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The Relationship with Prenatal Attachment of Psychosocial Health Status of Pregnant Women

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Abstract

Purpose: The study examines the relationship between psychosocial health status of pregnant women and prenatal attachment and the factors influencing it.
Methods: The study was conducted as descriptive and correlation. The study was carried out with 305 pregnant women in the study and met the inclusion criteria. The data were collected by using the personal information form, the Pregnancy Psychosocial Health Assessment Scale and Preatal Attachment Inventory. The data were assessed by using descriptive statistics, Reliability test, t-test, One- Way Analysis of Variance, Kruskall Wallis, Mann Whitney-U and Pearson Correlation Analysis.
Results: Pregnant woman's and her husband's education status, duration of marriage, number of pregnancies, number of living children, abortion history, status of go to regular control, status of pregnant woman and husband to intent the pregnancy, number of still birth sand gender of infant affected the level of prenatal attachment. It was determined statistically significant positive correlation between psychosocial health status psychosocial health status of pregnant women and prenatal attachment. Conclusion:Psychosocialhealth of pregnantwomen, as thelevelincreases, it is foundthatthelevel of prenatal attachment is alsoincreased.

Keywords:midwives, pregnantwomen, prenatal attachment, psychosocialhealth,theprocess of pregnancy.

Introduction

A socially complete well-being, in other words not having any problem in social life is defined as psycho-social health (Kesgin & Topuzoğlu, 2006). The source of psycho-social reactions during pregnancy constitutes the presence of foetus, physiological changes and differences occurring within the family and social life (Da Costa, Larouche, Dritsa, & Brender, 1999; Nelson, 2003; Babacan Gümüş, Çevik, Hataf Hyusni, Biçen, Keskin, & Tuna Malak,2011). It has been reported that mental and emotional life of the pregnant woman may affect the course of pregnancy, and additionally pregnancy is effective upon psychological and emotional life as well (Kuğu & Akyüz, 2001; Matthey, 2005; Babacan Gümüş, Çevik, Hataf Hyusni, Biçen, Keskin, & Tuna Malak, 2011). Therefore, pregnancy is related to important physiological and psychological changes that may affect prenatal attachment (Eswi, & Khali, 2012).

Background

The term of prenatal attachment is used to define the emotional bond established between the mother and her infant during pregnancy which takes place in emotional, cognitive and behavioural aspects (Salisbury, Law, LaGasse, & Lester,2003;McFarland, Salisbury, Battle, Hawes, Halloran, & Lester, 2011). Prenatal attachment initiates when a positive reaction is given to pregnancy.

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A pregnant woman with a high prenatal attachment level believes to have established a bond with her unborn baby and considers the foetus a separate individual. She is also aware that the foetus is dependent on her on matters such as feeding and protection. She thinks about what the baby will look like, how it will move and what kind of a development it will show during their lifetime. The affections related to attachment help the pregnant woman show more affection, compassion, and love to her baby, protect, feed and pay attention to the baby, interact with the baby and be sensitive to the needs of the foetus (Ryan, 2010;Duyan, Kapısız, & Yakut, 2013). Biological adaptation and psycho-social changes during the phases of pregnancy and birth may lead to psychological disorders such as depression (Danaci, Dinç, Deveci, Şen, & İçelli, 2002;Hergüner, Çiçek, Annagur, Hergüner, & Ors, 2014). Depressive symptoms such as irritability, sorrow, and the feeling of unworthiness may interrupt the pregnant woman's relationship with the foetus (Lindgren, 2001). In pregnancy follow-ups, typically biological and physiological changes of pregnancy are focused and pregnancy's psychological aspect is excluded from the areas of interest and following as long as a certain disorder does not develop (Kuğu, &Akyüz, 2001). The American Congress of Obstetricians and Gynecologists (ACOG) defines psychosocial factors as non-biomedical factors that affect mental and physical well-being. ACOG recommends that psycho-social screening should be performed at least once in every trimester in order to reduce the consequences of unintended pregnancies and increase the possibility of identifying significant problems (Cunnigham, Leveno, Bloom, Houth, Rouse, & Spong, 2010).

