

# Labour Worry and Postpartum Discomfort of Primiparous Mothers in Konya, Turkey

**Seyhan Çankaya**

<https://orcid.org/0000-0003-0433-2515>  
Selçuk University, Turkey  
seyhancankaya@selcuk.edu.tr

**Sema Dereli Yılmaz**

<https://orcid.org/0000-0001-5294-7966>  
Selçuk University, Turkey  
syilmaz33@gmail.com

## Abstract

Increased levels of worry about childbirth labour may lead to the development of obstetric complications. Therefore, this study was designed to determine the factors that affect the birth worry of primiparae. The population of the study consisted of the primiparous women between May and August 2018 in the Dr Ali Kemal Belviranlı Maternity and Children's Hospital in the province of Konya, Turkey. A total of 240 primiparous women were selected by means of convenience sampling for this descriptive research. The Postpartum Comfort Questionnaire (PPCQ), the Oxford Worries about Labour Scale (OWLS), and a questionnaire that examines socio-demographic and obstetrical features were used to collect the data. The data were analysed with independent samples, the *t*-test, the one-way ANOVA, and Pearson's correlation. The mean age of the women was  $27.09 \pm 5.04$  (min.: 18, max.: 41) years and the mean gestation was  $38.8 \pm 1.1$  weeks. The mean score of labour worry was higher while the mean score of postpartum comfort was lower for those women who had a caesarean delivery (OWLS:  $t = -6.47$ ,  $p = 0.001$ ; PPCQ:  $t = 4.40$ ,  $p = 0.001$ ), who had high concerns or fears about labour or delivery (OWLS:  $t = -7.05$ ,  $p = 0.001$ ; PPCQ:  $t = -7.04$ ,  $p = 0.001$ ), who were not emotionally supported by their family during pregnancy (OWLS:  $t = 13.12$ ,  $p = 0.001$ , PPCQ:  $t = 13.12$ ,  $p = 0.001$ ), and who had experiences of health problems during delivery (OWLS:  $t = -5.01$ ,  $p = 0.001$ ; PPCQ:  $t = -6.06$ ,  $p = 0.001$ ). It has been found that as the OWLS scores increase, the PPCQ scores also increase reflecting a positive correlation ( $r = 0.672$ ,  $p < 0.001$ ) between these variables. This study supports existing literature which states that factors such as health status, aspects of labour and social support affect labour worry and the postpartum comfort level. For this reason, increasing women's comfort in the postpartum period may be provided by being informed about their physical and psychological

health as of the antenatal period, and by giving midwifery care and health education that aim to determine their labour worry level and to eliminate it.

**Keywords:** childbirth; labour worry; maternal concerns; maternity care; midwifery care; postpartum comfort

## Introduction and Background

Pregnancy is not only an important life experience but also a transition period involving individual, physiological, psychological changes and social adaptation for many women (Grant, McMahon, and Austin 2008, 102). During the pregnancy, and during and after childbirth, many women may not only feel fear but also feel concerned about all these processes (Green et al. 2003, 760). Most of them may be concerned about different issues such as a first pregnancy, advanced maternal age, birth pain, embarrassment, not knowing when to start birth, whether the baby may be harmed or even die, feeling lonely and helpless during birth, insufficient support of the midwives, and the probability of labour induction, episiotomy, and lacerations (Redshaw et al. 2009, 360; Sahin, Dinc, and Dissiz 2009, 59).

Labour worry may be influenced by factors such as previous pregnancies and birth experiences of the pregnant woman, the experience of the birth process, having travail and childbirth education, support during birth, and bad stories from the environment about childbirth (Rondung, Thomtén, and Sundin 2016, 84; Signal et al. 2017, 172). Serçekuş and Okumuş (2009, 159) have categorised factors that influence labour worry for women in five groups: birth problems, problems during labour and delivery, birth care procedures (episiotomy, vaginal examination and other invasive procedures such as vacuum aspiration and forceps), attitudes of health professionals, and lastly, sexuality. Apart from these factors, a recent study in the United States of America has revealed that factors such as primiparity, younger age, white ethnicity, being single, lower education and lower income, attitude to the current pregnancy, and general anxiety have an impact on labour worry (Arch 2013, 221).

The inconsistency between women's birth-related expectations and their individual birth experiences may affect their attitudes to delivery methods and may lead them to an optional caesarean section. Turkey is known to have the highest caesarean rates among the OECD countries (OECD 2016, 58). According to the Ministry of Health's statistics, the caesarean rate in Turkey was 21 per cent in 2002 and rose to 53.1 per cent in 2017 (Republic of Turkey 2017, 81). Undoubtedly, the reasons for this inclination are various. For instance, the negative expectations of women about vaginal delivery have an important effect on the increase of caesarean rates. Women in Turkey are worried about the childbirth and postpartum period (Duman et al. 2007, 10; Kitapçioğlu et al. 2008, 50; Serçekuş and Okumuş 2009, 159). Several measures concerning the primary caesarean ratio have been taken in order to prevent the excessive increase in caesarean rates in Turkey. According to the latest data, the percentage of primary

caesarean in all births is 26.3 per cent (Republic of Turkey 2017, 81). In other words, our primary caesarean rates have not yet reached the 5–15 per cent range, which is the ratio proposed by the WHO (2015). These high caesarean rates may also negatively affect the postpartum comfort of the mothers in Turkey. Women's high-level birth fears and concerns are closely associated with caesarean delivery as an emergency or elective birthing method (Handelzalts et al. 2012, 19; Serçekuş and Okumuş 2009, 158; Stoll et al. 2014, 224).

