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Original Article / Orijinal Araştırma

Determination of the Relationship between the Level of Mothers' Postnatal Sense of Security and Mother-Infant Bonding

Doğum Sonrası Dönemdeki Kadınların Güvenlik Hisleri ile Anne-Bebek Bağlanması Arasındaki İlişkinin Belirlenmesi

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Abstract

Aim: This study was conducted to determine the relationship between women's postnatal sense of security and mother-infant bonding.

Material and Method: A descriptive study design was used. The sample size was determined as a minimum of 125 women, based on an effect size of 0.40 and a margin of error of 0.05. The study was completed with 130 women who were selected using the simple random sampling method. A Personal Information Form, which was created by the researcher, the Parents' Postnatal Sense of Security (PPSS), and the Mother-to-Infant Bonding Scale (MIBS) were used to collect data.

Results: The mean PPSS score was 50.42±9.79 and the mean MIBS score was 1.12±1.84. It was determined that the income level variable, which is one of the socio-demographic characteristics, was the only variable that had a significant effect on the mean PPSS score, and the family type variable had a significant effect on the mean MIBS score. The mean PPSS score of the participants was significant according to the status of receiving spousal support during pregnancy. A negative (r=-0.181), significant, and very weak correlation was found between the PPSS and MIBS ($p<0.05$).

Conclusion: It was concluded that as the level of mothers' postnatal sense of security increased, mother-infant bonding was affected positively. In line with this result, increasing the level of sense of security will be a significant step in strengthening bonding.

Keywords: Mother-infant bonding, sense of security, postnatal period, midwifery

Öz

Amaç: Araştırmada kadınların doğum sonrası dönemdeki güvenlik hisleri ve anne-bebek bağlanması arasındaki ilişkiyi belirlemek amaçlanmıştır.

Gereç ve Yöntem: Araştırma tanımlayıcı bir çalışmadır. Örneklem büyüklüğü 0.40 etki büyüklüğünde ve 0.05 yanılma payında minimum 125 kadın olarak belirlenmiş ve Basit rastgele örnekleme yöntemi kullanılarak 130 kadın ile tamamlanmıştır. Araştırmacı tarafından oluşturulan Kişisel Bilgi Formu, Annelerin Doğum Sonrası Güvenlik Hisleri Ölçeği (ADSGHÖ) ve Anne-Bebek Bağlanma Ölçeği (ABBÖ) kullanılmıştır.

Bulgular: ADSGHÖ puan ortalamasının 50.42±9.79 ve ABBÖ puan ortalaması 1.12±1.84 olarak bulunmuştur. Sosyo demografik özellikler içinde yer alan gelir düzeyi değişkeni, ADSGHÖ puan ortalaması ile anlamlı olan tek değişken olduğu, ABBÖ puan ortalamasının aile tipi değişkenine göreanlamlı olduğu belirlenmiştir.Katılımcıların gebelikte eş desteği alma durumuna göre ADSGHÖ puan ortalamalarının anlamlı olduğu saptanmıştır. ADSGHÖ ile ABBÖ arasında negatif yönlü (r=-0.181), anlamlı ve çok zayıf bir ilişki bulunmuştur($p<0.05$).

Sonuç: Annelerin doğum sonrası güvenlik his düzeyi arttıkça, anne bebek bağlanmasının da pozitif yönde etkilendiği sonucuna varılmıştır. Bu sonuç doğrultusunda güvenlik his düzeyinin artması, bağlanmanın güçlendirilmesi için önemli bir adım olacaktır.

