

Father-Baby Attachment Levels and Influencing Factors

Baba-Bebek Bağlanma Düzeyi ve Etkileyen Faktörler

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ABSTRACT

Objective: The aim of the study was to determine father-infant attachment levels and the affecting factors.

Methods: Descriptive study included 118 fathers of infants between the ages of 6-12 months. Data were collected using the Descriptive Information Form and the Paternal-Infant Attachment Scale (PIAS). Descriptive statistics, independent sample t-tests, Mann-Whitney U test, the Kruskal Wallis test, and Backward Stepwise Regression were used.

Results: The PIAS score average of fathers was 75.22. Fathers with social security and good marital relationships had significantly higher PIAS scores. Changed diapers, bathed, and massaged obtained significantly higher attachment scores than those who did not ($p<0.01$), and 10.4 % attachment scores of those who put their baby to sleep increased.

Conclusion: In the current study, the attachment scores of fathers who changed their babies' diapers, put them to sleep, bathe and massage them were higher than those who did not.

Keywords: Father, infant, attachment, parenting, nursing

ÖZ

Amaç: Çalışmanın amacı baba-bebek bağlanma düzeyini ve etkileyen faktörleri belirlemektir.

Yöntem: Bu kesitsel ve tanımlayıcı çalışmaya 6-12 aylık bebeği olan 118 baba dahil edildi. Veriler Tanıtıcı Bilgi Formu ve Baba-Bebek Bağlanma Ölçeği (PIAS) kullanılarak toplanmıştır. Verilerin değerlendirilmesinde tanımlayıcı istatistikler, bağımsız örneklem t testi, Mann-Whitney U testi, Kruskal Wallis testi ve Backward Stepwise Regresyon analizi kullanıldı.

Bulgular: Babaların PIAS puan ortalaması 75.22'dir. Sosyal güvencesi ve evlilik ilişkisi iyi olan babaların PIAS puan ortalamalarının anlamlı olarak daha yüksekti. Bezini değiştiren, uyutan, banyo ve masaj yaptıran babaların bağlanma puanları yaptırmayanlara göre yüksek olduğu bulundu ($p<0.01$) ve bebeğini uyutan babaların %10.4 bağlanma puanlarının arttığı belirlendi.

Sonuç: Bu çalışmada bebeğinin altını değiştiren, uyutan, banyo yaptıran ve masaj yapan babaların bağlanma puanları, yapmayanlara göre daha yüksek bulunmuştur.

Anahtar Kelimeler: Baba, bebek, bağlanma, ebeveynlik, hemşire

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Introduction

From the moment the baby is born, it needs the care of its parents longer than the offspring of other creatures to survive. This inevitable situation is explained by the need for attachment. Attachment is simply defined as the feeling and maintenance of closeness to another person and reflects the cognitive, emotional, and behavioral interaction between the caregiver and her offspring. Parent-child interaction is the cornerstone of attachment. Attachment is based on secure parent-infant interaction as the infant signals its needs and the caregiver responds accordingly (De Wolff and Van Ijzendoorn, 1997; Güleç and Kavlak, 2015).

Since the 1970s, there has been a growing belief that parents have significant, complex, and multidimensional functions in their children's development. Attachment affects the physical, social and mental health of individuals and this effect continues throughout life. (Brown and Whiteside, 2007; Güleç and Kavlak, 2013; Lamb, 2002). In the attachment development process, the baby is in the pre-attachment stage during the 8-12 weeks following the birth, and the baby is activated by the parents' warnings. The baby reacts to the individuals around him/her, but its ability to distinguish individuals is not yet fully developed. In the second period, attachment begins to form, and the first symptoms are seen. This period covers the 2nd or 3rd month and the 6th month, and the baby distinguishes its parents from other people and directs his attention more to the mother. The third period is the period between 6-24 months when attachment behavior is fully observed. The young child feels close to the person to whom s/he is attached and reacts in the absence of her/him. There is tension and restlessness in the absence of the attached parents, and a sense of comfort in their presence. The main function of attachment is to protect the individual from dangers (De Wolff and Van Ijzendoorn, 1997; Kesebir et al., 2011). In infancy, which is the first basic part of life, inadequacies, or disruptions in relationships with parents negatively affect attachment. Even if the attachment in this period is not stable, it hardly changes after it is established as secure or insecure. In this case, an inadequate or impaired attachment or the continuation of the causative factors adversely affect the next developmental steps (Dansby et al., 2020; Kesebir et al., 2011; Lahousen et al., 2019).

