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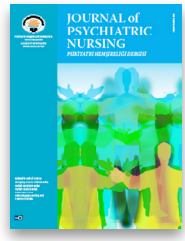

Original Article

The relationship between mothers' birth memories and attachment styles

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Abstract

Objectives: This study was conducted to examine the relationship between mothers' birth memories and secure and insecure attachment styles was investigated.

Methods: Two-hundred forty-one women who met the inclusion criteria were included in this descriptive and relationship-seeking study from October to December 2020. The research data were collected using the Introductory Information Form, the Birth Memories and Recall Questionnaire, and Adult Attachment Style Scale.

Results: It was determined that 47.3% of the mothers were between the ages of 25–29 years, 56.4% of them had a university or higher education level. There was a positive, moderate correlation between insecure attachment, with the mean score of memory centrality ($p \leq 0.001$), coherence and reliving ($p \leq 0.001$), sensory memory ($p \leq 0.001$), and recall ($p \leq 0.001$). It was determined that the independent variables that had an effect on the total score of the Birth Memories and Recall Questionnaire were abortion history ($p \leq 0.05$), planned pregnancy ($p \leq 0.05$), and experiencing a distressing event at birth ($p \leq 0.05$).

Conclusion: In the study, it was determined that there was a difference between positive and negative birth memories and attachment styles. In this context, emotional needs of mothers as well as their physical needs should be taken into account, and supportive care should be provided.

Keywords: Attachment styles; birth; birth memories.

What is presently known on this subject?

- Studies examining the relationship between birth memories with secure and insecure attachment styles are limited.

What does this article add to the existing knowledge?

- This study reveals the relationship between mothers' birth memories and secure and insecure attachment styles.

What are the implications for practice?

- It is clear how important positive birth memories are in order to maintain a healthy attachment, the foundations of which are laid during pregnancy. Most importantly, the physical needs as well as the emotional needs should be taken into account, and supportive care should be provided.

Birth, which is a natural, physiological, and special experience, is an important life experience that affects many factors such as the mother–baby's relationship, sense of trust, and well-being.[1] The mother's subjective feelings such as those regarding the mode of her delivery, duration, induction status, and complications as well as the support she received shape the birth memories.[2,3] Birth memories, which have the potential to affect the behavior and psychological health of the mother,[4] are directly associated with maternal and infant health outcomes.[5] It has been reported that mothers who had emergency cesarean section[6] or who were exposed to excessive intervention at birth have negative birth memories and are at risk for many problems such as post-traumatic stress disorder, depression, and weak mother–baby attachment in the postpartum period.[7–9] In studies, it has been reported that the risk of developing stress and depression in the

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postpartum period is higher in mothers with negative birth experiences as compared to those with positive birth experiences.[10,11]

Adult attachment style develops from the experiences established with parents in early childhood and shows its effect on the relationships established by the individual with other people throughout life. While secure attachment style is associated with less negative symptoms, it is stated that individuals with insecure attachment style may feel more stressed and overwhelmed during parenting.[12,13] Studies have also reported that mothers with an insecure attachment style are at risk for many symptoms such as lower levels of mother–infant attachment, postpartum stress, and depression.[11,14,15]

Considering the effects of birth experience on maternal and infant health,[1,5,16] it becomes important to understand which factors are associated with women's birth memories.[16] In order to increase the quality of care in the postpartum period, it is emphasized that adult attachment style should be considered together with birth memories.[11] In this context, the research was conducted to examine the relationship between mothers' birth memories and secure and insecure attachment styles. This study is valuable in the sense that it is the first data within the scope of our country, which has been brought to the literature.

Materials and Method

In the preparation of the research report, the STROBE Statement, which is the checklist of items that should be included in reports of cross-sectional studies, was used.

Type of Research

The research conducted is described as descriptive and relation-seeking.

Research Questions

1. Is there a difference between Birth Memory and Recall Questionnaire mean scores according to the sociodemographic characteristics?
2. Is there a difference between Birth Memory and Recall Questionnaire mean scores according to the obstetric characteristics?
3. Is there a difference between Birth Memory and Recall Questionnaire mean scores according to the birth characteristics?
4. Is there a relationship between Birth Memory and Recall Questionnaire and Adult Attachment Style Scale mean scores?
5. Do sociodemographic, obstetric, and birth-related variables have an effect on the Birth Memory and Recall Questionnaire mean score?