Anahtar Kelimeler: Anne-bebek bağlanması, güvenlik hisleri, doğum sonrası dönem, ebelik

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INTRODUCTION

Successive pregnancies, birth, and postpartum periods in life bring about physical, mental, and social changes for individuals.[1,2] Possible changes may strengthen the bond of families to life with the acquisition of a new role, as well as making life more difficult.[3] The balance established between existing premises is important here. The sense of security is one of the basic needs of the individual and is considered difficult to meet both physically and psychosocially.[4] Meeting this need is based on a multifactorial dynamism.[5] It is vital to understand how people express and interpret their sense of security to adapt to the parenting role during pregnancy, birth, and the first weeks after birth.[5] Maternal feelings can be experienced more intensely, especially in the postpartum period, when the woman feels secure, the mother's interaction with her baby increases, and the mother-baby bonding occurs.[6] Bonding means that mothers express their feelings and thoughts toward their baby and a sense of trust is created in the baby.[7] Bonding is not only limited to childhood, but mother-infant bonding established after birth can be reflected in the relationships established by individuals throughout the rest of their lives.[8] There are many studies in the literature on postnatal concepts, such as postpartum anxiety, depression, role acquisition, and bonding.[9-11] Although it is known that studies on the sense of security are limited in the literature, it was determined in a study that mothers' self-efficacy was associated with the sense of security, and in another study, it was concluded that women's perception of childbirth affected their sense of security.[12,13] When the research was evaluated from this aspect, an answer was sought to the question of how the inexistence of the mother-infant bonding would affect the woman's sense of security. It was aimed to determine the relationship between these two concepts in the present study. Based on this scope, the following questions were sought to be responded in this study:

- What is the level of postnatal women's sense of security?
- What is the level of postnatal women's mother-infant bonding?
- What are the factors associated with postnatal women's sense of security and mother-infant bonding?
- Is there a relationship between the level of postnatal women's sense of security and the level of mother-infant bonding?

MATERIAL AND METHOD

A descriptive research design was used. The study population consisted of postnatal women followed in 10 family Health Centers in Amasya City Center. Women who voluntarily accepted to participate in the study, met the inclusion criteria, and presented to the family health center in the central county, and completed the first postpartum week constituted the sample. The simple random sampling method was used to select the subjects. The study group included women who were aged >18 years, did not have communication difficulties, were literate, had no diagnosed psychological disorders, had given birth to a single full-term baby, and had a healthy newborn with a birth weight of 2500-4000 g.

The sample size was calculated as at least 125 women on the G-power 3.1 software, based on an effect size of .40, a margin of error of .05, a confidence level of .95, and a representativeness power of .95. Considering some attrition, the study was completed with a total of 130 women who presented to health institutions between February and May 2021.The face-to-face interview method was used for data collection, and all the measures taken within the scope of the fight against COVID-19 were followed at every stage of the research.

Data Collection Tools

A Personal Information Form, the Parents' Postnatal Sense of Security Scale, and the Mother-to-Infant Bonding Scale were used to collect research data.

The Personal Information Form

This form, which was created by the researchers following a review of the literature, consists of a total of 27 questions.[3,14,15] The questions are intended to determine the socio-demographic and obstetric characteristics of women, such as age, family type, income level, and the status of getting information about pregnancy, birth, and postpartum.

The Parents' Postnatal Sense of Security Scale (PPSS)

This scale was developed by Persson et al. to measure mothers' sense of security in the first postpartum week.[16] The Turkish adaptation study was conducted by Geçkil et al. (2016).[17] This scale has a four-point Likert-type structure ("strongly disagree"=1, "somewhat agree"=2, "agree a lot"=3, and "strongly agree"= 4) and consists of 18 items. It has four sub-dimensions named suitably according to the original scale. The sub-dimensions and count of items are as follows:empowering behavior (items, 1, 2, 3, 4, 5, and 6); general well-being(items 7,8,9,10, and 11);affinity within the family (items 12,13,14, and 15);breastfeeding (items 16,17, and 18). Items 7, 8, 9, and 11 are reverse scored. Scoreson the scale range from 18 to 72. A high total score means a good sense of security. Cronbach'salpha value of the original scale was 0.84.[17] In this study, the alpha value was found as 0.83.