Although most studies have focused on the developmental outcomes of infant-mother attachment, recent studies show that secure father-

infant attachment also has positive developmental outcomes (Lahousen et al., 2019; Lewis and Lamb, 2003; Newland et al., 2010; Ramchandani et al., 2013). There are studies on the effect of father-infant attachment on the child's mental, physical and social development. (Dansby et al., 2020; Lahousen et al., 2019; Newland et al., 2010; Ramchandani et al., 2013; Im and Vanderweele, 2018). Secure father-baby attachment is extremely effective, especially in cognitive development (Cabrera et al., 2011; Dansby et al., 2020; Lahousen et al., 2019; Im and Vanderweele, 2018). It is known that individuals with secure father-infant attachment are more positive, more independent, and more investigative (Dansby et al., 2020; Newland et al., 2010; Ramchandani et al., 2013; Im and Vanderweele, 2018).

Although studies are mostly focused on mother-infant attachment, interest in father-infant attachment studies has increased in recent years. Studies on this subject have revealed many factors effective in father-infant attachment. One of the significant determinants of father-infant attachment is the communication style between mother and father. Marriage perceptions of spouses and the satisfaction they receive affect father-infant attachment positively or negatively (Carlson et al., 2011). In addition, planned pregnancy, infant's health status, father's participation in the care of the baby, playing games, spending time, father's mental well-being, economic status, and perceived social support are among the factors affecting attachment (Cabrera et al., 2011; Freeman et al., 2010; Fuertes et al., 2016; Karakaş and Dağlı, 2019; Newland et al., 2010; Wilson and Durbin, 2010; Wynter et al., 2016; Ruiz et al., 2018.). A study conducted in Türkiye on the subject, father's age and number of children were reported as other factors affecting the level of attachment (Kartal and Erişen, 2020). In another study on this subject, it was found that fathers who spend more than 5 hours with their children and have a pleasant time have higher levels of attachment (Dinç and Balçı, 2021).

Nurses are key health professionals in initiating and maintaining the attachment process through a conscious nursing approach to father and baby before, during, and after birth. Babies who are securely attached to both parents have much higher levels of competence than babies who are securely attached to a single parent. Existing studies on father-infant bonding have mostly been conducted in western societies. Existing studies suggest studies on father-infant attachment in different cultures.

(Cabrera et al., 2011; Freeman et al., 2010; Fuertes et al., 2016; Karakaş and Dağlı, 2019; Newland et al., 2010; Ruiz et al., 2018; Wilson and Durbin, 2010). Researchers aimed to determine father-baby attachment and the factors affecting it and to contribute to the literature in this field.

Methods

Study Design

The research was carried out in the well-child polyclinic of a university hospital located in a province in the north-east of Türkiye. The study was carried out in an cross-sectional and descriptive design to determine the father-infant attachment levels of and the affecting factors.

Participants

The fathers of healthy babies followed in the healthy-child clinic of a university hospital were included in this descriptive study. Power analysis (a priori sample size calculator program) was used to calculate the number of samples (Calculator, 2021). In the calculation, the sample size was determined as 118 fathers with a 0.05 error level, 0.5 effect size, and 0.85 ability to represent the population. Between January 2020 and March 2020, 118 fathers who met the research criteria were included in the sampling. A purposive sampling method was used, and all fathers fulfilling the inclusion criteria were included in the study.

Inclusion Criteria

Having a 6–12 month-old baby, being 18 years of age and older, being Turkish literate, having a term baby, and not having a baby's disease are among the criteria for inclusion in the study.

Exclusion Criteria

Fathers who had twins, were hospitalized in the neonatal intensive care unit after birth, had a disease related to physical development disorder in the baby, and were separated from their babies during infancy were not included in the study.

Measurements

The data were collected using the “Descriptive Information Form” and the “Paternal-Infant Attachment Scale (PIAS).”

Descriptive Information Form: The form was prepared by the researchers in line with the relevant literature (Fuertes et al., 2016; Güleç and Kavlak, 2013; Güleç and Kavlak, 2015; Karakaş and Dağlı, 2019; Kesebir et al., 2011; Newland et al., 2010; Ruiz et al., 2018; Serçekuş and Başkale, 2016). It includes 25 questions regarding the socio-demographic characteristics of fathers and mothers.

Paternal-Infant Attachment Scale (PIAS):

The Turkish validity and reliability study of the scale developed by Condon et al. (2008) to evaluate postnatal father-infant attachment was conducted by Güleç and Kavlak (2013) with 190 fathers with 6-12 months old babies. The scale is a five-point Likert type and includes 3 sub-dimensions (patience and tolerance, pleasure in interaction, love, and pride) and a total of 18 items. There are 12 reverse-scored items on the scale (4, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16.) The total score to be obtained from the scale is between 19 and 95. High scores indicate high attachment. The Cronbach Alpha reliability coefficient of the scale was found to be 0.76 by Güleç and Kavlak (2013) (Güleç and Kavlak, 2013). The Cronbach alpha value of the scale was found to be 0.71 in this study.