Vaginal birth worry and the desire to avoid labour pains are the main causes for women who demand caesarean delivery. This suggests that there is a lack of knowledge about postnatal pain awareness associated with caesarean surgery and the recovery period compared to vaginal delivery (Fenwick et al. 2010, 397). Although the mother's care needs after caesarean delivery are similar to the needs of a mother who chose a normal vaginal delivery, in the caesarean birth, compared to the normal birth, the mother receives anaesthetics and she feels discomfort due to the abdominal incision. Therefore, these mothers may need more midwifery care. If mothers who experience both the problems of the postpartum period and a previous operation are not provided with adequate midwifery care in accordance with the mothers' needs in the postpartum period, it may reduce their postpartum comfort to some extent. In the studies, it was found that the comfort levels of the mothers who delivered by caesarean section were significantly lower than those of the mothers who delivered vaginally. It was determined that mothers who chose the caesarean birthing method, experienced more physical discomfort such as pain, fatigue, failure to cope, gas complaints and constipation than the mothers who had vaginal deliveries, and their postpartum comfort was negatively affected (Capik, Ozkan, and Apay 2014, 190; Karakaplan and Yildiz 2010, 60; Pınar et al. 2009, 187).

Kolcaba emphasised in his comfort theory that a holistic treatment should be provided for a patient in nursing care so that the labour worry leading to negative physiological results could be decreased (Kolcaba and Wilson 2002, 108). In this sense, in the context of healthcare services given to stressed mothers, first of all, it is necessary to determine the comfort needs of the mothers and to implement the midwifery or nursing interventions which increase their comfort. Afterwards, it was reported that the quality of life of the individuals should be increased by eliminating or reducing their labour worry and concern, providing the highest possible comfort for them (Capik, Ozkan, and Apay 2014, 190; Derya and Pasinlioğlu 2015, 5; Karakaplan and Yildiz 2010, 60). Birth worry is considerably important and may be even replaced with other worries, concerns and fears in the postpartum phase. In addition, it may lead to postpartum depression by affecting postpartum comfort adversely (Fenwick et al. 2010, 397; Larsson et al. 2015, 633).

## Statement of the Research Problem

Increased levels of labour worry and concerns could lead to the development of obstetric complications (for example prolonged labour, and increased invasive procedures such as episodes, caesarean section, and uterine bleeding in the postpartum period). Evidence-based studies point out that there is no direct relationship between labour worry and obstetric complications, yet psycho-social stress and labour worry may be associated with caesarean birth or prolonged birth (Junge et al. 2018, 473; Laursen, Hedegaard, and Johansen 2008, 355; Spice et al. 2009, 170). Concerns during pregnancy and childbirth cause women to experience stress. Since the level of hormones which ensures the healthy progression of the birth process changes due to this stress, the duration of delivery can be prolonged, and the woman may have an emergency caesarean section. Besides, concerns about pregnancy and childbirth may lead to an increase in the risk of severe affective disorders in the postnatal period (Gourounti, Anagnostopoulos, and Sandall 2014, 631).

However, many women want to give birth through caesarean section owing to the labour worry (Madhavanprabhakaran, D'Souza, and Nairy 2017, 6). In Turkey, 43.2 per cent of women in the study by Özkan et al. (2013, 65), 79.2 per cent of women in the study by Ergöl and Kürtüncü (2014, 30), and one out of two women in the study by Karabulutlu (2012, 215) had elective caesarean sections owing to their childbirth fear and anxiety. Besides, it is reported in a study conducted in Iran that more than half of the women preferred elective caesarean delivery because of their fear of childbirth and worry (Dehghani, Sharpe, and Khatibi 2014, 586). Fear of childbirth and birth worry play an important role in the demands of women for having a caesarean birth, and this is a major factor in the high caesarean rate in Turkey.

In addition, when the labour worry of birth is particularly severe, it may provide a basis for the development of maternal and neonatal complications by affecting the course of labour negatively (secretion of adrenaline hormone, inhibition of the release of oxytocin hormone, prolonged childbirth due to the hypotonic contraction or increased need for invasive interventions such as episodes, forceps and vacuum). Determining the factors that influence a woman's level of labour worry in pregnancy, helping her to overcome this labour worry level, and providing her with a positive birth and end-of-life experience increase her postpartum comfort. Therefore, having the awareness of the factors associated with the labour worry is particularly important for midwives so that they can take the necessary precautions in advance to improve the level of comfort of women during labour (Guardino and Schetter 2014, 80; Toohill et al. 2014, 389). In the literature, there is a satisfactory amount of information about the labour worry during the pregnancy that causes postpartum depression, anxiety, fear, sadness, guilt feelings, the inability to establish the relationship between mother and baby, and the problems of breastfeeding in the postnatal period. However, there is no study about the relationship between the woman's birth worry and postpartum comfort. In this sense, it is considered that this study could make a significant contribution to the field literature.