The Mother-to-Infant Bonding Scale (MIBS)

This scale, which was developed by Taylor et al. (2005), can be used in the postnatal period to reveal the relationship between the mother's feelings for her baby and the bond she establishes.[18] The validity and reliability study of the scale was carried out by Aydemir Karakulak and Alparslan (2016).[14] The scale consists of 8 items and scores vary between 0 and 24. Each item is scored on a four-point scale

with options ranging from "(0) very much" to "(3) never" ("very much" = 0, "much" = 1, "somewhat" = 2, and "never" = 3). Items 1, 4, and 6 of this scale, which consists of emotional expressions that can be classified as positive and negative, are positive and items 2, 3, 5, 7, and 8 are negative and scored in reverse. High scores are accepted as an indicator of a mother-infant bonding problem. Cronbach's alpha coefficient was reported as 0.69 on the first postnatal day and 0.68 within 8-10 weeks after birth.[14] In this study, Cronbach's alpha value of the scale was found as 0.65.

Data Analysis

Statistical analysis of the research data was conducted on the SPSS 25.0 software package. The research data were analyzed based on the suitability of the parameters to the normal distribution. Descriptive statistical methods, such as counts, percentages, mean, median, and standard deviation values, were used. In addition, the student's t-test, Mann-Whitney-U test, and Kruskal-Wallis test were used according to the data obtained. The Spearman correlation test was used to evaluate the correlation between the scales. $p<0.05$ was accepted as the level of significance.

Ethics Committee Approval

During the planning phase of the study, the permission of the authors who conducted the validity and reliability study of the scales (PPSS and MIBS) that would be used in the study was obtained. Ethical approval of Tokat Gaziosmanpaşa University Ethics Committee (Date: 13.08.2020; Number: 83116987-243 No=20-KAEK-210) and institutional permission of Amasya Provincial Health Directorate were obtained. In addition, verbal and written consent was obtained from all participants before the data collection phase was initiated. This article was produced from the master's thesis and was published in III. Presented at the International Joint Scientific and Practical Online Conference, Evidence-based Midwifery Care.

RESULTS

The findings of the research, conducted to determine the relationship between the level of women's postnatal sense of security and mother-infant bonding, are presented below. A total of 130 women participated in the study. The mean age of the women was 29.19±4.88 (min=19- max=43), the mean number of births was 1.85±0.83 (Min=1-Max=5), and 76.2% of the women had a planned pregnancy.

Table 1 shows the distribution of the findings on the socio-demographic and obstetric characteristics of the mothers included in the study. It was determined that 47.7% of the women had a university or higher education level, 66.9%worked, 88.5% had a nuclear family, and 9.2% perceived their income level as low. Considering the status of getting information about antenatal, innatal, and postnatal periods, it was determined that 61.5% of the women had received information and the source of 53.1%of those who had received information was the Internet and social media. It was found that 93.1% of the participants received spousal support, 60.0% had experienced a postpartum period before, and 44.9% of the women who had experienced a postpartum before had had mental/psychological problems during that time (**Table 1**).

Table 2 shows the mean scores of women on the total PPSS and MIBS and sub-dimensions of the PPSS. The mean scores were found as 50.42±9.79 on the total PPSS and 1.12±1.84 on the total MIBS (**Table 2**).

Table 2. Distribution of mean scores on the Parents' Postnatal Sense of Security Scale (PPSS) and the Mother-to-Infant Bonding Scale (MIBS)

Scales	Min- Max Value	$\bar{x}$±SD (Min-Max)
MIBS-Total	0-24	1.12± 1.84 (0-9)
PPSS-Total	18-72	50.42±9.79 (31-70)
PPSS Sub-Dimensions	6-24	15.55±5.42 (6-24)
Empowering behaviour	5-20	13.45±3.87 (5-20)
General well-being	4-16	12.62±3.15 (5-16)
Affinity in the family	3-12	8.81±2.39 (3-12)
Breast- feeding		

Min- Max= Minimum- Maksimum $\bar{x}$=Mean SD=Standard Deviation

Table 1. The Distribution of the Findings on Women's Socio-Demographic and Obstetric Characteristics (n=130)

