method. Construct validity has been assessed by exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), and the results showed the adequate fitness of the model. The Cronbach's alpha coefficient and intraclass correlation coefficient (ICC) have been reported as 0.98 and 0.78 for the total scale, respectively (30). In this study, only two subcategories pertinent to satisfaction with nurse or midwife and satisfaction with the physician were used, which totally included 17 items, and the score domain of this scale ranged from 17 to 85 in our research.

The DFS was used to assess the FOC. This scale is designed by Wijma et al. (2002). DFS is a valid 10-item self-assessment scale, in which the scores range from one (completely disagree) to 10 (completely agree). This scale can be completed easily within 60 to 90 seconds during any moment of labor and childbirth. The higher the score, the more the fear (31). The Persian version of DFS is a valid and reliable tool to measure fear in the delivery room at

the active dilatation stage. The face and content validity of the Persian version has been assessed following a qualitative method. Construct validity has been assessed by CFA, and the model obtained an optimal level of fit. The Cronbach's alpha coefficient and the split-half reliability coefficient have been reported as 0.77 and 0.83, respectively (32).

To record the duration of labor stages, the partograph form was used. Partograph is a tool to indicate the development of labor. In addition, mother's vital signs, fetal heart rate, medication process, cervical dilatation, effacement, station, amniotic fluid status, and number and duration of contractions should be recorded in this form. The researcher determined the duration of the active stage of labor using the partograph form from 4 cm dilatation until the child was born, based on the examinations. The duration of the second stage of labor was determined through vaginal examination at the proper time intervals by the researcher, and cervical dilatation and the exact time of delivery were recorded on the partograph diagram. The duration of the third stage was determined by recording the exact time of the removal of the baby and the placenta. Besides, labor characteristics, birth attendant, and type of childbirth (as confounding variables) were recorded using a checklist.

3.4. Sample Size

The sample size was calculated as 261 subjects using G-power software and based on the study by Azimi et al. (2018) (6) on the relationship between social support and fear of childbirth with $r = -0.18$, $\alpha = 0.05$, and power = 90%. By considering an attrition rate of 10%, the sample size was increased to 301 subjects.

3.5. Statistical Analysis

Data analysis was administered using SPSS, 24. Skewness and Kurtosis tests were employed to determine the normality of the quantitative data. The Pearson correlation test was used to determine the relationship of satisfaction with personnel's support with FOC and duration of labor stages at bivariate analysis. The Pearson correlation test, independent *t*-test, and one-way ANOVA were used to determine the relationship between socio-demographic and obstetrics characteristics, women's satisfaction, and personnel's support. The socio-demographic and obstetrics variables that were correlated with women's satisfaction with personnel's support, with a *P*-value less than 0.2, were entered into the multiple linear regression to control the confounding variables and assess the effect of each independent variable (i.e., FOC, duration of the active phase, and total duration of labor) on the dependent variable (women's satisfaction with personnel's support).

The results of multiple linear regression are reported as β (95% confidence interval) and P-values. Before building the model, the assumptions of multiple linear regression, including normality of residuals, homoscedasticity, independence of observations, no multicollinearity, linearity of association, and no outliers, were examined and confirmed. Statistical significance was considered when P-value < 0.05 .

4. Results

The present research was carried out from January to November 2020. In total, 464 pregnant women were examined. Among them, 117 did not meet the inclusion criteria of the study (i.e., gestational age under 38 weeks, a record of infertility, a record of mental illness, high-risk pregnancy, non-cephalic presentation, addiction to drugs, and death of one of the relatives within the last four weeks), and 28 met the exclusion criteria (i.e., a record of chronic systematic diseases), and 18 did not tend to participate; therefore, they all were excluded from the study. Finally, 301 pregnant women with a low-risk pregnancy, 3-4 cm dilatation, and at 38-42 weeks of gestational age who visited Taleghani and Alzahra Medical Centers of Tabriz were included in this study.

