

ORIGINAL ARTICLE

Medicine Science 2021;10(3):822-7

Determination of prenatal attachment in pregnant women and related factors in the city with the highest fertility rate in Turkey** Zeliha Turan,  Fatma Koruk***Harran University Institute of Health Science, Department of Nursing, Sanliurfa, Turkey*

Received 14 October 2020; Accepted 09 March 2021

Available online 09.05.2021 with doi: 10.5455/medscience.2020.10.216

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**Abstract**

Maternal attachment is an important component of maternal identity and the basis of the development of adaptation to the maternal role. An unhealthy attachment between mother and baby, which begins in the early years, may lead to adverse effects on the individual throughout his/her life. Therefore, it is important to determine the factors that may affect the bond between mother and baby. In this study, we aimed to determine prenatal attachment and related factors among pregnant women living in Sanliurfa, Turkey. A total of 109 pregnant women in the third trimester of pregnancy constituted the sample of this cross-sectional study. The study data were collected by face-to-face interviews using the Data Collection Form, Traumatic Childbirth Perception Scale (TCPS), and Prenatal Attachment Inventory (PAI). In the study, the mean prenatal attachment score was 44.4 ± 10.3 and a moderately negative relationship was found between prenatal attachment and the number of living children, while a weakly positive relationship was found with the number of prenatal follow up. These results show that antenatal follow-ups are effective in the development and enhancement of prenatal attachment.

Keywords: Pregnancy, prenatal attachment, traumatic birth perception, mother-baby attachment.

Introduction

Attachment is the ability to establish and maintain healthy relationships [1]. Bowlby, who put forward the attachment theory, defined the concept of attachment as a strong bond between two people. Prenatal attachment, the concept of attachment before birth, can be defined as the feelings, expectations, and behaviors of the parents about the fetus. An unhealthy bond between mother and baby, which begins in early years, may lead to adverse effects on the individual throughout his/her life [2-4]. Available studies show that the attachment between mother and baby actually emerges during pregnancy, rather than the antenatal period [4,5]. It has been reported that mother-fetus attachment starts around the 10th week of pregnancy and emerges when the mother feels the movements of the fetus [6].

Many factors are known to affect attachment, some of which include marital cohesion, parents' age, risk of pregnancy, the number of births, the number of living children, and the education level of the parents [7]. In addition, planned pregnancy, experiences, having a baby with the desired gender, presence of social support, ability to cope with problems, fears during pregnancy, and prenatal care are among the factors that affect attachment [8,9].

Another important factor affecting prenatal attachment is the childbirth experience. The birth experience is personal and is a major life experience for the woman in which many emotions can arise [10,11]. Women's perception of childbirth experience is affected by personality traits, expectations, and the meaning they attribute to their birth experience, and thus may differ significantly from one another [12,13]. In this sense, while childbirth experience is perceived as traumatic by some women, it may be perceived positively by others and may have physiological, psychological, emotional, and social effects [14-17]. Perception of childbirth as a traumatic experience and the psychological problems associated with this perception can lead to permanent or long-term positive or negative consequences [13,18,19], affecting the woman's future health and subsequent birth experiences, and the relationship between the mother and other family members [15, 18, 20, 21].

*Corresponding Author: Zeliha Turan, Harran University Institute of Health Science, Nursing Department, Sanliurfa, Turkey,
E-mail: zeliha028444@gmail.com

The literature shows that the source of many pathologies is closely related to the quality of the mother-infant relationship [22]. It is important to focus on bonding that begins to develop between mother and fetus in the prenatal period to understand this relationship better. Therefore, it is important to determine the factors that may negatively affect the mother's perception of childbirth and mother-baby attachment. Sanliurfa, where the study was conducted, is located in the Southeastern Anatolia Region in Turkey and has the highest fertility rate with a number of 3.89 children per woman, according to the Turkey Statistical Institute data [23]. In a region with such a high fertility rate, we believe it is of great importance to determine the factors affecting the prenatal attachment of pregnant women in terms of improving mother-infant wellness in particular and family and community wellness in general.

Consequently, the aim of this study was to determine prenatal attachment and related factors in pregnant women in Sanliurfa.

Material and Methods

Setting and Sample

The research population of the cross-sectional study was formed by pregnant women who applied to the Obstetrics and Gynecology Department of a university hospital. The study included pregnant women over the age of 18 who were in the third trimester of their pregnancy (27-41 weeks of gestation), who agreed to participate in the study and did not have any diagnosed psychiatric disorder.

