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Does Expectant Mothers' Fear of Childbirth Affect Their Prenatal Attachment Level?: A Cross-sectional Study

Anne Adaylarının Doğum Korkusu Doğum Öncesi Bağlanma Düzeylerini Etkiliyor mu?: Kesitsel Bir Çalışma

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ABSTRACT

Objective: The purpose of this study was to examine the relationship between fear of childbirth and prenatal attachment in pregnant women in the last trimester.

Methods: The study was descriptive and correlational. The sample comprised of 300 pregnant women. Data were obtained using the "Patient Information Form", "Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ)" A version, and "Prenatal Attachment Inventory (PAI)".

Results: A statistically significant difference was indicated between the mean W-DEQ score and the employment status, number of children, family type, and the effect of pregnancy on the relationship with the husband. There was a statistically significant difference between the educational status of the pregnant, the educational status of the husband, the number of previous pregnancies, the number of living children, and the effect of pregnancy on the relationship with the husband and the mean PAI score. A statistically significant relation was revealed between PAI and W-DEQ ($p<0.0001$). Accordingly, it was shown that as the fear of childbirth increased, the level of prenatal attachment also increased.

Conclusion: Fear of childbirth and prenatal attachment levels of pregnant should be evaluated. Eliminating the fear of childbirth and strengthening prenatal attachment is important for a healthy pregnancy, delivery, and postpartum period.

Keywords: Fear of childbirth, pregnancy, prenatal attachment

ÖZ

Amaç: Bu çalışmanın amacı, son trimesterdeki gebe kadınlarda doğum korkusu ile doğum öncesi bağlanma arasındaki ilişkiyi incelemektir.

Yöntem: Çalışma tanımlayıcı ve ilişkiseldir. Örneklem 300 gebe kadından oluşmaktadır. Veriler, "Hasta Bilgi Formu", "Wijma Doğum Beklentisi/Deneyim Ölçeği (W-DEQ)" versiyon A ve "Prenatal Bağlanma Envanteri (PBE)" kullanılarak elde edilmiştir.

Bulgular: W-DEQ puan ortalaması ile çalışma durumu, çocuk sayısı, aile tipi ve gebeliğin eşle ilişkiye olan etkisi arasında istatistiksel olarak anlamlı bir fark bulunmuştur. Gebenin eğitim durumu, eşin eğitim durumu, önceki gebelik sayısı, yaşayan çocuk sayısı ve gebeliğin eşle ilişkiye etkisi ile PBE puan ortalaması arasında istatistiksel olarak anlamlı bir fark saptanmıştır. PBE ile W-DEQ arasında istatistiksel olarak anlamlı bir ilişki tespit edilmiştir ($p<0,0001$). Buna göre doğum korkusu arttıkça prenatal bağlanma düzeyinin de arttığı bulunmuştur.

Sonuç: Gebelerin doğum korkusu ve prenatal bağlanma düzeyleri değerlendirilmelidir. Doğum korkusunun giderilmesi ve prenatal bağlanmanın güçlendirilmesi, sağlıklı bir gebelik, doğum ve doğum sonrası dönem için önemlidir.

Anahtar kelimeler: Doğum korkusu, gebelik, prenatal bağlanma

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INTRODUCTION

Pregnancy is one of the natural processes of a woman's life [1]. Women experience various physiological and psychological changes during pregnancy. Ambivalence related to psychological changes ise experienced in the first trimester of pregnancy. This feeling decreases in the second trimester and increases again in the last trimester. In the last trimester, women experience pregnancy-related problems; they want the baby, but they are afraid of birth and experience more intense anxiety about birth than in other trimesters [2,3].

Despite advancements in healthcare services leading to fewer complications during pregnancy, labor, and the postpartum period, many women experience fear related to these stages [4]. Fear of childbirth is an obstetrical and psychological widespread issue that significantly impacts women's health and well-being [5-8]. Biological factors such as labor pain, psychological factors including personality traits and previous traumatic experiences, social factors such as lack of support or economic reasons, and secondary factors like previous birth experiences lead to the development of fear of childbirth [3,4,9].