Study Sample

The research was conducted on mothers who have children between 0–1 years old. Considering the average score stated in the study of Ayaz et al.[17] (2012), with an effect size of 0.16, 80% power, and α=0.05 margin of error, it was calculated that 226 people should be included in the research sample, and 241 women who met the inclusion criteria were included. Mothers who were literate, had children between the ages of 0–1 years, volunteered to participate in the study, did not have a history of psychiatric illness, and did not receive childbirth preparation education were included in the study.

Data Collection Tools

Research data were collected using the Descriptive Information Form, Birth Memory and Recall Questionnaire, and Adult Attachment Style Scale.

Introductory Information Form: It consists of 25 questions in total, including six questions about mothers' sociodemographic characteristics, 11 questions about obstetric characteristics, and eight questions about the mother's last birth experience and birth memories.

Birth Memory and Recall Questionnaire: The scale was developed by Foley et al.,[18] (2014) to evaluate the birth memory of mothers with babies aged 0–1 years, and Turkish validity and reliability study was conducted by Topkara and Çağan (2019).[19] Differences were made in the factor pattern and naming of the original scale in the Turkish version of the scale. The Turkish version of the scale has 21 items and a seven-point Likert (1=I strongly disagree; 7=Strongly agree). The scale consists of six sub-dimensions and evaluates each sub-dimension in itself. Items 1, 3, and 11 are reverse-scored. In the Turkish validity and reliability study of the scale, the Cronbach's Alpha value of the scale was 0.80, while it ranged from 0.64 to 0.79 in its sub-dimensions.[19] In this study, the Cronbach's alpha coefficient of the scale was found to be 0.81.

Emotional Memory: This indicates the state of having negative feelings and/or more mixed feelings about the birth experience (items 1, 2, 4). *Ambivalent Emotional Memory:* Evaluates ambivalent emotions related to the birth experience (items 3 and 5). *Centrality of Memory:* Measures how much birth memory is integrated as a central experience in the mother's self-identity and life history. Higher scores indicate that birth memory is more central in the mother (items 6, 7, 8, and 9). *Coherence and Reliving:* This assesses the degree to which the birth memory is coherent, unfragmented, and like a continuous film and describes the perception of the birth experience through visual representations, sound, and bodily sensations and how many times it is relived as if it were today. A high score on this dimension indicates a more coherent birth memory, with more repetitions (items 10, 11, 12, 13, 14, and 15). *Sensory Memory:* It assesses how well they remember details of the smell, taste, sound, and touch at birth, and higher scores indicate increased sensory memory related to the birth experience (items 16, 17, 18, and 19). *Involuntary Recall:* Evaluates the frequency of vol-

untary and involuntary recall of birth. Higher scores indicate that recall is more frequent (items 20 and 21).[19]

Adult Attachment Style Scale: The Adult Attachment Style Scale consists of two parts, and the second part developed by Mikulincer (1990)[20] was used in this study. The second part of the scale consists of seven Likert features examining adult attachment characteristics, three sub-dimensions (secure, avoidant, and anxious/ambivalent attachment), and 15 items. The Turkish validity and reliability study of the scale was carried out by Kesebir et al.[21] (2012), and the number of items in the scale was increased from 15 to 18 by dividing the items that were thought to be incomprehensible. However, for each item, the seven-point Likert scoring system was abolished, and it was requested to be answered as "correct" or "false." The sub-dimension with the highest score represents the attachment style of the individual who completed the scale. Items 3, 4, 7, 13, 14, and 16 of the scale are safe, items 1, 2, 5, 6, 15, and 17 are avoidant, and finally, 8, 9, 10, 11, 12, and 18 items indicate anxious/ambivalent attachment. In this study, when the sub-dimensions were evaluated as secure and insecure (anxious/ambivalent and avoidant attachments are treated as the same and named as insecure attachment) attachment, both the consistency between the first and the second part increased (82%), and more and stronger relationships were revealed in other variables. In the Turkish validity and reliability study of the scale, the Cronbach's alpha coefficients for secure, avoidant, and anxious/ambivalent attachment were reported as 0.72, 0.82, and 0.85, respectively.[21] In this study, the secure attachment's Cronbach's alpha coefficient was found to be 0.73, and the insecure attachment's Cronbach's alpha coefficient was 0.70.