The mean \pm SD age of the participants and their husbands was 25.8 ± 6.4 and 32.4 ± 5.8 , respectively. The mean \pm SD number of parity and gestational age was 1.7 ± 1.0 and 39.7 ± 1.0 , respectively. Most of the women (86.7%) had unwanted pregnancies. Less than two-thirds of the participants (62.8%) evaluated their monthly income as sufficient to meet their livelihood expenses. Most of the women were strongly satisfied with their marital life (87.7%) and reported no experience of domestic violence (95.3%). Only one child required resuscitation at the time of birth, and two needed hospitalizations within the first 24 hours after birth. More than two-thirds (72.8%) of the participants had vaginal childbirth or episiotomy. Most of the birth attendants (81.4%) were residents (Table 1).

The mean \pm SD score of satisfaction with the personnel's support was 52.12 ± 13.9 , ranging from 17 to 85. The mean \pm SD score of FOC was 40.2 ± 20.2 , ranging from 10 to 100. The mean \pm SD duration of the active phase, the second and third stages of labor, and total duration of labor was 392.6 ± 174.1 , 25.7 ± 14.1 , 9.5 ± 4.7 , and 427.5 ± 170.5 minutes, respectively. In accordance with the Pearson correlation test, the FOC ($r = -0.78$, $P < 0.001$), duration of the active phase of labor ($r = -0.14$, $P = 0.013$), and total duration of labor ($r = -0.14$, $P = 0.013$) showed a significant negative correlation with the satisfaction with the personnel's support. However, the satisfaction with the personnel's support showed no statistically significant correlation with

the duration of the second phase ($P = 0.492$) and the third phase of labor ($P = 0.892$) (Table 2).

According to the unadjusted tests (Pearson correlation test, independent *t*-test, and one-way ANOVA), only the relationship between the mean score of satisfaction with the personnel's support and participant's educational level was significant ($P = 0.048$) (Table 3). Variables of spouse's age, gestational age, education, spouse's job, birth attendant, spouse's favorite fetal gender, intake of hyoscine and intake of pethidine along with FOC, duration of the active phase, and total duration of labor were entered into the multiple linear regression model. Of all variables that were entered the model, FOC ($\beta = -0.53$; 95% CI: -0.58 to -0.48; $P < 0.001$) and total duration of labor ($\beta = -0.007$, 95% CI: -0.013 to -0.001; $P = 0.029$) were inversely related to women's satisfaction with the personnel's support. The adjusted R^2 was 0.610 (Table 4).

5. Discussion

This study demonstrated that FOC and total duration of labor were inversely related to women's satisfaction with the personnel's support.

In this study, FOC showed a significant reverse relationship to the women's satisfaction with the personnel's support. In the same vein, Fisher et al. (10) showed that social relationships, non-official support networks for pregnant women, and strong support of the midwives can strengthen the women's beliefs that childbirth is a physiological process that can be controlled, leading to psychological well-being and reduction of the FOC. Furthermore, Azimi et al. (6) reported a significant negative relationship between perceived social support and the score of FOC among the nulliparous women, which corresponds to the results of the present research.

Research conducted in Iran reported a prevalence of 59% for FOC (33). Akhlaghi et al. reported a significant relationship between FOC and state and trait anxiety in a sample of nulliparous women (34). Besides, in their study, Fisher et al. (10) divided the FOC into two dimensions of social and personal. They considered fear of the unknown, such as hearing horrifying stories about childbirth, and concern regarding the child's health as social fear and the fear of pain, such as fear of lack of control during labor or incapability, as personal fear (30). FOC and the feeling of loneliness during pregnancy are among the pain predictive factors during labor and can increase the risk of both emergency (3) and elective C-section (35). C-section is not a solution for this problem, and the fear can remain even after the birth, leading to an unpleasant experience (3). Therefore, based on the statistically significant relationship between supportive care provided by health staff