The pregnant woman and the foetus are affected as a result of psycho-social problems affecting the pregnant woman's mental health negatively during pregnancy. As a result, the mother's and newborn's health in the postnatal period and therefore family and community health are affected (Yıldız, 2011). Although there is a hypothesis that the mental state and prenatal attachment during pregnancy are important in terms of the mother's and infant's health; when the correlation between them is analysed, it is stated that there are very few studies conducted on this matter until recently and findings are inconsistent (Hart, &McMahon, 2006;McFarland, Salisbury, Battle, Hawes, Halloran, & Lester, 2011;Walsh, Hepper, Bagge, Wadephul, & Jomeen, 2013). It is important to make appropriate interventions to identify pregnant woman who carry the risk of insufficient attachment in pregnancy and prepare the woman for motherhood. However, although it has been reported that some interventions help increase mother-infant attachment during pregnancy, there are numerous aspects that need to be enlightened in terms of what factors help increase attachment and what factors prevent attachment (Yılmaz, 2013). The number of studies analysing the correlation between pregnant women' psycho-social health conditions and prenatal attachment is very limited (Bouchard, 2011;Abasi, Tafazzoli, Esmaily, & Hasanabadi, 2013).

Materials and Methods:

Studydesign

Thestudywasconducted as descriptiveandcorrelational.

Research questions

- What is the psycho-social health level of pregnant women?
- What is the prenatal attachment level of pregnant women?
- Are socio-demographic characteristics of pregnant women related to their prenatal attachment levels?
- Is there any difference between the obstetric characteristics of pregnant women and their prenatal attachment levels?
- Are psycho-social health levels of pregnant women related to prenatal attachment?

Participants

The population of the study consisted of the pregnant women who applied to Nene Hatun Maternity Hospital's outpatient clinics between September 2014 and February 2015 and met the study's inclusion criteria. The study's sample calculation was conducted by using G* Power 3.1.5 programme. In the study where the scale mean score was found to be 61.72±10.72 (Yılmaz, & Beji, 2013), effect size was taken as 0.20, α=0.05, and power was taken as 95% and therefore the sample size was calculated as 305 pregnant women. Random sampling method, which is one of the improbable sampling methods, was used for sampling selection.

Pregnant women's inclusion criteria included (Yılmaz, & Beji, 2013) having a pregnancy above 20 weeks, having a healthy fetus, being 18 and over, being psychologically and mentally healthy, having conceived spontaneously, having no chronic diseases and pregnancy-related systematic problems, having no threatened preterm labor and premature rupture of membrane and being at least primary school graduates.

Measures

Personal Information Form prepared by the researcher, Pregnancy Psychosocial Health Assessment Scale, and Prenatal Attachment Inventory were used for the collection of study's data.

Personal Information Form

Personal Information Form was prepared by researchers in line with the literature. The form consisted of questions related to pregnant women' socio-demographic (pregnant women' age, education, place of residence, duration of marriage, employment status, husband's educational and employment statuses, income state perception, family type) and obstetric characteristics (numbers of pregnancies, surviving children, stillbirths and abortus, gender of infant, attending medical controls, status of the pregnant woman and her husband intending the pregnancy).

Pregnancy Psychosocial Health Assessment Scale (PPHAS)

The scale developed by Yıldız (2011) psychosocial health during pregnancy is evaluated as a whole. The scale involves 46 items and 6 subscales. Subgroup indicate whether there are problems in terms of conditions affecting psychosocial health. 13 items in the first subscale of the scale involve "Features regarding the relationship of pregnancy and husband", 8 items in the second subscale "Features regarding anxiety and stress", 7 items in the third subscale "Features regarding domestic violence", 7 items in the fourth subscale "Features regarding the need for a psychosocial support", 4 items in the fifth subscale "Family features" and 6 items in the sixth subscale involve "Features regarding pregnancy-related physical-psychosocial changes".