Data Collection

The survey form of the study was prepared by the researchers and shared with the participants via the survey online survey system, which allows web-based answers, and via WhatsApp and Instagram groups, and then collected by a self-report-based data collection method. The data of the research were collected between October 2020 and December 2020, and the answers of the participants were transferred to the SPSS-21 (Statistical Packages for the Social Sciences-License, Selcuk University) program to be evaluated.

Statistical Analysis

SPSS-21 program was used in the analysis and evaluation of the data. Number, percentage, mean, and standard deviation were used for the descriptive statistical analysis of the mothers' descriptive characteristics and scale scores. Compliance of numerical data with normal distribution was determined by Kolmogorow–Smirnow test, Skewness, and Kurtosis. T-test, one-way analysis of variance (advanced analysis, Tukey HSD) were used to evaluate normally distributed data, while Kruskal–Wallis H and Mann–Whitney U tests were used to evaluate data that did not show normal distribution. Multiple regression analysis was used to determine the factors affecting birth memory and recall. Statistical significance level was accepted as $p<0.05$.

Ethical Considerations

Ethics committee approval (dated 10.09.2020 and numbered 2020/018) was obtained before starting the research. The purpose of the study was explained to the participants, and it was explained that they were free to participate in the research in line with the principle of voluntariness. Before collecting the data, information about the study was given, and the participants' consent was obtained. In addition, it was explained that they can withdraw at any time, and their answers would be kept confidential.

Research Strengths

Contributing to the literature and being a pioneer in the studies to be carried out constitute the strength of the research.

Limitations

The results of the research can be generalized to the mothers who make up the sample group. The research data was based on mothers' self-report only, so the results are limited to the answers given by the mothers. In addition, the fact that the data were collected during the coronavirus disease 2019 (COVID-19) pandemic period and that the pandemic may adversely affect the birth memories of mothers is a limitation of this study.

Results

Findings Concerning Birth Memory and Recall Questionnaire Mean Scores According to the Sociodemographic Characteristics

It was determined that 47.3% of the mothers included in the study were between the ages of 25–29 years, 56.4% had a university or higher education level, 72.2% were not working, and 58.9% had income equal to their expenses.

It was determined that there was a difference between the age of the mothers ($p\leq0.05$) and the mean score of recall, and the difference was caused by the group aged 35 years and over. As the age of the mothers increased, the frequency of recall of birth memories decreased. It was determined that there was a difference between the education level of the mothers ($p\leq0.05$) and the mean emotional memory score, and the difference was caused by the mothers with a university or higher education level. It was determined that as the education level of the mothers increased, the level of emotional memory related to the birth experience decreased. Moreover, it was found that there was no difference between the perception of working status and income status and sub-dimensions of Birth Memory and Recall Questionnaire ($p>0.05$) (Table 1).

Table 1. Birth memory and recall questionnaire mean scores according to the sociodemographic characteristics of the participants

