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Effect of Parental Presence during Induction on Perioperative Anxiety.

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ABSTRACT

Background: Children usually develop significant anxiety before and during the induction of anesthesia because of their separation with parents, unfamiliar environment, and fear of medical processes. High levels of perioperative anxiety can result in ineffective cooperation in the process of anesthesia induction and adverse outcome of behavior after the surgery. The presence of parents at the time of administering anesthesia has been suggested as an adjuvant measure to minimize anxiety in children.

Objective: To evaluate the effect of parental presence during anesthesia induction on perioperative anxiety among pediatric patients undergoing elective surgical procedures.

Methodology: This is an observational comparative study carried out at Mohi ud Din Teaching Hospital Mirpur, AJK in six months between January 2025 and June 2025. Eighty-two pediatric patients who were electively admitted to undergo general anesthesia surgery were included. The children were split into two categories Group A, the use of parents during induction of anesthesia, and Group B, induction was conducted without the parents. In the preoperative area and the induction period, a scoring system on observational anxiety was used to measure anxiety levels. Inducing behavioral reactions, mask acceptance, emergence agitation and parental satisfaction were also noted. The statistical analysis of data was conducted with the help of proper statistical procedures, and a p-value was used as statistically significant at least 0.05.

Results: Children in the parental presence group demonstrated significantly lower anxiety scores during anesthesia induction compared with those in the non-parental presence group. Improved cooperation during mask placement and better behavioral responses were observed among children accompanied by their parents. Furthermore, postoperative agitation was less frequent in the parental presence group, and parental satisfaction scores were significantly higher.

Conclusion: Parental presence during anesthesia induction appears to be an effective non-pharmacological strategy to reduce perioperative anxiety in pediatric patients. Incorporating parental support during induction may improve the child's behavioral response, enhance cooperation during anesthesia administration, and increase parental satisfaction..

Key Words: Pediatric anesthesia, parental presence, anesthesia induction, perioperative anxiety, pediatric surgery.

INTRODUCTION

Children having surgical procedures are prone to anxiety, which is a major issue in pediatric anesthesia. The new hospital setting, parental separation, fear of medical apparatus, and expectancy of pain can also be included in the list of the stress and emotional burden factors in the life of the pediatric patient. High levels of anxiety in the perioperative state can lead to behavioral disorder, lack of cooperation in the process of induction of anesthesia, and negative post-surgery recovery [1-3]

One of the most stressful stages experienced by children during surgery is anesthesia induction. Fear is common with young patients as they are separated with their parents prior to entering the operating room. This can cause crying, resistance and.

Several measures have been suggested in order to minimize perioperative anxiety among children patients. Such strategies are: pharmacological sedation, behavioral preparatory programs, distraction strategies, and involvement of parents during the perioperative time. The parental presence at the time of anesthesia induction is one of such methods, which proved to be a simple and supportive intervention, which could possibly relieve anxiety and enhance compliance in children [7-9].

A parent can be a source of emotional comfort and security to the child with a stressful medical experience. Caregivers can reduce this fear by familiar voices and physical comfort that encourages the calm behavior during induction. Indeed, a number of studies have proposed that the parent presence could enhance psychological responses of child to the anesthesia although the outcomes were inconsistent basing on the study design and patient factors [10, 11].

Considering the importance of minimizing perioperative stress in pediatric patients, it is essential to further evaluate the effectiveness of parental presence during anesthesia induction. Therefore, the present study was conducted to assess the effect of parental presence during induction on perioperative anxiety among pediatric patients undergoing elective surgical procedures.

METHODOLOGY

This is an observational comparative study carried out at Mohi ud Din Teaching Hospital Mirpur, AJK in six months between January 2025 and June 2025, to determine the impact of the presence of parents during anesthesia induction on perioperative anxiety among children going through elective surgical operations. The study involved 82 children who were to be subjected to surgery using the general anesthesia. The sample population was a group of children of both gender who were eligible to take part in the research and their parents or guardians had to be informed consent.The research protocol was designed to observe and compare anxiety levels in children during the perioperative period with and without parental presence during anesthesia induction.

The study involved children aged between 3 and 12 years scheduled to undergo elective surgery and with American Society of Anesthesiologists (ASA) physical status I or II. Patients with developmental delay, psychiatric disorders, past traumatic operation, or emergency cases were not included as a possible confounding factor affecting the assessment of anxiety. The demographic information including age, sex, body mass index, ASA status, and the history of surgical exposure in the past were collected under a structured data collection form before surgery.

The two groups were categorized regarding the presence of a parent or a guardian with the child during the induction of anesthesia. Group A comprised of children that were inducted in the presence of a parent and Group B consisted of children that were inducted in the presence of an anesthesia inductor, as it is the practice of the operating room. All patients were subjected to standard anesthetic procedures to ensure that the procedure was the same across the board.