PPHAS is a 5-point likert scale. The scale of 29 items 1=very much, 2=much, 3=moderate, 4=least, 5=never being shaped scored, 17 items in the (1, 2, 3, 5, 6, 8, 16, 17, 18, 19, 20, 31, 32, 33, 34, 35, 42) is coded as 5=very much, 4=much, 3=moderate, 2= least, 1=never. Mean scores of items are determined by dividing the total score obtained from the assessment of the scale into the number of items and the result is between 1 and 5. When the total score diverges from 5 to 1, it signifies a problem in the psychosocial health during pregnancy. 1 point obtained from the scale signifies that the psychosocial health is very bad. The same assessment is also made in the subscales. The Cronbach Alpha reliability coefficient of the PPHAS was determined as 0.93 (Yıldız, 2011).In this study, Cronbach Alpha coefficient was found as 0.86.

Prenatal Attachment Inventory (PAI)

Prenatal Attachment Inventory was developed by Mary Muller in 1993 (Muller, 1993). It was adapted toTurkish by Dereli Yılmaz and Beji in 2009 (Yılmaz, 2010; Yılmaz, & Beji, 2013). This inventory, evaluating prenatal attachment subjectively, includes 21 items. It is a 4-likert typescaledevelopedtodeterminepregnantwomen'sfeelings, thoughts, andconditionsduringpregnancy, andtheirlevels of attachment with the fetus in prenatal period. Whilethelowestscoreto be received from the inventory is 21, thehighestscore is 84. Higherscoresindicatehigher prenatal attachment. Yılmaz and Beji specified the inventory's Cronbach Alpha reliability coefficient as 0.84 (Yılmaz, & Beji, 2013). Inthisstudy, Cronbach Alpha coefficientwasfound as 0.86.

Data collection

The data were collected between 15 September 2014 and 27 February 2015 by using face-to-face interview method. Preliminary application was conducted on 10 pregnant women before initiating the study in order to evaluate the intelligibility of questions in the questionnaire form. It was observed after this application that no change was needed on the data collection form. Preliminary application data were not included in the data of the study. Interviews lasted a total of 30 minutes; 5 minutes of which were allocated for the personal information form and the remaining 25 minutes were allocated for the scales for each pregnant woman.

Independent variables of the study

- Socio-demographic characteristics of pregnant women

- Obstetric characteristics of pregnant women
- Mean score of pregnant women' psychosocial health condition

Dependent variables of the study

- Prenatal attachment mean score

Data analyses

Suitability of the study's data to normal distribution was determined with Lilliefors Kolmogorov-Smirnov test and normal distribution curve, Skewness and Kurtosis tests and it was found that the data demonstrated a normal distribution. Data were evaluated in SPSS 20.0 statistical package programme by using descriptive statistics, Reliability test, t-test, One-way Analysis of Variance, Kruskall Wallis, Mann Whitney-U, and Pearson Correlation Analysis.

Procedure

Permissions were obtained from the presidency of the ethics committee and from the hospital where the study was planned to be conducted. Verbal consents were received after informing participants regarding the purpose of the study before filling in the questionnaires.

Results

When socio-demographic characteristics of the pregnant women were analysed; it was determined that 41.6% were in the age group of 20-24, 35.7% were primary school graduates, 77.0% resided in cities, 32.5% were married for 1 year or less, and 89.5% were unemployed. 37.0% of pregnant women's husbands were found to be high school graduates and 93.4% were employed. It was found that 59.0% of pregnant women had incomes equal to their expenses and 68.2% had nuclear family structures. When obstetric characteristics of the pregnant women were examined; 49.2% were found to have their first pregnancies, 53.4% did not have surviving children, 95.7% did not have stillbirths, and 88.5% did not have miscarriage. 52.5% of the pregnant women were found to have male infants, and 85.2% went to regular follow-ups. 78.0% of pregnant women reported that they wanted and planned their pregnancies; whereas, 83.9% of their husbands wanted and planned the pregnancy. It was found in the study that pregnant women's minimum PAI scores was 25, maximum PAI score was 83 and the total mean score was 56.97±11.58. In PPHAS scores of the pregnant women, minimum score was 2.59, maximum score was 4.85 and the total mean score was 4.15±0.40. According to the PPHAS subscales in the study; pregnancy and relationship with husband subscale mean score was 4.20±0.58, anxiety and stress subscale mean score was 3.77±0.75, domestic violence subscale mean score was 4.53±0.389, psychosocial support need subscale mean score was 3.85±0.67, familial characteristics subscale mean score was 4.40±0.58, and pregnancy-related physical – psychosocial changes subscale mean score was 4.21±0.63 (Table 1).

