TJFM&PC Turkish Journal of Family Medicine and Primary Care

Original Research / Özgün Araştırma

Relation Between the Characteristics of the Mother, The Gestation and The Prenatal Attachment

Anne Özellikleri, Gebelik ve Doğum Öncesi Bağlanma Arasındaki İlişki

Satı GÜL KAPISIZ[1*], *Esra ÇALIK VAR*[2], *Veli DUYAN*[3]

ABSTRACT

Introduction: Pregnancy is one of the most important periods in which psycho-physiological changes occur in a woman's life. There are significant interactions between the age of mother, years of marriage, the number of pregnancies, the number of alive children, gestational week, the education level of the mother, the foetus gender, the status of planned pregnancy, and the thoughts of pregnancy termination. The aim of the study is to explore the relationship between socio-demographic, family, pregnancy determinants, and prenatal attachment. **Method:** This study examines the mother-foetus relations on 295 expectant mothers in Turkey. The Prenatal Attachment Inventory (PAI) was used as a data collecting instrument. The results are discussed on the matter of prenatal attachment, infant abandonment and other variables. **Results:** According to the results, age of mother, years of marriage, the number of pregnancies, and the number of alive children are correlated negatively with PAI points. Moreover gestational weeks are positively correlated with PAI points. Other results of the study display significant differences among the education level of the mother, the foetus gender, the status of planned pregnancy, and the thoughts of pregnancy termination. However, there are no significant differences between PAI points and employment status, income levels, social security status, type of family, type of marriage, miscarriage, curettage, and medical assisted pregnancy. **Discussion:** Low level of prenatal attachment may cause a high risk of abandonment/the termination of pregnancy. Therefore, the results of the study may be useful for professionals who want to develop proactive parental education programs to assist couples during and after pregnancy, taking into account the level of prenatal attachment.

Key words: Prenatal attachment, pregnancy, mother–fetus relationship, abandonment

ÖZET

Giriş: Gebelik, bir kadının hayatında psiko-fizyolojik değişikliklerin meydana geldiği en önemli dönemlerden biridir. Annenin yaşı, evlilik yılı, gebelik sayısı, canlı çocuk sayısı, gebelik haftası, annenin eğitim düzeyi, fetüsün cinsiyeti, planlanan hamilelik ve gebeliği sonlandırma düşüncesi arasında önemli etkileşimler vardır. Bu çalışmanın amacı sosyo-demografik, aile, gebelik belirleyicileri ve doğum öncesi bağlanma arasındaki ilişkiyi araştırmaktır. **Yöntem:** Bu çalışmada Türkiye'deki 295 anne adayının anne-fetus ilişkileri incelenmiştir. Veri toplama aracı olarak Prenatal Bağlanma Envanteri (PAI) kullanılmıştır. Sonuçlar doğum öncesi bağlanma, bebek bırakma ve diğer değişkenler üzerine tartışılmaktadır. **Bulgular:** Sonuçlara göre, annenin yaşı, evlilik yılı, gebelik sayısı ve canlı çocuk sayısı PAI puanları ile negatif korelasyon göstermektedir. Ayrıca gebelik haftası PAI puanları ile pozitif korelasyon göstermektedir. Çalışmanın diğer sonuçları, annenin eğitim düzeyi, fetüsün cinsiyeti, planlanan hamilelik ve hamileliğin sonlandırılması düşüncesi arasındaki önemli farklılıklar göstermektedir. Bununla birlikte, PAI puanları ile çalışma durumu, gelir, sosyal güvenlik durumu, aile tipi, evlilik tipi, düşük yapma, kürtaj ve tedavi gebeliği olup olmadığı arasında anlamlı bir fark yoktur. **Sonuç:** Düşük doğum öncesi bağlanma düzeyi, yüksek terk etme/gebeliği sonlandırma riskine neden olabilir. Bu nedenle çalışmanın sonuçları, doğum öncesi bağlanma düzeyini dikkate alarak, hamilelik sırasında ve doğumdan sonra çiftlere yardımcı olmak için proaktif ebeveyn eğitimi programları geliştirmek isteyen profesyoneller için yararlı olabilir.

