The Factors Affecting Satisfaction Level of Parents Before and After Pediatric Surgery

Pediatrik Hastalarda Cerrahi Öncesi ve Sonrası Dönemde Ebeveynlerin Memnuniyetini Etkileyen Faktörler

ABSTRACT Objective: The purpose of the present study was to determine the level of satisfaction for parents of children inderwent surgery and indicate the factors affecting in our hospital. Material and Methods: The study included the families of 205 patients aged between 1.5 months and 18 years that were undergoing surgical intervention. The patients were divided into 2 groups: patients undergoing a major operation (n=150) and patients undergoing a minor operation (n=55). Demographic data of both patients and parents were compared between groups. Parents were asked their opinion on preoperative and postoperative environment and the people they met, with a questionnaire consisting of 21 questions. **Results:** In respect of the information provided by the surgeon and anesthesiologist, the satisfaction scores did not differ between groups (p=0.120 vs 0.247 respectively) The satisfaction scores regarding the surgical team and the anesthetists reduced mainly because the surgical team was unclear in communications and the anesthetists were usually in hurry. There was a statistically significant negative correlation between the child's age and the level of satisfaction regarding the information provided by the surgeon preoperatively. There was also a statistically significant negative correlation between the parent's age and the information provided by the anesthetist and the hygiene of the operating room. Also, a statistically significant positive correlation was obtained between the number of surgeries the patients underwent and the level of satisfaction regarding the importance attached to the privacy of the children. Conclusion: In general, the satisfaction levels of the parents were high. However, if the surgeons speak more clearly and the anesthetists assume less impetuous attitudes, satisfaction level can be increased.

Key Words: Patient satisfaction; parents; questionnaires; child

ÖZET Amaç: Bu çalışmadaki amacımız hastanemizde operasyon geçiren pediatrik hastaların ebeveynlerinin memnuniyet düzeylerinin belirlenmesi ve bunları etkileyen faktörlerin ortaya konulmasıdır. Gereç ve Yöntemler: Cerrahi girişim geçirecek olan yaşları 1,5 ay-18 yıl arasında 205 hastanın yakını çalışmaya dahil edildi. Hastalar major operasyon geçirenler (n=150) ve minör operasyon geçirenler (n=55) olmak üzere 2 gruba ayrıldılar. Hastaların ve ebeveynlerinin demografik verileri 2 grup arasında karşılaştırıldı. Yirmibir soruluk bir anket aracılığıyla ebeveynlerin preoperatif ve postoperatif bulundukları ortam ve karşılaştıkları kişilerle ilgili görüşleri alındı. Bulgular: Ameliyat öncesinde cerrah ve anestezist tarafından yapılan bilgilendirmelere ait tatmin skorları bakımından gruplar arasında anlamlı fark yoktu (p=0,120 ve 0,247 sırasıyla). Memnuniyet skorunu cerrahi ekip için en çok azaltan konuşmalarında açık olmayışlarıydı, anestezistler için ise aceleci olmalarıydı. Çocuk yaşıyla preoperatif cerrah tarafından yapılan bilgilendirmenin tatmin düzeyi arasında negatif anlamlı korelasyon mevcuttu. Ebeveyn yaşı ile anestezi doktoru tarafından yapılan bilgilendirme ve ameliyathane hijyeni arasında negatif anlamlı korelasyon mevcuttu. Hastaların geçirdiği operasyon sayısı ile çocuklarının mahremiyetine verilen önemin tatmin düzeyi arasında pozitif anlamlı korelasyon mevcuttu. Sonuç: Bu çalışmada genel olarak yüksek memnuniyet skorları bulunmustur. Ancak operasyon öncesinde cerrahların daha acık konusmaları, anestezistlerinse daha az aceleci yaklaşımları memnuniyet düzeylerini artıracaktır kanısındayız.