Table 1.Thelowestandhighestscoresthat can be receivedandarereceivedfromPAI and PPHAS bypregnantwomenanddistribution of meanscores

Scale	TheLowestandHighestScoresTo Be Received	TheLowestandHighestScoresReceived	ReceivedMeanScore X±SS
PAI	21-84	25-83	56.97±11.58
PPHAS	1-5	2.59-4.85	4.15±0.40
Relationship of pregnancyandhusband	1-5	1.46-5.00	4.20±0.58
Anxietyandstress	1-5	1.13-5.00	3.77±0.75
Domesticviolence	1-5	2.75-5.00	4.53±0.39
Needfor a psychosocialsupport	1-5	1.29-5.00	3.85±0.67
Familyfeatures	1-5	1.50-5.00	4.40±0.58
Pregnancy-relatedphysical-psychosocialchanges	1-5	2.00-5.00	4.21±0.63

Prenatal attachment mean score of pregnant women who were primary school graduates was 53.86±11.51 and the mean score of pregnant women who were university graduates was 61.74±10.05, and the difference between

the mean scores was found to be statistically significant (p=0.001, Table 2). The difference between marriage durations and prenatal attachment mean scores was statistically significant (p=0.000, Table 2). Prenatal attachment mean score of pregnant women's husbands who were primary school graduates was 51.38±12.54; whereas the mean score of the husbands who were university graduates was 58.14±11.06, and the difference between the mean scores was statistically significant and the difference was caused by the group of primary school graduates (p=0.001, Table 2). The difference between pregnant women's age group (p=0.265), place of residence (p=0.139), employment status (p=0.147), husband's employment status (p=0.188), income state (p=0.376), family type (p=0.134) characteristics and prenatal attachment mean scores was not statistically significant (Table 2).

Table2. Comparingthesocio-demographiccharacteristics of pregnantwomenwithmeanscores of PAI (N=305).

Socio-demographiccharacteristics	n	%		X±SD	Test and p value
Age group					
19 yearsandbelow	19	6.2		58.21±12.09	KW=3.971
20-24 years	127	41.6		58.14±10.90	p=0.265
25-29 years	86	28.3		56.71±11.71	
30 yearsandabove	73	23.9		54.92±12.34	
Education					
Primaryschool	109	35.7		53.86±11.51	F=5.873
Secondaryschool	88	28.9		57.10±10.65	**p=0.001**
High school	66	21.6		58.89±12.51	
Graduateschool	42	13.8		61.74±10.05	
Place of residence					
Village	34	11.2		53.26±10.19	F=1.987
District	36	11.8		57.14±11.49	p=0.139
Province	235	77.0		57.48±11.72	
Duration of marriage					
1 yearsandbelow	99	32.5		59.29±10.23	F=7.117
2-4 years	88	28.9		59.36±11.64	**p=0.000**
5-9 years	63	20.6		52.89±12.56	
10 yearsandabove	55	18.0		53.64±10.74	
Workingcondition					
Employed	32	10.5		59.78±11.80	t=1.454
Unemployed	273	89.5		56.64±11.53	p=0.147
Education of husband					
Primaryschool	47	15.4		51.38±12.54	F=5.284
Secondaryschool	50	16.4		55.86±11.39	p=0.001
High school	113	37.0		58.81±11.03	
Graduateschool	95	31.2		58.14±11.06	
Workingcondition of husband					
Employed	285	93.4		57.20±11.59	Z=-1.317
Unemployed	20	6.6		53.75±11.17	p=0.188
Perception of incomestatus					
Lessincomethanexpense	80	26.2		56.18±10.22	F=0.980
Equalincomeandexpense	180	59.0		56.79±12.45	p=0.376
Moreincomethanexpense	45	14.8		59.11±10.10	
FamilyType					
NuclearFamily	208	68.2		57.65±11.32	t=1.502
ExtendedFamily	97	31.8		55.52±12.04	p=0.134

