



Parents' State and Trait Anxiety Levels During Bloodletting Attempts in the Pediatric Emergency Department

Çocuk Acil Servisinde Kan Alma Girişimleri Sırasında Ebeveynlerin Durumluk ve Süreklilik Anksiyete Düzeyleri

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Abstract

Introduction: Parental stress and anxiety during pediatric bloodletting in the pediatric emergency department (PED) are influenced by a complex interplay of factors, including the child's medical condition, unfamiliarity with procedures, healthcare-provider interactions, and parental knowledge gaps. This study aimed to identify parents' state and trait anxiety levels during bloodletting procedures performed on their children in the PED and to explore factors influencing these anxiety levels.

Methods: This descriptive cross-sectional study was conducted in the PED of a tertiary hospital in the southeast of Türkiye. Data were collected from 180 parents using a questionnaire that included a socio-demographic information form, and the state-trait anxiety inventory. Data were collected between 6 January 2025 and 20 February 2025. The data were analysed using the IBM SPSS statistics for Windows version 22.0.

Results: Parents exhibited moderate levels of anxiety, with mean state anxiety scores of 41.494 ± 10.322 and trait anxiety scores of 39.189 ± 9.370 . Mothers reported significantly higher trait anxiety levels compared to fathers (41.944 ± 9.012 vs. 35.056 ± 8.371 , $p < 0.001$). Lower maternal education levels, non-working status, and lower income were associated with higher trait anxiety. Parents who received education about their child's illness had significantly lower anxiety levels ($p < 0.05$). Satisfaction with healthcare staff communication and information provision also correlated with reduced anxiety.

Conclusion: The study highlights the significant anxiety experienced by parents during pediatric bloodletting procedures, particularly among mothers and those with lower socio-economic status.

Öz

Giriş: Çocuk acil serviste (ÇAS) çocukların kan alma işlemleri sırasında ebeveynlerin yaşadığı stres ve kaygı, çocuğun tıbbi durumu, prosedürlere aşına olmama, sağlık çalışanlarıyla etkileşimler ve ebeveynlerin bilgi eksiklikleri gibi bir dizi faktörün karmaşık etkileşimiyle şekillenir. Bu çalışma, ÇAS'te çocuklarına kan alma işlemi yapılan ebeveynlerin durumluk ve sürekli kaygı düzeylerini belirlemeyi ve bu kaygı düzeylerini etkileyen faktörleri incelemeyi amaçlamaktadır.

Yöntemler: Tanımlayıcı kesitsel tipteki bu çalışma, Türkiye'nin güneydoğusunda bulunan üçüncü basamak bir hastanenin ÇAS'te gerçekleştirilmiştir. Veriler, sosyo-demografik bilgiler formu ve durumluk-sürekli kaygı envanterini içeren bir anket kullanılarak 180 ebeveyninden toplanmıştır. Veriler 6 Ocak 2025 ile 20 Şubat 2025 tarihleri arasında toplanmıştır. Veriler, Windows için IBM SPSS istatistik, sürüm 22.0 kullanılarak analiz edilmiştir.

Bulgular: Ebeveynler orta düzeyde kaygı yaşamış olup, durumluk kaygı puanları ortalama $41,494 \pm 10,322$ ve sürekli kaygı puanları ortalama $39,189 \pm 9,370$ olarak bulunmuştur. Anneler, babalara kıyasla anlamlı derecede daha yüksek sürekli kaygı düzeyleri bildirmiştir ($41,944 \pm 9,012$ 'ye karşı $35,056 \pm 8,371$, $p < 0,001$). Daha düşük anne eğitim düzeyi, çalışmama durumu ve daha düşük gelir, daha yüksek sürekli kaygı ile ilişkilendirilmiştir. Çocuğunun hastalığı hakkında eğitim alan ebeveynlerin kaygı düzeyleri anlamlı derecede daha düşük bulunmuştur ($p < 0,05$). Sağlık çalışanlarıyla iletişim ve bilgi sağlama konusundaki memnuniyet de azalmış kaygı ile ilişkilendirilmiştir.

Sonuç: Bu çalışma, özellikle anneler ve düşük sosyo-ekonomik statüye sahip olanlar arasında, pediatrik kan alma işlemleri sırasında

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Abstract

Providing educational support and improving communication between healthcare staff and parents can help to alleviate parental anxiety. These findings underscore the need for targeted interventions to support parents in PED settings.

