ARAŞTIRMA / RESEARCH

Anxiety and prenatal attachment levels in pregnancy and influencing factors

Gebelikte anksiyete ve prenatal bağlanma düzeyleri ile etkileyen faktörler

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Abstract

Purpose: The aim of this study was to determine the anxiety and prenatal attachment levels of pregnant women, examine certain related factors and evaluate the relationship between anxiety and prenatal attachment.

Materials and Methods: The study is a cross-sectional study conducted on pregnant women applying to the pregnancy polyclinic of Sakarya Education and Research Hospital. The study group consisted of 502 pregnant women. Beck Anxiety Scale and Prenatal Attachment Inventory were used to determine the anxiety level of the prenatal attachment level, respectively.

Results: Mean age of women participating in the study was 28.07±4.71 years (min:18, max:40). The mean scores of the pregnant women in the Beck Anxiety Scale and Prenatal Attachment Inventory were determined as 15.10±9.37 and 44.31±9.45, respectively. A negative medium level relationship is found between the points obtained in the Beck Anxiety Scale and the Prenatal Attachment Inventory.

Conclusion: Anxiety disorders experienced during pregnancy have a negative impact on the maternal and fetal health and weaken the prenatal attachment.

Keywords: Prenatal attachment, pregnancy, anxiety

Öz

Amaç: Bu çalışmanın amacı gebelerin anksiyete ve prenatal bağlanma düzeylerinin saptanması, ilişkili bazı faktörlerin incelenmesi ve anksiyete ile prenatal bağlanma arasındaki ilişkinin değerlendirilmesidir.

Gereç ve Yöntem: Çalışma, Sakarya Eğitim ve Araştırma Hastanesi gebe polikliniğine başvuru yapan gebeler üzerinde gerçekleştirilen kesitsel tipte bir araştırmadır. Çalışma grubu 502 gebeden oluşmuştur. Anksiyete düzeyinin değerlendirilmesi için Beck Anksiyete Ölçeği, prenatal bağlanma düzeyinin değerlendirilmesi için ise Prenatal Bağlanma Envanteri kullanılmıştır.

Bulgular: Çalışmaya katılan gebelerin yaş ortalaması 28.07±4.71 yıl (min:18, max:40) idi. Gebelerin Beck Anksiyete Ölçeğinden aldığı puan ortalaması 15.10±9.37 puan, Prenatal Bağlanma Envanterinden aldığı puan ortalaması 44.31±9.45 olarak bulunmuştur. Gebelerin Beck Anksiyete Ölçeğinden aldıkları puanlar ile Prenatal Bağlanma Envanterinden aldıkları puanlar arasında negatif yönde orta düzeyde bir ilişki bulunmuştur.

Sonuç: Gebelikte yaşanan anksiyete bozukluğu maternal ve fetal sağlığı olumsuz etkilemekte prenatal bağlanmayı zayıflatmaktadır.

Anahtar kelimeler: Gebelik, anksiyete, prenatal bağlanma

INTRODUCTION

In addition to being a natural life event for women, pregnancy constitutes a period in which major biopsychological changes are experienced in addition to the risk of experiencing numerous factors that may potentially lead to anxiety and stress[1]. An increase occurs in the emotional changers that may be triggered by the first signs of pregnancy in the first periods of pregnancy. In time, the physiological changes in the body, fluctuations in sexual interest, anxiety related with birth etc. factors may contribute to the changes in the moods[2,3]. Incidence of anxiety disorders in the prenatal period is specified between 9% and 30% based on the results of the studies[4-6]. Anxiety, which may trigger anxiety and worry during pregnancy, also contribute to complications such as uterus contractions, which are not effective during delivery. Thus, understanding the relation between

anxiety and delivery is important[7]. Presence of panic disorder is associated with preterm labour and low birth weight babies[8].

The term "attachment" refers to establishment of an emotionally positive and mutually helpful relationship between the babies and their parents. When the relationship is processed appropriately, the adults will adapt themselves to their babies and the babies will provide the clues related with their needs to the adults[9]. Attachment theory is essentially based on the attachment and object relationships of John Bowlby, who is from the psychoanalytical tradition[10]. Bowlby has defined the term attachment as the a strong tie between two people[11]. Attachment theory suggests that attachment to the mother or any other reassuring figure has an important function in survival of the child[12]. Attachment to a baby during pregnancy refers to the feelings of the pregnant woman towards their unborn baby, her interactions with the baby and identifying herself as a mother, i.e. the development of the motherhood identity during pregnancy. The studies show that prenatal attachment motivates the positive health behaviours, facilitates adapting to the role of parenthood and functions as a protection against perinetal depression during the pregnancy[10,13,14]. This study aims at identification of the anxiety and prenatal attachment levels of pregnant women, examination certain related factors and the evaluation of the relationship between presence of anxiety and prenatal attachment level.

