

Original Article

Attachment Levels of Fathers and Examining the Factors Affecting

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Correspondence: Reyhan Aydin, Karabuk University, Faculty of Health Sciences, Head of Midwifery Department Karabuk, Turkey E-mail: reyhan.aydin_@hotmail.com reyhanaydin@karabuk.edu.tr**Abstract****Objective:** The present study was conducted to determine the level of attachment of fathers in Karabuk province and the factors affecting them.**Materials and Methods:** The sample of this descriptive study consisted of 200 fathers who brought their children Karabuk University Education Research Hospital Pediatric Outpatient Clinic and were selected by random sampling method. The socio-demographic data form prepared by the researchers by scanning the literature and the Paternal-Infant attachment Scale, which was validated by Gulec in Turkish, were used. Data forms were applied to the fathers who agreed to participate in the study by face to face interview method. The data were calculated by applying descriptive statistics, percentage calculation and nonparametric tests used in independent variables.**Results:** It was found that 22.5% of the fathers defined attachment as "happiness", 5.5% "sacrifice", 17% "unconditional love" and 55% "I do not know". The mean score of attachment scores of the fathers was 80.3 ± 8.23 .**Conclusion:** Significant differences were found between the age of the children, duration of marriage, father's age, family type, number of children, and type of delivery. There was no significant difference between defining attachment, infant gender and working status.**Keywords:** Attachment, Paternal-Infant Attachment, Attachment Level.**Introduction**

Attachment is defined as the bond formed after close emotional relationship between two people (Budak, 2000; Karatas, 2017; Santrock, John W., 2012). Attachment is also considered as first socialization, first communication and first trust (Karatas, 2017). The first attachment of a person begins with his mother and continues with increasing father, family relatives and friends (Gulec & Kavlak, 2015). The baby's attachment behaviors develop in the first year of birth and these behaviors are defined as sucking, stinging, sniffing, smiling and crying (Karatas, 2017). The first theories and terms on attachment began to be formed in the early 1900s and have survived

until today (Karatas, 2017). Although the basis of attachment in infants may seem to be attachment to the caregiver or meeting their needs, in fact maternal attachment begins with the formation of pregnancy, that is, the mother produces oxytocin to her baby; it continues with the hearing of fetal heartbeats and the first fetal movements. Afterwards, it continues to increase with contact and breastfeeding after birth (Gulec & Kavlak, 2015; Karatas, 2017). Safe attachment that occurs during these processes is of great importance in entire life of child. In the studies, it was seen that the person who will provide the first care for baby and the attachment will be mother (Gulec & Kavlak, 2015; Karatas, 2017). Mother's care and fathers' inability to participate

in the care process reduces father-baby attachment (Gulec & Kavlak, 2015). When fetal movements become palpable, mother begins to attach to baby by touching her belly, and father's support for mother during pregnancy are the great steps for paternal-infant attachment at the end of birth (Dinc Sermin, 2014). In the studies, it was observed that children who attach strongly with their father, socialize, play games and have positive relationships, have better social relationships, are happier and more successful academically (Hazen, McFarland, Jacobvitz, & Boyd-Soisson, 2010; Simsiki Hilal, 2009; Soysal, Bodur, Iseri, & Senol, 2005; Sahin, 2014; Tuzun & Sayar, 2006). In this process, it is very important that father fulfills his problems and contributes to the care of child (Simsiki Hilal, 2009; Sahin, 2014). Mother has a great role in the paternal-infant attachment. Mother's inclusion of father in the care of baby, being a bridge between baby and wife and being in good communication with father affects the attachment of baby in a positive way. Although there are many studies that report the great impact of father's good communication with baby during childhood, the number of studies that show father's attachment to the baby is almost nonexistent (Benware, 1392; Dinc Sermin, 2014; Hazen vd., 2010; Simsiki Hilal, 2009; Sahin, 2014; Tuzun & Sayar, 2006; Veríssimo vd., 2011). In the present study, the attachment levels of fathers in Karabük province and the factors affecting them were determined.