## **Purpose of the Study**

This study has been carried out to determine the socio-demographic, obstetric, and social support factors of primiparous mothers associated with their labour worry and postpartum comfort.

## **Research Questions**

This study sought to answer the following research questions:

- Is there a relationship between the socio-demographic, obstetric characteristics, and postpartum comfort of primiparous mothers' labour worry?
- Is there a relationship between the Oxford Worries about Labour scores and the Postpartum Comfort Questionnaire scores of primiparous mothers?

## **Research Methodology**

### **Research Design**

The population of the study consisted of the primiparous mothers between May and August 2018 at the Dr Ali Kemal Belviranlı Maternity and Children's Hospital in the province of Konya, Turkey. For this descriptive research, a total of 240 primiparous mothers were included in the study by means of convenience sampling.

### **Study Setting**

The research was carried out in the maternity ward of the Dr Ali Kemal Belviranlı Maternity and Children's Hospital in the province of Konya in the Central Anatolia Region, Turkey. The reason why this hospital was chosen for the study is because the number of women who apply to give birth from villages and towns is particularly high (the average number of births per month is 500 to 550), and it is both the largest and the only maternity hospital in this province. In addition, this hospital has the highest number of midwives, nurses and health professionals in Konya.

### **Study Population, Sample Size and Sampling Strategy**

A total of 240 primiparous women, who gave birth between May 2018 and August 2018 at the Dr Ali Kemal Belviranlı Maternity and Children's Hospital, were selected by means of the convenience sampling method for this study.

The sample size of the study was determined to be 219 by the G\*Power 3 (Faul et al. 2007) program according to the Postpartum Comfort Questionnaire (PPCQ) score (Karakaplan and Yildiz 2010, 60) and the known average score ( $118.2 \pm 13.62$ ) in a 3-point deviation, with 5 per cent margin of error and 90 per cent strength. However, considering that there may be data loss during data collection, we added 10 per cent of

the desired sample, yielding a sample size of 240 (Cohen et al. 2003; Faul et al. 2007, 180). The number of samples according to the PPCQ was applied without taking the calculation of OWLS into consideration as the number of samples made for this scale remained inadequate.

### **Inclusion Criteria**

Those mothers who had stable vital signs (temperature, pulse, blood pressure, respiratory rate, and lack of abnormal results in glucose values), who gave birth to a baby that was 37 weeks old and over, who had no diagnosis of psychiatric distress during their pregnancy, who had no communication problems in terms of language, who did not develop any serious discomfort during their pregnancy (for example hypertension, and diabetes), who were in the postpartum period (before discharge from the clinic), who were 18 years or older, who were able to speak Turkish, who were married, and who were willing to participate were deemed to be eligible to participate in this study.

### **Exclusion Criteria**

Those mothers who developed any serious illness during their pregnancy (for example hypertension, and diabetes), who had serious conditions during labour and after birth such as uterine atony, puerperal infections, puerperal thromboemboli, mastitis, and breast engorgement, whose newborns suffered heavily from ineffective sucking and jaundice, and who had a high-risk pregnancy were excluded from the study since they could affect the level of birth worry and postpartum comfort outcomes.

### **Data Collection Instruments and Procedure**

We used a well-structured self-administered questionnaire to collect the data. All participants who properly completed the questionnaire were included in the current study. The questionnaire had three sections and took about 20 min for each participant to complete. The women who were willing to participate in the study were asked to fill in the questionnaires in an empty room.

### **General Information Form**

A 23-item structured questionnaire prepared by the researchers in line with the related literature was used as one of the data collection tools (Arch 2013, 221; Capik, Ozkan, and Apay 2014, 190; Derya and Pasinlioğlu 2015, 5; Fenwick et al. 2010, 397; Gourounti, Anagnostopoulos, and Sandall 2014, 631; Karakaplan and Yildiz 2010, 60; Redshaw et al. 2009, 157).

The questionnaire consisted of three sections:

- Women's socio-demographic characteristics (5 questions): This section asked about age, education level, employment status, perceived income level and health insurance.
- Pregnancy and social support (10 questions): This section asked about work-related problems or difficulties during the pregnancy, if the pregnancy was planned, concerns or fears about labour or delivery, prenatal care, prenatal education, health problems during the pregnancy, emotional supported by the family during the pregnancy, women's perceptions of their relationships with their partners, emotional or social support by the partner regarding all aspects of life, and thoughts regarding the type of delivery.
- Postpartum period (8 questions): This section asked the participants to report information on postnatal health problems, experiences of health problems during delivery, hospital attendance status, the type of birthing method, satisfaction with the type of delivery, the level of pain of the episiotomy in the delivery room, the success of the mothers' breastfeeding, and the satisfaction with the midwifery support during and after delivery.