Variables	n (%)	Emotional memory subdimension	Ambivalent emotional memory subdimension	Centrality of memory subdimension	Coherence and reliving subdimension	Sensory memory subdimension	Recall subdimension
Age (years)							
20-24	65 (27.0)	10.89±4.60	7.88±3.23	18.72±5.33	26.48±7.92	18.37±6.55	8.95±3.73
25-29	114 (47.3)	10.53±4.48	7.25±3.55	18.39±5.16	24.65±6.79	16.82±5.84	7.71±3.42
30-34	52 (21.6)	9.29±4.62	6.85±3.47	17.81±5.92	25.94±7.89	17.25±5.95	7.35±3.13
35 years above	10 (4.1)	10.70±5.81	7.30±3.92	16.00±7.70	23.00±8.89	13.30±6.73	6.50±3.78
KW		3.469	2.608	0.862	3.295	6.894	9.404
p		0.325	0.456	0.835	0.348	0.075	0.024
Educational status							
Primary School-Middle School	44 (18.3)	11.39±4.60	8.14±3.30	18.39±5.41	23.95±6.52	16.57±5.74	8.73±3.29
High school	61 (25.3)	11.08±4.74	7.70±3.59	18.21±5.60	27.10±7.30	18.21± 6.03	8.31±3.48
University and above	136 (56.4)	9.71±4.47	6.90±3.41	18.23±5.50	25.02±7.70	16.91± 6.31	7.48±3.54
F		3.239	2.614	0.016	2.619	1.204	2.664
p		0.041	0.075	0.984	0.075	0.302	0.072
Working status							
Working	67 (27.8)	10.22±4.27	7.13±3.11	19.16±5.37	25.27±7.14	16.69±5.99	7.51±3.49
Not working	174 (72.2)	10.42±4.74	7.41±3.59	17.90±5.51	25.39±7.59	17.37±6.21	8.07 ±3.51
p		-0.295	-0.549	1.605	-0.108	-0.777	-1.126
		0.768	0.583	0.110	0.914	0.438	0.261
Perception of income status							
Income less than expenses	56 (23.2)	10.54±4.54	7.39±3.82	18.77±5.31	25.98±7.43	17.73±5.93	8.23±3.54
Income equals expense	142 (58.9)	10.43±4.71	7.44±3.37	18.11±5.50	25.17±7.33	17.10±6.10	8.04±3.52
Income more than expenses	43 (17.8)	9.93±4.44	6.91±3.32	18.07±5.76	25.14±7.97	16.74±6.65	7.12±3.37
F		0.242	0.396	0.320	0.259	0.345	1.433
p		0.785	0.674	0.726	0.772	0.709	0.241

Findings Concerning Birth Memory and Recall Questionnaire Mean Scores According to the Obstetric Characteristics

It was found that there was a difference between the memory centrality ($p \leq 0.05$) and the mean score of recall ($p \leq 0.05$) according to the history of abortion. It was determined that the birth memory of the mothers without a history of abortion was in a more central place and the frequency of recall was higher. It was determined that there was a difference between the mean emotional memory score according to the planned pregnancy status ($p \leq 0.05$). It was determined that mothers whose pregnancy was not planned had higher negative emotions and more mixed feelings about the birth experience.

It was determined that there was a difference between the mean score of emotional memory ($p \leq 0.05$) and ambivalent emotional memory ($p \leq 0.05$) according to the baby's gender. Negative, mixed, and ambivalent feelings about the birth experience were found to be higher in mothers who had a baby boy as compared to those in mothers who had a baby girl (Table 2).

Findings Concerning Birth Memory and Recall Questionnaire Mean Scores According to the Birth-Related Characteristics

It was determined that there was a difference between the mean score of the of memory centrality according to the type of birth ($p \leq 0.05$). It was found that the difference was due to the vaginal delivery group, and the mothers who gave vaginal birth had a lower mean score of memory centrality.

It was determined that the mean coherence and reliving score differed according to the place of birth, and mothers who

Table 2. Birth memory and recall questionnaire mean scores according to the participants' obstetrical characteristics