The fear of childbirth can significantly affect a pregnant woman's daily life. Fear of childbirth at higher levels, it impairs the quality of life of pregnant women. Increased stress and anxiety related to childbirth may lead to emotional, behavioral, and physical changes. Pregnant women may experience restlessness, irritability, insomnia, episodes of crying or tachycardia, and alterations in their nutrition and physical activity levels. Fear of labor can also lead to complications during childbirth, potentially impacting the health of both the fetus and newborn, and may even result in fetal distress [4,10-12].

One of the important issues for the psychosocial well-being of pregnant women is prenatal attachment [1]. Prenatal attachment denotes the emotional connection between expectant parents with their unborn child [13]. During the prenatal period, the pregnant woman adapts to motherhood under the influence of the hormonal and physical changes she experiences, establishes a bond with her baby [1]. Prenatal attachment can have positive or negative effects during pregnancy and postpartum [14]. Failure to establish a secure prenatal attachment may pose physical and psychological risks to the infant. During the pregnancy period, mothers typically assume a protective role or feel a sense of responsibility for the baby's well-being [15]. This attachment fosters adaptation to pregnancy and significantly influences the mother-child relationship postnatally [13,16].

Prenatal attachment is influenced by various individual and environmental factors, including fear of childbirth [17]. Due to fear of childbirth, a woman's ability to establish a relationship with the unborn and newborn may be negatively affected [18]. Fear experienced during pregnancy can impair prenatal attachment, leading to psychosocial challenges in mother and baby by pregnancy, delivery, and the postnatal period [1]. Stress during pregnancy and fear of childbirth can increase obstetric problems including preeclampsia, preterm labor, posttraumatic stress disorder, postpartum anxiety, depression and psychosis, even increase the need for psychiatric care and as well as delays in mother-infant bonding [4,19].

The purpose of this study was to examine the relationship between fear of chidbirth and prenatal attachment in pregnant women in the last trimester.

MATERIAL AND METHOD

Study Design

The study is descriptive and correlational. The research data were collected by the researchers through face to face interviews between March 2019 and March 2020.

Population and Sample of the Study

The research population consisted of pregnant women followed up in the pregnancy outpatient clinic of a training and research hospital in İstanbul. The sample consisted of pregnant who applied to the outpatient clinic and met the criteria for participation in the research. The sample size was determined using power analysis with a "95% confidence interval", "5% margin of error", "0.5 effect size", and "80% power". The study was completed with 300 pregnant women who met the inclusion criteria.

Inclusion Criteria

Eligibility criteria for participation in the study included: being a healthy pregnant woman in the third trimester of pregnancy (28^{th} to 40^{th} weeks), voluntary willingness to participate, age between 18 and 45 years, no communication difficulties, and the ability to read and write.

Data Collection Tools

Data were collected using the following instruments: the "Patient Information Form", the "Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) A Version", and the "Prenatal Attachment Inventory (PAI)".

Patient Information Form: It was created by the researchers in line with the literature [3,4,11,15,20].

Wijma Delivery Expectancy/Experience Questionnaire (W-DEQ) A Version: W-DEQ was developed by Wijma et al. to measure women's feelings and fears about childbirth. The validity and reliability study of the Turkish version was conducted by Korukcu et al. [20] W-DEQ consists of 33 items is six-point Likert type. The minimum score on the scale is 0, while the maximum score is 165. Higher scores indicate a higher fear of childbirth. In the Turkish validity and reliability, Cronbach's alpha of W-DEQ was 0.89 [20] while this value was 0.88 in this study.