Table 1. Socio-demographic and Obstetric Characteristics (n = 301)^a

Variables	Values	Variables	Values
Age (y)	25.8 ± 6.4	Number of parity	1.7 ± 1.0
Spouse age (y)	32.4 ± 5.8	Gestational age (Week)	39.7 ± 1.0
Maternity hospital		One-minute Apgar scores	
Alzahra	164 (54.5)	7	5 (1.7)
Taleghani	137 (45.5)	8	30 (10.0)
Job		9	263 (87.4)
Housewife	279 (92.7)	Five-minute Apgar scores	
Employed	22 (7.3)	8	5 (1.7)
Educational level		9	27 (9.0)
Under diploma	110 (36.5)	10	266 (88.4)
Diploma	91 (30.2)	Type of delivery	
University	100 (33.2)	Vaginal with episiotomy	219 (72.8)
Spouse educational level		Vaginal without episiotomy	72 (23.9)
Under diploma	90 (29.9)	Cesarean section	10 (3.3)
Diploma	90 (29.9)	Birth attendant	
University	121 (40.2)	Midwife	12 (4.0)
Spouse job		Midwifery student and instructor	42 (14.0)
Unemployed	7 (2.3)	Resident	245 (81.4)
Manual worker	106 (35.2)	Stimulation	
Employee	27 (9.0)	Yes	6 (2.0)
Shopkeeper	23 (7.6)	No	294 (98.0)
Other	138 (45.8)	Induction	
Monthly income adequacy		Yes	145 (48.2)
Completely adequate	82 (27.2)	No	151 (50.2)
Somewhat adequate	189 (62.8)	Infant resuscitation	
Inadequate	30 (10.0)	Yes	1 (0.3)
Pregnancy type		No	293 (97.3)
Intended pregnancy	261 (86.7)	Infant hospitalization	
Unintended pregnancy	40 (13.3)	Yes	2 (0.7)
Mother's favorite fetus sex		No	292 (97.0)
Yes	291 (96.7)	Intake of hyoscine	
No	10 (3.3)	Yes	41 (13.6)
Spouse's favorite fetus sex		No	258 (85.7)
Yes	290 (96.3)	Intake of promethazine	
No	11 (3.7)	Yes	142 (47.2)
Satisfaction with marriage		No	159 (52.8)
Completely satisfied	264 (87.7)	Intake of pethidine	
Somewhat satisfied	67 (22.3)	Yes	50 (16.6)
Spouse violence during pregnancy	No	250 (83.1)	
No history of violence	287 (95.3)	Intake of remifentanil	
Psychological	1 (0.3)	Yes	23 (7.6)
Physical	4 (1.3)	No	277 (92.0)
Verbal	9 (3.0)	History of abortion	
Participate in childbirth preparation classes	Yes	223 (74.1)	
Not participate	300 (99.7)	No	78 (25.9)

^aValues are expressed as mean ± standard deviation or No. (%).

Table 2. Women's Satisfaction with the Personnel's Support, Fear of Childbirth and Duration of Labor Stages and Correlation Between Fear of Childbirth and Duration of Labor Stages with Women's Satisfaction with the Personnel's Support (n = 301)

Variables	Values ^a	Range	Correlation with Women's Satisfaction with the Personnel's Support; r (P) ^b
Women's Satisfaction with the personnel's support (range score: 17 - 85)	52.12 ± 13.9	19 - 68	
Fear of childbirth (range score: 10-100)	40.2 ± 20.2	10 - 91	-0.78 (< 0.001)
Durations of the active phase of labor (min)	392.6 ± 174.1	120 - 1260	-0.14 (0.013)
Duration of the second stage of labor (min)	25.7 ± 7.3	5 - 66	0.04 (0.492)
Duration of the third stage of labor (min)	9.5 ± 4.7	2 - 25	0.08 (0.892)
Total duration of labor (min)	427.5 ± 170.5	145 - 1289	-0.14 (0.013)

^aValues are expressed as mean \pm standard deviation.

^b Pearson correlation test.

and the FOC, improving the social support provided by personnel to mothers is recommended.