Data Collection

The data were collected between January 2020 and March 2020. The data were collected from fathers with healthy babies aged 6-12 months admitted to the healthy child clinic for routine health check-ups. Before the data were collected, the fathers were informed about the purpose of the study, and their consent was obtained. Descriptive Information Form and PIAS were filled in approximately 20 minutes by face-to-face interviews with fathers by the researchers in the nurse room of the outpatient clinic.

Data Analysis

Data were analyzed in the Statistical Package for Social Sciences (SPSS) 24.0 package program. Standard deviation, arithmetic mean, frequency and percentage were used in the analysis of descriptive data. Conformity of continuous data to normal distribution was evaluated with the Kolmogorov-Smirnow test (-1,+1) and Skewness-Kurtosis values (-2,+2). “Independent Sample t-Test” was used for the comparison of normally distributed pairwise groups, and the “Mann Whitney U Test” was used for the paired groups that did not. More than two groups that did not show normal distribution were evaluated with the “Kruskal Wallis Test”. The dependent variable was the PIAS for the Backward Stepwise Regression Analysis. The results were evaluated within the 95% confidence interval, and the statistical significance level was considered $p < 0.05$.

Ethical Considerations

The research was conducted following the scientific principles, universal ethical principles, and the principles of the Declaration of Helsinki. Institutional permission and ethics committee

approval (29/08/2019 dated, 10840098-604.01.01-E.45869 numbered, 641 no.) was obtained from the relevant institution. Before applying the data collection forms to the fathers, they were informed about the purpose of the study and their written and verbal consents were obtained.

Results

The findings obtained from the study conducted to better understand the father-infant interactions of fathers with a six-month-old baby and determine the factors that may affect attachment are presented below. Table 1 shows the distribution of the PIAS and sub-scales scores of the fathers included in the study. The mean total score of “PIAS” was 75.22±7.55, and the mean scores of the sub-scales were 34.70±4.10 in “patience and tolerance”, 26.84±3.90 in “pleasure in interaction”, and 13.73±1.53 in “love and pride” (Table 1).

Table 1. Total mean scores of PIAS and sub-scales (n=118)

PIAS and sub-scales	Mean±Sd
Patience and tolerance	34.70±4.10
Pleasure in interaction	26.84±3.90
Love, and pride	13.73±1.53
Total Scale Score	75.22±7.59

Table 2 shows the comparison of the descriptive characteristics of the fathers with the PIAS and sub-scale mean scores. Accordingly, the mean age of the fathers was 32.72±5.34 years. 36.4% of the fathers were university graduates, 46.6% were self-employed, 71.2% had a moderate income, 90.7% had social security, 76.3% had a nuclear family structure, 53.4% of them lived in the district, 61.9% were married for 5 years or less, and 78.8% had love marriage (Table 2).

The distribution of the mean total score of PIAS did not reveal a statistically significant difference between the father's socio-demographic characteristics like age, education level, occupation, social security, income level, family structure, place of residence, duration of the marriage, marriage decision, number of children, baby's gender, and desired gender (p>0.05). The fathers' love and pride sub-scale mean score and their social security status showed that the scores of those with social security were higher than those without it, showing a statistically significant difference (p<0.05, Table 2).

Table 3 shows the comparison of fathers' participation in infant care and mean total scores of

PIAS, and sub-scales. The mean total score of PIAS in fathers who helped feed the baby (76.52±6.99), who embraced their babies (75.38±7.71), and who took their baby to stroll around (75.54±7.65) were found to be higher than those of fathers who did not help feed the baby (73.97±7.96), who did not embrace their baby (74.67±7.09) and who did not take their baby to stroll around (74.33±7.33). However, no statistically significant difference was found between the groups (p>0.05). While the mean total score of PIAS was 76.71±6.96 for fathers who changed their baby's diaper, it was 73.74±7.89 for fathers who did not, revealing a statistically significant difference between the groups (MU=1367.00, p=0.04). While the mean score of pleasure in interaction was 28.07±3.53 in fathers who changed their baby's diaper, it was 25.60±3.90 in fathers who did not, and there was a statistically significant difference (p<0.01). In other words, fathers who changed their baby's diapers had higher attachment total scores and pleasure in interaction sub-scale mean scores than fathers who did not (Table 3).

The mean total score of PIAS (76.58±6.56) in fathers who put their babies to sleep was higher than that of fathers who did not (70.86±8.93). Patience and tolerance (35.20±3.70), and pleasure in interaction (27.48±3.4) sub-scales mean scores of fathers who put their babies to sleep were also higher than those of fathers who did not (patience and tolerance=33.11±4.93- pleasure in interaction=24.77±4.52). Taking part in the baby's sleep and the mean total scores of PIAS, patience and tolerance and pleasure in interaction sub-scales were found to be statistically significant (p=0.04, p<0.01, p<0.01, respectively). That is fathers who put their babies to sleep had higher attachment total scores, patience and tolerance, and pleasure in interaction sub-scale scores (Table 3).