The Prenatal Attachment Inventory (PAI): PAI was developed by Mary Muller in 1993. It was adapted into Turkish by Yılmaz and Kızılkaya Beji [15]. The scale consists of 21 items, a four-point Likert type. A minimum score of 21 and a maximum score of 84 can be obtained from the scale. An increase in the score of the

pregnant woman indicates an increase in the level of attachment. In the Turkish validity and reliability, Cronbach's alpha of PAI 0.84 [15]. While this value was 0.85 in this study.

Ethical Considerations

Ethics committee approval was obtained from the Social and Humanities Research and Publication Ethics Committee İstanbul Medeniyet University (date: 12.02.2019). Necessary permissions were also secured from the İstanbul Provincial Health Directorate and the institution where the research was conducted. Participants were enrolled in the study after providing their informed consent. The study was conducted in accordance with the principles outlined in the Declaration of Helsinki, and the study adhered to scientific and universal ethical standards.

Statistical Analysis

Statistical analyses were performed using "version 20.0 of the Statistical Package for Social Sciences (IBM SPSS Statistics, New York, USA)". Descriptive statistics were reported as means ± standard deviations for continuous variables. Categorical and binary variables were reported as "counts" and "frequencies". The Shapiro-Wilk test was used to assess the distribution of all data. All data, including categorical and continuous variables, exhibited a normal distribution. Given that the data followed a normal distribution, analysis of variance was employed for comparisons involving three or more groups, while the "Student's T-Test" was used for comparisons between two groups. The relationship between the PAI and the W-DEQ was examined using "linear regression analysis". A significance level of $p<0.05$ was considered statistically significant.

RESULTS

The mean age of the pregnant women who participated in the research was 27.28±4.93 years, with a mean gestational age of 35.56±2.63 weeks. The distribution of pregnant women according to their socio-demographic and clinical characteristics is detailed in Table 1.

The comparison of socio-demographic and clinical characteristics of the pregnant with their mean W-DEQ and PAI scores are detailed in Table 2. Statistically significant differences were revealed between the mean W-DEQ scores and employment

Table 1. Socio-demographic and Clinical Characteristics of Pregnant Women (n=300)

Age ($\bar{X}$ ± SD) 27.28±4.93 years

Pregnancy week ($\bar{X}$ ± SD) 35.56±2.63 week

Characteristics	n (%)	Characteristics	n (%)
Education status		**Husband education status**	
Literate	23 (7.7)	Literate	12 (4.0)
Primary school graduate	53 (17.7)	Primary school graduate	51 (17.0)
Secondary education	126 (42.0)	Secondary education	140 (46.7)
University	93 (31.0)	University	88 (29.3)
Post graduate	5 (1.7)	Post graduate	9 (3.0)
Employment status		**Husband employment status**	
Employed	57 (19.0)	Employed	285 (95.0)
Unemployed	243 (81)	Unemployed	5 (5.0)
Economic status		**Family type**	
Income<expense	94 (31.3)	Nuclear family	247 (82.3)
Income=expense	159 (53.0)	Extended family	48 (16.0)
Income>expense	47 (15.7)	Reconstituted family	5 (1.7)
Duration of marriage (year)		**Number of previous pregnancies**	
1-3	162 (54)	0	2 (0.7)
4-6	63 (21)	1	141 (47.0)
7-9	39 (13)	2	77 (25.7)
10-12	15 (5)	3	56 (18.7)
13 years and more	21 (7)	4	24 (8.0)
Number of abortus		**Number of curettages**	
1	46 (15.3)	1	35 (11.7)
2	6 (2.0)	2	1 (0.3)
3	1 (0.3)	3	2 (0.7)
4	1 (0.3)		
9	1 (0.3)		
Number of living children			
0	167 (55.7)		
1	82 (27.3)		
2	43 (14.3)		
3	5 (1.7)		
4	3 (1.0)		

$\bar{X}$: Mean, SD: Standard deviation

status, family type, number of children, and the effect of pregnancy on the relationship with the husband. Significant differences were also revealed between the educational status of the pregnant, the academic status of their husband, the number of previous pregnancies, the number of living children, and the effect of pregnancy on the relationship with the husband and the mean PAI scores.