MATERIALS AND METHODS

Data Collection Tools and Applications

The ethics committee of the study was obtained from Karabük University Ethics Committee with the permission dated 16/05/2019 and numbered 78977401-050.01.04-E.19785 and numbered 6/17. After obtaining the approval of the ethics committee, the permission of the institution was obtained from the institution where the research will be conducted. The purpose of the study was explained to the fathers who agreed to participate in the study. After the consent form was signed, the data were collected by face-to-face interview method. The data were collected by using the Data Collection form which consisted of 20 questions prepared by the researchers in line with the literature and the Paternal-Infant Attachment Scale, which was validated in Turkish by Gulec in 2010 (Gulec & Kavlak, 2013).

Data Collection Form Containing Socio-Demographic Characteristics

The form consists of 20 questions, including 1 open-ended and 19 closed-ended questions, which contain the age of the mother, father and child, working status, education and years of marriage. Questionnaire was collected by face to face interview method within 10-15 minutes.

Paternal-infant Attachment Scale: It is a Likert type scale which is validated in Turkish by Gulec and Kavlak in 2010 and consists of 19 items, and each item is scored between one and five points. The scale has 12 inverse items; 5, 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16. These items will be coded at the opposite point of the scale. The scale has three sub-dimensions: "love and pride", "patience and tolerance" and "interaction and pleasure". As the scores from the scale increase, it is stated that attachment is also increased (Gulec & Kavlak, 2013).

Evaluation of Data

The statistical analysis of the present study was evaluated using IBM SPSS Statistics 23 (IBM SPSS for Macbook America) software. The distribution of normality of the study data and the data of the scale used was evaluated by Kolmogorov-Smirnov test and it was determined that the parameters were not normally distributed. The data obtained from the study were analyzed by making percentage and frequency distributions. Since the data showed nonparametric distribution in the comparisons between dependent and independent variables, Kruskal Wallis tests were used in groups with three or more variables and Mann Whitney U tests were used in groups with two variables (Can Abdullah, 2018). The data were evaluated in 95% confidence and interpreted at $p < 0.05$ significance level.

Results

The Cronbach's alpha coefficient of the father-infant attachment scale, which was developed by Condon in 2008, was found to be 0.78, and it was found to be 0.80 in Turkish validity reliability by Gulec and Kavlak (J. T. Condon, Corkindale, & Boyce, 2008; Gulec & Kavlak, 2013). In the present study, Cronbach's alpha of the scale was found to be 0.81. A 17.5% of the fathers who participated in the present study were 23-27 years old, 25.5% of them were 28-32 years old, 30.5% of them were 33-37 years old and 26.5% of them were 38 years old and over.

Table 1: Comparison of father-infant attachment subscales and socio-demographic characteristics.

		Patience and tolerance		Interaction and enjoyment		Pride and Love		Scale Total	
		n	x±SD	n	x±SD	n	x±SD	n	x±SD
Age	23-27	35	103.81	35	121.63	35	98.56	35	114.30
	28-32	51	104.93	51	113.42	51	112.98	51	111.49
	33-37	61	102.24	61	95.88	61	95.58	61	98.52
	38 and above	53	92.05	53	79.43	53	95.43	53	83.09
	*h		1.606		14.698		3.539		8.695
	p		.658		.002		.316		.034
Educational Status	Primary School	17	86.35	17	85.15	17	110.62	17	89.47
	Middle School	21	103.33	21	89.95	21	84.45	21	93.55
	High school	91	100.19	91	101.17	91	100.33	91	99.97
	University / School	71	103.45	71	106.44	71	103.04	71	105.88
	*h		1.258		2.668		2.468		1.542
	p		.739		.446		.481		.673
Tangible Income	Income Less Than Expense	41	100.79	41	101.17	41	100.72	41	101.12
	Income Expense Equal	124	94.95	124	96.06	124	97.57	124	94.81
	Income Over Expense	35	119.94	35	119.83	35	115.46	35	110.61
	*h		5.066		3.091		1.507		5.155
	p		.079		.213		.471		.076
	Children's Delivery Method	Vajinal Birt	92	108.84	92	107.15	92	108.50	92
Cesarean		108	93.39	108	94.84	108	93.69	108	92.61
**u			4200.500		4356.500		4232.000		4116.000
p			.059		.133		.060		.037
Marriage Year	1-10 Years	84	113.56	84	115.23	84	104.61	84	115.90
	11-20 Years	55	98.20	55	105.25	55	104.19	55	103.35

	21 Years and Over	61	84.59	61	75.93	61	91.51	61	76.72
	*h		9.009		16.903		2.304		16.379
	p		.011		.000		.316		.000
Total Number of Children	1 Child	87	109.80	87	110.84	87	102.95	87	111.45
	2 Child	86	92.82	86	99.58	86	99.28	86	95.25
	3 Child	27	95.00	27	70.13	27	96.48	27	81.94
	*h		4.020		10.289		.353		6.597
	p		.134		.006		.838		.037

*h: Kruskal Wallis Test was used **u = Mann Whitney U test was used.