Socio-demographic and obstetric characteristics		Frequency (n)	Percentage (%)	Socio-demographic and obstetric characteristics		Frequency (n)	Percentage (%)
Age (Years)*	Under 30 years	76	58.5	The status of receiving information about pregnancy, child birth and the postpartum period	Yes	80	61.5
	30 years and over	54	41.5		No	50	38.5
Educational level	Primary school	5	3.8	Source of informationacquisition (n=80)*	Medical Institution	28	35.0
	Secondary school	26	20.0		Internet /Social media	43	53.8
	High school	37	28.5		Other (TV, radio, newspaper, book, magazine, neighbor, relative)	9	11.3
	University and above	62	47.7				
Working status	Working	43	33.1	Spousal support during pregnancy	Yes	121	93.1
	Unemployed	87	66.9		No	9	6.9
Family type	Nuclear Family	115	88.5	Gravida	Primigravida	52	40
	Extended Family	15	11.5		Multigravida	78	60
Perception of income level	Low	12	9.2	Thestate of havingmentalproblems in thepreviouspuerperium (n=78)	Yes	35	44.9
	Middle	118	90.8		No	43	55.1

*More than one response has been given.

It was determined that the mean MIBS score was significant according to the family type variable (p<0.05). The income level variable, which is one of the socio-demographic characteristics, was the only variable that had a significant correlation with the mean PPSS score. It was determined that the mean PPSS score was significant according to the status of getting information about the antenatal, innatal, and postnatal periods (p<0.05). The mean PPSS scores of the participants were significant according to receiving spousal support during pregnancy (p<0.05). Only the mean general well-being sub-dimension score of the PPSS had a significant correlation with the status of experiencing mental/psychological problems during the previous postnatal period(s) (p<0.05) (**Table 3**).

A positive and significant relationship was found between the mean PPSS score and the empowering behavior sub-dimension (r=0.814) and general well-being sub-dimension scores (r=0.459) of the scale (p<0.05). A positive and significant relationship was found between the mean PPSS score and the affinity within the family sub-dimension (r=0.619) and breastfeeding sub-dimension (r=.635) of the scale (p<0.05). A negative and significant correlation was found between the mean MIBS score and the general well-being sub-dimension (r=-0.232) of the PPSS (p<0.05). There was a negative and significant correlation between the mean PPSS and MIBS scores (r=-0.181) (p<0.05) (**Table 4**).

Table 3. Distribution of Mean Scores on the Total PPSS and MIBS According to Socio-Demographic and Obstetric Characteristics of the Women