Anahtar Kelimeler: Hasta memnuniyeti; ebeveynler; anketler; çocuk

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urrently, the healthcare services are adopting new policies that target providing services for a greater number of patients. In this context, it becomes crucial to increase patient satisfaction while at the same time considering the hospital costs without compromising patient safety.^{1,2} Patients' opinions have importance in assessing the quality of hospital services.³ Pediatric patients are mostly unable to clearly express their own dissatisfaction and the reasons behind this dissatisfaction. Therefore, parental satisfaction plays a key role in determining patient satisfaction.⁴ Parental satisfaction would produce positive results in terms of reducing patients' anxiety, overcoming the disease process without experiencing any psychological trauma, and increasing the success rate by improving cooperation during treatment.⁵ The satisfaction levels of the patients receiving pediatric ambulatory anesthesia were found to be high in the previous studies.^{6,7} The present study compared the satisfaction scores of the patients having minor surgery under ambulatory anesthesia and of the patients having major surgery requiring post-operative follow-up, and analyzed whether the characteristics of parents and patients, physical conditions and individual differences affected the results.

MATERIAL AND METHODS

The current study was conducted between January, 2012 and December, 2012 in the operating rooms of our University with the approval of the research ethics committee of our University School of Medicine (no: B.30.2.MAR.0.01.02/AEK/120118656, date: 06/14/2012) after taking written consents of patients' parents. This study was conducted according to the basic principles of the 2008 Helsinki Declaration. The study included the parents of those patients who underwent pediatric abdomen surgery, chest surgery, bronchoscopy, eye surgery, otorhinolaryngology surgery, inguinal hernia repair, circumcision, orthopedic and urologic intervention. Parents younger than 18 years who could not speak or write Turkish or failed to provide written consent for participation, and children with any psychiatric disorder were not included in the study. The study included 205 sequential patients under 18 with ASA 1-2. Depending on the type of the surgery, patients received general anesthesia or general and regional anesthesia together.

A questionnaire of 21 short and easily comprehensible questions was prepared for evaluating the parental satisfaction, and the issues previously examined in the literature were covered in this questionnaire. The questions were asked to patients' parents in face-to-face interviews conducted by a different anesthetist other than the one administrating anesthesia in the operating room. Therefore, the questions were answered comfortably without influence, shame or embarrassment. The interviews took place in the post-operative period when the patients were taken to the services. The questions asked during the interview had to do with the waiting room they were taken pre-operatively, the operating room their children were taken to, and the post-operative recovery unit. Parents were asked to score some questions on a 10-point Likert scale where 0 represents the lowest satisfaction level and 10 represent the highest satisfaction level.8 The other questions were yes/no questions where the participants were asked to answer the question by saying yes/no and then select one of the 5 sub-options as the reason of their answer.

STATISTICAL ANALYSIS

The SPSS 20.0 program was used for statistical analyses. Average, standard deviation, ratio and frequency values were used in descriptive data statistics. Data distribution was analyzed with the Kolmogorov Simirnov Test. Mann-Whitney U Test was used for analyzing the quantitative data while the Chi-square test was used for analyzing the qualitative data. Fisher's Exact Test was used for the analysis of the qualitative data not fulfill the conditions for the Chi-square test. Chaid Analysis was used to determine how variables best combine. Spearman Correlation analysis was used for correlation analysis.

RESULTS

The parents of a total of 248 patients were asked whether they wanted to participate in the questionnaire study. Out of them 206 accepted to participate (83%). One patient's relative who refused answering the questions due to incompletion of the bronchoscopy procedure was excluded from the study. In major and minor surgeries, age and gender of children, parental age and sex, education level and number of operations were not significantly different (p<0.05).

There was no significant difference for children's age, gender and previous operation number, parents' age, gender and education level between minor and major surgical interventions (Table 1). The patients under 3 years old constituted the majority of the patients (40.5%). Distribution of the operations is summarized in Table 2. The main questions with preoperative and postoperative satisfaction scores are listed in Table 3. In respect of the information provided by the surgeon, satisfaction scores were 7.33±3.13 and 6.80±3.11 in minor and major surgery groups respectively (p=0.120). Satisfaction scores of the information provided by the anesthetist were not statistically different between groups (7.01±2.96 in minor surgery and 6.73±2.79 in major surgery, p=0.247) (Table 4). In both major and minor surgeries, there was not a statistically significant difference in satisfaction scores of parents related with surgeons or anesthesiologists. The patients declared negative feedback as the surgical team was unclear in communications and the anesthetists were in hurry.