Prenatal attachment mean score of pregnant women who had one pregnancy was 60.42±10.42, the mean score of pregnant women who had four or more pregnancies was 48.35±9.85, and the difference between the mean scores was statistically significant (p=0.000, Table 3).

The difference between the mean scores of groups in which women had three pregnancies and four or more pregnancies was significantly low. The difference between the number of surviving children and prenatal attachment mean score was statistically significant (p=0.000, Table 3). The difference was found to be arising from the group of women who had no surviving children. The prenatal attachment mean score of pregnant women who did not have

any stillbirths was 57.32±11.50, the mean score of pregnant women who had one stillbirth was 49.23±10.99 and the difference between the mean scores was statistically significant (p=0.013, Table 3). Prenatal attachment mean score of pregnant women who did not have any abortus history was 57.86±11.18, prenatal attachment mean score of women who had abortus history was 50.11±12.44 and the difference between the mean scores was statistically significant (p=0.000, Table 3).

The difference was found to be arising from the group of women who had abortus history. The difference between the prenatal attachment mean scores according to the infant's gender was statistically significant (p=0.002, Table 3). It was found that the difference was arisen from the group of women who did not know the gender of their infants and the mean score was low. Prenatal attachment mean score of pregnant women who regularly went to their medical controls was 58.03±10.87, the mean score of those who did not regularly go to controls was 50.82±13.61 and the difference between the mean scores was statistically significant (p=0.000, Table 3). The difference between state of the pregnant woman and her husband to want the pregnancy (p=0.000, Table 3) and prenatal attachment mean scores was statistically significant. In the advanced analysis, the difference was arisen from the group who wanted and planned the pregnancy.

Table3. Comparingtheobstetricalcharacteristics of pregnantwomenwithmeanscoresof PAI (N=305).

Obstetricalcharacteristics	n	%	X±SS	Test and p value
Number of pregnancies				
1	150	49.2	60.42±10.42	
2	67	22.0	57.76±10.89	F=16.573
3	54	17.7	51.83±12.11	**p=0.000**
4 andabove	34	11.1	48.35±9.85	
Number of childrenliving				
Not	163	53.4	60.06±10.47	
1	70	23.0	55.33±12.48	KW=29.426
2	57	18.7	52.42±11.50	**p=0.000**
3	15	4.9	48.40±7.65	
Number of Stillbirths				
No	292	95.7	57.32±11.50	Z=-2.494
1	13	4.3	49.23±10.99	**p=0.013**
Number of abortions				
No	270	88.5	57.86±11.18	t=3.805
Yes	35	11.5	50.11±12.44	**p=0.000**
Gender of Infant				
Female	126	41.3	56.00±11.77	KW=12.953
Male	160	52.5	58.79±10.79	p=0.002
Do not know	19	6.2	48.11±12.41	
Status of gotoregularcontrol				
Yes	260	85.2	58.03±10.87	t=3.950
No	45	14.8	50.82±13.61	**p=0.000**
State of intendingthepregnancy				
I wasintendingandplanningthepregnancy	238	78.0	59.29±10.59	
I wasintendingthepregnancy, but foranother time in thefuture	34	11.2	51.32±11.64	KW=43.708 **p=0.000**
I wasintendingthepregnancyneitherforthepresent time northefuture	8	2.6	47.50±8.78	
I was not intendingthepregnancy; but, when I conceived, I accepted it	25	8.2	45.64±10.94	
State of thehusbandtointendthepregnancy				
He wanted me toconceiveandplannedthepregnancy	256	83.9	58.63±11.06	
He wanted me toconceive, but foranother time in thefuture	18	5.9	49.94±9.64	KW=33.422 **p=0.000**
He wanted me toconceiveneitherforthepresent time northefuture	5	1.7	54.20±10.13	
He did not want me toconceive; but when I did, he accepted it	26	8.5	46.08±10.64	