### **Postpartum Comfort Questionnaire (PPCQ)**

Originally developed by Kolcaba (1992, 6), the "General Comfort Scale (GCS)" was adapted to the Turkish version by Kuguoglu and Karabacak (2008, 19). Therefore, based on the Turkish version of the GCS, the "Postpartum Comfort Questionnaire" was developed by Karakaplan and Yıldız (2010, 58). The PPCQ evaluates the physical, psychospiritual, and sociocultural comfort of mothers after a caesarean section or vaginal delivery. This questionnaire consists of 34 items with a 5-point Likert-type scale (where 5 indicates the highest level of comfort for each item). The minimum score on the scale is 34, and the maximum is 170. Scores close to 170 indicate a high level of comfort (Karakaplan and Yıldız 2010, 58). For the construct validity of the measurement, a factor analysis was applied to the property of the GCS. In addition, the internal consistency in terms of reliability was tested, and Cronbach's  $\alpha$  was found to be 0.78. In this study, Cronbach's  $\alpha$  reliability of this scale was found to be 0.87 for the total PPCQ scores.

### **The Oxford Worries about Labour Scale (OWLS)**

The OWLS was developed by Redshaw et al. (2009, 157) with the purpose of evaluating the levels of worry of mothers regarding the birth process. It is a 4-point Likert scale consisting of 10 items (min. = 10, max. = 40). Additionally, it can be applied to women before, during, and after birth. With this scale, the participants rate their worry levels as "I was very worried (1 point)", "I was quite worried (2 points)", "I was not very worried (3 points)", and lastly, "I was not worried at all (4 points)". The scale is evaluated over the total score. It could be assessed that the level of worry is reduced as the score

increases (Redshaw et al. 2009, 157). The reliability validity of the Turkish version of the OWLS scale was performed by Aksoy and Özentürk (2016, 176), and Cronbach's  $\alpha$  was found to be 0.83. In the current study, Cronbach's  $\alpha$  reliability of the scale was found to be 0.88 for the total OWLS.

### **Ethical Considerations**

At the beginning of the research, ethics approval was granted by the ethics committee of the Faculty of Health Sciences of Selçuk University (permit number: 638/2018). Institutional permission was obtained from the T.C. Konya Provincial Health Directorate (approval number: 94723667-806.01.03/6). The primary purpose of the research was explained to all the participants in detail. All the women involved in this study signed informed-consent forms. Furthermore, all information related to the participants was kept strictly confidential.

### **Data Analysis**

In order to assess the data, SPSS Statistics, version 20.0, was used. The suitability of the normal distribution of the data was tested using the Kolmogorov-Smirnov (K-S) test for normality. Descriptive statistics include arithmetic means, standard deviations and proportions. While the independent samples *t*-test (the homogeneity of variances was determined according to the results of Levene's test) was used to compare PPCQ and OWLS scores with the women's socio-demographic features, the one-way analysis of variance (ANOVA) test was used to compare means for categorical variables with more than two levels. Where the one-way test revealed a statistically significant difference, a Tukey HSD post hoc test was conducted to determine which groups significantly differed. In addition to these, Pearson's correlation analysis was used to investigate the linear relationships between the women's PPCQ and OWLS scores. For all inferential tests, the *p*-value was set at 0.05, two-sided.

### **Results**

A total of 240 postpartum women participated in this study. All the women in our study gave birth at their terms (gestational weeks of  $38.8 \pm 1.1$ ) and they were all married. The mothers' average age was  $27.09 \pm 5.04$  (min.: 18, max.: 41) years. The most common reasons for choosing caesarean section ( $n = 83$ ) delivery was failure to progress in labour ( $n = 20$ , 24.1%), amniotic fluid abnormalities ( $n = 27$ , 32.5%), maternal requests ( $n = 23$ , 27.7%), and non-stress test problems ( $n = 13$ , 15.7%).

### **Relationship between the Socio-Demographic and Obstetric Characteristics of Primiparous Mothers and their Labour Worry and Postpartum Comfort**

The mean labour worry levels were found to be significantly higher while the mean of comfort levels was found to be lower for mothers who were 25 or younger ( $t = -4.65$ ,  $p < 0.001$ ), who were employed, who had low income perceptions ( $t = -4.10$ ,  $p < 0.001$ ), and who did not have any health insurance ( $t = 6.92$ ,  $p < 0.001$ ). Besides,



while the levels of labour worry were determined as high for those who had a high education profile (high school and tertiary education) ( $t = 4.004$ ,  $p < 0.001$ ), their levels of comfort were found not to be significantly different ( $t = -0.34$ ,  $p = 0.74$ ) (Table 1).