The mean total scores of PIAS (76.92±7.04) and the sub-scale of pleasure in interaction (27.71±3.82) sub-scale of fathers who bathed their baby were higher than those of fathers who did not (PIAS =73.89±7.73, pleasure in interaction =26.15±3.86), and the difference between them was found to be statistically significant (p<0.05, Table 3).

Fathers who massaged their babies had a higher total (76.68±6.98) PIAS score and a sub-scale of patience and tolerance score (35.51±3.60) than those who did not (PIAS=73.56±7.90). - patience and tolerance=33.78±4.47), and the difference between them was found to be statistically significant (p<0,05, Table 3).

Table 2. Comparison of the descriptive characteristics of fathers and the mean scores of PIAS and sub-scales (n=118)

Characteristics			Patience /and tolerance	Pleasure in interaction	Love, and pride	Total score
	n	%	X± Sd	X± Sd	X± Sd	X± Sd
Age			32.72±5.34			
≤ 30	44	37.3	35.34±3.58	27.09±3.56	13.84±1.56	75.90±6.56
≥31	74	62.7	34.33±4.37	26.69±4.11	13.67±1.52	74.82±8.11
t test/ p-value			1.29/ 0.19	0.53/0.59	0.58/0.55	0.75/0.45
Education level						
Primary school	21	17.8	34.60±3.40	25.90±3.74	13.39±1.45	73.91±7.07
Secondary school	23	19.5	36.16±4.19	27.50±3.91	13.97±1.35	77.21±6.92
High school	31	26.3	34.67±4.14	27.18±3.98	13.69±1.74	75.74±8.09
University	43	36.4	33.99±4.28	26.70±3.96	13.80±1.53	74.43±7.72
KW test/ p-value			0.06/ 0.80	1.75/0.18	1.60/0.20	1.33/0.24
Occupation						
Self-employed	55	46.6	34.68±3.67	26.15±3.82	13.63±1.62	74.6±7.00
Worker	37	31.4	35.35±4.39	27.77±4.02	13.84±1.51	77.14±8.09
Civil servant	26	22.0	33.83±4.54	26.96±3.77	13.80±1.41	74.74±7.67
KW test/ p-value			1.05/0.35	1.96/0.14	0.23/0.79	1.80/0.16
Income level						
Low	34	28.8	35.48±3.89	27.12±4.22	13.57±1.65	75.97±7.46
Moderate	84	71.2	34.39±4.17	26.72±3.79	13.80±1.49	74.92±7.61
t test/ p-value			1.31/ 0.19	0.49/0.62	-0.72/0.47	0.68/0.49
Social security						
Yes	107	90.7	34.72±4.12	26.90±3.94	13.87±1.48	75.48±7.64
No	11	9.3	34.52±4.19	26.20±3.59	12.41±1.51	72.78±6.48
MU test / p value			569.00/ 0.85	483.50/0.33	291.50/0.00	442.50/0.17
Family type						
Extended	28	23.7	33.88±3.76	26.94±3.25	13.50±1.63	74.25±6.07
Nucleus	90	76.3	34.96±4.19	26.81±4.10	13.81±1.51	75.53±7.97
MU test / p-value			-0.21/0.22	0.15/0.87	-0.93/0.35	-0.78/0.43
Place of residence						
District	55	46.6	34.60±3.91	26.60±3.90	13.56±1.62	74.60±7.48
City	63	53.4	34.79±4.30	27.05±3.93	13.89±1.45	75.77±7.64
t test/ p-value			-0.25/0.80	-0.62/0.53	-1.17/0.24	-0.84/0.40
Duration of marriage						
≤ 5 years	73	61.9	35.09±3.75	27.28±3.78	13.78±1.57	75.96±7.21
6-10 years	27	22.9	34.19±4.31	26.48±4.26	13.79±1.54	74.75±7.69
≥11 years	18	15.3	33.90±5.10	25.60±3.74	13.44±1.40	72.95±8.60
KW test/ p-value			0.90/0.63	2.85/0.24	1.58/0.45	1.89/0.38
Marriage decision						
Love marriage	93	78.8	34.76±4.06	27.18±3.92	13.83±1.52	75.78±7.45
Arranged marriage	25	21.2	34.76±4.06	25.58±3.65	13.39±1.57	73.15±7.72
MU test / p-value			1139.00/0.87	879.00/0.06	953.00/0.14	931.50/0.12
Gender						
Girl	55	46.6	34.9±3.62	27.13±3.90	13.70±1.70	75.84±6.99
Boy	63	53.4	34.48±4.51	26.58±3.92	13.76±1.38	74.69±8.03
t test/ p-value			0.62/0.53	0.76/0.44	-0.18/0.85	0.81/0.41
Perception of marital relationship						
Good	101	85.6	35.16±3.74	27.36±3.42	13.84±1.46	76.40±6.51
Moderate	17	14.4	32.00±5.19	23.71±5.14	13.10±1.83	68.24±9.58
MU test/ p value			547.00/0.01	467.50/0.00	660.00/0.10	383.00/0.00