In the present research, the total duration of labor presented a significant reverse relationship with the satisfaction with the personnel's support. In the interventional study by Kashanian et al. (36), the constant support during labor resulted in reducing the duration of the active phase and the second and third phases of labor, which is not in line with the present study. This difference can be attributed to the fact that Kashanian et al. (36) merely studied the nulliparous women, while the present research does not suffer from this limitation. Furthermore, Kashanian et al. (36) followed an interventional design, while this study followed an observational design. Langer et al. (37), conducted a study to investigate the effect of social and psychological support provided by a Doula midwife in Mexico. They reported that women who received support experienced reduced duration of labor, which is consistent with the results of the present research. The results of a review study by Hodnett et al. (27) revealed that constantly supporting women during labor by any supporter, such as a nurse, midwife, or non-specialists, was influential in reducing the duration of labor, increasing the number of spontaneous vaginal delivery, reducing the need for pain relievers during labor, and resulted in a positive experience.

The duration of labor is among the factors that affect the pregnancy outcomes and damages to the mother and the embryo. Accordingly, the excessive increase of the duration of labor enhances the risk of anxiety, insomnia, the possibility of infection, physical and neural injuries, and death of the embryo or child, and increases the risk of bleeding for the mother, postpartum infection, mental breakdown, and fatigue (38).

In accordance with the study by Abasi et al., prolonged labor can increase the mortality rate during birth by 5.3%,

and it accounts for 8% of maternal mortality in developing countries (39). On the other hand, prolonged labor and the severity of its pain are among the main causes of fear of childbirth among mothers and selection of C-section childbirth. In comparison to vaginal delivery, C-section increases the risk of ulcer infection, bleeding, urinary tract infection, and thromboembolism in mothers (40).

Taking into account the above results, it can be argued that social support and supportive care provided by the personnel during labor can be highly helpful to reduce women's FOC. Accordingly, it can reduce the duration of labor, which can influence the reduction of C-section and childbirth complications.

5.1. Limitations & Strength of the Study

One of the limitations of this study is following a cross-sectional design, in which the demonstrated relationship of satisfaction with the support of the personnel, FOC, and duration of the active phase of labor does not indicate a cause-and-effect relationship. Administering valid scales and recruiting both nulliparous women and multiparous pregnant women are among the strengths of the present study.

5.2. Conclusions

The results indicated that the FOC and prolonged labor can lead to decreased satisfaction with the personnel's support during labor. Therefore, reducing the severity of FOC and duration of labor can increase satisfaction with the personnel's support during labor. Consequently, it prevents various childbirth complications and enables us to achieve one of the objectives of midwifery and reduce the number of C-section childbirth.

Table 3. Relationship Between Socio-Demographic and Obstetric Characteristics with Women's Satisfaction with the Personnel's Support (n = 301)