The mean total score for the W-DEQ was 53.06±22.64 (range: 0-125), the mean total score for the PAI was 39.85±9.68 (range: 21-75). Regression analysis demonstrated a statistically significant relationship between the W-DEQ and PAI scores (p<0.0001) (Table 3).

Table 2. Comparison of Socio-demographic and Clinical Characteristics of Pregnant Women and Mean Scores of W-DEQ and PAI (n=300)

Characteristics	W-DEQ (Mean ± SD)	p	PAI (Mean ± SD)	p
Educaion status				
Literate	59.86±23.7	0.343	43.17±9.92	<0.0001
Primary school graduate	56.71±25.38		44.50±10.77	
Secondary education	52.46±19.92		39.75±9.11	
University	49.82±24.15		36.50±8.49	
Post graduate	58.0±17.26		39.60±9.39	
Husband education status				
Literate	65.16±28.75	0.485	40.91±10.05	0.008
Primary school graduate	56.43±26.08		43.41±10.74	
Secondary education	52.40±21.17		40.30±9.58	
University	50.82±21.65		37.57±8.65	
Post graduate	49.77±22.60		33.22±6.55	
Employment status				
Employed	44.52±23.61	0.002*	37.45±9.41	0.071
Unemployed	55.05±21.98		40.40±9.68	
Family type				
Nuclear family	51.59±21.34	0.013	39.34±9.27	0.133
Extended family	61.85±26.22		42.83±113.35	
Reconstituted family	40.60±31.26		36.20±8.25	
Number of previous pregnancies				
0	44.5±4.94	0.380	34.50±6.36	0.001
1	51.26±22.76		37.56±8.99	
2	55.70±21.96		40.28±7.83	
3	51.62±20.30		41.89±10.23	
4	59.16±28.92		47.50±12.82	
Number of living children				
0	51.47±22.51	0.039	37.87±8.76	<0.0001
1	54.06±22.05		39.93±8.53	
2	52.86±21.11		44.41±10.83	
3	66.20±33.45		51.20±13.02	
4	94.33±4.93		62.66±2.08	
The effect of pregnancy on the relationship with the husband				
Positive	50.95±22.41	0.003	38.71±8.97	0.001
Negative	69.40±11.45		43.20±6.97	
Ineffective	61.91±22.07		45.16±11.50	

*Student's t-test
SD: Standard deviation, W-DEQ: Wijma Delivery Expectancy/Experience Questionnaire, PAI: Prenatal Attachment Inventory

Table 3. Linear Regression Analysis Results

	B	Beta	p	95% CI
W-DEQ	0.108	0.253	<0.0001	0.063-0.153
Number of pregnancies	2.129	0.219	<0.0001	1.042-3.216
Education year	-0.304	-0.138	0.016	-0.550-(-0.57)

W-DEQ: Wijma Delivery Expectancy/Experience Questionnaire, CI: Confidence interval

DISCUSSION

The research investigating the relationship between fear of childbirth experienced by pregnant in the last trimester and their prenatal attachment status indicate that unemployment among the pregnant was associated with increased fear of childbirth. This finding aligns with similar research in the field [21,22]. The continuation of a woman's employment may mitigate fear of childbirth due to its positive psychosocial and financial impacts.

The study showed that having a larger family structure was associated with increased fear of birth. However, this finding contrasts with the study by Arslantaş et al. [2], which concluded that family type did not influence fear of childbirth. It is possible that differing characteristics of the sample groups contributed to these disparate findings.

The study revealed that women with multiple children experienced higher levels of fear of childbirth. This observation is consistent with the findings of Gökçe İsbir et al. [22], who also declared that multiparous women experienced fear of childbirth more frequently. Strategies such as obtaining information, planning, receiving empathic support, managing emotions through various techniques, and maintaining a positive focus may help mitigate the fear of childbirth [23]. It is important to recognize that negative previous pregnancy and birth experiences may contribute to heightened fear in subsequent pregnancies and births.