Variables	n (%)	Emotional memory subdimension	Ambivalent emotional memory subdimension	Centrality of memory subdimension	Coherence and reliving subdimension	Sensory memory subdimension	Recall subdimension
Number of pregnancies							
1	148 (61.4)	10.49±4.54	7.43±3.52	18.76±5.22	25.89±7.12	17.80±5.99	8.22±3.39
2	58 (24.1)	10.07±4.53	7.17±3.25	17.86±5.39	24.57±7.26	16.48±6.15	7.36±3.48
3 and above	35 (14.5)	10.31± 5.11	7.17±3.64	16.74±6.49	24.37±8.99	15.71±6.59	7.57±3.97
F		0.178	0.160	2.134	1.012	2.151	1.441
p		0.837	0.852	0.121	0.365	0.119	0.239
Number of births							
1	169 (70.1)	10.24±4.51	7.31±3.49	18.43±5.35	25.57±7.13	17.67±6.12	7.93±3.51
2	52 (21.6)	10.54±4.70	7.29±3.35	18.17±5.47	25.13±7.72	16.17±5.84	8.21±3.41
3 and above	20 (8.3)	10.95±5.34	7.60±3.68	17.00±6.72	24.10±9.43	15.70±6.84	7.05±3.72
KW		0.449	0.056	0.282	0.637	2.732	1.593
p		0.799	0.972	0.869	0.727	0.255	0.451
Abortion history							
Yes	53 (22.0)	9.68±4.54	6.60±2.91	16.38±6.00	23.79±6.61	16.19±6.53	6.87±3.61
No	188 (78.0)	10.56±4.62	7.54±3.58	18.78±5.23	25.79±7.63	17.46±6.02	8.21±3.43
p		-1.228	-1.954	-2.860	-1.878	-1.335	-2.493
		0.221	0.053	0.005	0.063	0.183	0.013
Curettage history							
Yes	31 (12.9)	10.55±5.13	7.19±3.39	16.45±7.00	24.87±6.24	16.23±6.09	7.13±4.27
No	210 (87.1)	10.34±4.54	7.35±3.48	18.52±5.19	25.42±7.62	17.32±6.16	8.03±3.38
t		0.237	-0.238	-1.581	-0.385	-0.928	-1.128
p		0.813	0.812	0.123	0.701	0.354	0.267
Number of postpartum days							
0-10	21 (8.7)	10.38±3.94	7.29±3.18	18.95±6.21	24.10±7.24	14.76±7.01	8.10±3.58
11-40	36 (14.9)	11.56±4.84	8.25±3.25	18.28±5.78	26.33±8.36	17.75±5.62	8.94±3.06
41-180	99 (41.1)	9.62±4.47	6.70±3.33	18.65±5.38	25.43±7.02	17.44±6.02	7.55±3.50
181 and above	85 (35.3)	10.73±4.74	7.70±3.67	17.61±5.33	25.15±7.65	17.24±6.26	7.87±3.64
KW		5.202	6.784	2.449	1.602	3.612	4.377
p		0.158	0.079	0.485	0.659	0.307	0.224
Pregnancy planned							
Yes	198 (82.2)	10.08±4.56	7.22±3.57	17.95±5.57	24.95±7.27	16.99±6.19	7.73±3.51
No	43 (17.8)	11.67±4.67	7.84±2.92	19.65±4.92	27.19±8.08	18.05±5.95	8.77±3.39
t		-2.070	-1.201	-1.853	-1.789	-1.017	-1.762
p		0.040	0.234	0.065	0.075	0.310	0.079
Baby's gender							
Girl	126 (52.3)	9.79±4.63	6.79±3.43	18.63±5.43	25.58±7.62	17.74±6.07	7.93±3.39
Male	115 (47.7)	11.00±4.51	7.92±3.41	17.83±5.54	25.10±7.28	16.57±6.19	7.90±3.65
t		-2.057	-2.556	1.132	0.494	1.472	0.053
p		0.041	0.011	0.259	0.622	0.142	0.957

gave birth in a private hospital experienced lower levels of coherence and reliving ($p \leq 0.05$).

It was found that the state of having trouble some problems at birth differed in terms of emotional memory ($p \leq 0.001$), ambivalent emotional memory ($p \leq 0.001$), and recall ($p \leq 0.05$). It was found that mothers who did not have any distressing problems at birth had a lower frequency of negative, mixed, and ambivalent feelings about the birth experience and recall of birth memories as compared to those who had distressing problems at birth (Table 3).