Variables	Women's Satisfaction with the Personnel's Support	P-Value	Variables	Women's Satisfaction with the Personnel's Support	P-Value
Age (y)	0.04	0.463 ^a	Gestational age (Week)	-0.08	0.177 ^a
Spouse age (y)	0.10	0.096 ^a	One-minute Apgar scores		0.648 ^c
Maternity hospital		0.864 ^b	7	55.8 ± 7.2	
Alzahra	52.0 ± 14.2		8	53.7 ± 13.5	
Taleghani	52.3 ± 13.6		9	51.8 ± 14.1	
Job		0.707 ^b	Five-minute Apgar scores		0.742 ^c
Housewife	52.2 ± 13.7		8	55.8 ± 7.2	
Employed	51.0 ± 15.7		9	53.2 ± 13.5	
Educational level		0.048 ^c	10	51.9 ± 14.1	
Under diploma	54.6 ± 11.7		Type of delivery		0.403 ^c
Diploma	51.5 ± 14.6		Vaginal with episiotomy	51.5 ± 13.9	
University	50.0 ± 15.0		Vaginal without episiotomy	53.2 ± 14.2	
Spouse educational level		0.502 ^c	Cesarean section	56.5 ± 10.5	
Under diploma	53.5 ± 12.5		Birth attendant		
Diploma	51.1 ± 15.3		Midwife	58.0 ± 4.5	0.144 ^c
University	51.9 ± 13.7		Midwifery student and instructor	49.3 ± 16.1	
Spouse job		0.111 ^c	Resident	52.3 ± 13.7	
Unemployed	49.6 ± 10.8		Stimulation		0.267 ^b
manual worker	51.9 ± 13.4		Yes	52.2 ± 13.9	
Employee	55.7 ± 8.5		No	45.8 ± 11.1	
Shopkeeper	45.6 ± 19.1		Induction		0.946 ^b
Other	52.8 ± 14.0		Yes	52.0 ± 14.3	
Monthly income adequacy		0.476 ^c	No	51.9 ± 13.5	
Completely adequate	53.6 ± 13.5		Parity		0.303
Somewhat adequate	51.7 ± 13.7		1	51.3 ± 14.7	
Inadequate	50.5 ± 15.9		2	51.7 ± 13.5	
Pregnancy type		0.886 ^b	3	55.4 ± 12.7	
Intended pregnancy	52.2 ± 14.1		≥ 4	54.9 ± 11.7	
Unintended pregnancy	51.8 ± 13.0		Intake of hyoscine		0.058 ^b
Mother's favorite fetus sex		0.240 ^b	Yes	51.6 ± 14.4	
Yes	51.9 ± 13.9		No	55.0 ± 9.8	
No	57.2 ± 10.8		Intake of promethazine		0.502 ^b
Spouse's favorite fetus sex		0.140 ^b	Yes	52.6 ± 14.2	
Yes	51.9 ± 13.9		No	51.5 ± 13.5	
No	58.2 ± 10.7		Intake of pethidine		0.066 ^b
Satisfaction with marriage		0.205 ^b	Yes	52.9 ± 13.4	
Completely satisfied	52.5 ± 13.7		No	49.0 ± 15.3	
Somewhat satisfied	49.4 ± 14.8		Intake of remifentanil		0.733 ^b
Spouse violence during pregnancy			Yes	52.1 ± 13.7	
No	52.1 ± 14.0	0.763 ^b	No	53.2 ± 14.6	
Yes	53.2 ± 11.2		History of abortion		0.864 ^b
			Yes	51.9 ± 14.0	
			No	52.3 ± 13.5	

^a Pearson correlation test.^b Independent t-test.^c One-way ANOVA.

Table 4. Linear Regression Model for Predicting Women's Satisfaction with the Personnel's Support^a

Variables	B (95% Confidence Interval)	P
Fear of childbirth	-0.53 (-0.58 to -0.48)	< 0.001
Total duration of labor	-0.007 (-0.013 to -0.001)	0.029
Durations of the active phase of labor	-0.01 (-0.07 to 0.04)	0.660
Spouse age (y)	-0.01 (-0.20 to 0.19)	0.954
Gestational age (Week)	-0.28 (-1.39 to 0.83)	0.619
Mother's education (Reference: University)		
Under diploma	1.75 (-0.80 to 4.30)	0.178
Diploma	-1.04 (-3.70 to 1.61)	0.440
Spouse job (Reference: Other)		
Unemployed	-3.30 (-12.10 to 4.47)	0.368
manual worker	-1.02 (-3.32 to 1.30)	0.380
Employee	1.05 (-2.79 to 4.90)	0.590
Shopkeeper	-1.34 (-5.28 to 2.61)	0.505
Spouse's favorite fetus sex (Reference: No)		
Yes	-4.61 (-10.16 to 0.92)	0.102
Intake of hyoscine (Reference: Yes)		
No	1.35 (-1.71 to 4.41)	0.387
Intake of pethidine (Reference: Yes)		
No	-0.62 (-3.63 to 2.39)	0.686
Birth attendant (Reference: Midwifery student and instructor)		
Resident	-0.65 (-3.77 to 2.47)	0.683
Midwife	0.14 (-6.07 to 6.36)	0.964

^aAdjusted R Square: 61%

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Footnotes

Authors' Contribution: MJM involved in the conception and design, acquisition of data, and drafting the manuscript. MM was involved in the conception and design, acquisition of data, blinded analysis of the data, interpretation of data, and revising this manuscript.