Table 3. Comparison of fathers' participation in infant care and total mean scores of PIAS (n=118)

Characteristics			Patience /and tolerance	Pleasure in interaction	Love and pride	Total score
	n	%	X± Sd	X± Sd	X± Sd	X± Sd
Feeding /helping with breastfeeding						
Yes	58	49.2	35.10±3.55	27.53±3.87	13.95±1.39	76.52±6.99
No	60	50.8	34.33±4.57	26.16±3.85	13.52±1.64	73.97±7.96
MU test / p-value			1641.50/0.59	1410.00/0.07	1506.00/0.17	1435.00/0.10
Strolling around the baby						
Yes	92	78.0	34.72±4.23	26.91±3.88	13.72±1.50	75.38±7.71
No	26	22.0	34.64±3.71	26.59±4.06	13.78±1.68	74.67±7.09
MU test / p-value			1156.00/0.79	1148.00/0.75	1146.00/0.72	1092.00/0.49
Embracing baby						
Yes	87	73.7	34.81±4.09	26.98±3.83	13.73±1.55	75.54±7.65
No	31	26.3	34.39±4.19	26.45±4.16	13.75±1.51	74.33±7.33
MU test / p-value			1289.50/0.71	1240.50/0.50	1345.00/0.98	1226.00/0.45
Changing nappies						
Yes	59	50.0	34.81±3.96	28.07±3.53	13.85±1.44	76.71±6.96
No	59	50.0	34.59±4.28	25.60±3.90	13.62±1.62	73.74±7.89
MU test / p-value			1724.50/0.93	1097.00/0.00	1610.50/0.45	1367.00/0.04
Putting the baby to sleep						
Yes	90	76.3	35.20±3.70	27.48±3.48	13.84±1.53	76.58±6.56
No	28	23.7	33.11±4.93	24.77±4.52	13.39±1.51	70.86±8.93
MU test / p-value			960.00/0.04	823.50/0.00	1020.00/0.10	795.50/0.00
Bathing the baby						
Yes	52	44.1	35.53±3.57	27.71±3.82	13.77±1.50	76.92±7.04
No	66	55.9	34.06±4.40	26.15±3.86	13.70±1.57	73.89±7.73
MU test / p-value			1403.50/0.09	1341.50/0.04	1684.500/0.85	1352.50/0.04
Massaging the baby						
Yes	63	53.4	35.51±3.60	27.32±4.02	13.91±1.43	76.68±6.98
No	55	46.6	33.78±4.47	26.28±3.73	13.53±1.63	73.56±7.90
MU test / p-value			1365.00/0.04	1448.50/0.12	1528.00/0.22	1370.00/0.04
Talking to the baby						
Yes	91	77.1	35.09±4.03	26.80±3.78	13.75±1.57	75.54±7.45
No	27	22.9	33.39±4.16	26.98±4.38	13.68±1.43	74.16±7.96
MU test / p-value			925.50/0.04	1166.00/0.68	1168.00/0.67	1118.00/0.47

Table 4. The effect of some characteristics of fathers on father-infant attachment (Backward Stepwise Model)**

Father-infant attachment determinants	Std.β	Min. value	Max. value	t	p
Putting the baby to sleep	0.323	68.179	73.557	52.194	<0.001
R=0.323	R ² = 0.104	Adjusted R ² = 0.097			

** Variables that were significant as a result of the statistical analysis were included in the multiple regression analysis: the perception of the marital relationship (good), changing the baby's diaper (yes), putting the baby to sleep (yes), bathing the baby (yes), and massaging the baby (yes). As a result of the analysis, the perception of the marriage relationship (good), changing the baby's diaper (yes), bathing the baby (yes), and massaging the baby (yes) were eliminated. Multiple regression analysis was performed in the Backward Stepwise Model, and variables that contributed significantly to the Model were included (p<0.05)

Patience and tolerance mean scores of fathers who talked to their babies (35.09±4.03) were found to be higher than that of fathers who did not (33.39±4.16), and the difference between the mean scores was found to be statistically significant (p<0.05, Table 3).