The amount of anxiety in the children was measured through a validated observational anxiety assessment scale, which measured the behavioral indicators of the children, including the facial expression, the activity level, vocalization and interaction with the medical staff. The baseline anxiety was measured in the preoperative holding area and a second test was done on anesthesia induction. Other perioperative behavioral responses such as the cooperation during mask placement, crying, resistance and reassurance were also reported by the attending anesthesia team.

The recovery room monitored postoperative observations to measure agitation on emergence, postoperative anxiety and postoperative recovery time. Besides that, the satisfaction of the parents with the induction process was measured on the basis of a numerical rating scale. All the gathered data was keyed into a statistical software application to be examined. Continuous variables were summarized in the form of mean ± SD and the categorical variables in forms of frequencies and percentages. The appropriate statistical tests were conducted in making comparisons between the two groups and a p-value of 0.05 or less was considered statistically significant.

RESULTS

A total of 82 pediatric patients scheduled for elective surgical procedures were included in the study. The participants were divided into two equal groups: Group A (parent present during anesthesia induction) and Group B (no parental presence during induction), each consisting of 41 children. The results compare demographic characteristics, anxiety scores, behavioral responses during induction, and postoperative outcomes between the two groups.

This table provides the summary of the demographic and clinical features of the children involved in the study at the baseline. The sampling population was comparable in terms of age, gender, body weight, and ASA physical status classification. There were no statistically significant differences between the groups which suggest that the study groups were similar at baseline.

Table 1. Demographic Characteristics of the Study Participants (n = 82)

Variable	Group A (Parent Present) n=41	Group B (Parent Absent) n=41	p-value
Age (years), mean ± SD	6.8 ± 2.1	7.1 ± 2.3	0.52
Male, n (%)	23 (56.1%)	21 (51.2%)	0.65
Female, n (%)	18 (43.9%)	20 (48.8%)	
Weight (kg), mean ± SD	22.6 ± 5.4	23.1 ± 5.7	0.68
ASA I, n (%)	30 (73.2%)	29 (70.7%)	0.80
ASA II, n (%)	11 (26.8%)	12 (29.3%)	
Previous surgery history, n (%)	9 (21.9%)	10 (24.4%)	0.79

This table shows the comparison of the anxiety levels that were experienced in the preoperative holding area before the anesthesia induction. Children with parents showed less anxiety levels in comparison with those who lacked a parental presence. The two groups showed significant difference, thus, indicating that parental presence led to less anxiety before induction.

Table 2. Comparison of Preoperative Anxiety Scores Between Groups

Anxiety Variable	Group A (Parent Present)	Group B (Parent Absent)	p-value
Baseline anxiety score (mean ± SD)	38.6 ± 7.5	47.9 ± 8.2	<0.001
Moderate anxiety, n (%)	13 (31.7%)	21 (51.2%)	
High anxiety, n (%)	6 (14.6%)	15 (36.6%)	

This table shows the levels of anxiety and behavioral conditions of children in the induction of anesthesia. Parents with their children were significantly less anxious and more cooperative during the induction of a mask. Children who did not have parents, on the contrary, had more distress behavioral patterns in crying and resistance.

Table 3. Anxiety and Behavioral Response During Anesthesia Induction

Variable	Group A (Parent Present)	Group B (Parent Absent)	p-value
Anxiety score during induction (mean ± SD)	35.2 ± 6.8	49.3 ± 9.1	<0.001
Calm/cooperative child, n (%)	30 (73.2%)	17 (41.5%)	0.004
Crying/resistance, n (%)	11 (26.8%)	24 (58.5%)	

This table presents an overview of the perioperative behavior results in anesthesia induction. The parental presence group of children showed better mask acceptance and less extra reassurance or intervention was required during the induction. Such results indicate that presence of parents enhanced the child behavioral response at the perioperative stage.

Table 4. Perioperative Behavioral Outcomes

Variable	Group A	Group B	p-value
Easy mask acceptance, n (%)	32 (78.0%)	19 (46.3%)	0.003
Difficult mask acceptance, n (%)	9 (22.0%)	22 (53.7%)	
Need for sedative premedication, n (%)	7 (17.1%)	16 (39.0%)	0.02
Induction time (minutes), mean ± SD	3.6 ± 1.2	5.1 ± 1.6	<0.001

This table shows the behavioral outcomes of postoperative and parental satisfaction after the procedure. Children who had parents present during induction had fewer incidences of emergence agitation and smooth recovery profiles. Also, parental satisfaction with the process of anesthesia was much more in the group of parental presence.