A positive significant correlation was determined between PPHAS and PAI mean scores. When the correlation between PPHAS subscale mean scores and PAI mean scores was analysed; a positive significant correlation was found between pregnancy and relationship with the husband (p=0.000), anxiety and stress (p=0.001), domestic violence (p=0.040), psychosocial support need (p=0.015), familial characteristics (p=0.000) mean scores and PAI mean scores (Table 4). The difference between the pregnancy-related physical-psychosocial changes subscale and PAI mean score was not statistically significant (p=0.939, Table 4).

Table4. Therelationshipbetweenmeanscoreof PPHAS andmeanscoreof PAI.

Scales		PAI
PPHAS	**r** **p**	0.307** 0.000
Relationship of pregnancyandhusband	**r** **p**	0.380** 0.000
Anxietyandstress	**r** **p**	0.193** 0.001
Domesticviolence	**r** **p**	0.117* 0.040
Needfor a psychosocialsupport	**r** **p**	0.139* 0.015
Familyfeatures	**r** **p**	0.296** 0.000
Pregnancy-relatedphysical-psychosocialchanges	**r** **p**	-0.004 0.939

Discussion and Conclusion

In response to the research question, "What is the prenatal attachment level of pregnant women?", pregnant women's prenatal attachment levels were found to be moderate. The results of the studies conducted by Yılmaz and Beji (2010) and Metin (2014) were compatible with the result of this study. The fact that the psychosocial health of pregnant women in the study was found to be on a good level was found as the research question, "What is the psychosocial health level of pregnant women?". In their studies, Uçar (2014) and Keskin (2014) specified that the psychosocial health of pregnant women was at good/very good levels.

Pregnant women's anxiety and stress subscale and psychosocial support need subscale were at a medium level. In his study, Uçar (2014) reported that anxiety and stress subscales were at a medium level. The study results were similar. However, in a study conducted by Yıldız (2011), it was stated that distinct problems are experienced particularly in terms of anxiety and stress subscales and the psychosocial health of pregnant women at total was at a medium level. This difference may have arisen from the locations that the studies were conducted and participants' characteristics. That is to say; the study of Yıldız (2011) was conducted in health centres and the educational levels of pregnant women were mostly primary schools, whereas this study was conducted in a maternity hospital and pregnant women were mostly high school and university graduates, which may have cause the difference.

As the age of pregnancy increased, prenatal attachment mean score reduced; however, no statistically significant difference was found. In such a way to support the study's result, there are studies indicating that there is no significant correlation between prenatal attachment during pregnancy and mother's age (Abasi, Tahmasebi, Zafari, & Nasiri Takami, 2012; Metin, 2014).

Ustunsoz et al., (2010) stated that mother-infant attachment reduced as the age of pregnancy increased; whereas, Lindgren (2001) reported that pregnant women in younger age group had higher prenatal attachment levels than pregnant women in older age group, Rubertsson et al., (2014) reported that a low level of attachment was observed among women older than the age of 25.

The difference between pregnant women's educational levels and prenatal attachment mean scores was found to be statistically significant. Ustunsoz et al., (2010) specified a positive correlation between education and prenatal attachment, and Kwon and Bang (2011) stated that women with lower educational levels had lower prenatal attachment levels.

This result makes us think that people with higher educational level are likely to be in the employed group, determine their priorities in terms of planning their lives and are highly prepared for the decision of being parents.

The difference between pregnant women's durations of marriage and their prenatal attachment mean scores was found to be statistically significant. In his study, Metin (2014) specified a significant correlation between the duration of marriage and prenatal attachment. According to the result of this study; as age and duration of marriage increased, prenatal attachment decreased. Although there was no significant difference, prenatal attachment mean score of employed pregnant women was higher than the prenatal attachment mean scores of unemployed pregnant women. In addition, prenatal attachment mean scores of women whose husbands were unemployed were found to be low. This result indicates that individuals' employment statuses may affect the care received by pregnant women and reinforce prenatal attachment.