Table 4 shows the factors affecting father-infant attachment. According to the results of the multiple regression analysis performed with the backward stepwise method, the last variable in the model was

rate of this variable was evaluated using R2, and it was found to be 10.4%. In other words, the attachment scores of fathers who put their babies to sleep increased by 10.4% (Table 4).

Discussion

Attachment theory has been one of the main subjects of research on mother, father, and child since the 1970s. To our best of knowledge, in the literature on attachment, father-infant attachment has not been addressed so comprehensively as

mother mother-infant attachment (Alan and Ege, 2013; Güleşen and Yıldız, 2013; Mutlu et al., 2015). The validity and reliability study of the Paternal-Infant Attachment Scale in Turkish society was performed by Güleç and Kavlak in 2013 (Güleç and Kavlak, 2013). Establishing a secure bond between father and infant is known to affect the child's direct and indirect developmental outcomes (Brown and Whiteside, 2007; Lamb, 2002; Lewis and Lamb, 2003; Nakash-Eisikovits et al., 2000; Newland et al., 2010; Storey et al., 2000). For example, in a study children of fathers who scored low on father-infant attachment at 6 months had more behavioral and hyperactivity problems when they reached the age of 3.5, compared to fathers with high scores (Ramchandani et al., 2013). We believe that direct and indirect developmental problems that may develop in children in the future can be prevented if the factors that negatively affect father-infant attachment are identified and intervened in early infancy. Therefore, this study was conducted to determine the postnatal father-infant attachment levels and predictors affecting factors and contribute to the literature in this field.

The highest score on PIAS is 95, and a high score also indicates a high attachment level (Condon et al., 2008; Güleç and Kavlak, 2013). Considering the total mean score of the fathers included in this study (75.22 ± 7.55), it can be said that they have a close to good attachment to their babies. In a study conducted in our country using the same scale, it was reported as 78.3 ± 5.2 (Serçekuş and Başkale, 2016). In a study with 241 fathers, Condon et al. (2013) found the father-infant attachment score as 79.24 at 6 months (Condon et al., 2013). This study, father-infant attachment was found to be lower compared to other studies.

In many studies on father-infant attachment, it is seen that age, number of children, education level, family type, place of residence, and intended pregnancy affect attachment positively (Cabrera et al., 2011; Freeman et al., 2010; Fuertes et al., 2016; Karakaş and Dağlı, 2019; Newland et al., 2010; Ruiz et al., 2018; Wilson and Durbin, 2010; Wynter et al., 2016). In this study, socio-demographic characteristics of fathers other than social security did not affect the level of father-infant attachment (Table 2). Fathers with social security had higher PIAS total scores and sub-scale scores than fathers without it. However, the "love and pride" sub-dimension mean score of fathers with social security was statistically significantly higher. These findings suggest that the presence of a new member of the

family is a factor that increases socioeconomic anxiety, and in the presence of social security, this anxiety decreases, thus increasing the level of attachment.

As for the perception of marital relationship, the total scale and sub-scale ("patience and tolerance," "pleasure in interaction") scores of the fathers with a good perception of marital relationship were found to be significantly higher than those of the fathers with a medium perception ($p=0.01$, Table 2.), which supports the literature and shows that positive marital relations positively affect infant-parent attachment (Alan and Ege, 2013; Condon et al., 2008; Condon et al., 2013; Wynter et al., 2016). In a study, it was reported a strong positive and significant relationship between marital relationship quality and father-infant attachment (Wynter et al., 2016). Various studies on mother-infant attachment emphasize that marital relations have an impact on attachment. In a study conducted in our country, it was stated that the relationship status of mothers with their spouses affects maternal attachment (Alan and Ege, 2013). Findings of the study and similar findings in the literature, it can be said that spouses who feel happy in their marriages adopt parental roles better and have a more positive attitude towards their children.

In the current study, the attachment scores of fathers who changed their babies' diapers, put them to sleep, bathe and massage them were higher than those who did not (Table 3). Although studies on the attachment relationship between fathers and infants are scarce in Türkiye, international studies demonstrate that parents participating in care are more securely attached to their children, which supports our study (Caldera and Lindsey, 2006; Fuertes et al., 2016; Grossmann et al., 2002; Lewis and Lamb, 2003; Newland et al., 2010; Schaber et al., 2021). For example, Boechler et al. (2003), Caldera (2004) highlighted that father who participate in care activities (feeding, dressing, changing diapers, etc.) have higher attachment scores than those who do not (Boechler et al., 2003; Caldera, 2004). In the study of Fägerskiöld (2008), it is emphasized that fathers want to take a role in the care of the baby as much as the mother, and when they do not take a role, they feel inadequate and unimportant (Fägerskiöld, 2008), which is in parallel with our study. In this study, fathers who participate in baby care (changing diapers, bathing, sleeping, massaging) are better attached to their babies. It was observed that especially putting the babies to sleep increased the attachment scores by

10.4%. This finding suggests that nurses, and especially pediatric nurses, can have a greater impact on father-infant attachment by supporting not only mothers but also fathers in infant care and increasing their participation in infant care.