Anahtar kelimeler: Doğum öncesi bağlanma, gebelik, anne-fetus ilişkisi, terk etme

Received / Geliş tarihi: 19.05.2020, **Accepted / Kabul tarihi:** 11.10.2020

[1]Ankara City Hospital, Department of Social Work, ANKARA
[2] Yıldırım Beyazıt University, Faculty of Health Sciences, Department of Social Work, ANKARA
[3] Ankara University, Faculty of Health Sciences, Department of Social Work, ANKARA

***Address for Correspondence / Yazışma Adresi:** Ankara City Hospital, Department of Social Work, Üniversiteler Mahallesi 1604. Cadde No: 9 Çankaya / ANKARA-TÜRKİYE.
E-mail: satikapisiz@gmail.com

Kapısız SG, Var CE, Duyan V. Relation Between the Characteristics of the Mother, The Gestation and The Prenatal Attachment. TJFMPC, 2020;14(4): 651-656.

DOI: 10.21763/tjfmpc.739981

INTRODUCTION

The relationship between mother and child has been investigated for a long time; especially Bowlby's attachment theory focused on the child and mother relationship. However, little attention has been given to the prenatal attachment.[1] Studies state that maternal attachment begins during pregnancy.[2] Firstly, Condon tried to describe women's emotions to the foetus.[3] Kennell et al. observed the deep grief of mothers whose children died during or before the birth and they started to study the concept of prenatal attachment.[4] Lastly, Cranley defined prenatal attachment as women's behaviours that represent an affiliation and interactive relation with the foetus and also developed six-dimensional scale for prenatal attachment.[2] Cranley stated that the moment of birth is not the first emotional scene for the mother, she has committed to her child before the birth.[2] Muller defined prenatal attachment unique, affectionate relationship between mother and foetus.[5]

Demonstrating care and commitment to baby, focusing on healthy nurturance, comforting, preparing to meet the baby are specific tasks for prenatal attachment.[6] Researchers have investigated the antecedents and consequences of prenatal attachment. As a result, several factors were found related with prenatal attachment, such as social support, the number of fetuses, using ultrasonic imaging, disorders of the fetus[7], the number of pregnancies[8], feeling the fetus movements, mothers' attachment styles[7], early parenting experiences of mothers, the imagination of the fetus, personality characteristics, risks about the period of the pregnancy, age, education, and socio-economic level.[9]

One of the most important consequences of low prenatal attachment is abandonment. Most of the studies focused on the importance of mother and infant attachment and the first touch after birth to prevent abandonment.[10]

Prenatal attachment is a good predictor of risky behaviours of mothers during pregnancy.[11] Maternal factors can influence the child's physical, intellectual growth.[12] On the other hand, the evidence shows that if there is a negative early bonding process, it may also harm the regulatory functions of the child's brain, engendering maladaptive infant mental health.[13] Furthermore, some researchers have demonstrated that persistence in risky behaviours in pregnancy (smoking, taking drugs, etc.) shows the low level of prenatal attachment and high risk for abandonment and leads to negative results for the fetus.[14]

There is not a clear agreement on the classification and dimension of prenatal attachment, for this reason, there are different measurement tools. Prenatal attachment is described as a multi-dimensional structure named cognitive, emotional, and behavioural components.[15] One of the earliest was the Maternal-Fetal Attachment Scale which assessed the extent to women engage in a variety of behaviours within the five domains that indicate the interaction and affiliation with their fetus.[3] Then Muller developed the PAI that was used in a number of studies and by researchers to measure the concept in one dimension.[5]

The aim of the study is to examine the relationship between socio-demographic and family characteristics which are the age of mother, education level of the mother, years of marriage, style of marriage, the number of pregnancies, planned pregnancy, risk of abandonment, gestational weeks, foetus gender, the idea of pregnancy termination, employment status, income, social insurance secure, type of family, miscarriage, curettage, having a death in childbirth, and prenatal attachment level of 295 pregnant women in Turkey.