MATERIALS AND METHODS

This study is a cross-section type study conducted on pregnant women applying to the pregnancy polyclinic of Sakarya Education and Research Hospital. Ethical approval has been obtained for the study from the Ethics Board of Faculty of Medicine of Sakarya University (Date: 2014/ Number: 71522473.050.01.04/19).

After the verbal informed consents were obtained from women applying to the pregnancy polyclinic of Sakarya Education and Research Hospital, the previously prepared questionnaires were filled by the authors with the face to face interview method. This process took approximately 15 minutes. Rules specified in the Helsinki Declaration were observed in the data collection phase.

The universe of the study consisted of 950 pregnant women who applied to Sakarya Training and Research Hospital Central Campus and Child and Gynecology Campus between 01 April - 30 April 2014. The sample of the study consisted of 502 pregnant women (52.8% of universe size) that meet the research criteria. Inclusion criteria were interest in participating in the study, literacy, not having communication problems, not having a chronic disease. Whereas the exclusion criteria were the presence of a physical or mental disability which can cause incoordination, under the age of 18 and pregnant with in vitro fertilization.

Measures

Data collection form

The questionnaire that has been prepared as a result of the literature scanning[5, 15-18] performed in conformity with the objective of the study, consists of information including certain sociodemographic characteristics of pregnant women (age, education status, employment, family type, income status, smoking habit), medical history, certain obstetrical and gynaecological characteristic (number of pregnancies, abortus history, curettage history, stillbirth history, number of living children, whether it is a planned pregnancy and it is a pregnancy after treatment).

Beck Anxiety Scale

Beck Anxiety Scale was prepared by Beck and colleagues in 1988. Cronbach alpha factor of the original scale is .93 species[19]. The scale was used after the Turkish validity reliability study was carried out by Ulusoy and colleagues. In the Turkish validity and reliability study of the scale, Cronbach Alpha factor was found as .93. Beck Anxiety Scale is a self-assessment scale used for determining the frequency of the signs of anxiety experienced by individuals. It is a likert type scale which consists of 21 items with the options of "not at all", "mildly", "moderately", "severely", for which are score between 0-3 is given. The score range is 0-63 and the higher total score means anxiety experienced by the individual more severely [20].

Prenatal Attachment Inventory

Prenatal Attachment Inventory is used to measure the level of attachment of pregnant women to the baby they are carrying. It is a 21-item scale developed by Mary Muller to explain the thoughts, emotions and conditions experienced by women during their pregnancy and level of attachment to the baby in the

prenatal period. Every item is arranged on a four point response set with a total scale score between 21-84. Cronbach alpha factor of the original scale is .81[21]. Cronbach Alpha factor of scale, adapted to Turkish by Yılmaz and Beji (2013), is 0.84[10].

Table 1. Breakdown of the mean scores of pregnant women in the Beck Anxiety Scale by certain characteristics

Sociodemographic characteristics	n	Beck Anxiety Scale			
		Scale Score	Test value F/T;p	Multiple Comparison	p
Age					
≤24 1	171	16.19±12.79		3-4	0.056
25-29 2	187	15.53±7.44		3-1	0.003
30-34 3	113	12.32±5.94	5.045; 0.002	3-2	0.017
≥35 4	31	17.58±4.20		4-1	0.901
-				4-2	0.737
-				1-2	0.907
Education Status					
Min. primary school 1	145	14.47±6.38		3-4	0.000
Jr. High School 2	102	14.60±14.01		3-1	0.028
Sr. High School 3	175	17.36±9.38	7.023; 0.000	3-2	0.076
University 4	80	11.92±3.95		4-1	0.194
-				4-2	0.211
-				1-2	1.000
Employment					
Employed	101	16.24±5.71	1.874; 0.062	-	-
Unemployed	401	14.81±10.07		-	-
Family type					
Nuclear	429	15.22±9.93	1.057;0.292	-	-
Extended	73	14.42±4.91		-	-
Income status					
Income lower than expenses	339	15.73±10.16	2.180; 0.030	-	-
Income equal to/ higher than expenses	163	13.79±7.34		-	-
Smoking					
Smoker	35	24.03±12.36	36.609; 0.000	-	-
Non-smoker	467	14.43±8.77		-	-
Whether pregnancy was intended					
No	57	11.95±7.06	2.715; 0.007	-	-
Yes	445	15.50±9.56		-	-
History of previous delivery					
No	190	16.10±9.07	0.061; 0.065	-	-
Yes	312	14.50±9.52		-	-
Whether she has seen a woman giving birth before					
No	439	14.79±9.85	0.161;0.001	-	-
Yes	63	17.28±4.39		-	-
Total	502	15.10±9.37	-	-	-