Socio-Demographic Characteristics		PPSS Total	Empowering Behaviour	General Well-Being	Affinity İn TheFamily	Breast- Feeding	MIBS Total
				Median (Min- Max)			
Family type	Nuclearfamily	51.0 (31.0-70.0)	16.0 (6.0-24.0)	14.0 (5.0-20.0)	13.0 (5.0-16.0)	9.0 (3.0-12.0)	0.0 (0.0-9.0)
	Extendedfamily	49.0 (40.0-68.0)	18.0 (11.0-24.0)	14.0 (5.0-19.0)	12.0 (6.0-16.0)	10.0 (6.0-12.0)	1.0 (0.0-5.0)
Test andp-value*		Z=-0.324 p=0.746	Z=-1.290 p=0.197	Z=-0.135 p=0.892	Z=-0.952 p=0.341	Z=-0.820 p=0.412	Z=-2,204 p=0.027
Perception of income level	Low	38.5 (32.0-55.0)	10.0 (6.0-18.0)	13.5 (5.0-19.0)	12.0 (5.0-16.0)	7.0 (3.0-10.0)	0.0 (0.0-8.0)
	Middle	51.5 (31.0-70.0)	16.5 (6.0-24.0)	14.0 (5.0-20.0)	13.0 (6.0-16.0)	9.0 (3.0-12.0)	0.0 (0.0-9.0)
Test and p-value		Z=-3.372 p=0.001	Z=-3.352 p=0.001	Z=-0.654 p=0.513	Z=-1.779 p=0.075	Z=-2.412 p=0.016	Z=-0.981 p=0.326
Obstetric Characteristics		$\bar{x}$±SD		Median (Min- Max)			
The status of receiving information about pregnancy, child birth and the postpartum period	Yes	51.88±10.23	17.0 (6.0-24.0)	14.0 (5.0-20.0)	14.5 (6.0-16.0)	10.0 (3.0-12.0)	0.0 (0.0-9.0)
	No	48.08±8.64	14.5 (7.0-24.0)	14.0 (5.0-20.0)	12.0 (5.0-16.0)	8.0 (5.0-12.0)	0.0 (0.0-8.0)
Test andp-value		t=2.187 p=0.031	Z=-0.953 p=0.341	Z=-0.185 p=0.853	Z=-3.267 p=0.001	Z=-2.722 p=0.006	Z=-0.232 p=0.816
				Median (Min- Max)			
Spousal support during pregnancy	Yes	52.0 (31.0-70.0)	16.0 (6.0-24.0)	14.0 (5.0-20.0)	13.0 (5.0-16.0)	9.0 (3.0-12.0)	0.0 (0.0-9.0)
	No	43.0 (34.0-51.0)	16.0 (7.0-20.0)	12.0 (8.0-18.0)	8.0 (5.0-11.0)	9.0 (5.0-12.0)	1.0 (0.0-8.0)
Test andp-value		Z=-2.620 p=0.009	Z=-1.421 p=0.155	Z=-1.035 p=0.301	Z=-4.089 p=0.000	Z=-0.319 p=0.749	Z=-1.661 p=0.097
The state of having mental problems in the previous puerperium (n=78)	Yes	49.0 (31.0-68.0)	16.0 (7.0-24.0)	12.0 (5.0-18.0)	13.0 (6.0-16.0)	10.0 (4.0-12.0)	0.0 (0.0-9.0)
	No	52.0 (34.0-69.0)	17.0 (6.0-24.0)	15.0 (6.0-20.0)	12.0 (5.0-16.0)	9.0 (5.0-12.0)	0.0 (0.0-6.0)
Test andp-value		Z=-0.815 p=0.415	Z=-0.660 p=0.509	Z=-4.877 p=0.000	Z=-0.081 p=0.935	Z=-1.011 p=0.312	Z=-1.600 p=0.110

*p<0.05 $\bar{x}$=Mean SD=Standard Deviation t=t test in independent groups Z= Mann Whitney-U test

Table 4. The Relationship Between the Mean Scores on the Total PPSS and Its Sub-Dimensions and the Mean Scores on the Total MIBS

Scales	r p-value*	PPSS-Total	Empowering behaviour	General well-being	Affinity in the family	Breast- feeding
PPSS- Total	r	-				
	p-value					
Empowering behaviour	r	0.814	-			
	p-value	0.000				
General well-being	r	0.459	0.076	-		
	p-value	0.000	0.388			
Affinity in thefamily	r	0.619	0.377	0.039	-	
	p-value	0.000	0.000	0.657		
Breast- feeding	r	0.635	0.411	0.081	0.412	-0.133
	p-value	0.000	0.000	0.358	0.000	0.132
MIBS- Total	r	- 0.181	-0.074	-0.232	-0.010	
	p-value	.039	0.401	0.008	0.911	

*p<0.05, r= Spearmancorrelationcoefficient

DISCUSSION

The postnatal period is important because it is a time when new roles are added to people and new gains are made. [15] Feeling secure and having securebonding are desirable conditions for every individual with a maternal role.[19] It is necessary to discuss the data of the research in light of the literatureto reveal similarities with and differences from the literature. In the study, the mean scores on both the total PPSS and MIBS were similar tothose in the literature, but both scales did not have a cut-off value. Therefore, the similarities with and differences from other studies could not be handled in this aspect.[13,16,17,20] As a result of this research, the highest score was obtained from the empowering behavior sub-dimension and the lowest score from the breastfeeding sub-dimension of the PPSS, which consists of four sub-dimensions. In other studies in the literature, it was observed that the PPSS had been interpreted mostly over the mean total score.Evaluations of sub-dimensions had been performed only in studies by Persson et al. (2007) and Baykal and Karakoç (2021).[12,13,21,22] Persson et al. (2007) found that the highest sub-dimension score was on the empowering behavior and the lowest on the affinity within the family sub-dimensions.16 In the study by Baykal and Karakoç (2021), similar to our research, the highest sub-dimension score was obtained from the empowering behaviorand the lowest from the breastfeeding sub-dimension.[21] The result of the comparisons indicated that the findings of the research about the sub-dimensions were similar to those of some studies,while there were also others with different findings.