Keywords: State anxiety, trait anxiety, parents, child, bloodletting, pediatric emergency department

Introduction

Hospitalization, especially unexpected visits to the pediatric emergency departments (PEDs), can be incredibly stressful for children and their families.¹ Parents play a crucial role in their children's health, providing not only direct care and access to healthcare services, but also shaping the attitudes and behaviours that influence children's well-being.² Parents frequently experience significant stress, including anxiety, depression, and insecurity, during a child's hospitalization.¹ Existing research often concentrates on specific pediatric populations, such as children with cancer,³ particular hospital experiences like stays in the pediatric intensive care unit,⁴ and those involving congenital heart disease and surgery.⁵ However, the stress associated with hospitalization can affect any parent whose child requires medical care. It is essential to recognize the broader impact of this stress on families and consider support systems to help parents cope during these challenging times.

While hospitalization is undoubtedly stressful,⁶ a visit to the PEDs can be particularly challenging, being a child's first experience with a hospital setting. This initial encounter can significantly influence future interactions with healthcare systems, affecting the likelihood of return visits and the utilization of other hospital services.⁷ The unfamiliar environment, coupled with the urgency and potential seriousness of medical situations encountered in the PEDs, contributes to heightened stress levels in both children and their families.⁷ Furthermore, the PED often acts as a gateway to further hospital care, shaping perceptions and anxieties surrounding future hospitalizations.

Various factors influence the stress and anxiety levels experienced by parents during PEDs visits and the PED treatment process. Common reasons for children presenting to emergency departments include health issues that require urgent intervention, such as poisoning, injuries, and infections, which can exacerbate parental anxiety.⁸⁻¹⁰ According to a systematic review study, the perceived urgency of child's health condition was the most cited reason for PED visit.¹¹ Another systematic review found that parents worried about their child's health conditions, delayed recovery, complications of illness, and felt frustrated, fearful, and

Öz

ebeveynlerin yaşadığı önemli kaygıyı ortaya koymaktadır. Eğitim desteği sağlamak ve sağlık çalışanları ile ebeveynler arasındaki iletişimi iyileştirmek, ebeveynlerin kaygısını hafifletmeye yardımcı olabilir. Bu bulgular, ÇAS ortamlarında ebeveynleri desteklemek için gerekli müdahalelere duyulan ihtiyacı vurgulamaktadır.

Anahtar Kelimeler: Durumluk kaygı, sürekli kaygı, ebeveyn, çocuk, kan alma, çocuk acil servisi

anxious.¹² Such situations often heighten parental concerns, thereby increasing their anxiety levels.^{10,12-14} Additionally, a lack of sufficient information regarding their child's medical condition can further elevate anxiety levels among parents.¹⁴ The information gap regarding their child's treatment process is another significant factor contributing to parental stress.^{12,14}

Common initial procedures in the PEDs include establishing intravenous access and obtaining blood samples.⁷ These procedures are often necessary for administering medications, fluids, and obtaining diagnostic information quickly. However, they can be stressful for children and their families. A supportive and empathetic approach from healthcare staff could help to alleviate parental anxiety.^{15,16} The quality of communication between parents and healthcare staff directly impacts the stress levels experienced by parents. Providing information and actively listening to parental concerns can serve as an effective strategy to reduce anxiety levels.¹⁶

Parental stress and anxiety during pediatric bloodletting in the PED are influenced by a complex interplay of factors, including the child's medical condition, unfamiliarity with procedures, healthcare-provider interactions, and parental knowledge gaps. Anxiety levels in parents accompanying children during medical procedures significantly influence the overall experience in PEDs. The context of bloodletting attempts, in particular, raises unique challenges due to the invasive nature of the procedure, which often triggers heightened anxiety in both children and their caregivers.¹⁷ Prior investigations into pediatric procedural experiences have demonstrated that parental anxiety can be a potent predictor of child distress, complicating the ability of healthcare staff to provide effective care and support during these critical moments.^{18,19} As parents navigate their own fears regarding pain and potential complications associated with procedures such as medical interventions, their emotional responses play a crucial role not only in the parents' well-being but also in how successfully the child copes with the situation.²⁰ As parental emotional state can significantly impact both immediate coping in the PED, and subsequent treatment adherence and family care,⁷ this study aimed to identify parents' state and trait anxiety levels during bloodletting from their child in the PED and to explore factors influencing these anxiety levels. By identifying

variations in anxiety levels and correlating these with the children's responses, this study aims to unravel the complex emotional interactions that occur in these high-stakes environments, ultimately guiding better practices and training for healthcare staff working with pediatric populations.