**Table 1:** The mean scores of the OWLS and the PPCQ by socio-demographic characteristics (N = 240)

Characteristics	n (%)	OWLS		PPCQ	
		Mean $\pm$ SD	test values	Mean $\pm$ SD	test values
Age					
≤ 25	121(50.4)	20.4 $\pm$ 5.9	$t = -4.65$	118.4 $\pm$ 16	$t = -4.62$
≥ 26	119 (49.6)	23.7 $\pm$ 5	$p = 0.001$	126 $\pm$ 15.1	$p = 0.001$
Educational status of mothers					
Primary/secondary school graduates	118(49.2)	23.5 $\pm$ 4.8		123.2 $\pm$ 14.8	
High school and master's/doctoral graduates	122 (50.8)	20.6 $\pm$ 6.1	$t = 4.004^b$ $p = 0.001$	120.6 $\pm$ 17.5	$t = -0.34$ $p = 0.74$
Employment status					
Employed <sup>d</sup>	68 (28.3)	19.4 $\pm$ 5.8	$p = 0.007$ $d > e$	127.6 $\pm$ 15.2	$p = 0.001$ $d > f$
Not employed due to pregnancy <sup>e</sup>	40 (16.7)	22.8 $\pm$ 5.2	$p = 0.00$ $d > f$	123.4 $\pm$ 17.4	$p = 0.364$ $d < e$
Not employed (e.g. housewife) <sup>f</sup>	132 (55)	23.2 $\pm$ 5.4	$p = 0.920$ $e < f$	119 $\pm$ 15.2	$p = 0.279$ $e < f$
			$F = 10.81^c$ $p = 0.001$		$F = 6.85$ $p = 0.001$
Perceived income level					
Low income perception	97 (40.4)	20.2 $\pm$ 6	$t = -4.10^b$	119.1 $\pm$ 17.3	$t = -2.39^b$
High income perception	143 (59.6)	23.3 $\pm$ 5.2	$p = 0.001$	124.2 $\pm$ 15	$p = 0.02$
Health insurance					
Yes	232 (96.7)	22.3 $\pm$ 5.6	$t = 6.92$	122.9 $\pm$ 15.7	$t = 6.84$
No	8 (3.3)	14.6 $\pm$ 2.9	$p = 0.001$	101.6 $\pm$ 8.3	$p = 0.001$

$p$ -value  $< 0.001$  = highly significant difference. All data are presented as mean  $\pm$  SD.

<sup>b</sup> Independent samples  $t$ -test.

<sup>c</sup>One-way ANOVA.

<sup>d,e,f</sup>Tukey HSD post hoc test.

On the one hand, the women who had a vaginal delivery were found to be more anxious ( $t = 6.47$ ,  $p = 0.001$ ) than the women who had undergone a caesarian section ( $t = 4.40$ ,  $p = 0.001$ ), and their postpartum comfort was seen as higher. The levels of labour worry were found to be high, and the levels of postpartum comfort were found to be low for those who experienced concerns or fears about labour or delivery (OWLS:  $t = -7.05$ ,  $p = 0.001$ ; PPCQ:  $t = -7.04$ ,  $p = 0.001$ ), who were not supported emotionally by their families during their pregnancy (OWLS:  $t = 13.12$ ,  $p = 0.001$ ; PPCQ:  $t = 13.12$ ,  $p = 0.001$ ), who had health problems during and after childbirth (OWLS:  $t = -5.012$ ,  $p < 0.001$ ; PPCQ:  $t = -6.064$ ,  $p = 0.001$ ), who had poor partner support (OWLS:

$t = 4.29$ ,  $p = 0.001$ ; PPCQ;  $t = 3.09$ ,  $p = 0.003$ ), and who were not happy with their delivery types (OWLS:  $t = 3.694$ ,  $p = 0.001$ ; PPCQ:  $t = 3.694$ ,  $p = 0.001$ ).

On the other hand, the labour worry levels of the women were found to be high, and the levels of postpartum comfort were found to be similar for those who experienced a problem or a difficulty related to their work during their pregnancy (OWLS:  $t = -7.55$ ,  $p = 0.001$ ; PPCQ:  $t = -1.18$ ,  $p = 0.239$ ), who considered to give a vaginal birth during their pregnancy or were undecided about the labour type (OWLS:  $F = 6.22$ ,  $p = 0.001$ ; PPCQ:  $F = 2.10$ ,  $p = 0.13$ ), and who regularly took their antenatal controls (OWLS:  $t = -4.84$ ,  $p = 0.001$ ; PPCQ:  $t = 0.42$ ,  $p = 0.680$ ).

