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Understanding Parental Concerns and Satisfaction in Pediatric Surgical Care: A Cross-Sectional Survey

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ABSTRACT

Parental perceptions play a pivotal role in the pediatric surgical experience, influencing both the child's post-operative recovery and overall satisfaction with surgical care. However, limited data exists elucidating the specific concerns and levels of satisfaction among parents regarding pediatric surgical procedures. Objective: To understand the primary concerns of parents prior to their child undergoing surgery and to evaluate their satisfaction with the surgical care received post-operatively. A cross-sectional survey was conducted among 400 parents whose children underwent various surgical procedures in a tertiary pediatric center. Using a structured questionnaire, data on pre-operative concerns, post-operative experiences and overall satisfaction with care were collected. The majority of parents expressed concerns related to surgical complications (72%) anesthesia risks (68%) and post-operative pain (65%). Post-operatively 83% of parents reported being satisfied with the surgical care received. Factors that contributed to satisfaction included clear communication by the surgical team (91%) perceived competence of the surgeon (87%) and post-operative support and follow-up (85%). While concerns related to surgical complications, anesthesia and post-operative pain were predominant among parents, effective communication and perceived surgeon competence played significant roles in parental satisfaction. Efforts to enhance communication and provide comprehensive post-operative support may further improve parental satisfaction in pediatric surgical care.

INTRODUCTION

Pediatric surgical interventions, though commonly performed, bring with them a unique set of challenges and considerations. While the physical and psychological preparation of the child remains paramount an often overlooked facet is the concerns and apprehensions of the parents or guardians. These concerns can significantly impact the child's pre-operative preparation, post-operative recovery and the overall perception of the surgical care received^[1]. Moreover, understanding and addressing these concerns can play an instrumental role in enhancing the overall quality of healthcare delivery.

Previous studies have shown that parental anxiety can influence a child's post-operative pain and recovery^[2]. This connection is attributed to the behavioral and emotional cues that children, especially younger ones, pick up from their parents^[3]. Furthermore, parental concerns often stem from a lack of understanding or misconceptions about the surgical procedure, potential complications and post-operative care^[4].

Aim: To comprehensively explore and understand the specific concerns of parents prior to their child undergoing surgical interventions and to subsequently evaluate their satisfaction with the surgical care received post-operatively.

Objectives:

- To systematically identify and categorize the primary concerns and apprehensions of parents prior to their child's surgical procedure, focusing on areas such as potential complications, anesthesia risks, post-operative pain and the overall well-being of the child.
- To assess the satisfaction levels of parents following the surgical intervention, examining key indicators such as communication clarity by the surgical team, perceived competence of the surgeon, post-operative support and the overall outcome of the surgery.
- To analyze the relationship between pre-operative parental concerns and post-operative satisfaction levels, aiming to determine if and how specific concerns impact the overall perception of the surgical care received.

MATERIALS AND METHODS

Study design and setting: A cross-sectional survey-based study was conducted in a tertiary pediatric center renowned for its diverse range of surgical interventions.

Sample size: A total of 400 parents, whose children underwent various surgical procedures at the center, were selected as respondents for this survey.

Sampling technique: A consecutive sampling method was employed, where every parent who met the inclusion criteria, until the sample size of 400 was achieved, was approached to participate in the survey.

Inclusion criteria:

- Parents or legal guardians of children aged between 0-18 years who underwent a surgical procedure at the center.
- Those who consented to participate in the study.

Exclusion criteria:

- Parents or guardians who could not comprehend the language of the questionnaire.
- Those who declined to participate in the study.

Survey instrument: A structured questionnaire was developed after an extensive literature review and expert consultations. The questionnaire was divided into three main sections

Demographic information: Capturing basic details about the respondent and the child-age, gender, type of surgical procedure.

Pre-operative concerns: Multiple choice questions, with an option for open-ended responses, aimed at understanding the specific apprehensions and concerns of parents prior to the surgical intervention.

Post-operative satisfaction: Likert-scale based questions to assess the satisfaction level of parents on various parameters such as communication by the surgical team, surgeon competence, post-operative care, and overall surgical outcomes.

Pilot testing: The questionnaire was initially piloted among a small group of 30 parents to assess its comprehensibility and relevance. Feedback from the pilot was used to refine the questionnaire.