The difference between husbands' education and prenatal attachment mean scores was also statistically significant. Prenatal attachment levels of pregnant women and husbands with high educational levels were high. Higher educational levels ensure that both the pregnant woman and her husband are more knowledgeable about pregnancy. Therefore, the husband may support the pregnant woman receive better care and consequently make contribution to development of prenatal attachment. Pregnant women's income statuses were not found to be affecting prenatal attachment and be statistically significant. Similar studies have reported no correlation between mother-infant attachment and income status during pregnancy (Lindgren, 2001; Yılmaz,& Beji, 2010;Abasi, Tahmasebi, Zafari, & Nasiri Takami, 2012). The difference between family structure and pregnant women's prenatal attachment mean scores was not statistically significant. Similarly, Yılmaz and Beji (2010) and Metin (2014) reported that family structure was not an effective factor on mother-infant attachment. These results make us think that the number of individuals living inside the house is not an effective factor in mother-infant attachment. In response to the question, "Are socio-demographic characteristics of pregnant women related to their prenatal attachment levels?"; educational status, duration of marriage, and husband's educational status were found to be affecting prenatal attachment levels. However; characteristics of age, place of residence, employment statuses of the pregnant woman and her husband, income state perception and family type did not affect prenatal attachment levels.

The difference between the number of pregnancies, number of surviving children and prenatal attachment mean scores was found to be statistically significant. As supporting the study's result, Rubertsson et al., (2014) reported that low attachment levels are observed in multipara pregnant women, Ustunsoz et al., (2010) stated a negative correlation between the number of births and prenatal attachment, Abasi et al., (2012) reported that multipara women who gave birth for more than three times had low prenatal attachment levels. This makes us think that prenatal attachment is closely related to the fact if the pregnant woman is ready for motherhood and wants to have children. It was determined that there was a statistically significant correlation between pregnant women's prenatal attachment mean scores, and the number of stillbirths and abortus, and the pregnant women who had stillbirth and abortus history have lower prenatal attachment mean scores. Alhusen (2008) reported that as the loss of foetus in previous pregnancies is a sorrowful experience, it may lead to fear of losing in subsequent pregnancies and may reduce prenatal attachment level. A statistically significant was found between the pregnant women's prenatal attachment mean scores and the infant's gender. This result indicated that knowing the gender of the infant had an increasing effect on prenatal attachment for the pregnant woman. State of the pregnant women to go to their regular medical controls was also reported to affect prenatal attachment mean score. Alhusen (2008) reported that health practices such as receiving prenatal care, eating a healthy diet and exercising regularly were related to high levels of prenatal attachment. Results were in parallel.

The difference between state of the pregnant woman and her husband to want the pregnancy and prenatal attachment mean scores was found to be statistically significant. Pregnant women who had planned pregnancies had higher prenatal attachment levels according to unplanned pregnancies (Laxton-Kane, &Slade, 2002; Ustunsoz, Guvenc, Akyuz, & Oflaz, 2010; Yılmaz, &Beji, 2010;Abasi, Tahmasebi, Zafari, & Nasiri Takami, 2012). Planned and wanted pregnancies increased couples' prenatal attachment levels.

Correlations of the number of pregnancies, number of surviving children, number of stillbirths, number of abortus, infant's gender, going to regular medical controls and association of state of the pregnant woman and her husband to want the pregnancy with prenatal attachment levels replied to the question "Are there any difference between the obstetric characteristics of pregnant women and their prenatal attachment levels?". A positive significant

correlation was found between pregnant women's psychosocial health mean scores and their prenatal attachment mean scores.