**Table 2:** The mean scores of the OWLS and the PPCQ scores by obstetric characteristics and social support status (N = 240)

Characteristics	n (%)	OWLS		PPCQ	
		Mean $\pm$ SD	test values	Mean $\pm$ SD	test values
Birthing method					
Vaginal	157 (65.4)	20.5 $\pm$ 5.4	$t = -6.47$	125.2 $\pm$ 16.2	$t = 4.40$
Caesarian operation	83 (34.6)	25 $\pm$ 5	$p = 0.001$	116.4 $\pm$ 13.9	$p = 0.001$
Preferred type of birth during pregnancy					
Vaginal <sup>d</sup>	135 (56.3)	21.5 $\pm$ 5.5	$p = 0.007$ $e > d$	198.5 $\pm$ 14.8	
*Caesarean <sup>e</sup>	62 (25.8)	24.1 $\pm$ 5.5	$p = 0.005$ $e > f$	124.1 $\pm$ 16	
Undecided <sup>f</sup>	43 (17.9)	20.7 $\pm$ 5.7	$p = 0.689$ $f < d$ $F = 6.22^c$ $p = 0.001$	120.4 $\pm$ 16.9	$F = 2.10^c$ $p = 0.13$
Work-related problems or difficulties during pregnancy					
Yes	74 (22.9)	18.3 $\pm$ 4.9	$t = -7.55^b$	120.5 $\pm$ 14.1	$t = -1.18^b$
No	166 (77.1)	23.7 $\pm$ 5.2	$p = 0.001$	122.9 $\pm$ 16.7	$p = 0.23$
Pregnancy					
Planned	212 (88.3)	22.2 $\pm$ 5.7	$t = 1.42$	122 $\pm$ 15.6	$t = -0.52$
Unplanned	28 (11.7)	20.6 $\pm$ 5.8	$p = 0.16$	123.9 $\pm$ 18.5	$p = 0.60$
Antenatal care					
Regular antenatal care (visits $\geq 4$ )	225 (93.8)	21.6 $\pm$ 5.5		122.3 $\pm$ 15.9	
Irregular antenatal care (visits $< 4$ )	15 (6.3)	28.6 $\pm$ 5.4	$t = -4.84$ $p = 0.001$	120.4 $\pm$ 16.7	$t = 0.42$ $p = 0.68$
Concerns or fears about labour or delivery					
Yes	167 (69.6)	20.4 $\pm$ 5.1	$t = -7.05$	118 $\pm$ 15.3	$t = -7.04$
No	73 (30.4)	25.7 $\pm$ 5.3	$p = 0.001$	131.7 $\pm$ 13.1	$p = 0.001$

Characteristics	n (%)	OWLS		PPCQ	
		Mean $\pm$ SD	<i>test values</i>	Mean $\pm$ SD	<i>test values</i>
History of pregnancy-related problems during current pregnancy (nausea, vomiting, etc.)					
Yes	38 (15.8)	18.4 $\pm$ 6.4	$t = -3.81$	113.2 $\pm$ 15.8	$t = -3.86$
No	202 (84.2)	22.7 $\pm$ 5.3	$p = 0.001$	123.9 $\pm$ 15.5	$p = 0.001$
Experience of health problems during delivery (e.g. nuchal cord complications, episiotomy and vacuum operative vaginal deliveries, or fetal asphyxia, perinatal asphyxia)					
Experienced	33 (13.8)	17.6 $\pm$ 4.3	$t = -5.01$	111.5 $\pm$ 12.6	$t = -6.06$
Not experienced	207 (86.3)	22.7 $\pm$ 5.6	$p = 0.001$	123.9 $\pm$ 15.8	$p = 0.001$
Experience of a postnatal health problem (such as suture opening, infection, gas extraction)					
Experienced	25 (10.4)	19.7 $\pm$ 4.4	$t = -2.60$	115.7 $\pm$ 12.8	$t = -2.64$
Not experienced	215 (89.6)	22.3 $\pm$ 5.8	$p = 0.014$	122.9 $\pm$ 16.1	$p = 0.012$
Prenatal education					
Received	116 (48.3)	25.4 $\pm$ 4.7	$t = 10.59$	125.2 $\pm$ 15	$t = 2.90$
Not received	124 (51.7)	18.9 $\pm$ 7.7	$p = 0.001$	119.3 $\pm$ 16.3	$p = 0.004$
Hospital attendant					
Yes	181 (75.4)	23.5 $\pm$ 5.2	$t = 7.790$	124.3 $\pm$ 15.6	$t = 3.75$
No	59 (24.6)	17.6 $\pm$ 4.8	$p = 0.001$	115.6 $\pm$ 15.4	$p = 0.001$
Emotionally supported by family during pregnancy					
Yes	197 (82.1)	23.4 $\pm$ 5.2	$t = 13.12$	124.4 $\pm$ 15.4	$t = 13.12$
No	43 (17.9)	15.8 $\pm$ 2.8	$p = 0.001$	112 $\pm$ 14.4	$p = 0.001$
Women's perceptions about relationship with their partners					
Excellent <sup>d</sup>	106 (44.2)	25.2 $\pm$ 4.2	$p = 0.033$ $d > e$	126.8 $\pm$ 14.8	$p = 0.002$ $d > e$
Good <sup>e</sup>	68 (28.3)	23.7 $\pm$ 4.3	$p = 0.000$ $d > f$	118.4 $\pm$ 13.7	$p = 0.003$ $d > e$
Moderate <sup>f</sup>	66 (27.5)	15.1 $\pm$ 2.2	$p = 0.000$ $e > f$ $F = 150.29^c$ $p = 0.001$	118.7 $\pm$ 18.1	$p = 0.991$ $e < f$ $F = 8.34^c$ $p = 0.001$
Emotional or social support of the partner with all aspects of life					
Good support	205 (85.4)	22.6 $\pm$ 5.5	$t = 4.29^b$	123.4 $\pm$ 16	$t = 3.09^b$
Poor support	35 (14.6)	18.4 $\pm$ 5.3	$p = 0.001$	115.2 $\pm$ 14.2	$p = 0.003$
Support for baby care after birth					
Family elders or relatives, neighbours, etc. <sup>d</sup>	149 (62.1)	24.6 $\pm$ 4.5	$p = 0.000$ $d > e$	121.4 $\pm$ 14.8	