Table 5. Postoperative Outcomes and Parental Satisfaction

Variable	Group A	Group B	p-value
Emergence agitation, n (%)	6 (14.6%)	15 (36.6%)	0.02
Postoperative anxiety score (mean ± SD)	28.4 ± 6.1	35.7 ± 7.2	<0.001
Recovery room stay (minutes), mean ± SD	36.5 ± 8.4	42.1 ± 9.7	0.01
Parent satisfaction score (0–10)	8.9 ± 1.1	6.3 ± 1.5	<0.001

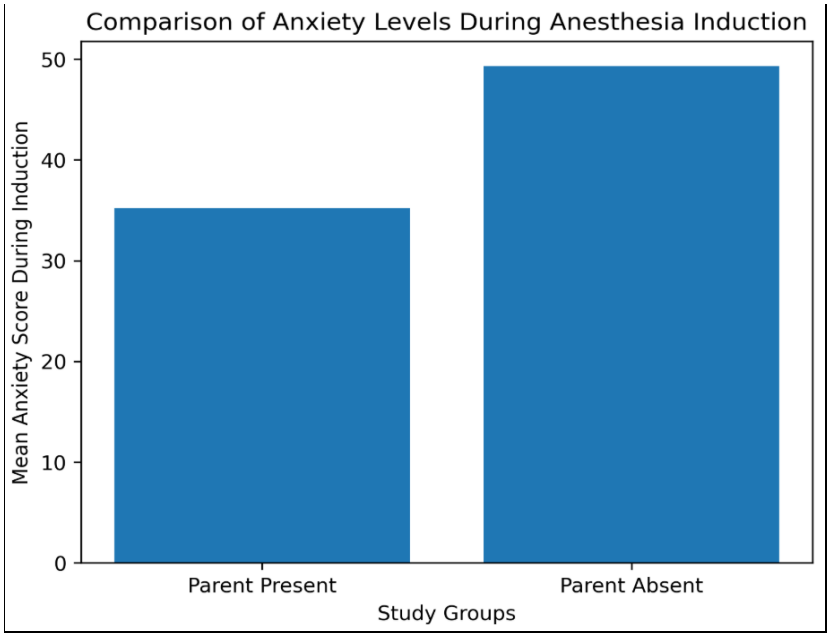

Figure 1. Comparison of anxiety levels during anesthesia induction between children with parental presence and those without parental presence (n = 82).

Children whose parents were present during anesthesia induction demonstrated lower mean anxiety scores compared with children who underwent induction without parental presence, indicating that parental presence may help reduce perioperative anxiety.

DISCUSSION

The present study evaluated the effect of parental presence during induction of anesthesia on perioperative anxiety among pediatric patients. This study has shown that children, whose parents were with them during the anesthesia induction procedure, had very low levels of anxiety than those who were inducted, in the absence of parents. This finding underscores the valuable role of emotional reassurance and familiar support in minimizing psychological stress of children during surgical operations [12-14].

In the present study, the baseline data included age, gender distribution, weight and physical status of ASA, and the similarities between the two groups were observed. This resemblance points to the fact that the variations in the anxiety scores were probably based on the presence or absence of parents but not demographic or clinical issues. Children whose parents were in attendance exhibited better cooperation and calmer demeanor when the mask was being put on and induction was taking place meaning that the presence of the parents might be beneficial to a more seamless induction of anesthesia [15-17].

The findings also showed that children without presence of their parents showed increased levels of crying, resistance and emotional distress in the process of induction. Pediatric patients tend to fear the unknown environment, the loss of their carers and expectancy of medical practice. Availability of a parent in this stressful situation seems to give a feeling of security

which then helps in reducing the anxiety besides enhancing the behavioral response of the child [18].

The other significant result of this research was the decrease in perioperative behavioral disturbance in the parental presence group of children. Children who were present with their parents had high levels of mask acceptance, reduced induction duration and less difficulty in behavior during the administration of anesthesia. Such results imply that the parental presence can enhance the effectiveness of the perioperative management as well as increase the experience of the pediatric patients [19].

The positive impact of parental presence was also supported by the outcomes of this study on postoperative outcomes. Kids who had parents at the induction had lesser postoperative anxiety scores and reduced incidences of emergence agitations in the recovery room. This means that alleviation of anxiety in the initial perioperative period can positively affect the child in terms of recovery and emotional stability in the postoperative period [20].

Also, the level of parental satisfaction was significant when the parents were given an opportunity to be with their children during induction of anesthesia. Parents were relieved a lot to have the ability to support their child in this critical stage. Parental satisfaction may be strengthened and can help in enhancing the trust in the healthcare professionals, which may positively affect the perception of the entire surgical experience.

Overall, the results of the given research indicate that the presence of parents during the induction of anesthesia is a non-pharmacological and easy strategy that might be effective in reducing perioperative anxiety and enhancing behavioral outcomes in children.

CONCLUSION

Parental presence during induction of anesthesia was associated with significantly reduced perioperative anxiety among pediatric patients undergoing elective surgical procedures. Children who were accompanied by their parents demonstrated lower anxiety scores, improved cooperation during anesthesia induction, and fewer behavioral disturbances compared with those who underwent induction without parental presence.

These findings indicate that allowing parental presence during anesthesia induction can serve as a beneficial supportive strategy to improve the psychological comfort of children during the perioperative period. Incorporating family-centered practices in pediatric anesthesia care may enhance both patient outcomes and parental satisfaction. Further research with larger sample sizes may help to strengthen the evidence supporting this approach in pediatric surgical settings

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