If the patients answered no, we investigated the reasons using multiple-choice questions. There was a statistically significant negative correlation between the child's age and the level of satisfaction regarding the information provided by the surgeon preoperatively. There was also a significant negative correlation between the parent's age and the information provided by the anesthetist and the hygiene of the operating room. And there was substantial positive correlation between the number of surgeries that the patients underwent and the satisfaction level regarding the importance attached to the privacy of the children. The satisfaction levels for minor and major surgeries showed no significant difference except for the 16th question (Table 4). The rate of the people demanding the same physician to perform the operation in case of a repeat pediatric surgery was significantly lower in the patients undergoing major operations compared to the patients having minor operations (85.5% vs. 94.75%, p=0.029). The

		Minor Surgery	Major Surgery	Total	
		n-%	n-%	n-%	р
Child's age (year)		5.0±4.2	6.9±5.0	5.5±4.5	0.051
Child's gender	Female	53 (35.3%)	21 (38.2%)	74 (36.1%)	0.707
	Male	97 (64.7%)	34 (61.8%)	131 (63.9%)	
Parent's age (year)		32.7±7.2	35.7±7.0	33.5±7.2	0.487
Parent's gender	Female	98 (65.3%)	31 (56.4%)	129 (62.9%)	0.239
	Male	52 (34.7%)	24 (43.6%)	76 (37.1%)	
Parent's education	Primary school	79 (52.7%)	27 (49.1%)	106 (51.7%)	0.733
	Secondary school	22 (14.7%)	9 (16.4%)	31 (15.1%)	
	High school	37 (24.7%)	12 (21.8%)	49 (23.9%)	
	University	12 (8.0%)	7 (12.7%)	19 (9.3%)	
Number of surgeries		1.8±1.6	2.0±2.1	1.9±1.7	0.719

SD: Standard deviation

TABLE 2:	Dis	tributio	on of the operations.		
	n	%		n	%
Abdominal surgery	14	6.8	Orthopedics	14	6.8
Thoracic surgery	16	7.8	Plastic surgery	13	6.3
Eye surgery	13	6.3	Circumcision	26	12.7
Inguinal hernia	21	10.2	Tonsillectomy	13	6.3
Ear-Nose-Throat	17	8.3	Urology	36	17.6
Neurosurgery	14	6.8	Upper gastrointestinal	8	3.9
			surgery		

correlation analysis between questionnaire answers and demographic data, educational background of the parents and the number of surgeries is indicated in Table 5. In CHAID analysis, when the age of child was determined as a dependent variable it was found associated with the question "What does your child think about the operating room?" The age of parent was associated with the question "Are you satisfied with the attitudes of the anesthetist?" The gender of parent was associated with the question "Do you think the room you were taken to before the procedure was comfortable for your child?" The gender of child, number of surgeries, the educational level of parent and the type of surgery were not associated with any questions of the survey.

TABLE 3: The preoperative and postoperative satisfact	tion sco	res (mear	n±SD)			
		Lowest	Highest		n-%	
1. Are you satisfied with the information provided by the surgeon?		0	10	7.2	±	3.1
2. Are you satisfied with the information provided by the anesthetist?		0	10	6.9	±	2.9
3. Are you satisfied with the attitudes of the anesthetist?		0	10	7.6	±	1.8
4. Are you satisfied with the quality and sufficiency of the postoperative follow-up process conducted by the anesthetist?		0	10	7.4	±	2.1
5. Are you satisfied with the quality and sufficiency of the postoperative follow-up process conducted by the nurses?		0	10	8.0	±	1.6
6. Do you think the room you were taken to before the procedure was comfortable for you?		0	10	8.2	±	1.5
7. Do you think the room you were taken to before the procedure was comfortable for your child?)	4	10	8.1	±	1.4
8. How satisfactory and kind were the attitudes of the healthcare personnel?		0	10	7.9	±	1.7
9. What do you think about the operating room where your child underwent surgery?		0	10	8.1	±	1.6
10. What does your child think about the operating room?		1	10	7.7	±	1.6
11. Did you find post-anesthetic care unit comfortable?		0	10	7.9	±	1.8
12. Was there any unexpected issue making you unhappy before the procedure?	No			192	((93.7%)
	Yes			13		(6.3%)
13. Would you want to go through the same preparation period if it was necessary to	No			50	((24.4%)
repeat the same procedure?	Yes			155	((75.6%)
14. Would you want to go through the same preparation period if it was necessary to	No			16		(7.8%)
repeat the same procedure?	Yes			189	((92.2%)
15. Would you want the same anesthetist to anesthetize your child if there was a need to	No			13		(6.3%)
repeat the same procedure?	Yes			192	((93.7%)
16. Would you want the same surgeon to perform the procedure if there was a need to	No			16		(7.8%)
repeat the same procedure?	Yes			189	((92.2%)
17. Are you satisfied with the degree of importance attached to your child?		0	10	8.0	±	1.6
18. Are you satisfied with the degree of the importance attached to your child's privacy?		3	10	8.5	±	1.3
19. Did your child have sufficient pain treatment after the procedure?		0	10	8.4	±	1.4
20. Did your child have sufficient treatment for nausea and vomiting after the procedure?		0	10	8.2	±	1.5
21. Were the pre-operation room and the post-anesthetic care unit hygienic enough?		4	101	9.4	±	6.5