Characteristics	n (%)	OWLS		PPCQ	
		Mean $\pm$ SD	test values	Mean $\pm$ SD	test values
Professional support <sup>e</sup>	46 (19.2)	20.6 $\pm$ 4.9	$p = 0.000$ $d > f$	119.7 $\pm$ 14.3	
*No support <sup>f</sup>	45 (18.8)	14.9 $\pm$ 2.3	$p = 0.000$ $e > f$ $F = 90.43^c$ $p = 0.001$	120 $\pm$ 19.9	$F = 1.20^c$ $p = 0.303$
Satisfaction with postpartum midwifery care					
Satisfied	171 (72.1)	22.5 $\pm$ 5.9	$t = 2.22^b$	124.6 $\pm$ 15.9	$t = 3.96^b$
Not satisfied	69 (27.9)	20.8 $\pm$ 5	$p = 0.03$	116.2 $\pm$ 14.4	$p = 0.001$
Satisfaction with the type of delivery					
Satisfied	138 (57.1)	23.2 $\pm$ 5.2	$t = 3.69$	125.8 $\pm$ 15	$t = 3.69$
Not satisfied	102 (42.9)	20.5 $\pm$ 6	$p = 0.001$	117.2 $\pm$ 16	$p = 0.001$

<sup>a</sup> $p$ -value  $< 0.001$  = highly significant difference. All data are presented as mean  $\pm$  SD.

<sup>b</sup>  $t$ -test.

<sup>c</sup>One-way ANOVA.

<sup>d,e,f</sup> Tukey HSD post hoc test.

### Relationship between OWLS and PPC Mean Scores

There was a positive and medium effect size correlation between the OWLS and the PPCQ scores of the mothers ( $r = 0.672$ ,  $p < 0.001$ ) (Table 3).

**Table 3:** Correlation between women's PPCQ scores and OWLS scores ( $n = 240$ )

	Mean $\pm$ SD	r	p
OWLS <sup>a</sup>	23.8 $\pm$ 7.6	0.67	$< 0.001$
PPCQ <sup>b</sup>	122.2 $\pm$ 16		

\*\*The correlation between the scores of the OWLS and the PPCQ is significant at 0.01 level; SD: standard deviation, r: Pearson's correlation coefficient

## Discussion

In this study, it was concluded that women aged 25 years and under were more worried about birth and were found to have lower comfort levels. In the literature, it was, on the one hand, reported that primiparous women who gave their first birth at the age of 25 or even younger were very concerned about labour and the type of delivery (Henderson and Redshaw 2016, 153; Zasloff, Schytt, and Waldenström 2007, 1331). On the other hand, a Spanish study, in which the Cambridge Worry Scale was used, reflected that the pregnancy worry score was higher in pregnant women aged 34 years and older (Penacoba-Puente, Monge, and Morales 2011, 1032). Furthermore, it was reported in the studies that the postpartum comfort decreased as the age at which women give birth decreased (Aksoy and Pasinlioğlu, 2017, 140; Capik, Ozkan, and Apay 2014, 187;

Karakaplan and Yıldız 2010, 58). In this regard, it is assumed that women of younger age have more physical and psychosocial problems than those aged 25 years or older in terms of adaptation to pregnancy, the postpartum period, and the role of new motherhood.

In the research, it was found that women with a higher education profile and who received antenatal care (visits  $\geq 4$ ) were more anxious; however, no significant mean differences were found in their postpartum comfort levels. For those who received prenatal education, the worry levels were found to be very low, while their postpartum comfort levels were found to be quite high. Within this context it could be considered that the pregnant women who have high levels of education and frequently receive antenatal care but who, at the same time, have high levels of labour worry want to get information to relieve their anxiety and concerns about delivery and pregnancy in general.