Table 2: Comparison of paternal-infant attachment subscales and fathers' self-definition against infant care

Fathers' identification of themselves against baby care	Patience and tolerance		Interaction and enjoyment		Pride and Love		Scale Total	
	n	x±SD	n	x±SD	n	x±SD	n	x±SD
I am not ready for fatherhood, so I cannot support my wife in taking care of the baby.	6	36.25	6	62.17	6	71.17	6	47.25
I am not ready for fatherhood, but I support my wife in baby care.	24	72.56	24	71.00	24	79.90	24	66.10
I am ready for fatherhood; I willingly participate in the care of my baby and support my wife.	99	112.96	99	113.95	99	107.21	99	114.60
I am always ready for fatherhood, but I cannot support my wife too much due to my workload	71	98.00	71	94.96	71	100.58	71	96.97
*h		17.778		14.946		6.426		19.695
p		.000		.002		.093		.000
*	h:	Kruskal	Wallis	Test	was	used		

It was observed that 8.5% of the fathers were primary school, 10.5% were secondary school, 45.5% were high school, 35.5% were university / high school graduates. It was observed that 36% of fathers were workers, 32.5% were civil servants, 24.5% were self-employed and 7% were unemployed, 62% of them expressed their financial income as equal to income-expense, 20.5% less than income-expense and 17.5% more than income-expense. The age ranges of 5.5% of the spouses of fathers who participated

in the present study were 18 to 22, 21% of them were 23 to 27, 37% of them were 28 to 32, 23.5% of them were 33 to 37, and 23.5% of them were 38 or older. 15% of the spouses of the fathers were 15% elementary school, 19.5% middle school, 42% high school and 23.5% university graduates, 70.5% were housewives, 19.5% were civil servants, 4% were workers and 6% were self-employed. It was seen that 57.5% of the fathers had social security and 42.5% had no social security, 42% had 1-10 years, 27.5%

had 11-20 years and 30.5% had 21 years of marriage and over, 57.5% had other children, 42.5% had no other children, 43.5% had 1 child, 43% had 2 children and 13.5% had 3 children. When the age difference among children is examined, it was seen that 44% had no age difference, 26% had 2-3 years of age, 18% had 4-5 years of age, 6% had 6-7 years of age and 6% had 8-9 years of age. 56% of the children were girls and 44% of them were boys. When the birth methods of the children were examined, it was found that 54% had cesarean section and 46% had normal vaginal birth. The fathers were asked about family relationships, and 81.5% stated that they had a good relationship, and 18.5% stated that they had a medium-problem free relationship. There has been no father describing their relationship as bad.

3% of the fathers described themselves as "I am not ready to be a father, therefore I cannot support my wife in taking care of the baby", 12% of the fathers said, "I am not ready to be a father, yet I support my wife in baby care.", 49% of the fathers said, "I am ready to be a father, I willingly agree with the care of my baby and I support my wife" and 35.5% of the fathers described themselves as "I am always ready to be a father, but I cannot support my wife very much because of my workload".

In the present study, the fathers were asked the question, "What is attachment for you?" 55% of the fathers stated, "I don't know," 22.5% of the fathers stated, "happiness," 5.5% of the fathers stated "sacrifice" and 17% of the fathers stated "unconditional love."

In the present study, the total scores of the paternal-infant attachment scale of the fathers were $80,30 \pm 8,23$, and the patience and tolerance subscale score was $35,05 \pm 3,96$, interaction and pleasure subscale score was $26,64 \pm 4,36$. and pride subscale score was found to be $13,71 \pm 1,39$.