Statistical analysis

Data obtained was evaluated in the computer environment. Descriptive data are expressed as number, percentage, mean and standard deviation. Normality tests of quantitative variables are analysed by using "Kolmogorov-Smirnov and Shapiro Wilk". For comparison of two variables were used Student

T-test and comparison of two or more variables were used Anova. The relationship between the scales was used Spearman Correlation Analysis. Significance value was accepted as p<0.05.
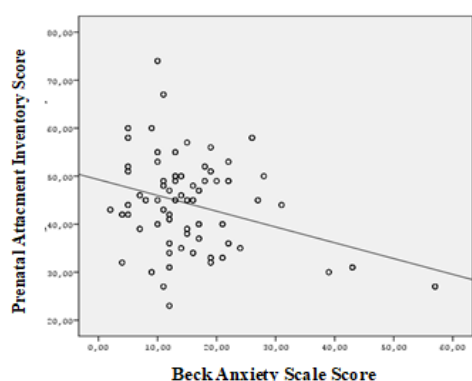

Figure 1. Breakdown of scores from the Beck Anxiety Scale and the Prenatal Attachment Inventory

RESULTS

The ages of the pregnant women participating in the study varied between 18 and 40 years and the mean age is found as 28.07±4.71 years. 34.9% of pregnant women were senior high school graduates; 79.9% were not employed in a revenue generation work; 85.5% lived in nuclear families; and the economic status of 67.5% of pregnant women was with income equal to or higher than the expenses.

76.9% of pregnant women constituting the work group stated that they did not have any chronic and systemic diseases, and 93% have stated that they did not smoke and 100% said they did not consume alcohol. 88.6% of pregnant women said that they intended their pregnancy and 37.8% said that they did not give birth previously.

The mean points of the pregnant women was determined as 15.10±9.37 in the Beck Anxiety Scale. Breakdown of the mean scores of those in the study from the Beck Anxiety Scale by certain characteristics is provided in Table 1. The mean score of pregnant women in the Prenatal Attachment Inventory is determined as 44.31±9.45. The breakdown of the mean scores of those in the workgroup from the Prenatal Attachment Inventory is provided by certain characteristics are presented in Table 2.

A medium level negative relationship has been found between the scores of pregnant women from the Beck Anxiety Scale and the scores from the Prenatal Attachment Inventory (r=-0.326; p=0.000). Breakdown of the scores obtained from the Beck Anxiety Scale and the Prenatal Attachment Inventory are shown in Figure 1.

Table 1. Breakdown of the mean scores of pregnant women in the Beck Anxiety Scale by certain characteristics

Sociodemographic characteristics	n	Beck Anxiety Scale			
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Age					
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Min. primary school 1	145	14.47±6.38		3-4	0.000
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Employed	101	16.24±5.71	1.874; 0.062	-	-
Unemployed	401	14.81±10.07		-	-
Family type					
Nuclear	429	15.22±9.93	1.057;0.292	-	-

Extended	73	14.42±4.91		-	-
Income status					
Income lower than expenses	339	15.73±10.16	2.180; 0.030	-	-
Income equal to/ higher than expenses	163	13.79±7.34		-	-
Smoking					
Smoker	35	24.03±12.36	36.609; 0.000	-	-
Non-smoker	467	14.43±8.77		-	-
Whether pregnancy was intended					
No	57	11.95±7.06	2.715; 0.007	-	-
Yes	445	15.50±9.56		-	-
History of previous delivery					
No	190	16.10±9.07	0.061; 0.065	-	-
Yes	312	14.50±9.52		-	-
Whether she has seen a woman giving birth before					
No	439	14.79±9.85	0.161;0.001	-	-
Yes	63	17.28±4.39		-	-
Total	502	15.10±9.37	-	-	-