Among the factors that lead to pregnant women opting for elective caesarean section is the lack of adequate knowledge about birth, the fear of delivery pain and the delivery room, the lack of adequate maternity conditions in the delivery room, the lack of sufficient psychological support, and epidural anaesthesia, which may reduce delivery pain during birth (Stramrood and Slade 2017, 36; Takegata et al. 2017, 17). Many studies specify that prenatal education and interventions such as mindfulness-based cognitive therapy are quite effective in reducing antenatal worries and concerns (Goodman et al. 2014, 378; Guardino et al. 2014, 377). In our study, it was found that most of the women did not receive birth preparation training. For this reason, it is believed that most of the women who want to give vaginal delivery or who are undecided about the way of delivery have higher levels of birth anxiety.

The current study also showed that women who had health problems during pregnancy (nausea, vomiting, etc), labour (for example nuchal cord complications, episiotomy and vacuum operative vaginal deliveries, fetal asphyxia, and perinatal asphyxia) and the postpartum period (such as suture opening, infection, gas extraction) felt more anxious in the postpartum period, and that they had a lower level of postpartum comfort. Similarly, it has been reported in other studies (Guardino et al. 2014, 377; Yelland, Sutherland, and Brown 2010, 6) that the worry, concern, and depression levels increase as postpartum comfort levels decrease for those women who have pregnancy and postpartum complications (for example suture opening, infection, failure of gas extraction). In the literature, it is stated that midwifery care given in a qualified, high quality and integrated manner in this period meets the needs of the mother and the newborn, prevents the problems which may arise, and affects the satisfaction of the woman and the quality of life positively (Derya and Pasinlioğlu 2015, 5; Gourounti, Anagnostopoulos, and Sandall 2014, 631).

Previous studies (Arslan and Uzun 2008, 739; Cameron, Sedov, and Tomfohr-Madsen 2016, 196) have also clarified that mothers who do not receive partner or family support

have difficulty in adapting to motherhood, to develop the mother-baby bond, and to independently care for their baby directly after birth, and that they feel inadequate and lonely and therefore refuse to breastfeed.

In accordance with the literature, it has been determined in this study that the women who are accompanied and supported emotionally with all aspects of life by their partners for the birth have low levels of labour worry and high levels of postpartum comfort.

Mothers who were not satisfied with the maternal support during delivery and postpartum period were found to have higher concerns and lower levels of comfort in the postpartum period. This study also showed that satisfaction with the midwifery support for mothers who had caesarean section delivery was lower than that of mothers who had a vaginal delivery. Previous studies reported that nulliparous women experience fear and worry about “the lack of support and not being paid sufficient attention from the health personnel: physical and verbal violence, invasion of privacy during delivery, and previous negative experiences with health personnel” (Fenwick et al. 2009, 672; Rijnders et al. 2008, 112). For this reason, in this study it could be noted that nulliparous women were unwilling to undergo vaginal delivery (Serçekuş and Okumuş 2009, 158). Midwives’ awareness of women’s expectations about labour makes it easy for mothers to cope with fear, concern, labour worry, and birth; moreover, it provides a basis for an excellent birth experience (Pınar et al. 2009, 188; Stoll et al. 2014, 224; Takegata et al. 2017, 22). In this sense, it is concluded that the labour worry of women who think that they did not have enough midwifery support during the delivery and postpartum period cannot be eliminated, and the high level of labour worry, therefore, has a negative effect on the comfort level.

This study revealed that as the labour worry of the mothers decrease during the postnatal period, their levels of comfort increase. Thus, it is believed that if the problems that may cause labour worry for mothers are resolved to some extent at least, they will feel more relaxed, pleased, and comfortable both physically and psychologically.

### Limitations of the Study

This research has some limitations which might have an effect on the results of this study. First of all, the use of a convenience sample among voluntary primiparous mothers in a single study setting may limit its representativeness in the general population; thus, it may limit the generalisation of the findings of the research to the general population of primiparous women in Turkey. Another limitation of this study might be the under-representation of mothers by culture. In our sample, only married women and women born in Turkey have taken part in the research. Therefore, the results of this study may limit its generalisability to all primiparous mothers from other cultures or mothers without partners all around the world. Lastly, a multivariate analysis has not been performed, the questionnaire is self-reported, and the study has a descriptive design.

## Conclusion and Recommendations

In conclusion, we found high levels of labour worry and low levels of postpartum comfort for mothers who were 25 years old or younger, who were employed, who had moderate income perceptions, who did not have health insurance, who had concerns or fears about labour or delivery, who had health problems during childbirth, who had postpartum health problems, who did not receive prenatal education, who had moderate or poor breastfeeding success, who did not have any attendant care, who were not emotionally supported by their family during pregnancy, who had poor partner support, who were not supported for the postpartum baby care, and who were not satisfied with the postpartum midwifery care and their own birthing method.

This study also revealed that the labour worry and postpartum comfort mean scores did not differ by unplanned pregnancy status. Furthermore, it was found that as the mothers' labour worry decreased, their levels of postpartum comfort increased. In this sense, during labour and in the postpartum period, it is suggested that mothers be provided with qualified midwifery care for their needs, expectations, and comfort in order to reduce their labour worry. It is also recommended that, during the antenatal period, women be given prenatal education on pain relief measures during labour in order to reduce their labour worry and increase their level of comfort.

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