For the calculation of the sample size, a pilot study was conducted with 15 pregnant women who applied to the outpatient clinic between 30.06.2020-02.07.2020. The Spearman Rho correlation coefficient between traumatic birth perception and prenatal attachment was -0.22, and the sample size was calculated as 109 using 0.3 effect size, 95% confidence level, and 90% power.

The phase of data collection was conducted between 03.07.2020-26.07.2020. 5 pregnant women who met the sampling criteria were excluded due to language barriers while another 2 pregnant women were excluded as they did not agree to volunteer. An appropriate environment was provided where women can answer questions comfortably, with each session lasting approximately 15-20 minutes.

Ethical Considerations

Prior to the study, written permission was obtained from the Harran University ethics committee (date:29.06.2020 and no:19) and hospital, as well as the informed consent from the participating pregnant women and the author of the scale used for data collection.

Data Collection Tools

The data were collected by face-to-face interviews using the Data Collection Form, Traumatic Childbirth Perception Scale (TCPS), and Prenatal Attachment Inventory (PAI).

Data Collection Form, consisted of 11 questions that questioned the participants' socio-demographics, (age, participant's and her spouse's education status, most commonly spoken language at home, participant's and her spouse's employment status, presence

of social security, economic status, family type, place of residence, chronic disease history), and 18 questions that questioned pregnancy and birth characteristics (week of gestation, number of pregnancies, number of living children, status of planning/desiring pregnancy, status of any intervention/treatment for pregnancy, presence of any health problems during pregnancy, number of prenatal follow up, place where health checks are performed, support from the spouse during pregnancy, baby's gender, having a baby with a desired gender, planned type of delivery, childbirth preparation education or counseling, preparation for childbirth and the baby, how the previous pregnancy ended, presence of any previous complications, perception of previous childbirth, and any disability or anomaly in living children), adding up to 29 questions in total.

Traumatic Childbirth Perception Scale (TCPS), It is a 13-item scale developed by Yalniz et al. in 2016 to measure the extent of women's perception of childbirth as traumatic. Higher scores obtained from the scale indicate higher levels of traumatic childbirth perception. The minimum and maximum scores that can be obtained from the scale range from "0" to "130". Rated from zero to ten, traumatic childbirth perception is assessed as "very low" between 0-26 points, "low" between 27- 52 points, "moderate" between 53-78 points, "high" between 79-104 points, and "very high" between 105-130 points, according to the mean total scale scores [24]. The Cronbach alpha value of the scale is 0.895, and the Cronbach alpha value of this study is 0.854.

Prenatal Attachment Inventory (PAI), It is a 21-item scale developed by Muller in 1993 to explain the thoughts, feelings, and situations experienced by women during pregnancy and to determine the prenatal attachment levels to their babies. Adaptation of the scale to Turkish society was performed by Yılmaz and Beji in 2013. "It is a four-point Likert scale in which each item is scored between 1 and 4. The minimum and maximum scores range from 21 to 84. High scores indicate greater levels of attachment. Each item is scored as 1 = Never, 2 = Sometimes, 3 = Frequently, 4 = Always [25]. The Cronbach alpha value of the scale is 0.840, and the Cronbach alpha value of this study is 0.876.

Variables

The dependent variable of the study is the level of prenatal attachment while socio-demographics, pregnancy and birth characteristics, and Traumatic Birth Perception Scale scores are the independent variables.

Data Analysis

Data analysis was performed using the Statistical Package for Social Sciences (SPSS) for Windows 20.0 statistical package program. For the evaluation of data, percentage, mean, median and standard deviation were used for descriptive statistics, Spearman's correlation test was used for sequential data that does not conform to normal distribution in relationships between dependent-independent variables (the number of prenatal follow up), t test was used for comparing two groups (participant's and her spouse's employment status, social security, family type, history of chronic illness, place of residence, planned/voluntary pregnancy, treatment/intervention for pregnancy, baby's gender, desired gender by the family, health problems during pregnancy, childbirth preparation education or counseling, planned type of

delivery, presence of previous birth complications and children with disabilities or anomalies), Kendall's tau-b test was used for comparing three or more groups education status (participant/spouse), perceived economic status), Pearson correlation analysis was used for data that conforms to normal distribution (age, number of pregnancies, gestational week, the number of living children), and one-way analysis of variance was used for comparing three or more groups (most spoken language at home, perception about the previous birth experience and its termination). A p-value of <0.05 was considered statistically significant and results were evaluated at a 95% confidence interval.