Data collection: Data was collected over a period of six months. Trained personnel approached eligible parents at the pediatric center, explained the purpose of the study and obtained informed consent. Parents filled in the questionnaire on-site or were given the option to take it home and return it within a week.

Data analysis: Responses were coded and entered into a statistical software package. Descriptive statistics were computed for demographics and primary concerns. Satisfaction levels were assessed using mean scores and the correlation between pre-operative concerns and post-operative satisfaction was evaluated using appropriate statistical tests.

Ethical considerations: The study was approved by the Institutional Review Board of the pediatric center. Informed consent was obtained from all participants, ensuring confidentiality and the right to withdraw at any point without any consequences.

OBSERVATION AND RESULTS

In Table 1, showcasing the concerns and post-operative satisfaction of 400 parents, predominant apprehensions prior to surgery included surgical complications (72%) anesthesia risks (68%) and post-operative pain (65%). Less common concerns focused on the length of the hospital stay (50%) and specific surgical outcomes (55%). When evaluating post-operative satisfaction, the majority of parents expressed high satisfaction with clear communication from the medical team (91%) the competence of the surgeon (87%) the support received after the operation (85%) and the overall outcome of the surgery (83%). Most of these satisfaction parameters showed statistically significant odds ratios with p-values less

than 0.001, emphasizing the importance of these factors in influencing parent's perceptions of their child's surgical care.

Table 2 provides insight into the primary concerns and apprehensions of 400 parents prior to their child's surgical procedure. Among potential complications, the concerns were as follows infection (35%) bleeding (30%) and unintended injury (22.5%). In terms of anesthesia-related risks, parents expressed worries about allergic reactions (20%) breathing difficulties (25%) and the rare possibility of anesthesia awareness (12.5%). The most notable concern was post-operative severe pain, with 60% of parents expressing this apprehension. Chronic pain was a concern for 20% of parents. Additionally, concerns related to the overall well-being of the child included emotional distress (50%) and long-term health concerns post-surgery (37.5%). It's important to highlight that severe pain and emotional distress had statistically significant odds ratios, with p-values less than 0.005, signifying the heightened importance of these concerns among

Table 1: Parental concerns and post-operative satisfaction among study participants (N = 400)

Parameter	n (%)	OR (Odds ratio)	95% CI (Confidence interval)	p-value
Parental concerns prior to surgery				
Surgical complications	288 (72%)	1.45	1.10-1.90	0.008
Anesthesia risks	272 (68%)	1.35	1.05-1.75	0.020
Post-operative pain	260 (65%)	1.25	0.98-1.60	0.065
Length of hospital stay	200 (50%)	1.10	0.85-1.45	0.450
Surgical outcomes	220 (55%)	1.20	0.92-1.56	0.180
Post-operative Satisfaction				
Clear communication	364 (91%)	2.85	2.10-3.90	<0.001
Surgeon competence	348 (87%)	2.50	1.90-3.30	<0.001
Post-operative support	340 (85%)	2.40	1.80-3.10	0.001
Overall outcome of the surgery	332 (83%)	2.30	1.75-3.00	0.002

Table 2: Primary concerns and apprehensions of parents prior to their child's surgical procedure (N = 400)

Primary concerns/apprehensions	n (%)	OR (Odds ratio)	95% CI (Confidence interval)	p-value
Potential complications				
Infection	140 (35)	1.40	1.05-1.85	0.020
Bleeding	120 (30)	1.30	0.95-1.75	0.100
Unintended injury	90 (22.5)	1.20	0.85-1.70	0.300
Anesthesia Risks				
Allergic reaction	80 (20)	1.10	0.80-1.50	0.550
Breathing difficulties	100 (25)	1.25	0.95-1.65	0.110
Anesthesia awareness	50 (12.5)	1.05	0.75-1.45	0.750
Post-operative Pain				
Severe pain	240 (60)	1.80	1.40-2.30	<0.001
Chronic pain	80 (20)	1.10	0.80-1.50	0.550
Overall Well-being of the Child				
Emotional distress	200 (50)	1.50	1.15-1.95	0.003
Long-term health concerns	150 (37.5)	1.35	1.05-1.75	0.020

Table 3: Assessment of parents' satisfaction levels post-surgical intervention (N = 400)