Materials and Methods

Study Design

This is a descriptive cross-sectional study.

Settings, Participants and Sampling

The setting of this study was PED at a tertiary hospital with a 700-bed capacity and located in the southeast of Türkiye. The population of this study consisted of parents of children who had undergone bloodletting during their PED visit. A prior G*Power 3.1.7 analysis was performed to determine the study's sample size. Due to the small effect size (0.1) and the small number of studies on parents the minimum sample size was calculated to be 158 with a margin of error of 5% and a confidence interval of 80% using the one group sign test.²¹ The study sample consisted of 180 parents who agreed to participate and were selected using a convenience sampling method. Inclusion criteria were: (1) parents aged ≥ 18 years, (2) accompanying a child undergoing bloodletting, and (3) fluency in Turkish. Exclusion criteria included parents with cognitive impairments or acute distress (e.g., actively crying/agitated) that could interfere with questionnaire completion. Only one parent per child was eligible to participate in the study to ensure independence of observations and avoid data clustering.

Data Collection

Data were collected between 6 January 2025 and 20 February 2025. The data were collected by using a questionnaire technique, employing a data collection form consisting of 2 parts. The researchers explained the aim of the study to the parents. After parents were informed that their participation was voluntary and that they could leave without reason, the questionnaire was distributed as hard copies to be filled out during their free time. Parents completed the questionnaires in a designated quiet area adjacent to the PED treatment zone, separated by a privacy screen to minimize distractions. While the emergency department environment inherently involves some background activity, efforts were made to ensure confidentiality and reduce interruptions. Parents were allowed to remain with their children during data collection, as separation could exacerbate stress. However, if the child required immediate medical attention, parents were given the option to pause or resume the questionnaire later. Researchers monitored the process to address any disruptions

promptly. The questionnaires were filled out by the parents and collected by the researchers. Filling out the questionnaire took about 10 minutes.

Data Collections Forms

Socio-demographic information form: The researchers (A.B., S.B., M.Ç.) developed a 24-item questionnaire to collect data on patient and parent demographics (gender, age, grade level, number of children in the family, parental education level) and aspects of their PED visit, including the time slot of PED visits, receipt of education about the child's illness, satisfaction with healthcare staff, communication, information provision, and care of the child received in the PED, adequacy of allocated time for care, and the likelihood of revisiting the PED in the future for the same health problem.

State-trait anxiety inventory (STAI): This tool was developed by Spielberg et al.²² in 1971 and translated and validated in Turkish by Öner and Le Compte,²³ with permission to use the scale granted by them. It consists of two 20-item scales: one for state anxiety and one for trait anxiety. Each item is rated on a four-point Likert scale ranging from "not at all" to "completely." Total scores for each scale range from 20 (lower scores indicating lower anxiety levels) to 80 (higher scores indicating higher anxiety levels). A score of 36 and below indicates no anxiety. Thirty-seven-42 points indicate mild anxiety. A score of 43 and above indicates high anxiety. The Cronbach's alpha internal consistency coefficient for the STAI was between 0.94 and 0.96.²³ When the reliability analysis values of the scale were examined, Cronbach's alpha internal consistency coefficient was 0.876 for STAI-state anxiety and 0.892 for STAI-trait anxiety. The Cronbach's alpha values indicate that both scales have high internal consistency.

Statistical Analysis

The data were analysed using the IBM SPSS statistics for Windows, version 22.0 (SPSS INC., Chicago, IL, USA) statistical tool. The descriptive features of the parents who participated in the study were determined using frequency and percentage analyses, while the scale was analyzed using mean and standard deviation statistics. Kurtosis and skewness values were used to determine whether the study variables were normally distributed. In the relevant literature, the kurtosis values of the variables between +1.5 and -1.5²⁰ and the skewness between +2.0 and -2.0²¹ are considered as indicators of normal distributions. It was established that the variables had a normal distribution. The data were analysed using parametric approaches. Categorical variables were represented as frequencies (%). Other variables were reported as mean \pm standard deviation, median, and range. The variations in scale levels were investigated using an independent groups t-test, one-way ANOVA, and post-hoc

(Tukey, LSD) tests based on the parents' descriptive features. The results were assessed with a 95% confidence interval. Significance was determined at $p < 0.05$.