SD: Standard deviation.

		Mino	r Su	rgery	Ма	ajor	Surgery	
			n-%			n-	%	р
1. Are you satisfied with the information provided by the surgeon?		7.33	±	3.133	6.80	±	3.117	0.12
2. Are you satisfied with the information provided by the anesthetist?		7.01	±	2.964	6.73	±	2.799	0.24
3. Are you satisfied with the attitudes of the anesthetist?		7.69	±	1.840	7.53	±	1.854	0.54
4. Are you satisfied with the quality and sufficiency of the postoperative								
follow-up process conducted by the anesthetist?		7.54	±	1.916	6.84	±	2.595	0.12
5. Are you satisfied with the quality and sufficiency of the postoperative		8.17	±	1.379	7.71	±	1.997	0.29
follow-up process conducted by the nurses?								
6. Do you think the room you were taken to before the procedure was comfortable for your child?		8.30	±	1.375	7.91	±	1.818	0.26
7. Do you think the room you were taken to before the procedure was comfortable for your child?		8.09	±	1.421	8.04	±	1.414	0.99
3. How satisfactory and kind were the attitudes of the healthcare personnel?		7.96	±	1.722	7.84	±	1.793	0.6
9. What do you think about the operating room where your child underwent surgery?		8.19	±	1.467	7.95	±	1.938	0.7
10. What does your child think about the operating room?		7.78	±	1.532	7.62	±	1.650	0.6
11. Did you find post-anesthetic care unit comfortable?		8.06	±	1.623	7.44	±	2.175	0.08
12. Was there any unexpected issue making you unhappy before the	No	141		(94.0%)	51		(92.7%)	0.74
procedure?	Yes	9		(6.0%)	4		(7.3%)	
3. Would you want to go through the same preparation period if it was	No	35		(23.3%)	15		(27.3%)	0.5
necessary to repeat the same procedure?	Yes	115		(76.7%)	40		(72.7%)	
4. Would you want to go through the same preparation period if it was	No	9		(6.0%)	7		(12.7%)	0.1
necessary to repeat the same procedure?	Yes	141		(94.0%)	48		(87.3%)	
5. Would you want the same anesthetist to anesthetize your child if there	No	8		(5.3%)	5		(9.1%)	0.3
was a need to repeat the same procedure?	Yes	142		(94.7%)	50		(90.9%)	
6. Would you want the same surgeon to perform the procedure if there was	No	8		(5.3%)	8		(14.5%)	0.0
a need to repeat the same procedure?	Yes	142		(94.7%)	47		(85.5%)	
17. Are you satisfied with the degree of importance attached to your child?		8.06	±	1.639	7.76	±	1.633	0.2
8. Are you satisfied with the degree of the importance attached to your child's privacy?		8.52	±	1.268	8.44	±	1.273	0.6
9. Did your child have sufficient pain treatment after the procedure?		8.43	±	1.223	8.15	±	1.840	0.7
20. Did your child have sufficient treatment for nausea and vomiting after the procedure?		8.24	±	1.432	8.13	±	1.796	0.9
21. Were the pre-operation room and the post-anesthetic care unit hygienic enough?		9.53	±	7.608	9.09	±	1.337	0.1

SD: Standard deviation

All the answers were correlated with one another. Parents who had positive opinions gave positive answers to the questions while parents who had negative opinions gave negative answers in general (Table 6).