Table 2. Breakdown of mean score of pregnant women from the Prenatal Attachment Inventory by certain characteristics

Sociodemographic characteristics	n	Beck Anxiety scale			
		Scale Score	Test value F/T; p	Multiple Comparison	p
Age					
≤24 1	171	43.54±10.76	7.596; 0.000	3-4	0.410
25-29 2	187	42.80±8.76		3-1	0.024
30-34 3	113	46.70±8.60		3-2	0.002
≥35 4	31	49.92±1.06		4-1	0.009
-				4-2	0.002
-				1-2	0.874
Education status					
Min. primary school 1	145	46.87±8.97	11.991; 0.000	3-4	0.184
Jr. High School 2	102	46.35±11.08		3-1	0.001
Sr. High School 3	175	42.82±9.41		3-2	0.011
University 4	80	40.34±5.45		4-1	0.000
-				4-2	0.000
-				1-2	0.973
Employment					
Employed	101	44.91±6.34	0.711; 0.477	-	-
Unemployed	401	44.16±10.09		-	-
Family type					
Nuclear	429	44.09±9.23	1.129;0.262	-	-
Extended	73	45.59±10.64		-	-
Income status					
Income lower than expenses	339	43.75±9.82	2.006; 0.046	-	-
Income equal to/higher than expenses	163	45.47±8.54		-	-
Smoking					
Smoker	35	38.37±9.44	3.909; 0.000	-	-
Non-smoker	467	44.76±9.31		-	-
Whether pregnancy was intended					
No	57	46.47±6.08	2.602; 0.011	-	-
Yes	445	44.04±9.77		-	-

History of previous delivery					
No	190	41.65±7.45	4.356; 0.000	-	-
Yes	312	45.93±10.03		-	-
Whether she has seen a woman giving birth before					
No	439	43.91±9.92	43.758; 0.000	-	-
Yes	63	47.08±4.22		-	-
Total	502	44.31±9.45	-	-	-

DISCUSSION

Pregnancy is a period, which causes major changes in a woman's life and in which significant concerns can be experienced in psychosocial terms [16]. Anxiety disorders in pregnancies reported in the studies in the last 30 years are higher than the community percentages. In numerous studies, it has been shown that the depression and anxiety seen during pregnancy may be related with sociodemographic characteristics of pregnant women such as their age, marital status, number of children, education levels, smoking, alcohol and substance use, the related trimester of pregnancy, whether pregnancy was intended etc. [4, 22, 23]. The score obtained by pregnant women in our study from the Beck Anxiety Scale varies between 2 and 57, and the mean score is calculated as 15.10±9.37.

In further phases of pregnancy, the woman senses the fetus as a different and new individual, and the fetus is loved as both a part of the woman and an independent individual [17]. Thus, the parent attachment is already established in the pregnancy period. Mother-infant attachment is defined as "a unique relationship established between the mother and the unborn infant" or "a bond or connection developed normally between the pregnant woman and her unborn son"[20, 24]. In a study examining the factors affecting the mother-infant attachment in pregnancy, it has been reported that age, education, socioeconomic status, pregnancy planning, previous pregnancies, pregnancy interruptions and gestational age [25]. The score obtained by the pregnant women in our study from the Prenatal Attachment Inventory varies between 23-74 and the mean score is calculated as 44.31±9.37.

The studies have revealed that mother-infant attachment is affected by the anxiety level [17, 24, 26]. In the study conducted in UK, it has been reported that situations affecting mental health such as anxiety caused inadequate prenatal attachment [27]. A medium level negative relationship has been found between the scores of pregnant women from the Beck Anxiety Scale and the scores from the Prenatal Attachment Inventory (r=-0.326; p<0.05).

In numerous studies, it has been observed that the anxiety observed during pregnancy is related with the ages of pregnant women [1, 28, 29]. It is believed that a reduction will occur in the anxiety level with age as a result of development of problem solving skills and the methods for overcoming stress. However, due to advanced pregnancy age of the mother resulting in a risky pregnancy [30], it is expected that anxiety level will increase in mothers over age 35. Based on the findings of our study, no relationship was found between age and anxiety, and the lowest Beck Anxiety Scale mean score was determined in pregnant women between age 30 and 34 (p<0.05). Due to women being more prepared for motherhood with age, it is believed that prenatal attachment level shall also increase. In the studies conducted, it has been seen that being satisfied with motherhood role increased in the first 4 months after birth but that this process continued up to 8 months in those who became a mother at young age [31-33]. As it was expected in our study findings, it has been determined that the mean scores from the Prenatal Attachment Inventory increased with age (p<0.05).