Results

56.9% of pregnant women did not complete primary education and did not graduate from any school. 96.3% of the pregnant women do not have an income-generating job, 1.8% do not have social security and 74.3% perceive their income level as "medium". 69.7% of the pregnant women speak a language other than Turkish at home. Again, 33.0% of pregnant women live in the city center and 77.1% live in nuclear families. On the other hand, 13.7% of the spouses did not complete primary education and 8.3% do not have an income-generating job (Table 1).

Table 1. Distribution of Some Socio-Demographic Characteristics of Pregnant Women

Characteristics	Number	%
Education Level		
Illiterate	44	40.4
Literate	18	16.5
Primary education	37	33.9
Secondary	10	9.2
Employment status		
Employed	4	3.7
Unemployed	105	96.3
Social Security		
Yes	107	98.2
No	2	1.8
Perceived Income Level		
Good	5	4.6
Moderate	81	74.3
Poor	23	21.1
Most Spoken Language at Home		
Turkish	33	30.3
Kurdish	20	18.3
Arabic	56	51.4
Family Type		
Nuclear family	84	77.1
Extended family	25	22.9
Place of Residence		
City Center	36	33.0
District	16	14.7
Village	57	52.3
Spouse's Educational Background		
Illiterate	8	7.3
Literate	7	6.4
Primary education	61	56.0
Secondary education	30	27.5
University or higher	3	2.8
Spouse's Employment Status		
Employed	100	91.7
Unemployed	9	8.3
Total	109	100.0

The mean age of the pregnant women was 29.8 ± 6.1 , with a mean week of gestation of 34.8 ± 3.1 , a mean number of pregnancies of 5.2 ± 2.6 , and a mean number of living children of 3.2 ± 2.0 (Table 2).

8.3% of pregnant women have at least one chronic disease. The pregnancy of 27.5% was unplanned or unintentional, whereas 2.8% received special treatment for pregnancy. 27.5% of the pregnant women had at least one health problem during their pregnancy, 48.6% applied 2-8 times to a health institution for pregnancy follow-up. 10.1% of pregnant women do not receive support from their spouses during their pregnancy. Again, 71.6% of the pregnant women knew the gender of the baby, and the known gender was contrary to the expectations of 8.3% women. 83.5% of the pregnant women did not receive any childbirth preparation education or counseling while 38.5% did not make any preparations for the birth and the baby.

27.5% of the pregnant women planned to have a normal delivery, 32.7% experienced a previous loss during pregnancy, 6.4% had a problem during their previous delivery. Again, 61.5% of the pregnant women perceived the previous birth experience as difficult and 6.4% had at least one disability or anomaly in their living children.

The mean prenatal attachment score of the pregnant women was

44.4 ± 10.3 . The mean perception of traumatic childbirth score was 49.0 ± 28.0 , revealing a “low” traumatic birth perception (Table 3).

Pregnant women's prenatal attachment levels were found similar regarding the following variables: participant's and her spouse's employment status, most spoken language at home, place of residence, social security, family type, history of chronic illness, planned/voluntary pregnancy, treatment/intervention for pregnancy, baby's gender, desired gender by the family, health problems during pregnancy, childbirth preparation education or counseling, planned type of delivery, perception about the previous birth experience and its termination, presence of previous birth complications and children with disabilities or anomalies, while no statistically significant difference was between them ($p > 0.05$).

A moderately negative relationship ($Rho: -, 282 p < 0.05$) was found between prenatal attachment and the number of living children, while a weakly positive relationship ($Rho: ., 207 p > 0.05$) was found with the number of prenatal follow up. No statistically significant correlation was found between prenatal attachment score and age, education status (participant/spouse), perceived economic status, number of pregnancies, gestational week, and perception of traumatic birth ($p > 0.05$) (Table 4).

Table 2. Characteristics of Age, Pregnancy, and the Number of Living Children of Pregnant Women

Characteristics	Mean $\pm$ SD	Median (min-max)
Age	29.8 ± 6.1	30 (18-42)
Gestational week	34.8 ± 3.1	36 (27-40)
Number of pregnancies	5.2 ± 2.6	5 (1-13)
Number of living children	3.2 ± 2.0	3 (0-9)

Table 3. Characteristics of Prenatal Attachment Inventory and Traumatic Childbirth Perception Scale of Pregnant Women

Characteristics	Mean $\pm$ SD	Median (min-max)
Prenatal Attachment Inventory	44.4 ± 10.3	44 (26-78)
Traumatic Childbirth Perception Scale	49.0 ± 28.0	47 (0-130)