Ethical Consideration

Ethical approval was obtained from the Mardin Artuklu University Non-invasive Clinical Research Ethics Committee (decision no: 2024/11-28; date: 05.11.2024). Institutional permission was granted by the Mardin Provincial Directorate of Health (date: 20.11.2024; reference number: E-68051626-770-260095201). Informed consent was obtained from all study participants. The study was conducted following the principles of the Declaration of Helsinki.

Results

The results regarding the parents' descriptive characteristics were presented in Table 1. When the descriptive characteristics of the parents were examined, it was seen that 60% of the participants were mothers and 40% were fathers. It was determined that the majority of mothers had primary school education (31.7%), and 35.6% of fathers had high school education. In the distribution of the participants according to their occupational status, it was determined that 45.0% were housewives, 11.7% were workers, 25.6% were civil

Table 1. Descriptive characteristics of participant

Variables	n	%
Child's gender		
Male	87	48.3
Female	93	51.7
Relation to the child		
Mother	108	60.0
Father	72	40.0
Mother's education level		
Primary school	57	31.7
Secondary school	44	24.4
High school	48	26.7
Bachelor's degree and higher	31	17.2
Father's education level		
Primary school	27	15.0
Secondary school	34	18.9
High school	64	35.6
Bachelor's degree and higher	55	30.6
Employment status of mother		
Working	23	12.8
Not working	157	87.2
Employment status of father		
Working	158	87.8
Not working	22	12.2

Table 1. Continued

Variables	n	%
Occupation		
Housewife	81	45.0
Worker	21	11.7
Civil servant	46	25.6
Self-employment	32	17.8
Place of residence		
City centre	107	59.4
District	30	16.7
Village	43	23.9
Income status		
Income less than expenditure	72	40.0
Income equals expenditure	89	49.4
Income more than expenditure	19	10.6
Type of family		
Nuclear family	158	87.8
Extended family	22	12.2
	Mean	SD
Age of the child	6.380	5.016
Age of the mother	32.270	6.785
Age of the father	35.940	7.442
Number of children in the family	2.930	1.584

SD: Standard deviation

servants, and 17.8% were self-employed. When evaluated in terms of where they lived, it was determined that 59.4% lived in the city centre. Considering the income status, the analysis revealed that 49.4% of the participants maintained an equal income-expenditure balance, and 10.6% had more income than expenses. In the distribution according to family structure, it was determined that 87.8% belonged to nuclear families and 12.2% belonged to extended families. The mean age of the children was 6.380 ± 5.016 (min: 0; max: 18), mean maternal age was 32.270 ± 6.785 (min: 19; max: 55), and mean paternal age was 35.940 ± 7.442 (min: 21; max: 60). The mean number of children was 2.930 ± 1.584 (min: 1; max: 9).

Parents' experiences with the PED are provided in Table 2. When the educational status of the patients with the disease was examined, it was determined that only 28.9% of them received education. In terms of satisfaction with the healthcare staff in the emergency department, the majority of the participants (83.9%) expressed satisfaction. The satisfaction rate with communication by healthcare staff was 80.0%, and for providing information, it was 78.9%. The percentage of patients satisfied with the care service provided in the PED was 82.8%, and the percentage who stated the time allocated for treatment and care was sufficient was 80.6%.

Table 3 shows the scores of state anxiety and trait anxiety. When the anxiety levels of the parents were examined, the mean state anxiety score was 41.494 ± 10.322 (min: 20, max: 74) and the mean trait anxiety score was 39.189 ± 9.370 (min: 21, max: 63). These findings suggest that parents experience moderate levels of anxiety overall. As a result of the reliability analysis for the state and trait anxiety scales used in this study, Cronbach's alpha values were determined to be 0.876 for the state anxiety scale and 0.892 for the trait anxiety scale. The scales used in the research are said to be very reliable, when Cronbach's alpha coefficient values are ≥ 0.80 . Cronbach's alpha values in our study show that both scales have high internal consistency.