METHOD

This study is a descriptive and cross-sectional study patterned in a correlational survey model. The research was carried out on pregnant women who applied to Ankara Doctor Zekai Tahir Burak Women Health Education and Research Hospital for pregnancy examination between November and December 2013. The participants were selected according to the Maximum Diversity Method for purposeful sampling. The Maximum Diversity Method aims to discover and define the main themes that cover many differences related to the event or phenomenon under study.[16] In the research, the data were collected using face to face interview method. Prenatal Attachment Inventory (PAI) was used as a data collection tool. According to the sampling method, pregnant women were selected from different socio-economic status (low, medium, and high). The age of the women ranged from 18 to 43 (median = 28.41 years); gestational week ranged from 2 to 40 weeks; had a high school degree (41.1%); and were non-employed (80.7%). The independent ethics committee of Ankara Doctor Zekai Tahir Burak Women Health and Research Hospital has approved the study with a decision number of 30.

Instruments

PAI and knowledge form were administered to pregnant women. PAI was adapted to Turkish by Duyan, Gül-Kapısız and Yakut.[17] PAI has 21 self-report items. It is a 4-point response scale and takes approximately 5-10 minutes to complete. It has one dimension and It's Cronbach $\alpha = 0.81$.[7] Other one

studies using the PAI achieved an alpha score of 0.85 and higher.[11] Adaption form of PAI has one dimension explaining. Total variability was 34.528% and has 0.78 Cronbach α point.[18]

Data analysis

All data were analysed using SPSS 20. Independent samples t-test was performed to the results obtained with the help of PAI in order to determine whether there were quantitative differences among pregnant women scores and their presence of social insurance, planned pregnancy, employment status, the idea of pregnancy termination, type of marriage, type of family, miscarriage, curettage and treatment of pregnancy. The analysis of variance was conducted to explore the effects of pregnants' income, education level and sex of the foetus, and LSD test was used for Post-hoc comparisons to the mean scores of PSR. Correlation analysis was performed using Pearson's correlation test with the age of mother, the years of marriage, the number of pregnancies, the number of alive children, the gestational weeks. The alpha level of significance was established at 0.05.

Table I. Comparisons between the Characteristics of the Participants and the PAI scores

		N	M	SD	t	P
Planned pregnancy	No	97	62.26	13.01	-2.35	.019*
	Yes	197	65.63	10.76		
Employment status	Yes	55	66.71	11.32	1.55	.120
	No	240	64.01	11.65		
Idea of pregnancy termination	Yes	10	54.60	9.64	2.776	.006*
	No	285	64.86	11.54		
Social insurance	Yes	265	64.68	11.74	-.735	.463
	No	30	63,03	10,57		
Miscarriage	Yes	78	63.04	12.52	1,308	.192
	No	217	65.04	11.26		
Type of marriage	Arranged	116	62.49	11.52	2,425	.16
	Love	179	65.82	11.52		
Type of family	Extended	94	63.87	12.66	-,548	.584
	Nuclear	198	64.67	11.14		
Curettage	Yes	58	63.93	12.90	,424	.672
	No	237	64.65	11.31		

* $p < .05$

Table 2. Result of Variance Analysis

Variable	Source	Sum of Squares	df	MS	F	Sig.
Level of education	Between Groups	1265,43	3	421,81	3.19	.024*
	Within Groups	38406,27	291	131,98		
	Total	39671,70	294			
Income	Between Groups	171,092	2	85,54	0.63	.532
	Within Groups	39500,6	292	135,27		
	Total	39671,70	294			
Sex of fetus	Between Groups	1119,41	2	559,70	4.23	.015*
	Within Groups	38552,29	292	132,02		
	Total	39671,70	294			

* $p < .05$

RESULTS

The results of Independent samples t-test are shown in table 1.

Analysis of variance was conducted to explore the effects of educational levels categorized as primary school, middle school, high school, undergraduate education, income level of pregnant women categorized as low, medium, high and sex of foetus categorized as boy, girl, and unknown. The results of the analysis are shown in table 2.