It is expected that higher level of education will result in an increase in use of problem-oriented coping, improve the level of coping with stress, develop skills to direct attention to other aspects and lower anxiety level as a result of greater social support [18, 34]. Accordingly, a statistically meaningful relationship was found between education status and anxiety in line with the above information in the pregnant women forming our study group, and the lowest anxiety mean score was found in pregnant women with a university education level. (p<0.05). In the study of Yılmaz and Beji, a decrease is observed in the prenatal attachment level as the education level decreases [18]. However, it has been found in our study that lower level of education increased the prenatal attachment (p<0.05). A busier work and social life

with the increase in education level leads to lower attention towards their babies. It is considered that this has a negative effect on the prenatal attachment level.

Economic welfare of pregnant women, expenses during and after birth are economic factors that lead to anxiety in candidate mothers [35]. In a study conducted by Kaplan et al., anxiety level was found higher in pregnant women with lower income [36]. Similarly, a relationship was found between income level and anxiety in a study conducted by Tunç et al.[16] Based on our findings, higher anxiety level in pregnant women with lower income found in our study is in line with the literature (p<0.05). Although, it is not expected that economic factors will be effective in establishment of the bond between the mother and the infant, prenatal attachment is found lower in pregnant women with lower income level in our study (p<0.05).

Pregnant women with high anxiety may use substances like cigarettes, which are hazardous for both the fetus and themselves, as a coping method. A statistically significant relationship is found between smoking and anxiety in the pregnant women forming our study group, and the anxiety level is determined higher in pregnant women who smoked (p<0.05). Anxiety level is found to be high in pregnant women who smoked and higher level of anxiety reduced prenatal attachment [17, 24, 26]. Prenatal attachment level is found lower in pregnant women who smoked in our study (p<0.05).

A relationship could not be found between planned pregnancy and the anxiety level in the study of Tekgöz et al [35]. Similarly, anxiety levels of pregnant women was compared with whether pregnancy was planned in another study but no statistically significant relationships could be found [37]. In a study by Kaplan et al. a relationship was found between planned pregnancy and prenatal anxiety and anxiety level was found higher in women who did not want the pregnancy [36]. Different to the findings of other studies, the anxiety level was found higher when it was a planned pregnancy (p<0.05). It is considered that anxiety level increased as a result of higher rate of fear related with the baby suffering an injury in women with planned pregnancy. The fact that the woman wants the pregnancy is an indication that it is a convenient time to have a baby both for themselves and their husbands and that an attachment is established with their babies. It is expected that prenatal attachment is higher in woman who wanted

the pregnancy. However, it has been found in our study that prenatal attachment is lower in women who wanted the pregnancy (p<0.05). This situation can be explained by the high level of anxiety in the desired pregnancy.

In the study by Ortaarık et al., no relationships could be found between giving birth previously and anxiety [38]. No statistically significant relationship could be found between giving birth previously and the mean scores from the Beck Anxiety Scale (p>0.05). One of the factors contributing to the mother-infant attachment in the prenatal period is giving birth to a baby previously [17]. Findings of our study are similar to those in literature and the mean prenatal attachment score has been found higher in women who had given birth previously (p<0.05).

Pregnant women seeing a woman giving birth previously causes an increase in anxiety related with labour in addition to causing fear related with injury of the baby, which is expected to increase the attachment to the baby. It has been found in our study also that pregnant women who had seen a women giving birth previously had higher anxiety and prenatal attachment levels (p<0.05).

The fact that the study is a cross-sectional type study; that it is conducted on pregnant women applying to one hospital only; and that the scales used not providing a final diagnosis may be considered among the limitations of the study.

As a conclusion, anxiety disorders experienced during pregnancy have a negative impact on maternal and fetal health and weaken the prenatal attachment. Health professionals providing antenatal care must evaluate pregnant women not only in physical terms but in psychological terms with due consideration of the sociodemocgraphic characteristics. It is recommended to increase the support policies for families giving birth since low socio-economic level increases anxiety and decreases prenatal attachment level. Since having not given birth before is one of the factors that increase anxiety, it may be possible to reduce the fear of the unknown, especially by increasing the participation of women who are pregnant for the first time in pregnant education classes. Thus, early diagnosis and treatment of the anxiety disorders of the mother will be ensured and damage to prenatal attachment will be prevented.

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