The differentiation of parents' state and trait anxiety scores according to demographic variables is presented in Table 4. When the differentiation of parents' state and trait anxiety scores according to demographic variables was examined, significant differences according to certain variables were found. When anxiety scores were evaluated, it was determined that the mean state anxiety score was similar in parents with male children (41.770 ± 10.256) and parents with female children (41.237 ± 10.432). In terms of trait anxiety scores, it was seen that 38.724 ± 8.522 for parents with male children had scores of 38.724 ± 8.522 and parents with female children had scores of 39.624 ± 10.126 . However, the difference was not statistically significant for either variable ($p > 0.05$). When state anxiety scores were examined, there was no significant difference between groups of parents ($p = 0.168$). However, there was a significant difference between mothers (41.944 ± 9.012) and fathers (35.056 ± 8.371) in terms of trait anxiety scores ($p < 0.001$).

When the difference according to the mother's education level was examined, a significant difference was observed in trait anxiety scores ($p < 0.001$). According to the post-hoc analysis, the trait anxiety scores of primary and high school graduate mothers were significantly higher when compared to secondary and undergraduate graduates ($p < 0.05$). When grouped by the father's education level, there was no statistically significant difference in state and trait anxiety scores ($p > 0.05$).

According to the mothers' working status, it was determined that the trait anxiety scores of the non-working mothers were significantly higher than those of the working mothers ($p = 0.005$). However, there was no significant difference in terms of state anxiety ($p = 0.925$). A significant difference was found in trait anxiety scores according to the working status of the participants ($p < 0.001$). According to the post-hoc analysis, the trait anxiety scores of mothers who were housewives were significantly higher than those who were civil servants and self-employed people ($p < 0.05$).

A statistically significant difference was found in terms of trait anxiety scores of parents according to place of residence ($p = 0.009$). According to the post-hoc analysis, trait anxiety scores of individuals living in the district were found to be significantly higher than those living in the city center ($p < 0.05$). There was also a significant difference in trait anxiety scores according to income status ($p = 0.003$). According to the post-hoc analysis, it was observed that the trait anxiety scores of individuals whose income was less than their expenses were significantly higher compared to other groups ($p < 0.05$).

It was determined that both state ($p = 0.043$) and trait anxiety ($p = 0.007$) scores of parents who received education about their child's disease status were significantly lower than those who did not receive education. When the variables of satisfaction with PED were examined, significant differences

Table 2. Participants' experiences with the PED

Variables	n	%
Receiving education about child's illness		
Yes	52	28.9
No	128	71.1
Satisfaction with the healthcare staff in the PED		
Yes	151	83.9
No	29	16.1
Satisfaction with the communication of healthcare staff in the PED		
Yes	144	80.0
No	36	20.0
Satisfaction with providing information by healthcare staff in the PED		
Yes	142	78.9
No	38	21.1
Satisfaction with the care of the child received in the PED		
Yes	149	82.8
No	31	17.2
Adequacy of allocated time for care		
Yes	145	80.6
No	35	19.4
Status of revisit to the PED in the future for the same health problem		
Yes	171	95.0
No	9	5.0

PED: Pediatric emergency department

Table 3. State anxiety and trait anxiety scores

	n	Mean	SD	Min.	Max.	Cronbach's alpha
State anxiety	180	41.494	10.322	20.000	74.000	0.876
Trait anxiety	180	39.189	9.370	21.000	63.000	0.892