As long as psychosocial health condition is high in pregnancy, prenatal attachment level may increase, as well. Flykt et al., (2010) reported that prenatal depression had a negative effect on the attachment between the mother and the infant, Walsh et al., (2014) reported that the most important determinant of prenatal attachment is mental health, Lindgren (2001) reported that attachment reduced in prenatal period when depression levels went higher, Berlin et al., (2013) reported that there was a significant correlation between the hostile behaviours exhibited by pregnant women against their infants and their mental health problems and social isolation, Abasi et al., (2012) reported that mothers with high anxiety and depression levels had lower mother-infant attachment levels, and McFarland et al., (2011) reported that clinical diagnosis of major depressive disorders in second and third trimesters and low levels of mother-infant attachment were considerably related.

A positive correlation was found between pregnant women's pregnancy and relationship with husband subscale and prenatal attachment. Abasi et al., (2012) indicated that there was a positive correlation between the marital relation and prenatal attachment. Marital adjustment was seen to have a positive effect on prenatal attachment. A positive significant correlation was found between anxiety and stress subscale and prenatal attachment mean scores. Foetal loss experienced in previous pregnancies is considered a sorrowful incident for the woman and it may lead to fear of loss in subsequent pregnancies (Alhusen, 2008). Abasi et al., (2013) indicated that high levels of prenatal attachment were related to less anxiety, stress and depression, therefore better female mental health. Particularly the fear of loss experienced in abortus and abortion incidents may be thought to reduce the prenatal attachment level for subsequent pregnancies.

A significant correlation was found between domestic violence subscale and prenatal attachment mean scores. Studies have reported that pregnant women were exposed to violence during their pregnancies and they mostly experienced emotional/verbal violence (Göğüş, & Yıldız, 2013; Bolu et al., 2015). According to the results of the study, being exposed to violence during pregnancy may be thought to affect prenatal attachment levels negatively. A positive significant correlation was found between psychosocial support need subscale, familial characteristics subscale and prenatal attachment mean score. Hergüner et al., (2014) reported a positive correlation between the perceived social support and prenatal attachment. This showed that pregnancies accepted and supported by husbands and family members may affect prenatal attachment levels positively.

No significant correlation was found between pregnancy-related physical and psychosocial changes and prenatal attachment mean score. This result makes us think that the changes occurring during pregnancy were taken normally by pregnant women. In response to the question, "Are psycho-social health levels of pregnant women related to prenatal attachment?", a positive significant correlation was found between pregnant women's psychosocial health mean score and prenatal attachment mean score.A positive significant correlation was found between pregnant women's psychosocial health condition and prenatal attachment levels. In addition to pregnant women's physical examinations, their psychosocial health conditions should also be included in routine examinations. Pregnant women should be examined by the use of assessment instruments within the scope of prenatal care services and those carrying risks should be identified. Pregnant women with bad psychosocial health should receive professional support and their prenatal attachment levels should be evaluated during their pregnancies. Experimental studies analysing the attachment levels of pregnant women with psychosocial health risks in their late pregnancy periods could be recommended.

Limitations of this study

The use of improbable sampling method in collecting the study's data is the limitation of this study. Therefore, the study's results could be generalized to the pregnant women within the scope of the study.

Implications for practice

Although there is a hypothesis that the psycho-social health and prenatal attachment during pregnancy are important in terms of the mother's and infant's health, there are very few studies conducted on this matter and findings are inconsistent. There are many aspects that need to be enlightened in terms of determining which conditions increase prenatal attachment and which conditions prevent prenatal attachment. It was determined statistically significant positive correlation between psychosocial health status of pregnant women and prenatal attachment.

Psycho social health of pregnant women, as the level increases, it is found that the level of prenatal attachment is also increased. Study results show that both physical and psychosocial examinations of pregnant women coming to medical centres for prenatal care are important. According to these results, it should ensured during the practice that;

- o Psychosocial medical screenings are performed in pregnancy period,
- o Pregnant women are closely followed by the use of assessment instruments within the scope of prenatal care services and those carrying risks should be determined,
- o Pregnant women with bad psychosocial health receive professional support in order to increase mother-infant interaction.

Skills intended to increase qualifications of providing care could be gained by including the concepts of psychosocial health and prenatal attachment in the subjects of pregnancy and women's health in undergraduate and graduate educations.

Conflict of interest

No potential conflict of interest was reported by the authors.

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