Table 3. Birth memory and recall questionnaire mean scores according to the birth-related characteristics of the participants

Variables	n (%)	Emotional memory subdimension	Ambivalent emotional memory subdimension	Centrality of memory subdimension	Coherence and reliving subdimension	Sensory memory subdimension	Recall subdimension
Type of birth							
Vaginal birth	87 (36.1)	10.40±4.42	7.90±3.35	16.99±5.81	25.62±7.81	16.52±6.12	7.44±3.55
Interventional vaginal delivery	21 (8.7)	9.90±4.35	7.62±3.73	21.00±3.92	25.76±8.10	17.67±6.63	8.81±3.88
Epidural cesarean section	50 (20.7)	10.52±4.85	6.56±3.41	18.58±5.46	24.86±6.38	17.02±6.06	7.58±3.36
General anesthesia cesarean section	15 (6.2)	12.20±4.06	7.07±3.51	17.27±5.60	26.80±8.01	19.27±5.68	8.27±3.33
Emergency cesarean section	31 (12.9)	11.45±5.31	8.26±3.72	19.19±5.18	24.84±7.96	18.26±7.10	8.97±3.14
Planned cesarean section	37 (15.4)	8.68±4.12	6.22±3.07	18.84±5.14	25.00±7.28	16.95±5.41	7.97±3.67
KW		9.853	10.963	11.169	1.026	3.204	6.733
p		0.080	0.052	0.048	0.960	0.669	0.241
Person giving birth							
Midwife	39 (16.2)	10.49±4.59	8.28±3.37	17.08±6.15	26.49±7.55	16.97±6.67	8.03±3.69
Doctor	91(37.8)	9.98±4.42	6.76±3.22	18.90±5.01	24.31±7.07	17.22±5.90	7.63±3.47
Midwife and doctor	111 (46.1)	10.64±4.78	7.47±3.63	18.14±5.59	25.81±7.68	17.23±6.21	8.12±3.49
F		0.530	2.849	1.564	1.565	0.026	0.510
p		0.589	0.060	0.211	0.211	0.974	0.601
Birth week							
37 weeks ago	26 (10.8)	11.27±4.75	6.65±3.22	18.38±4.83	24.27±5.82	15.81±6.16	7.27±3.85
37 weeks and beyond	215 (89.2)	10.26±4.59	7.41±3.49	18.24±5.57	25.48±7.62	17.35±6.14	8.00±3.46
t		-1.156	-1.048	-0.096	-0.557	-1.226	-1.023
p		0.248	0.295	0.924	0.577	0.220	0.306
Place of birth							
Public hospital	79 (32.8)	10.81±4.76	8.10±3.48	18.42±5.74	27.25±7.20	17.72±6.76	8.44±3.53
Private hospital	146 (60.6)	10.10±4.47	6.92±3.42	18.23±5.41	24.36±7.44	16.91±5.90	7.69±3.48
University hospital	16 (6.6)	10.56±5.23	7.25±3.32	17.63±5.15	25.06±7.38	17.00±5.33	7.38±3.52
KW		0.740	5.610	0.610	7.757	0.922	2.866
p		0.691	0.061	0.737	0.021	0.631	0.239
Experiencing distressing problems at birth							
Yes	101 (41.9)	12.00±4.75	8.80±3.40	18.01±5.62	25.70±7.62	17.28±6.01	8.66±3.65
No	140 (58.1)	9.19±4.13	6.27±3.11	18.43±5.40	25.10±7.34	17.11±6.26	7.38±3.31
t		4.788	5.994	-0.584	0.619	0.203	2.848
p		0.000	0.000	0.560	0.536	0.840	0.005
Cause of distressing problems at birth							
Interventional birth	28 (11.6)	4.47±0.84	3.69±0.70	5.85±1.11	7.47±1.41	6.05±1.14	8.18±4.24
Cesarean section	17 (7.1)	3.88±0.94	2.79±0.68	5.10±1.24	6.10±1.48	4.65±1.13	9.00±3.34
Health worker attitude	32 (13.3)	5.57±0.98	3.70±0.65	5.68±1.00	7.89±1.40	6.59±1.17	8.72±3.60
Baby problems	15 (6.2)	4.61±1.19	2.64±0.68	6.11±1.58	9.05±2.34	5.99±1.55	9.20±3.51
Social support	9 (3.7)	4.15±1.38	2.86±0.95	5.52±1.84	8.19±2.73	7.02±2.34	8.44±3.13
KW		24.854	37.932	2.405	1.835	1.505	9.097
p		0.000	0.000	0.791	0.872	0.912	0.105