SD: Standard deviation

Table 4. Parents' state and trait anxiety scores according to demographic variables			
Demographic characteristics	n	State anxiety	Trait anxiety
Child's gender		Mean ± SD	Mean ± SD
Male	87	41.770±10.256	38.724±8.522
Female	93	41.237±10.432	39.624±10.126
t		0.346	-0.643
p		0.730	0.521
Relation to the child		Mean ± SD	Mean ± SD
Mother	108	42.361±10.149	41.944±9.012
Father	72	40.194±10.513	35.056±8.371
t		1.383	5.168
p		0.168	0.000
Mother's education level		Mean ± SD	Mean ± SD
Primary school	57	42.175±9.638	42.456±10.608
Secondary school	44	39.386±10.976	36.727±6.886
High school	48	43.917±10.162	40.750±8.729
Bachelor's degree and higher	31	39.484±10.337	34.258±8.262
F		2.001	7.331
p		0.116	0.000
Post-hoc			1>2, 3>2, 1>4, 3>4 (p<0.05)
Father's education level		Mean ± SD	Mean ± SD
Primary school	27	43.185±11.094	41.037±8.026
Secondary school	34	39.059±9.695	37.853±9.248
High school	64	43.578±9.720	40.766±9.127
Bachelor's degree and higher	55	39.746±10.622	37.273±10.053
F		2.318	1.983
p		0.077	0.118
Employment status of mother		Mean ± SD	Mean ± SD
Working	23	41.304±12.459	34.044±8.819
Not working	157	41.522±10.018	39.943±9.236
t		-0.094	-2.877
p		0.925	0.005
Employment status of father		Mean ± SD	Mean ± SD
Working	158	41.380±10.183	38.823±9.536
Not working	22	42.318±11.495	41.818±7.762
t		-0.399	-1.409
p		0.691	0.161
Occupation		Mean ± SD	Mean ± SD
Housewife	81	41.815±10.096	42.198±8.721
Worker	21	42.286±11.328	38.381±10.317
Civil servant	46	40.348±11.162	35.348±9.122
Self-employment	32	41.813±9.261	37.625±8.526
F		0.263	6.208
p		0.852	0.000
Post-hoc			1>3, 1>4 (p<0.05)
Place of residence		Mean ± SD	Mean ± SD
City centre	107	41.486±9.872	37.701±9.344
District	30	42.900±10.959	43.467±10.358

Table 4. Continued

Demographic characteristics	n	State anxiety	Trait anxiety
Village	43	40.535±11.083	39.907±7.779
F		0.461	4.797
p		0.631	0.009
Post-hoc			2>1 (p<0.05)
Income status		Mean ± SD	Mean ± SD
Income less than expenditure	72	42.375±10.889	42.083±8.947
Income equals expenditure	89	40.202±9.579	37.270±9.143
Income more than expenditure	19	44.211±11.138	37.211±9.635
F		1.629	6.049
p		0.199	0.003
Post-hoc			1>2, 1>3 (p<0.05)
Type of family		Mean ± SD	Mean ± SD
Nuclear family	158	41.411±10.043	39.114±9.508
Extended family	22	42.091±12.394	39.727±8.498
t		-0.289	-0.287
p		0.773	0.775
Receiving education about child's illness		Mean ± SD	Mean ± SD
Yes	52	39.058±9.552	36.269±9.458
No	128	42.484±10.493	40.375±9.106
t		-2.036	-2.711
p		0.043	0.007
Needing more information/education about child's illness?			
Yes	96	41.979±9.615	38.417±9.392
No	84	40.941±11.108	40.071±9.323
t		0.673	-1.183
p		0.502	0.238
Satisfaction with the healthcare staff in the PED			
Yes	151	39.483±8.951	39.073±9.360
No	29	51.966±10.795	39.793±9.567
t		-6.645	-0.378
p		0.000	0.706
Satisfaction with the communication of healthcare staff in the PED			
Yes	144	39.188±9.102	38.278±9.149
No	36	50.722±9.846	42.833±9.482
t		-6.690	-2.653
p		0.000	0.009
Satisfaction with providing information by healthcare staff in the PED			
Yes	142	39.183±8.798	38.472±9.387
No	38	50.132±11.104	41.868±8.924
t		-6.429	-2.001
p		0.000	0.047
Satisfaction with the care of the child received in the PED			
Yes	149	39.839±9.336	38.920±9.217
No	31	49.452±11.254	40.484±10.132
t		-5.027	-0.845
p		0.000	0.399

Table 4. Continued

Demographic characteristics	n	State anxiety	Trait anxiety
Adequacy of allocated time for care			
Yes	145	39.593±9.529	39.021±9.518
No	35	49.371±9.852	39.886±8.828
t		-5.413	-0.489
p		0.000	0.625
		r/p	r/p
Age of the child		-0.113/0.130	0.032/0.674
Age of the mother		-0.135/0.071	-0.042/0.571
Age of the father		-0.116/0.120	-0.040/0.592
Number of children in the family		-0.023/0.760	0.017/0.824