DISCUSSION

The study generally revealed high levels of satisfaction, however, parents expected surgeons to speak more clearly during the preoperative process

		1. Question	3. Ques.	4. Ques.	5. Ques.	6. Ques.	7. Ques.	8. Ques.
Child's age	r	-0.090	-0.029	-0.043	0.076	-0.087	-0.056	0.018
	р	0.201	0.676	0.541	0.279	0.214	0.429	0.796
Parent's age	r	-0.079	-0.157	-0.114	-0.016	-0.158	-0.116	-0.068
	р	0.263	0.025	0.104	0.822	0.024	0.096	0.332
Parent's education	r	0.047	-0.025	-0.128	0.032	-0.032	-0.039	0.030
	р	0.503	0.718	0.067	0.644	0.652	0.581	0.668
Number of surgeries	r	0.024	0.001	-0.094	-0.038	-0.111	-0.096	-0.158
	р	0.728	0.993	0.181	0.585	0.113	0.169	0.024
		10.Ques.	11.Ques.	17.Ques.	18.Ques.	19.Ques.	20.Ques.	21.Ques
Child's age	r	-0.006	0.007	-0.053	-0.053	0.055	-0.012	0.013
	р	0.929	0.923	0.448	0.453	0.432	0.865	0.858
Parent's age	r	0.026	-0.115	-0.062	0.022	0.002	0.017	-0.014
	р	0.710	0.100	0.374	0.760	0.981	0.809	0.842
Parent's education	r	-0.079	0.011	-0.013	0.044	-0.107	-0.055	-0.005
	р	0.263	0.880	0.855	0.535	0.125	0.436	0.949
Number of surgeries	r	-0.062	-0.018	-0.125	-0.042	-0.050	-0.097	-0.052
	р	0.374	0.797	0.074	0.548	0.476	0.169	0.461

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and anesthesiologists to display a less impetuous attitude. A substantial negative correlation was found between the patient's age and the level of satisfaction regarding the information provided by the surgeon and the anesthetist. And there was a significant positive correlation between the number of surgeries the patients underwent and the level of satisfaction regarding the importance attached to the privacy of the children.

Anxiety is an important negative factor for both children and their families in the preoperative period, and the anxiety of the families would affect children and increase their concerns.^{9,10} While the fear of separation from their families is the cause of anxiety in younger children, older children became anxious because of their concerns regarding the surgery and anesthesia. However, anxiety develops in families mainly due to lack of information in the operative process. Such anxiety leads to negative outcomes in children such as increased stress, fear, temper or difficulty in pain treatment.11 Therefore, it is important to reduce the level of anxiety of the families by providing them with sufficient information, allocating enough time for them, answering their questions clearly and increasing their satisfaction levels.12 In this study, the satisfaction levels for patients' parents decreased mainly due to anesthetist's failure to make enough time for them during the preoperative process. Parents also demanded the surgeons to be more honest about the procedures and to have conversations with them in which parents discuss the issues worrying them about the procedure. The intense patient population in the hospital might have contributed to this negative outcome.

Although the questionnaire included 21 questions, the participation rate was high in this study. It may be due to the fact that the questions were easily comprehensible and required short answers. A previous study dominated by females, indicated that mothers had more pathological anxiety compared to fathers.13 In the present study, nearly 63% of the participants were female, 52% of them were young adults aged between 30 and 40 and 52% of them were primary school graduates. The fact that the study population was dominated by mothers may have increased anxiety levels, but didn't lead to any change in satisfaction levels.