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References

1. Gao LL, Liu XJ, Fu BL, Xie W. Predictors of childbirth fear among pregnant Chinese women: A cross-sectional questionnaire survey. *Midwifery*. 2015;31(9):865-70. doi: [10.1016/j.midw.2015.05.003](https://doi.org/10.1016/j.midw.2015.05.003). [PubMed: 26051983].
2. Salomonsson B, Wijma K, Alehagen S. Swedish midwives' perceptions of fear of childbirth. *Midwifery*. 2010;26(3):327-37. doi: [10.1016/j.midw.2008.07.003](https://doi.org/10.1016/j.midw.2008.07.003). [PubMed: 18774630].
3. Klabbers GA, van Bakel HJ, van den Heuvel M, Vingerhoets AJ. Severe fear of childbirth: its features, assessment, prevalence, determinants, consequences and possible treatments. *Psichologische teme*. 2016;25(1):107-27.
4. O'Connell MA, Leahy-Warren P, Khashan AS, Kenny LC, O'Neill SM. Worldwide prevalence of tocophobia in pregnant women: systematic review and meta-analysis. *Acta Obstet Gynecol Scand*. 2017;96(8):907-20. doi: [10.1111/aogs.13138](https://doi.org/10.1111/aogs.13138). [PubMed: 28369672].
5. Aguilera-Martin A, Galvez-Lara M, Blanco-Ruiz M, Garcia-Torres F. Psychological, educational, and alternative interventions for reducing fear of childbirth in pregnant women: A systematic review. *J Clin Psychol*. 2021;77(3):525-55. doi: [10.1002/jclp.23071](https://doi.org/10.1002/jclp.23071). [PubMed: 33078851].
6. Azimi M, Fahami F, Mohamadirizi S. The Relationship between Perceived Social Support in the First Pregnancy and Fear of Childbirth. *Iran J Nurs Midwifery Res*. 2018;23(3):235-9. doi: [10.4103/ijnmr.IJNMR_170_16](https://doi.org/10.4103/ijnmr.IJNMR_170_16). [PubMed: 29861764]. [PubMed Central: PMC5954647].
7. Akgun M, Boz I, Ozer Z. The effect of psychoeducation on fear of childbirth and birth type: systematic review and meta-analysis. *J Psychosom Obstet Gynaecol*. 2020;41(4):253-65. doi: [10.1080/0167482X.2019.1689950](https://doi.org/10.1080/0167482X.2019.1689950). [PubMed: 31718369].