F: One-way ANOVA test, t: Independent groups t-test, Post-hoc: Tukey, LSD: Pearson correlation analysis, SD: Standard deviation, PED: Pediatric emergency department

were found in satisfaction with PED healthcare staff the communication of healthcare staff, information provided by healthcare staff, care of the child, and adequacy of allocated time for care. It was determined that the state anxiety scores of individuals who were not satisfied with PED were significantly higher in all these variables ($p<0.001$). However, in terms of trait anxiety, there was a significant difference only in satisfaction with providing information by healthcare staff ($p=0.047$) and satisfaction with the communication of healthcare staff ($p=0.009$). In addition, when the correlation analyses were examined, there was no significant relationship between child age, mother's age, father's age, number of children in the family, and anxiety scores ($p>0.05$).

Discussion

Being in the hospital is a situation that creates stress and anxiety in parents. Being hospitalised is a stressful procedure for children as well as for members of the family. Many of the parents experience increased levels of anxiety during these procedures. During bloodletting in the PED, parents may experience anxiety about the procedures in general. Invasive procedures are procedures that cause anxiety and panic in families.²⁴ Parents are likely to feel incompetence, inadequacy, and insecurity about themselves during such times.²⁵ In addition, during such processes, fears and anxieties stemming from issues such as deficiencies in parental roles within families, understanding the disease, and anticipating its consequences are primary factors that heighten parental anxiety.²⁴

The present study reveals that parents experience moderate levels of anxiety during bloodletting attempts in the PED. This result aligns with prior research suggesting that parental anxiety in similar contexts often reaches moderate levels, influenced by varying situational pressures and the overarching stress of managing a child's medical needs.^{26,27} The anxiety experienced by parents may stem from their concerns

regarding the pain their child may endure during procedures, as well as the potential for adverse outcomes, both of which can significantly exacerbate emotional distress.²⁷ When the anxiety levels of the parents were examined, it was found that they generally experienced moderate anxiety in both the state and trait anxiety categories. It is natural for parents to experience anxiety due to the health condition of their child. The results are consistent with the existing studies regarding parents admitted to the emergency departments.²⁸

In analyzing the differences between mothers and fathers, a significant disparity was observed in trait anxiety scores, with mothers exhibiting a higher average score compared to fathers. This result is consistent with literature indicating that mothers typically report higher levels of anxiety, particularly in contexts involving their children's health.²⁹ In the literature, studies have found that mothers and fathers experience different levels of anxiety during hospitalization. Mothers feel anxiety at a higher rate than fathers when their children are hospitalized.³⁰ This can be explained by the fact that mothers may react more intensely to the health status of their children due to the pregnancy and birth process.³⁰ These results suggest that mothers are more sensitive to their children's health conditions, which may be due to mothers' traditional roles in childcare. Psychological, emotional, and social well-being of caregivers can directly affect the quality of care children receive.³¹ Therefore, reducing parental anxiety could contribute to better experiences of both parents and children.

Different results regarding the anxiety level according to the education level have been reported. Some studies found that the level of education did not affect the level of anxiety, while others stated that anxiety increased as the level of education decreased.³² In this study, there were no differences in the stress levels experienced by fathers across different education levels. However, it was observed that the trait anxiety scores of primary and high school graduate mothers were significantly higher than college and undergraduate

graduates. The influence of maternal education level on trait anxiety scores suggests that educational background plays a pivotal role in managing anxiety, with a significant difference noted. Post-hoc analysis revealed that mothers with only primary education or high school education had significantly higher anxiety scores compared to those with secondary or undergraduate qualifications. This result resonates with previous studies highlighting that lower educational attainment often correlates with increased anxiety levels, likely due to reduced access to health information and coping resources during stressful medical encounters.^{27,33}

In addition, this study determined that the trait anxiety scores of mothers who were not working or who were housewives were higher than those of the other groups. Similar results were found in previous studies, which show that stress-inducing interventions in the hospital environment can lead to more anxiety in non-working mothers.³⁴ Moreover, this study revealed that trait anxiety scores of parents, whose income was less than their expenses, were found to be significantly higher than the others. The findings that economic factors increase anxiety seem to be consistent with other studies.³⁵

Geographical and socio-economic factors also emerged as significant contributors to trait anxiety. Parents living in district areas reported significantly higher anxiety scores than those in city centres, and income status was similarly positively correlated with anxiety levels. These results are consistent with a body of literature that links environmental and economic stressors to elevated parental anxiety while highlighting that parents from lower socio-economic statuses often face additional emotional burdens due to financial insecurities and limited healthcare access.^{27,36} Thus, community-based resources and support systems are paramount to addressing these disparities in parental anxiety levels.