In the present study, a significant difference was found between the fathers' age, total score of the scale, interaction and pleasure subscale; however, no significant difference was found between the other two subscales. When the income and expenditure status of the fathers were examined, no significant difference was found. When the birth type and scale sub-dimensions of the baby were examined, a significant difference was found in the total score of the scale; nevertheless, no difference was observed between the scale sub-dimensions. When the

fathers' marriage years were examined, a significant difference was found in the subscales except the love and pride subscales. When the relationship between the total number of children and the sub-dimensions of the scale was examined, a significant difference was found between the communication and pleasure dimension and the total score of the scale, yet no significant difference was found between the patience and tolerance and love and pride subscales (Table 1).

A significant relationship was found between the fathers' self-definition of infant care and the other subscales, except the "love and pride" subscale. The scale scores of the fathers willingly and always participating in the care of their babies were higher than the ones who stated that they were not ready for paternity (Table 2).

Discussion

It was observed that children who established healthy bonds with their father during infancy and childhood experienced secure attachment in the past (Kuzucu, 2011; Sahip & Molzan Turan, 2007). At the same time, it was observed that children who had behavioral problems in childhood were affected by attachment processes with their fathers (Ramchandani vd., 2013). In the present study, as the age of fathers increased, attachment scores decreased. The studies of Arslan et al. involving 300 fathers showed that the attachment scores decreased as the age of fathers increased and significant differences were observed in the lower dimension of "love and pride" and "patience and tolerance" (Aslan, Erturk, Demir, & Aksoy, 2017). In their studies involving 403 fathers, He et al. examined the fathers' feelings about the birth of their spouses and found that the fathers who were younger at birth needed more support (He et al., 2015). In the present study, a significant difference was found in the interaction and pleasure sub-dimension with the total score of the scale. Although "love and pride" and "patience and tolerance" scores of the fathers were not significant, it was found to decrease with increasing age.

The attachment is also known to increase with the educational status of the fathers and participation in the care of the infants. The increased awareness of the father that infant care does not belong to mother and that he feels sufficient in the care of his baby is supported by studies (Dinc Sermin, 2014; Kuzucu, 2011).

Nkwake's qualitative study with 222 fathers and 246 mothers determined that as the fathers' educational attainment increased, the rate of participation in infant care increased, and the fathers thought to move away from the traditional father/spouse relationship and became more egalitarian in a family structure (Nkwake, 2009). Sapountzi-Krepia et al. examined the fathers' and spouses' feelings and experiences related to childbirth and found that educational status had a positive effect on the father's feelings and experience in their study involving 417 fathers (Sapountzi-Krepia vd., 2013). Similarly, in the studies of He et al., a significant relation was found between education level and emotional state of fathers. They found that fathers with higher levels of education felt more anxious. They stated that the higher the level of education, the higher working conditions of the fathers and the absence of paternity leave, were the reasons for this (He vd., 2015). In the present study, contrary to the literature, there was no significant difference between fathers' educational status and attachment levels. Although there was no statistical difference, the scores of high school and college graduates were higher than those of elementary and middle school graduates.

The length of the birth process, the occurrence of a difficult and interventional birth or the birth with general anesthesia negatively affect maternal attachment (Kavlak Oya, 2007). In interventional births, it is thought that the mother as well as the father are negatively affected (Kavlak Oya, 2007). The father's meeting with his baby immediately after the birth provides a quick start to the attachment process (Ayben, 2003). Two views have been reported that fathers' care for postpartum, maternal and infant health will either decrease or increase attachment (Herguner, Cicek, Annagur, Herguner, & Ors, 2014; Sabuncuoglu & Berkem, 2006). Herguner et al found that the attachment levels of cesarean delivery women were significantly lower when they examined the relationship of birth pattern with attachment and social support, in the study included 40 normal and 40 cesarean births (Herguner vd., 2014). In Sabuncuoglu and Berkem's studies, which included 80 women, and examined the relationship between postpartum depression and attachment, they did not find a significant relationship between the mode of delivery and maternal attachment (Sabuncuoglu & Berkem, 2006). In their study, Sapountzi-

Krepia et al. found that when fathers witness moment of birth, they experience fear because of feeling physical pain of women. However, they expressed the need for further studies to study the way of birth and infant-parent attachment (Sapountzi-Krepia vd., 2013). In today's literature, it was seen that the way of birth was not observed in the studies conducted with the attachment of father and baby. Studies examining the connection of paternal attachment with the way of delivery and having a significant difference were found to be studied in the late 1900s (Anderson, 1986; Bell, Paul, D, Paul, & Lang, 1998; Mercer & Ferkehch, 1990). In the present study, a significant difference was found between the paternal infant attachment scale score and the birth pattern. It was observed that the attachment points of the husbands of the mothers who gave birth to normal vaginal delivery were higher than the rate of the husbands of the mothers who had cesarean delivery.