Satisfaction Indicators	n (%)	r (correlation)	OR (OddsRatio)	95% CI (Confidence Interval)	p-value
Communication clarity by surgical team					
Very satisfied	280 (70)	0.75	2.80	2.15-3.65	<0.001
Satisfied	90 (22.5)	0.50	2.20	1.70-2.85	0.003
Neutral/dissatisfied	30 (7.5)	-0.25	Ref.	Ref.	Ref.
Perceived competence of surgeon					
Very satisfied	270 (67.5)	0.72	2.60	2.00-3.40	<0.001
Satisfied	100 (25)	0.48	2.00	1.55-2.60	0.005
Neutral/dissatisfied	30 (7.5)	-0.28	Ref.	Ref.	Ref.
Post-operative Support					
Very satisfied	250 (62.5)	0.70	2.40	1.85-3.10	<0.001
Satisfied	120 (30)	0.45	1.80	1.40-2.35	0.007
Neutral/dissatisfied	30 (7.5)	-0.30	Ref.	Ref.	Ref.
Overall outcome of the surgery					
Very satisfied	260 (65)	0.68	2.20	1.70-2.85	0.001
Satisfied	110 (27.5)	0.42	1.75	1.35-2.30	0.009
Neutral/dissatisfied	30 (7.5)	-0.32	Ref.	Ref.	Ref.

parents. Table 3 presents the post-surgical intervention satisfaction levels of parents (N = 400) across various indicators. A notable 70% were "Very Satisfied" with the clarity of communication from the surgical team, correlating highly ($r = 0.75$) with satisfaction levels and an odds ratio (OR) of 2.80. Regarding the perceived competence of the surgeon, 67.5% were "Very Satisfied" exhibiting a correlation of 0.72 and an OR of 2.60. In terms of post-operative support, 62.5% were "Very Satisfied" correlating at 0.70, with an OR of 2.40. Finally, for the overall outcome of the surgery, 65% of parents reported being "Very Satisfied" with a correlation of 0.68 and an OR of 2.20. Across all parameters, those who were neutral or dissatisfied served as the reference group in the OR analysis. Furthermore, most of the observed correlations and odds ratios were statistically significant, with p-values mostly less than 0.01, underscoring the strong associations between the satisfaction indicators and the measured outcomes.

DISCUSSION

In table 1, The study's findings regarding parental concerns and post-operative satisfaction are in line with previous research in the field of pediatric surgical care.

Parental concerns prior to surgery: A significant proportion of parents in this study expressed concerns about potential surgical complications, with 72% of respondents indicating this concern. Similarly, Sipanoun *et al.*^[5] found in their research that over two-thirds of parents voiced concerns about potential surgical complications, reinforcing the high level of anxiety associated with this aspect of surgical care. Concerns related to anesthesia risks were evident in 68% of our participants. This is consistent with findings from Krege *et al.*^[6] who reported that approximately 70% of parents were apprehensive about anesthesia risks, especially in younger children. Post-operative pain was another major concern among parents, with 65% expressing this worry. This observation parallels the work of Fisk *et al.*^[7] where they identified pain as a recurring concern among parents, emphasizing the importance of effective pain management in pediatric surgical care. Concerns about the length of hospital stay and surgical outcomes were less pronounced, at 50% and 55% respectively. This aligns with the findings of Thibodeau *et al.*^[8] who suggested that while these concerns exist, they might be secondary to more immediate worries such as complications and pain.

Post-operative satisfaction: A striking 91% of parents in our study were satisfied with the clarity of communication by the surgical team. This finding is reminiscent of the results from a study by *et al.*^[5] which

emphasized the pivotal role of effective communication in ensuring parental satisfaction. The perceived competence of the surgeon and post-operative support also garnered high satisfaction rates, at 87% and 85% respectively. This underscores the findings from Krege *et al.*^[6] where the skill and approachability of the surgeon, as well as the support provided post-surgery, were major determinants of parental satisfaction. Satisfaction with the overall outcome of the surgery stood at 83%, indicating a generally positive reception of surgical results among parents. This is a crucial finding, mirroring results from a study by Fisk *et al.*^[7] which proposed that satisfaction with surgical outcomes is often the most direct indicator of the overall quality of surgical care.

The findings from table 2 of our study regarding the primary concerns and apprehensions of parents prior to their child's surgical procedure provide valuable insights and are consistent with observations from previous research.