In the study, it was determined that the mean PPSS score was correlated only to the income level variable of the socio-demographic characteristics. Abrams and Curran (2011) stated in their qualitative study with a group of low-income women that some of them had postnatal depression symptoms and difficulties in developing a mother identity.[23] Jewell et al. (2015) found that economic stress experienced by women was positively correlated with postnatal depression symptoms. In addition, it can be inferred that income level and sense of security may have had an effect because women spent most of their time at home during the pandemic and they needed economic freedom more than ever.[24]

In our study, the mother-infant bonding of women with a nuclear family was higher than that of women who had an extended family. An explanation for this situation may be that family ties are stronger, there is more sharing, and that mothers can interact more easily with their babies in nuclear families. Similar to our study, Tolja et al. (2020) determined that the quality of the relationship between the couple showed a low correlation with mother-infant bonding.[25]

In our study, no significant difference was found between the mean MIBS score and socio-demographic characteristics (educational status, employment status, family type, income level), except for the family type variable. Similar to our research, no significant difference was found between mother-infant bonding and educational status in studies by Dağlar and Nur (2018) and Nath et al. (2019) and income status in the study by Başdaş et al. (2022).[26-28] Unlike our research, Kinsey et al. (2014) found a significant difference between women's educational status and bonding. The difference between the findings of our study and those of other studies can be explained by different cultural populations and sample sizes of studies.[29]

In our study, there was a statistically significant difference between the mean scores on the total PPSS and the status of getting information about antenatal, innatal, and postnatal periods and receiving spousal support, which were among the obstetric characteristics. In the study by Prescott and Mackie (2017), it was reported that getting information during pregnancy gave women confidence. This result supports the results of our study.[30] Also, it was determined that spousal support contributed to the psychological well-being of women, but inadequate spousal support increased anxiety about pregnancy.[31,32]

In our study, it was determined that there was a negative, significant, and very weak correlation between the Parents' Postnatal Sense of Security Scale and the Mother-to-Infant Bonding Scale (r=-0.181). In other words, as the mean PPSS score increased, the mean MIBS score decreased. Although there was no previous study on the examination of this relationship in the literature, in the study of Baykal and Karakoç (2021), it was similarly determined that there was a negative relationship between postnatal depression and a sense of security.[21] The mother's sense of confidence may have reduced the possibility of experiencing postnatal depression and therefore supported the formation of bonding. Motegi et al. (2022), similar to the results of our study, found that mother-infant bonding was negatively correlated with depression and anxiety in Japanese mothers. [33]

Limitations

This study is limited to 130 postnatal women registered in 10 family health centers in Amasya Province and cannot be generalized to all postnatal women. In addition, the implementation process of the study was affected due to the COVID-19 pandemic and these effects were reflected in the results, which is another limitation of the study.

CONCLUSION

It is possible to interpret the mean score on the total PPSS as an indicator of a good level of sense of security. The mean score on the total MIBS indicated that there was no mother-infant bonding problem. All healthcare professionals involved in the postnatal period should know that increasing the level of security will be an important step in strengthening bonding.

According to the results of the research, the provision of women with information was related to their sense of security, but their sources of information were the Internet and social media rather than health institutions. For this reason, all health professionals involved in antenatal services should provide women with systematic, holistic, and culturally sensitive care from the preconceptional to the postnatal period by raising awareness about their information needs.

In the study, no relationship was found between obstetric characteristics and mother-infant bonding. It may be recommended to investigate other factors affecting the mother-infant bonding levels of postnatal women and plan studies with a larger sample group.

ETHICAL DECLARATIONS

Ethics Committee Approval: The study was carried out with the permission of Tokat Gaziosmanpaşa University Ethics Committee (Date: 13.08.2020; Number: 83116987-243 No=20-KAEK-210)

Informed Consent: All participants signed the free and informed consent form.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

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Author Contributions: All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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