Limitations

Several limitations were identified in this study. Firstly, the single center may limit generalization. Because this study was conducted based on volunteer participation, only fathers willing to participate completed the questionnaire, and father-infant attachment level was measured based on fathers' self-reports.

Conclusion

In this study, father-infant attachment and the factors affecting it were explored. According to the results, the mean score of the fathers in the PIAS was 75.22, and the “love and pride” sub-scale scores of the fathers with social security, which is one of the socio-demographic characteristics, were higher than the others.

Fathers with a good perception of marital relationships were found to be significantly more attached to their babies. The attachment scores of fathers who changed their babies' diapers, put them to sleep, bathed and massaged them were significantly higher than those who did not. It is known that father-infant attachment significantly affects the social, spiritual, and mental development of the child. Therefore, knowing the factors affecting attachment and evaluating family health considering these factors will make a significant contribution to child development.

After all these considerations, it is recommended to monitor and evaluate the attachment status of both mothers and fathers to their babies, train fathers on child care starting from pregnancy and positively reinforce their participation in the care of the baby in the postpartum period, train both health professionals and parents on father-infant interaction and its importance, and conduct further comprehensive and experimental studies on the factors affecting father-infant attachment with different research groups.

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What did the study add to the literature?

- In this study, fathers who participate in baby care are better attached to their babies.
 - It was observed that especially putting the babies to sleep increased the attachment scores by 10.4%.
 - This finding suggests that nurses, and especially pediatric nurses, can have a greater impact on father-infant attachment by supporting not only mothers but also fathers in infant care and increasing their participation in infant care.
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Kaynaklar

- Alan H, Ege E. (2013). The influence of social support on maternal-infant attachment in Turkish society. *Journal of Anatolia Nursing and Health Sciences*, 16, 234-40.
- Boechler V, Harrison MJ, Magill-Evans J. (2003). Father-child teaching interactions: the relationship to father involvement in caregiving. *Journal of Pediatric Nursing*, 18(1), 46-51.
- Brown M, Whiteside SP. (2007). Relations among perceived parental rearing behaviors, attachment style, and worry in anxious children. *Anxiety Disorders*, 22:263-272.
- Cabrera NJ, Fagan J, Wight V, Schadler C. (2011). Influence of mother, father, and child risk on parenting and children's cognitive and social behaviors. *Child Development*, 82 (6), 1985-2005.
- Calculator, Sample Size Calculator, Retrieved November 2020 from <https://www.calculator.net/> (2022)
- Caldera YM, Lindsey EW. (2006). Coparenting, mother-infant interaction, and infant-parent attachment relationships in two-parent families. *Journal of Family Psychology*, 20(2), 275-283.
- Caldera YM. (2004). Paternal involvement and infant-father attachment: a q-set study. *Fathering*, 2(2), 191-210.
- Carlson MJ, Pilkauskas NV, McLanahan SS, Brooks-Gunn J. (2011). Couples as partners and parents over children's early years. *Journal of Marriage and Family*, 73, 317-334.
- Condon J, Corkindale C, Boyce P, Gamble E. (2013). A longitudinal study of father-to-infant attachment:

- antecedents and correlates. *Journal of Reproductive and Infant Psychology*, 31(1),15-30.
- Condon JT, Corkindale CJ, Boyce P. (2008). Assessment of postnatal paternal–infant attachment: development of a questionnaire instrument. *Journal of Reproductive and Infant Psychology*, 26, 195–210.
- Dansby Olufowote RA, Fife ST, Schleiden C, Whiting JB. (2020). How can I become more secure? a grounded theory of earning secure attachment. *Journal of Marital and Family Therapy*, 46(3), 489-506.
- De Wolff MS, Van Ijzendoorn MH. (1997). Sensitivity and attachment: a meta- analysis on parental antecedents of infant attachment. *Child Development*, 68(4), 571-591.
- Dinç S, Balci S. (2021). Father-infant attachment status and determination of affecting factors. *Türkiye Klinikleri Journal of Nursing Sciences*, 13(1), 8-17.
- Fägerskiöld A. (2008). A change in life as experienced by first- time fathers. *Scandinavian Journal of Caring Sciences*, 22(1), 64-71.
- Freeman H, Newland LA, Coyl DD. (2010). New directions in father attachment. *Early Child Development and Care*, 180(1-2),1-8.
- Fuertes M, Faria A, Beeghly M, Lopes-dos-Santos P. (2016). The effects of parental sensitivity and involvement in caregiving on mother–infant and father–infant attachment in a Portuguese sample. *Journal of Family Psychology*, 30(1), 147-156.
- Grossmann K, Grossmann KE, Fremmer- Bombik E, Kindler H, Scheuerer- Englisch H, Zimmermann AP. (2002). The uniqueness of the child–father attachment relationship: fathers’ sensitive and challenging play as a pivotal variable in a 16- year longitudinal study. *Social Development*, 11(3), 301-337.
- Güleç D, Kavlak O. (2013). The study of reliability and validity of paternal-infant attachment scale in Turkish society. *Journal of Human Sciences*, 10(2), 170-181.
- Güleç D, Kavlak O. (2015). Father-infant attachment and the role of the nurse. *Türkiye Klinikleri Journal of Nursing Sciences*, 7(1), 63-68.
- Güleşen A, Yıldız D. (2013). Investigation of maternal-infant attachment in the early postpartum period with evidence-based practice. *TAF Preventive Medicine Bulletin*, 12(2), 177-82.
- Im Y, Vanderweel TJ. (2018). Role of first- year maternal employment and paternal involvement in behavioral and cognitive development of young children. *Infant Mental Health Journal*, 39(4), 449–465.
- Karakaş NM, Dağlı FŞ. (2019). The importance of attachment in infant and influencing factors. *Turkish Archives of Pediatrics*, 54(2), 76-81.
- Kartal YA, Erişen B. (2020). Fathers’ attachment to their infants between 6-12 months of age and related factors. *Mehmet Akif Ersoy University Journal of Health Sciences Institute*, 8(2), 44-49.
- Kesebir S, Kavzoğlu SÖ, Üstündağ MF. (2011). Attachment and psychopathology. *Current Approaches in Psychiatry*, 3(2), 321-342.
- Lamb ME. (2002). Infant-father attachments and their impact on child development. In CS. Tamis-Le Monda, N Cabrera, Eds. *Handbook of father involvement: Multidisciplinary perspectives*. New Jersey, London: LEA, 93-117.
- Lahousen T, Unterrainer HF, Kapfhammer HP. (2019). Psychobiology of attachment and trauma-some general remarks from a clinical perspective. *Frontiers in Psychiatry*, 10, 1-15.
- Lewis C, Lamb ME. (2003). Fathers’ influences on children’s development: the evidence from two-parent families. *European Journal of Psychology of Education*, 18(2), 211-228.
- Mutlu C, Yorbik Ö, Tanju IA, Çelikel F, Sezer RG. (2015). Association of prenatal, natal, and postnatal factors with maternal attachment. *Anatolian Journal of Psychiatry*, 16(6), 442-450.
- Nakash-Eisikovits O, Dutra L, Westen D. (2000). Relationship between attachment patterns and personality pathology in adolescents. *J Am Acad Child Adolesc Psychiatry*, 41(9), 1111-1123.
- Newland LA, Coyl DD, Chen HH. (2010). Fathering and attachment in the USA and Taiwan: contextual predictors and child outcomes. *Early Child Development and Care*, 180(1-2), 173-191.
- Ramchandani PG, Domoney J, Sethna V, Psychogiou L, Vlachos H, Murray L. (2013). Do early father–infant interactions predict the onset of externalising behaviours in young children? findings from a longitudinal cohort study. *Journal of Child Psychology and Psychiatry*, 54(1), 56-64.
- Ruiz N, Piskernik B, Witting A, Fuiko R, Ahnert L. (2018). Parent-child attachment in children born preterm and at term: A multigroup analysis. *PloS One*, 13(8), e0202972.
- Schaber R, Kopp M, Zähringer A, Mack JT, Kress V, Garthus-Niegel S. (2021). Paternal leave and father-infant bonding: findings from the population-based cohort study. *Frontiers in Psychology*, 12, 668028.
- Serçekuş P, Başkale H. (2016). Effects of antenatal education on fear of childbirth, maternal self-efficacy and parental attachment. *Midwifery*, 34, 166-172.
- Storey AE, Walsh CJ, Quinton RL, Wynne-Edwards KE. (2000). Hormonal correlates of paternal responsiveness in new and expectant fathers. *Evolution and Human Behavior*, 21(2), 79-95.
- Wilson S, Durbin CE. (2010). Effects of paternal depression on fathers' parenting behaviors: A meta-analytic review. *Clinical Psychology Review*, 30(2), 167-180.
- Wynter K, Rowe H, Tran T, Fisher J. (2016). Factors associated with father-to-infant attachment at 6 months postpartum: a community-based study in Victoria, Australia. *Journal of Reproductive and Infant Psychology*, 34(2), 185-195.