8. Sharif M, Majlesi F, Azari S, Mahmoodi M. [Cesarean section in maternity hospitals in Tehran, Iran]. *Payesh (Health Monitor)*. 2002;1(3):5-10. Persian.
9. Nilsson C, Hessman E, Sjöblom H, Dencker A, Jangsten E, Mollberg M, et al. Definitions, measurements and prevalence of fear of childbirth: a systematic review. *BMC Pregnancy Childbirth*. 2018;18(1):28. doi: 10.1186/s12884-018-1659-7. [PubMed: 29329526]. [PubMed Central: PMC5766978].
10. Fisher C, Hauck Y, Fenwick J. How social context impacts on women's fears of childbirth: a Western Australian example. *Soc Sci Med*. 2006;63(1):64-75. doi: 10.1016/j.socscimed.2005.11.065. [PubMed: 16476516].
11. Storksen HT, Garthus-Niegel S, Adams SS, Vangen S, Eberhard-Gran M. Fear of childbirth and elective caesarean section: a population-based study. *BMC Pregnancy Childbirth*. 2015;15(1):221. doi: 10.1186/s12884-015-0654-4. [PubMed: 26382746]. [PubMed Central: PMC4573308].
12. Antoine C, Young BK. Cesarean section one hundred years 1920-2020: the Good, the Bad and the Ugly. *J Perinat Med*. 2020;49(1):5-16. doi: 10.1515/jpm-2020-0305. [PubMed: 32887190].
13. Dikete Ekanga M, Prudence M, Yves C, Christine K, Richard K, Philippe S, et al. Analysis of caesarean section practices and consequences in Goma, DR Congo: Frequency, indications, maternal and perinatal morbidity and mortality. *Arch Community Med Public Health*. 2019;91:8. doi: 10.17352/2455-5479.000060.
14. Kirkeby Hansen A, Wisborg K, Uldbjerg N, Henriksen TB. Elective caesarean section and respiratory morbidity in the term and near-term neonate. *Acta Obstet Gynecol Scand*. 2007;86(4):389-94. doi: 10.1080/00016340601159256. [PubMed: 17486457].
15. Zanardo V, Svegliato G, Cavallin F, Giustardi A, Cosmi E, Litta P, et al. Elective cesarean delivery: does it have a negative effect on breastfeeding? *Birth*. 2010;37(4):275-9. doi: 10.1111/j.1523-536X.2010.00421.x. [PubMed: 21083718].
16. Haider MR, Rahman MM, Moinuddin M, Rahman AE, Ahmed S, Khan MM. Ever-increasing Caesarean section and its economic burden in Bangladesh. *PLoS One*. 2018;13(12). e0208623. doi: 10.1371/journal.pone.0208623. [PubMed: 30532194]. [PubMed Central: PMC6287834].
17. Siriwan Yuenyong R, Veena Jirapae R, O'Brien BA. Support from a close female relative in labour: the ideal maternity nursing intervention in Thailand. *J Med Assoc Thai*. 2008;91(2):253-60.
18. Halldorsdottir S, Karlsson S. The primacy of the good midwife in midwifery services: an evolving theory of professionalism in midwifery. *Scand J Caring Sci*. 2011;25(4):806-17. doi: 10.1111/j.1471-6712.2011.00886.x. [PubMed: 21480938].
19. Aune I, Dahlberg Msc U, Ingebrigtsen O. Parents' experiences of midwifery students providing continuity of care. *Midwifery*. 2012;28(4):372-8. doi: 10.1016/j.midw.2011.06.006. [PubMed: 21764190].
20. Nazari S, Salari P, Mazlom R, Mahram B. [Comparison of social support in the first and second month of postpartum in multiparous]. *Community Health J*. 2017;8(2):1-9. Persian.
21. Faramarzi M, Pasha H. [The role of social support in prediction of stress during pregnancy]. *J Babol Univ Med Sci*. 2015;17(11):52-60. Persian.
22. Hildingsson I, Tingvall M, Rubertsson C. Partner support in the childbearing period -A follow up study. *Women Birth*. 2008;21(4):141-8. doi: 10.1016/j.wombi.2008.07.003. [PubMed: 18707928].
23. Theodore RF, Thompson JM, Waldie KE, Bcroft DM, Robinson E, Wild CJ, et al. Determinants of cognitive ability at 7 years: a longitudinal case-control study of children born small-for-gestational age at term. *Eur J Pediatr*. 2009;168(10):1217-24. doi: 10.1007/s00431-008-0913-9. [PubMed: 19165501].
24. Spoozak L, Gotman N, Smith MV, Belanger K, Yonkers KA. Evaluation of a social support measure that may indicate risk of depression during pregnancy. *J Affect Disord*. 2009;114(1-3):216-23. doi: 10.1016/j.jad.2008.07.015. [PubMed: 18765164]. [PubMed Central: PMC2654337].