					TABLE 6:		tion betwe	en answei	rs of the qu	Jestionnain	. Correlation between answers of the questionnairre questions.	s.				
		1.Ques.	2.Ques.	3.Ques.	4.Ques.	5.Ques.	6.Ques.	7.Ques.	8.Ques.	11.Ques.	12.Ques.	13.Ques.	19.Ques.	20.Ques.	21.Ques.	22.Ques.
2.Ques.	<u> </u>	0.305														
	ď	0.000														
3.Ques.	2	0.361	0.325													
	ď	0.000	0.000													
4.Ques.	<u> </u>	0.281	0.364	0.419												
	d	0.000	0.000	0.000												
5.Ques.	L	0.280	0.191	0.389	0.408											
	ď	0.000	0.006	0.000	0.000											
6.Ques.	2	0.282	0.179	0.312	0.366	0.580										
	d	0.000	0.010	0.000	0.000	0.000										
7.Ques.	L	0.277	0.211	0.342	0.305	0.501	0.602									
	٩	0.000	0.002	0.000	0.000	0.000	0.000									
8.Ques.	2	0.085	0.236	0.239	0.258	0.372	0.321	0.445								
	d	0.223	0.001	0.001	0.000	0.000	0.000	0.000								
10.Ques.	L	0.190	0.250	0.211	0.379	0.406	0.418	0.451	0.242							
	٩	0.006	0.000	0.002	0.000	0.000	0.000	0.000	0.000							
11.Ques.	2	0.260	0.352	0.443	0.325	0.437	0.377	0.448	0.475	0.398						
	d	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000						
12.Ques.	L	0.169	0.252	0.393	0.234	0.407	0.272	0.351	0.415	0.275	0.712					
	ď	0.016	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000					
16.Ques.	~	0.158	0.319	0.245	0.323	0.313	0.255	0.261	0.265	0.416	0.335	0.268				
	ď	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000				
17.Ques.	L	0.374	0.199	0.282	0.352	0.373	0.377	0.473	0.380	0.346	0.453	0.324	0.354			
	ď	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
18.Ques.	<u> </u>	0.268	0.274	0.393	0.356	0.517	0.364	0.365	0.353	0.318	0.490	0.466	0.426	0.525		
	ď	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
19.Ques.	L	0.248	0.218	0.240	0.356	0.385	0.327	0.419	0.342	0.330	0.432	0.398	0.335	0.622	0.688	
	d	0.000	0.002	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
20.Ques.	-	0.104	0.108	0.138	0.136	-0.030	0.152	0.083	0.145	0.156	0.176	0.138	0.140	0.182	0.151	0.158
	d	0.138	0.125	0.048	0.051	0.665	0.029	0.238	0.038	0.025	0.012	0.049	0.045	0.009	0.031	0.024
Spearman Correlation	irrelation															

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The study indicated that there was a significant negative correlation between the children's age and the level of satisfaction regarding the information provided by anesthetist and surgical team. The older the children were, the less satisfied they were with the information provided during the preoperative process. As is known, it is much harder for the patients to convince older children and answer their questions compared to younger children. Therefore, patients want to have more detailed information to be able to make sufficient explanations to their children.¹⁴ Regarding the importance attached to their children's privacy, the satisfaction scores of the parents whose children had no operation before were lower than the satisfaction scores of the parents whose children had multiple operations earlier. It can be concluded from this information that parents who encountered in an operating room for the first time had higher expectations.

The rate of people demanding the same physician to perform the procedure again, in case of repeated surgery, was significantly lower in major surgery cases compared to minor surgeries. The factor leading that result was the concern that both the patients and their parents could experience complications following the procedure in major operations.

There are some limitations regarding the present study. One of the limitations has to do with

the questions that parents were taking into consideration for the questionnaire. However, specific questions could have been prepared for the children and therefore the services of the hospital could have been improved through the ones convinced to cooperate. Another limitation of the present study concerns the categorization of the patients; patients could have been categorized according to the surgical departments, and the satisfaction levels would be examined one by one; whereas this study in general examined the scores of the parents who were admitted to the operating room.

CONCLUSION

The satisfaction level of the patients and their parents directly affect the quality of the hospital and play a significant role in improving the income level of the hospital and the equipment used in the hospital accordingly. Furthermore, patient/parental satisfaction facilitates pediatric patient's adaptation to the hospital environment and improves the outcomes of the responses to treatment by reducing complication rates. High levels of satisfaction producing such valuable results could only be achieved through the cooperation of the surgical team, anesthetist and hospital staff.

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