There was a significant effect of educational level on the points of PAI and LSD test. This indicates that the mean score for the undergraduate degree (M = 69.14, SD = 8.44) was significantly different from the others. Taken together, these results suggest that high levels of education affect points of PAI. Moreover, there was a significant effect of the sex of foetus on the points of PAI. The Pregnant women whose foetus were a boy (M =66.63, SD = 9,53) took higher scores than the others. There were no significant differences between PAI points and income.

A pearson product-moment correlation coefficient was computed to assess the relationship between the age of mother, the years of marriage, the number of pregnancy, the number of alive children. There was a negative correlation among the age of mother (r =-0.150, n = 295, p = 0.010), the years of marriage (r = - .204, n = 295, p = 0.000), the number of pregnancy (r= - 0.152, n = 295, p = 0.009), and PAI points. Overall, there was a positive correlation between the gestational week (r = 0.123, n = 295, p =0.035), and the PAI points

DISCUSSION

The results of this study provide new points and determine the significant factors for discussions on prenatal attachment. According to the results of this study, older mothers had a lower attachment to their fetus as indicated by Laxton-Kane and Slade[18] and Berryman & Windridge.[8] However, Alhusen[14] stated that age was conflicting in the concept of prenatal attachment.

Several studies focused on the gestational weeks as an independent variable for prenatal attachment and found a significant relationship.[8,9-18] In this study, there was a positive correlation between prenatal attachment and increasing of the gestational week. Former researches indicated that prenatal attachment was a developing process and, in this process, mothers' perception of foetal movement adaptation to motherhood was developing positively.

According to one of the results obtained in this study, the number of pregnancies and the number of alive children had a negative correlation on prenatal attachment. Yilmaz and Beji[19] found the same results in Turkey. According to Yilmaz and Beji [19], pregnant women who 35 years old and over, they have lower levels of education, unemployed, having an unplanned pregnancy and multiparous have lower prenatal attachment score.

It is known that fertilization dramatically increases and many women suffer from these problems and they can demonstrate higher

attachment.[14]In this study there were no differences between being pregnant with treatment and prenatal was no significant difference between PAI points and miscarriage.

There were no significant differences among income, occupational status, social insurance, and prenatal attachment. However, Yılmaz and Beji[19] stated that non-occupied pregnancies have the low prenatal attachment. Besides, they also could not find any significant differences between family income, social influences, and prenatal attachment. According to this result, it can be stated that economic status and other economic factors are inefficient attachment to the foetus.

There were significant differences between educational level and prenatal attachment in favor of pregnant having an undergraduate degree. Also, Yilmaz and Biji[19] found that primary school graduate pregnant had lower prenatal attachment points and they stated that less-educated pregnant women choose different coping strategies.

Unplanned pregnancies can be the reason for termination, whereas the unplanned pregnancy cannot explain all terminations such as prenatal abnormalities.[14] As a result of this study, having the idea of pregnancy termination and unplanned pregnancy had significant differences in prenatal attachment. Consequently, the low level of prenatal attachment can be helpful in recognizing the risk of abandonment and making provisions to protect mother and child. On the other hand, Yilmaz and Beji[19] could not find any differences between the idea of termination and prenatal attachment and they discussed the finding as the result of the Turkish law system and adapting to the idea of being a mother after learning she is pregnant.

The type of marriage which is named arranged or love marriage may represent the quality and intimacy of the relationship. The type of marriage had significant differences in favour of love marriage pregnancy because of the relationship quality.

Also, in this study knowing the foetus gender and expecting a boy had a significant effect on prenatal attachment. These differences can be explained in the perspective of childcare traditions of Turkish culture giving boys a higher value than girls and it is perceived that having a boy brings higher social status and acceptance according to the rest of the family.