Table 4. The relationship between birth memory and recall questionnaire with the adult attachment style scale mean scores

Variables	Secure attachment		Insecure attachment	
	r	p	r	p
Birth Memory and Recall Questionnaire Total Points	.097	0.131	0.419**	0.000
Emotional memory sub-dimension	-0.002	0.976	0.124	0.054
Ambivalent emotional memory sub-dimension	-0.012	0.852	0.103	0.110
Ambivalent emotional memory sub-dimension	0.072	0.267	0.323**	0.000
Ambivalent emotional memory sub-dimension	0.046	0.475	0.289**	0.000
Sensory memory sub-dimension	0.155*	0.016	0.309**	0.000
Sensory memory sub-dimension	0.067	0.297	0.373**	0.000

*Correlation is significant at the 0.05 level (two-tailed). **Correlation is significant at the 0.01 level (two-tailed).

Table 5. Predictors of birth memory and recall questionnaire (multiple regression analysis-enter model)

Variables	Birth memory and recall questionnaire total points				
	ß±SD	t	p	Collinearity	
				Tolerance	VIF
Age (35 and over)	-5.43±6.05	-0.89	0.370	0.958	1.044
Education (university and above)	-4.00±2.51	-1.59	0.113	0.897	1.115
Abortion Story (yes)	-8.37±2.97	-2.81	0.005	0.921	1.086
Planned pregnancy (planned)	-7.93±3.15	-2.51	0.012	0.958	1.044
Baby's gender (girl)	0.65±2.40	0.27	0.785	0.971	1.030
Type of birth (vaginal birth)	-2.87±2.49	-1.15	0.252	0.970	1.031
Place of birth (private hospital)	-2.84±2.58	-1.09	0.273	0.873	1.145
Experiencing distressing problems at birth (no)	-5.98±2.44	-2.44	0.015	0.957	1.045
	R=:0.349	R^2:0.122	Adjusted R^2: 0.091	F: 4.014	p=0.000

Findings Regarding the Relationship Between Birth Memory and Recall Questionnaire and Adult Attachment Style Scale Mean Scores

A positive moderate correlation was found between the mean scores of memory centrality (p≤0.001), coherence and reliving (p≤0.001), and recall (p≤0.001) with insecure attachment. It was determined that there was a weak positive correlation between the mean sensory memory score and secure attachment and a moderately strong positive correlation with insecure attachment (Table 4).

Factors Affecting Birth Memory and Recall Status

Multiple regression analysis was conducted using the enter method to investigate the effects of mothers' age, education level, history of abortion, planned pregnancy, gender of the baby, delivery type, place of birth, and distressing event at birth on the birth memory and recall. For multiple regression analysis, categorical data were transformed into a dummy variable, and the Birth Memory and Recall Questionnaire total score was included in the analysis as a continuous variable. It was determined that the variables examined in the multiple regression analysis performed with the enter method were important determinants of the scale scores (p≤0.05). It was determined that the independent variables that had an effect on Birth Memory and Recall Questionnaire total score of the were history of abortion (p≤0.05), planned pregnancy (p≤0.05), and having troublesome problems at birth (p≤0.05), and it was found to be 12% higher on the total score of the scale. were found to be predictive (R^2=0.122, F=4.014, p≤0.001). Age, education level, gender of the baby, mode of delivery, and place of delivery did not affect the total score of the scale (p>0.05, Table 5).

Discussion

In this part of the study, the relationship between birth memories and mothers' attachment styles was discussed in terms of various variables. In our study, it was determined that there was a difference between the age of the mothers and the mean score of recall, and the difference was caused by the group aged 35 years and over. As the age of the mothers increased, the frequency of recall of birth memories decreased. In studies examining the relationship between age and birth memories, it is stated that birth memories become more con-

sistent and shorter with increasing age.[22,23] In addition, in studies examining the relationship between birth experience and age, younger women have a more negative birth experience[24,25] and a low birth satisfaction.[26,27] It is clear that the young age group, who has no birth experience, has low birth satisfaction and, therefore, negative birth memories due to the feeling of uncertainty. For this reason, it is thought that especially the young age group, who has no birth experience, should be encouraged to prepare for childbirth classes.