There was a significant difference between the duration of marriage and attachment in the literature (Dinc Sermin, 2014; Sevil & Ozkan, 2009). The increase in the number of children with the duration of marriage and the increase in the time spent with the spouse lead to positive interaction between fathers and their babies (Sevil & Ozkan, 2009). In the present study, we found a significant relationship between the year of marriage and the other subscales except the "love and pride" subscale.

In the present study, a significant difference was found between the number of children and the overall score of the scale, and the subscale of interaction and enjoyment. The result suggests compatibility with the literature (Aslan vd., 2017; Dinc Sermin, 2014; Mehall, Spinrad, Eisenberg, & Gaertner, 2009; Simsiki Hilal, 2009). As the number of children increases, it is emphasized that the attachment points decrease at the same rate as the number of children that fathers need to take care of and the need for material income increases (Aslan vd., 2017; Dinc Sermin, 2014; Mehall vd., 2009).

Studies have shown that there is a significant difference between father's readiness to become a father, attending childbirth classes or supporting mother at birth and attachment level (Aslan et al., 2017; Walker, Visger, & Rossie, 2009). Father's education about birth is important in terms of management of postpartum process and its

relationship with baby (Aslan et al., 2017; Walker et al., 2009). Sapountzi-Krepia et al., (2015) found that fathers who received pre-natal, birth-related information and made frequent hospital visits at birth felt their partners more secure, even though they were more afraid. They also emphasized that participating in childbirth training is important for fathers and increases positive emotions in childbirth). Sapountzi-Krepia et al., (2015) found that it is important for fathers to be part of the birth and to help their spouses in their qualitative studies involving 384 fathers, in which they examined the experiences of Greek fathers in the birth and postpartum, as well as aspects of birth care that need to be improved. They also found that this process gave them happiness, peace and joy and strengthened the bond between them and their partner. In the present study, fathers' readiness for fatherhood and active participation in infant care were significantly higher with all sub-dimension scores except the "love and pride" sub-dimension of the scale. Arslan et al., (2017) Found that there was a significant difference between the "interaction and pleasure" and "patience and tolerance" scores of the fathers who attended the birth preparation classes. Ferketich and Mercer found that fathers who interacted with their babies during pregnancy and attended the birth of their babies were strongly attached to their babies (Ferketich & Mercer, 1995). Witte et al. in the studies involving 105 pairs, in which they compared paternal infant attachment and testosterone levels, they found that prenatal family relationships were effective in increasing paternal infant attachment and testosterone levels. (Witte, et al., 2019). Similarly, Condon et al., (2013) found that readiness for paternity during pregnancy and education have a great effect on paternal attachment, in their study with 204 fathers to examine paternal infant attachment. In Ozluses and Celebioglu's studies with 117 fathers in order to evaluate the effect of breastfeeding education on paternal infant attachment and breastfeeding rates, there was an increase in the attachment scores of fathers who received breastfeeding education (Ozluses & Celebioglu, 2014). Similarly, in their study, He et al. found that fathers were anxious and stressed about babysitting because of their workload. Sapountzi-Krepia et al., (2015) also found in their study that the support of fathers after birth and postpartum increased the bond between their spouses).

The limitations of the study and the use of old literature resulted from the lack of community-based data and adequate resources including paternal attachment in the current literature, and experimental control group studies investigating paternal attachment.

Result

It was seen that the educational and income level of the fathers did not affect their attachment status. The level of attachment in the total scores of the scale was found to be high, and the sub-dimension of "love and pride" was found to be low compared to the sub-dimensions of the other scales. The number of children, the year of marriage and the condition of feeling ready for fatherhood were found to have an effect on attachment. In line with these results, it is thought that the participation of fathers in childbirth education, supporting the mother at birth, increasing the level of knowledge about pregnancy, birth and postpartum period will positively affect the level of attachment. In these processes, fathers should be supported by childbirth training.

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