The study showed that a negative impact of pregnancy on the relationship with the husband was associated with increased fear of childbirth among pregnant. The literature reports that women who could not receive physical or emotional support from their husbands experienced higher levels of fear of childbirth [10]. Support from a partner and a positive relationship with the husband may enhance psychosocial well-being and help mitigate fear of childbirth.

The study also revealed that prenatal attachment levels were higher among both participants and their husbands with primary education. This finding aligns with some studies in the literature [16] but contrasts with others [24], indicating that while some research shows an increase in prenatal attachment with higher educational levels, other studies do not. These discrepancies suggest that educational attainment should be considered when planning interventions related to fear of childbirth, prenatal attachment, and other related issues.

The study identified an increase in the number of pregnancies and children as factors associated with higher levels of prenatal attachment. Koç Özkan et al. [16] reported that women with three or more pregnancies had higher PAI scores. Similarly, Gürol et al. [25] emphasized that women with a greater number of children exhibited higher levels of attachment compared to those with 1-2 children. These findings suggest that individual and cultural factors related to pregnancy and childbearing may influence prenatal attachment.

The research identified that the prenatal attachment levels who reported that their relationship with their partner was not affected by pregnancy were significantly higher compared to those who reported a positive or negative impact. Küçükkaya et al. [26] also observed that prenatal attachment increased with greater couple harmony. This highlights the importance of positive relationships and harmony between husbands for fostering healthy prenatal attachment, as well as for the well-being during pregnancy, childbirth, and the postpartum period.

The mean total score for the W-DEQ among the participants in this study was 53.06±22.64. Existing literature presents varying findings, with some studies reporting lower [27] and others higher levels of fear of childbirth [22,28]. These discrepancies may be attributed to differences in socio-demographic and clinical characteristics among pregnant.

In the research, the mean total score for the PAI among pregnant women was detected to be 39.85±9.68. This indicates that the level of prenatal attachment in our research was lower compared to that reported in the literature [13,29,30]. Variations in prenatal attachment levels may be attributed to differences in sample characteristics.

The study also revealed that as the fear of birth increased, the level of prenatal attachment also increased. This finding is consistent with the results reported by Gürol et al. [25]. Conversely, other studies have indicated that higher levels of fear of childbirth are associated with decreased levels of prenatal attachment [1,31,32]. Therefore, it is essential to evaluate pregnant in terms of both fear of childbirth and prenatal attachment. Based on these evaluations, targeted interventions should be implemented to support maternal, infant, and family health.

Study Limitations

The generalizability of the research findings is limited by the fact that the research was conducted at a single hospital. Additionally, the data obtained are confined to the information provided by the participants, which may restrict the broader applicability of the results.

CONCLUSION

Investigating the levels of fear of childbirth and prenatal attachment among pregnant women is crucial for ensuring maternal and infant health. Healthcare professionals should implement appropriate interventions to address and alleviate fear in pregnant who experience birth anxiety and to enhance prenatal attachment in those with weak attachment. Ensuring that fear is managed effectively and fostering a strong bond between mother and baby is vital for the health of the mother, infant, and family.

Ethics

Ethics Committee Approval: Ethics committee approval was obtained from the Social and Humanities Research and Publication Ethics Committee İstanbul Medeniyet University (date: 12.02.2019).

Informed Consent: Participants were enrolled in the study after providing their informed consent.

Footnotes

Author Contributions

Concept: HA, MİB, ÖAA; Design: HA, MİB, ÖAA; Data Collection or Processing: MİB, ÖAA; Analysis or Interpretation: HA, MİB, ÖAA; Literature Search: HA, MİB, ÖAA; Writing: HA, MİB, ÖAA.

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