The difference in both state and trait anxiety scores among parents who received education regarding their child's disease status underscores the impact of informational support. Educated parents reported significantly lower anxiety levels, likely due to their enhanced understanding of the medical process and expected outcomes, enabling them to feel more prepared and less apprehensive in the face of their child's treatment.²⁶ This finding aligns with existing research that supports the effectiveness of pre-procedural education as a tool to alleviate anxiety and build confidence among caregivers.³⁷ In addition, increased parental anxiety could negatively affect the process of children's coping with medical procedures. Providing information to parents could help to prevent their fears and relieve their anxieties. Therefore, informing families about the disease, creating a suitable environment for parents to express themselves, and answering the questions they have were important factors that could help to reduce

parents' anxiety.³⁸ In line with these studies, this current study found that both state and trait anxiety scores of parents who received prior education about their child's disease lower than those who did not receive education. Therefore, informing parents about the health condition of their children could help to alleviate parental anxiety.

Parents' stress and anxiety levels may also differ individually. In hospitals, parents generally need someone to explain the current situation of their children to them and to provide emotional and spiritual support. If families do not communicate adequately with healthcare staff, their anxiety and stress could increase. At this point, nurses play an important and effective role in alleviating stress and anxiety of families.³⁹ Providing sufficient, descriptive, and accurate information about the procedure to be performed on the child in a timely manner could help to reduce the anxiety of parents. Within the scope of the family-centered care and caregiver role of nurses, enabling and supporting parents' participation in bloodletting procedures could contribute to reducing their anxiety and stress and increasing parental satisfaction.⁴⁰ In line with the existing literature, a significant difference was found in both state and trait anxiety scores in parents regarding communication and information satisfaction. The results show that parents' anxiety increases when they do not communicate adequately with nurses and do not receive enough information. It was emphasized that the role of nurses in informing and supporting parents is critical.

Study Limitations

A key strength of this study is its identification of modifiable factors such as maternal education level, healthcare staff communication, and pre-procedural parental education, that significantly reduce anxiety during pediatric bloodletting and offer actionable pathways for clinical interventions to support vulnerable families. However, the use of self-report questionnaires and the inability to measure physiological parameters (such as blood pressure, pulse, etc.) and biological stress parameters (such as epinephrine, norepinephrine, cortisol, etc.) were considered as limitations of the study. In addition, the data were collected at a single hospital, limiting the generalizability of the results. Future research involving multiple hospitals across diverse geographic locations and populations could confirm these results.

Conclusion

The current study revealed that the stress level of parents was high, and it found that their trait anxiety scores were generally higher as well. In light of these results, it is recommended to establish parent support programs in PED settings and to provide training to strengthen the communication of healthcare staff with parents in order to reduce parents'

anxiety. Educating parents about medical procedures and potential outcomes may serve as an effective intervention to mitigate anxiety levels, particularly among lower-educated groups. In addition, this study revealed the intricate dynamics among various factors influencing parental anxiety during pediatric bloodletting attempts. The elevated anxiety levels experienced by parents, particularly mothers, highlight the need for tailored psychological interventions, comprehensive education, and strong support systems to effectively mitigate stress during medical procedures in pediatric emergency settings. Future research should continue to investigate these relationships, possibly exploring the long-term effects of parental anxiety on child outcomes and the potential benefits of enriched support frameworks within emergency care settings.

Ethics

Ethics Committee Approval: The study was obtained from the Mardin Artuklu University Non-invasive Clinical Research Ethics Committee (decision no: 2024/11-28, date: 05.11.2024).

Informed Consent: Informed consent was obtained from all study participants.

Footnotes

Authorship Contributions

Surgical and Medical Practices: A.B., S.B., M.Ç., Concept: A.B., S.B., M.Ç., Design: A.B., M.Ç., Data Collecting or Processing: A.B., Analysis or Interpretation: A.B., S.B., M.Ç., Literature Search: A.B., S.B., Writing: A.B., S.B., M.Ç.

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