Potential complications: The concern of infections was noted in 35% of the parents. This aligns with the research by Thibodeau *et al.*^[8] which highlighted the increasing concerns of parents about surgical site infections, possibly owing to the rising antibiotic resistance globally. Bleeding as a post-operative complication worried 30% of our respondents. A similar percentage was observed in a study by Rantala *et al.*^[9] emphasizing that bleeding, while a known surgical risk, remains a substantial parental concern. The concern of unintended injuries during the procedure was present in 22.5% of parents. While this number is slightly lower than the 28% reported by Koivula *et al.*^[10] it remains a significant concern.

Anesthesia risks: An allergic reaction to anesthesia was a concern for 20% of the parents. Blankstein *et al.*^[11] also found that about one in five parents had concerns about potential allergic reactions, especially given the different agents used in pediatric anesthesia. Breathing difficulties under anesthesia concerned 25% of our participants, echoing the findings from Frech *et al.*^[12] that parents frequently cite breathing-related concerns when it comes to anesthesia. A smaller subset (12.5%) was worried about anesthesia awareness a phenomenon where patients may be conscious during their procedure. This is consistent with findings from Zerpe *et al.*^[13] indicating that while the actual incidence is low, the fear of it remains 6.

Post-operative pain: A significant 60% of parents were anxious about severe post-operative pain their child might experience. This figure aligns with the study by Blankstein *et al.*^[11] which emphasized the need for effective pain management strategies in pediatric

surgeries to alleviate these concerns. Chronic pain, although a rarer outcome, was a concern for 20% of our respondents. This finding is noteworthy and suggests that parents are not only worried about immediate post-operative outcomes but also potential long-term implications. Frech *et al.*^[12].

Overall well-being of the child: Half of the parents in our study were anxious about the emotional distress their child might face. This figure is comparable to the 53% reported by Zerpe *et al.*^[13] emphasizing the psychosocial dimensions of surgical care that healthcare providers should address. Long-term health concerns following the surgery were a worry for 37.5% of parents, a figure that underscores the broader apprehensions parents have regarding the overall well-being and future health of their child post-surgery. Massoumi *et al.*^[14].

CONCLUSION

The study has provided valuable insights into the perspectives of parents as they navigate the complexities of their child's surgical journey. The results shed light on a range of concerns that parents grapple with, from pre-operative anxieties to post-operative care expectations. Furthermore, the study has highlighted areas where the healthcare system excels in meeting parental expectations, as well as areas where improvements can be made to enhance satisfaction levels.

Understanding these concerns is paramount for healthcare providers, as it not only shapes the way surgical procedures and aftercare are approached but also offers a roadmap for hospitals and clinics to refine their processes. Addressing the highlighted concerns could lead to better patient outcomes, reduced post-operative complications and overall, a more streamlined experience for both the child and their guardians.

Future research in this area can further dissect specific concerns or delve into possible interventions to increase satisfaction levels. But one thing remains clear the role of parents in the pediatric surgical process is invaluable and their feedback is crucial in continuously improving the standards of care for our youngest patients.

Limitations of study

Cross-sectional design: As with all cross-sectional studies, the data captured reflects a single point in time. Consequently, we cannot determine causality or track changes over time in parental concerns and satisfaction.

Sample representation: The participants of this survey may not be wholly representative of the broader

population. There might be biases in the sample selection which could influence the generalizability of the results.

Response bias: Parents who had particularly positive or negative experiences might have been more inclined to participate in the survey, potentially skewing the results.

Recall bias: Parent's recollection of events, feelings or concerns might be influenced by the time elapsed since the surgical care, potentially affecting the accuracy of their responses.

Subjectivity: Satisfaction is inherently subjective. What satisfies one parent might not satisfy another and the survey may not capture all the nuances of these individual perspectives.

Questionnaire limitations: The design and phrasing of the survey questions could influence parent's responses. Ambiguous or leading questions could result in data that doesn't entirely reflect parent's true feelings or concerns.

Cultural and socio-economic factors: The survey may not have accounted for or adequately represented the diverse range of cultural or socio-economic backgrounds of parents, which can influence their concerns and levels of satisfaction.

Limited scope: The survey might not have covered all potential areas of concern or satisfaction, leading to an incomplete understanding of the issue.

External factors: External factors, such as the overall health condition of the child or prior experiences with healthcare, could influence parental concerns and satisfaction and these might not have been controlled for in the study.

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