25. Ma J, Huang YQ, Yao C, Ma SQ, Meng T, Ma M, et al. Parental health and social support in the first trimester of pregnancy and the risk of oral clefts: a questionnaire-based, case-control study. *Plast Reconstr Surg*. 2015;135(1):212-8. doi: 10.1097/PRS.0000000000000778. [PubMed: 25539307].
26. Martinez Garcia MF, Garcia Ramirez M, Maya Jariego I. Social support and locus of control as predictors of psychological well-being in Moroccan and Peruvian immigrant women in Spain. *Int J Intercult Relat*. 2002;26(3):287-310. doi: 10.1016/s0147-1767(02)00005-6.
27. Hodnett ED, Gates S, Hofmeyr GJ, Sakala C. Continuous support for women during childbirth. *Cochrane Database Syst Rev*. 2013;7. doi: 10.1002/14651858.CD003766.pub5.
28. Hassanzadeh R, Abbas-Alizadeh F, Meedy S, Mohammad-Alizadeh-Charandabi S, Mirghafourvand M. Fear of childbirth, anxiety and depression in three groups of primiparous pregnant women not attending, irregularly attending and regularly attending childbirth preparation classes. *BMC Womens Health*. 2020;20(1):180. doi: 10.1186/s12905-020-01048-9. [PubMed: 32799875]. [PubMed Central: PMC7429472].
29. Goodman P, Mackey MC, Tavakoli AS. Factors related to child-birth satisfaction. *J Adv Nurs*. 2004;46(2):212-9. doi: 10.1111/j.1365-2648.2003.02981.x. [PubMed: 15056335].
30. Moudi Z, Tavousi M. Evaluation of Mackey Childbirth Satisfaction Rating Scale in Iran: What are the Psychometric Properties? *Nurs Midwifery Stud*. 2016;5(2). e29952. doi: 10.1775/nmsjournal29952. [PubMed: 27556053]. [PubMed Central: PMC4993069].
31. Wijma K, Alehagen S, Wijma B. Development of the Delivery Fear Scale. *J Psychosom Obstet Gynaecol*. 2002;23(2):97-107. doi: 10.3109/01674820209042791. [PubMed: 12189903].
32. Shakarami A, Iravani M, Mirghafourvand M, Jafarabadi MA. Psychometric properties of the Persian version of delivery fear scale (DFS) in Iran. *BMC Pregnancy Childbirth*. 2021;21(1):147. doi: 10.1186/s12884-021-03634-7. [PubMed: 33602180]. [PubMed Central: PMC7890816].
33. Zafarghandi N, Hadavand SH, Zayeri F, Hamzeloo L. [Risk factors associated with forth-degree laceration during vaginal delivery]. *Tehran Univ Med J TUMS Public*. 2006;64(7):65-74. Persian.
34. Akhlaghi F, Mokhber N, Shakeri MT, Shamsae F. [Relation between depression, anxiety, self-esteem, marital satisfaction, demographical factor and maternal complications with fear of childbirth in nulliparous women]. *J Fundam Mental Health*. 2012;14(54):31-122. Persian.
35. Bryanton J, Beck CT, Morrison S. When Fear Surrounding Childbirth Leads Women to Request a Planned Cesarean Birth. *West J Nurs Res*. 2021;1939459211010190. doi: 10.1177/01939459211010192. [PubMed: 33882757].
36. Kashanian M, Javadi F, Haghghi MM. Effect of continuous support during labor on duration of labor and rate of cesarean delivery. *Int J Gynaecol Obstet*. 2010;109(3):198-200. doi: 10.1016/j.ijgo.2009.11.028. [PubMed: 20152972].
37. Langer A, Campero I, Garcia C, Reynoso S. Effects of psychosocial support during labour and childbirth on breastfeeding, medical interventions, and mothers' wellbeing in a Mexican public hospital: a randomised clinical trial. *Br J Obstet Gynaecol*. 1998;105(10):1056-63. doi: 10.1111/j.1471-0528.1998.tb09936.x. [PubMed: 9800927].
38. Simkin P, Bolding A. Update on nonpharmacologic approaches to relieve labor pain and prevent suffering. *J Midwifery Womens Health*. 2004;49(6):489-504. doi: 10.1016/j.jmwh.2004.07.007. [PubMed: 15544978].
39. Abasi Z, Abedian Z, Fdaii A. [Effect of massage on the duration of first stage of labor]. *J Arak Univ Med Sci*. 2008;11(1):63-71. Persian.
40. Saat SS, Ahmadi Haji M, Basirat Z, Nazari R, Beheshti Z. [Comparison of atropine-promethazine combination and pethidine effects on active phase of labor]. *J Babol Univ Med Sci*. 2007;9(3):39-42. Persian.