Strengths and Limitations

This study is important because there are a few studies in Turkey about maternal characteristics affecting prenatal attachment.The study produced significant results, but the following could be mentioned in regard to limitations. One of the limitations of the current study is that the study was a descriptive and cross-sectional study patterned in a correlational survey model. Therefore no cause-effect relationship could be concluded. This study points to the implications for future studies and clinical intervention programs. Also, the relation between abandonment and prenatal attachment can be investigated to make provision and develop social policies.

Conclusion

In light of these results, proficiencies can develop proactive parental training programs by taking into account the level of prenatal attachment, older pregnant women, being married for more than a few years, having a lower level of education, having an unplanned pregnancy and intention on termination to prevent abandonment.

REFERENCES

1.Wu JHL, Eichmann MA. Fetal sex identification and prenatal bonding. Psychological Reports, 1988;63(1):199-202.

2. Cranley MS. Development of a tool for the measurement of maternal attachment during pregnancy. Nursing Research,1981;30(5):281-284.

3. Condon, J. T. The assessment of antenatal emotional attachment: Development of a questionnaire instrument. British Journal of Medical Psychology, 1993; 66: 167-183.

4. Kennell JH, Slyter H, Klaus MH. The mourning response of parents to the death of a newborn infant. New England Journal of Medicine, 1970; 283:344–349.

5.Muller ME. Development of the Prenatal Attachment Inventory. Western Journal of Nursing Research, 1993; 15 (2): 199-215

6. Yarcheski, A., Mahon, N.E., Yarcheski, T.J., Hank, M.M. & Cannella, B.L. A Metaanalytic study of predictors of maternal-fetal attachment. Int Journal of Nursing Studies, 2009; 46(5):708-15.

7. Elkin, N. Gebelerin Prenatal Bağlanma Düzeyleri ve Bunları Etkileyen Faktörler. Sürekli Tıp Eğitimi Dergisi, 2015;24(6):230-237.

8. Berryman J.C, Windridge KC. Pregnancy after 35 and attachment to the fetus. Journal of Reproductive and Infant Psychology, 1996; 14: 133–143.

9. Canella BL. Maternal-Fetal Attachment: An integrative review. Journal of Advanced Nursing, 2005;50:60–68.

10. Lvoff, N. M., Lvoff, V., Klaus, M. H. Effect of the baby-friendly initiative on infant abandonment in a Russian hospital. Archives of Pediatrics& Adolescent Medicine, 2000; 154(5):474-477.

11.Fonagy P, Steele H, Steele M. Maternal representations of attachment during pregnancy predict the organization of infant-mother attachment at one year of age. Child Development, 1991;62, 891–905.

12. Gillibrand R, Lam V, O'Donnell V. Developmental Psychology:300. Pearson, 2013.

13.Patock-Peckham JA, Morgan-Lopez, AA. Direct and mediational links between parental bonds and neglect, antisocial personality, reasons for drinking, alcohol use, and alcohol problems. Journal of Studies On Alcohol And Drugs, 2010;71 (1):95-104.

14. Alhusen JL. A literature update on maternal-fetal attachment. Journal of Obstetric, Gynecologic, & Neonatal Nursing, 2008; 37(3):315-328.

15. Doan H, Zimerman A. Prenatal Attachment: A developmental Model. Int. J. Prenatal and Perinatal Psychology and Medicine, 2008;20 (1-2):20–28.

16. Neuman, L. W. (2014). Social Research Methods: Qualitative And QuantitativeApproaches (Seventh Ed.). Essex: Pearson Education Limited.

17. Duyan V, Kapısız SG and Yakut Hİ. (2013). The Adaptation of Fetal Attachment Inventory to Turkish with a Group of Pregnant Women. The Journal of Gynecology-Obstetrics and Neonatology, 2013;10(39): 1609-1614.

18. Laxton-Kane M, Slade P. The role of maternal attachment in a woman's experience of pregnancy and implications for the process of care. Journal of Reproductive and Infant Psychology, 2002; 20, 253–266.

19. Yılmaz SD, Beji NK. Levels of coping with stres, depression and prenatal attachment and affecting factors of pregnant women. Journal of General Medicine, 2010;20(3):99- 108.