Table 4. Correlation between Prenatal Attachment Inventory Score and Some Variables

Variables	N	Rho	p
Number of Living Children	109	-.282	.003
Prenatal Care Check-ups	109	.207	.030

Discussion

It was determined that most of the pregnant women in the study group had a low education level, were unemployed, and lived in rural areas. In terms of key indicators, the results of the study are in line with the data of the Turkey Demographic Health Survey (2018) for the Southeastern Anatolia Region, where Sanliurfa is located. [26]. It is necessary to improve education and socio-economic levels in order to maintain public wellness and increase health care awareness. In addition, considering that the place of residence is an important factor affecting the access and use of health services, it can be said that the

researched population is a disadvantaged group in this respect.

The mean prenatal attachment score was determined to be 44.4 ± 10.3 . Compared with the literature, it is considerably lower than the mean prenatal attachment scores in many studies [25,27-31]. Pregnancy is a process in which great physical and psychological changes occur. The attachment between mother and fetus, an element of this process, is very important as it is thought to form the basis of the child's attachment in the future [32]. Impaired attachment can negatively affect the child's emotional, cognitive, and behavioral long-term development [2,3,4]. In this respect, it can be said that the women in the study group are in the risky group.

Many factors related to prenatal attachment have been reported in the literature, one of the most frequently discussed being socio-demographic factors. Age, education level, and economic status are stated to have an impact on the prenatal attachment [7,33,34]. However, this study, contrary to the literature, revealed no correlation between age, education and economic level, and prenatal attachment score. This was attributed to the low educational level and similar socio-economic levels among the majority of the pregnant women in the study group.

In the study, a moderately negative relationship was found between prenatal attachment and the number of living children. The prenatal attachment scores decreased with the increasing number of children. These results were found consistent with many studies in the literature, [7,25,30] however, they were not actually expected for the study area as Sanliurfa, where the research was conducted is a province that exhibits traditional eastern culture. Having children is of great importance in this culture. Women want to have a child shortly after marriage because they do not want to be alienated by her husband and his family if they do not have children. This is why the city has the highest fertility rate in Turkey [23]. The study also showed that the total number of pregnancies and living children is higher than Turkey's average [26] in Sanliurfa. Given this, prenatal attachment of women is actually expected to increase in line with the number of children. However, the result of the study has shown the opposite, which suggests that women want to have children for cultural and social reasons.

In the present study, a weak positive correlation was found between the number of prenatal follow up and prenatal attachment. The prenatal attachment scores increase with the increasing number of prenatal follow up. Available studies demonstrate that women who receive correct and adequate prenatal care can accept pregnancy in a shorter time and adapt to the maternal role more easily [35,36]. Therefore, the increase in prenatal attachment scores with the increasing number of prenatal follow up comes as no surprise in this study. In addition, it is significant in terms of revealing the importance of antenatal follow-up once again.

While childbirth is a satisfying and rewarding experience for the vast majority of women, it can be a traumatic experience for some. It has been shown in the literature that the quality of childbirth experience is associated with the quality of both prenatal and postnatal attachment. Studies show that difficult or traumatic childbirth experience may cause difficulty in connecting emotionally with the newborn [37,38] and impair the development of a positive maternal postnatal attachment [38], which may negatively affect early interactions between mother and newborn [39]. Based on these data, the relationship between traumatic birth perception and prenatal attachment was investigated but no statistically significant relationship was detected. This result may be due to the low levels of traumatic birth perception of pregnant women in the study group.

Limitations of the study: The research represents those who applied to the hospital in question. The data were collected according to the statements of the women who participated in the research. In the hospital where the study was conducted, Arab and Kurdish women who cannot speak Turkish also receive service. Although the number of people who did not participate due to language

problems is low, this can be viewed as a limitation.

Conclusion and Recommendations

In the study, it was determined that prenatal attachment of pregnant women was not at the desired level and prenatal attachment decreased as the number of children increased, while prenatal attachment increased with the increasing number of prenatal follow up. These results show that antenatal follow-ups are effective in the development and enhancement of prenatal attachment. It is recommended that health professionals providing primary care health services, midwives, and nurses in particular, carefully evaluate the prenatal attachment of pregnant women and associated factors during antenatal care, develop positive health behaviors that will enhance attachment, and provide training and counseling services.

Conflict of interests

The authors declare that they have no competing interests.

Financial Disclosure

All authors declare no financial support.

Ethical approval

The local ethical committee approved our study protocol numbered 104, dated October 2, 2020.

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