In our study, it was determined that the emotional memory score averages of university graduate mothers were lower. It has been reported that increasing education level will increase the expectation about childbirth; therefore, stress levels of mothers may be affected.[28] It is stated that birth satisfaction is lower in cases where the expectations about birth are not met.[29] Thus, it is thought that postpartum memories can be positively shaped by meeting the expectations and wishes of mothers, regardless of their educational status and sociodemographic characteristics.[16,30]

In our study, it was found that mothers without abortion history had more of memory centrality of their birth and recalled more involuntarily. A mothers' history of abortion had an effect on birth memory and the recall questionnaire mean score. Although the psychological and physiological effects of abortion on individuals are often not noticed,[31] it is thought that risky pregnancies may cause negative birth memories by bringing sadness, anxiety, and fear.[32,33]

In our study, it was determined that mothers whose pregnancy was not planned had more negative and mixed emotions. The planned state of pregnancy had an effect on the mothers' Birth Memory and Recall Questionnaire mean score. Supporting our finding, it is stated that women's readiness for childbirth is related to their birth memories.[18] Studies have reported that those with planned pregnancies experience less post-traumatic stress disorder in the postpartum period compared to mothers with unplanned and unwanted pregnancies.[8,10] In line with these results, it is thought that the mothers who have had a planned pregnancy feel ready for the process and contribute to the positive memories of birth.

In our study, it was determined that mothers who gave birth in a private hospital had lower mean scores of coherence and reliving. Considering that the birth environment has an important effect on providing a positive birth experience, it is stated that a stress-free environment should be provided where mothers can feel comfortable and are protected from unnecessary stimuli and interventions.[34,35] Thus, mothers will be protected from unnecessary stimuli and gain positive birth memories.

In our study, it was determined that the mean score of memory centrality was lower in mothers who had vaginal delivery. In addition, it was found that experiencing distressing problems at birth had an effect on mothers' Birth Memory and Recall Questionnaire mean scores, and mothers who did not have distressing problems at birth had lower emotional memory, ambivalent emotional memory, and recall scores. It is a striking result that although women with positive birth experiences may forget their birth memories over the years, they cannot forget those who have had negative birth experiences.[36,37] In the literature, it is stated that unnecessary interventions and negative attitudes of health personnel may cause a negative perception of the birth experience.[38–40] In line with the presented study findings and research results, it can be said that it is important for all women to receive continuous and holistic care under the leadership of midwives. In addition, in order to develop practices aimed at protecting privacy, these issues should be addressed in in-service training.

In our study, it was determined that there was a strong relationship between recall and insecure attachment, having a more central place of birth memories, having a coherence birth memory, re-experiencing more, remembering the details of smell, taste, sound, and touch at the time of birth well. In the study conducted by Chabbert et al.,[41] it was found that emergency cesarean section, vaginal delivery with intervention, and high pain level during delivery caused negative birth experience, and these negative experiences were associated with increased insecure anxious attachment levels of individuals. While individuals' attachment styles determine their reactions to events, they are associated with a high level of mental health.[42] Indeed, it has been reported that insecure attachment style may be a risk factor for postpartum stress and depression. Considering that women who experience interventions and complications during delivery are also at risk in terms of postpartum stress and depression, it becomes necessary to consider attachment style together with birth memories in the evaluation of the mother in the postpartum period.[11] In order to protect the psychological health of the woman in the postpartum period, it is important that her memories of birth are positive and that she feels positive when she remembers her birth.[43]

Conclusion

In the study, it was determined that there is a relationship between negative birth memories and insecure attachment. It is clear how important positive birth memories are for maintaining a healthy attachment, the foundations of which are laid during pregnancy. Most importantly, physical needs as well as emotional needs are should be taken into account, and supportive care should be provided, which should be the common philosophy for all healthcare professionals working in maternity care and services. Increasing oxytocin release should minimize neocortex stimulation.

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