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From fear to triumph: empowering children to overcome anxiety in day surgery: a mini review

Review

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Abstract: **Objective:** Pediatric patients undergoing day surgery often experience significant anxiety, which can negatively impact both the child and their parents. Addressing this anxiety is crucial to ensure a smooth surgical experience and recovery. This mini review aims to evaluate the impact of preoperative anxiety in children, identify contributing factors, and explore effective strategies to manage this anxiety during day surgery.

Methods: A literature review was conducted, focusing on studies that assess anxiety levels in pediatric patients before day surgery and the interventions designed to alleviate this anxiety. The review included both psychological and procedural strategies.

Results: Preoperative anxiety in children can be influenced by a variety of factors, including age, previous medical experiences, parental anxiety, and the hospital environment. Untreated anxiety may lead to increased postoperative pain, behavioral changes, and extended recovery times. Several strategies, including psychological preparation, family centered approaches, and the involvement of child life specialists, have been shown to effectively reduce anxiety.

Conclusions: Managing anxiety in pediatric day surgery is vital to improving both surgical outcomes and the overall experience for children and their families. Healthcare professionals can play a key role in reducing anxiety through targeted interventions and supportive care.

Keywords: *pediatric anxiety • day surgery • preoperative preparation • parental involvement • psychological interventions*

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1. Introduction

Anxiety is a normal response to stressful situations and can be experienced by children undergoing surgery, particularly in day cases where they do not stay overnight in the hospital. Anxiety is a state of mind characterized by uneasiness, apprehension, or concern about an uncertain outcome. It can cause adverse physiological effects

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in the body, such as increased heart rate, sweating, and trembling.[1]

Children often have limited knowledge about the surgical process and may imagine the worst-case scenario. They may feel overwhelmed by the medical equipment, the strange surroundings, and the presence of strangers. Therefore, healthcare professionals must clarify every aspect of the surgical procedure to children and their caregivers, including what to anticipate and how to become prepared. Studies have shown that children's anxiety levels will decrease with more knowledge about their surgery.[2,3] The separation from their caregivers is another common cause of anxiety for kids getting surgery. When children are separated from their parents or principal caregivers, especially in strange environments, they may feel uncomfortable and anxious. However, family presence during the induction of anesthesia has been found to significantly lower children's anxiety levels and enhance their emotional well-being.[4] To alleviate anxiety, healthcare professionals should encourage parents to stay with their children as much as possible before and during the surgical procedure. The fear of pain is another cause of anxiety in children undergoing surgery. Children may be concerned about experiencing pain during or after the procedure, which can be frustrating. Healthcare professionals should provide children with appropriate pain management strategies to reduce stress and pain, including preoperative preparation and postoperative analgesia.[5]

Children may be concerned about complications or death, which can cause stress for both them and their families. The risks and advantages of the surgery must be thoroughly discussed with children and their families by medical professionals to allay their concerns. Healthcare professionals should know the causes of anxiety in children undergoing surgery and provide appropriate support to reduce anxiety levels. Providing detailed information about the surgical process, encouraging parental presence, providing pain management strategies, and discussing the risks and benefits of the surgery with children and their families can help alleviate anxiety and improve emotional well-being.[6,7] We evaluated this review to show the effect of anxiety and its related factors in pediatric patients and how we can manage it to avoid many risk factors.

2. Beyond the scalpel: Holistic approaches to addressing pediatric day surgery anxiety

Around 5 million children have surgery in the United States every year; 50%–75% of those children suffer from great levels of anxiety and fear during the perioperative period.[8] Preoperative anxiety leads to multiple adverse events following surgery as separation trauma, new-onset negative thoughts, and changes in attitude.[9,10] The trait of anxiety in parents has been shown to affect children's outcomes.[11] Interaction between parents and children was proven to be effective in reducing children's anxiety.[12,13] This encouraged more investigators to accomplish parent-centered programs to alleviate anxiety.[14]

Fortier et al.[14] have designed a preoperative preparation program based on shaping, exposure, distraction, and modeling with coaching techniques and involves information provided through video, written pamphlets, and coaching of parents. After investigating the components of the program individually, they found that parental planning and the use of distraction were the most effective 2 components in reducing the children's anxiety. Using parents to distract children is shown to be an effective technique by multiple studies.[12] Parents are the role models for their children, so if they show signs of anxiety or stress, this will have an impact on the child's behavior.[7]

Enabling parents to receive a sufficient amount of information about the procedure, educate their children about it, and have an active role in preparatory activities, such as play-based interventions or surgical tours may reduce anxiety in children during induction of anesthesia. [15–17] In addition, when in the operation room or procedure room, parents can benefit from coaching about where they can stand, the sequence of events, and what they can do to help their child.[18] During the procedure, parents can benefit from communication and updates, as well as social support offered by family and friends or hospital staff if appropriate.[17]

A nurse's role in ambulatory surgery can be summarized into 4 roles. First, to provide parents with sufficient information about the procedure, given orally or in printed form during the operation day. They can also provide information through telephone calls during the day before the operation. Giving parents sufficient information regarding the procedure may alleviate parents' anxiety. This will have an impact on the stress level encountered by the child. Second, documentation of all information about the procedure outcomes, and pre- and postoperative assessment. Third, individual nursing care. Nursing care must be individualized according to the child's needs and every patient needs to express their wishes about the nursing care they need. Lastly, follow-up through postoperative assessment and documentation and telephone calls after discharge.[19]

Parents and children have to be given enough information to deal with circumstances that may be strange or new for them.[20] Although it is a simple aim, the information given to parents must be simple and practical. It

includes information about preparation for the day, the day's routine, the postoperative care, and possible risks and complications.[21] Nurses are also responsible for pain care of children, including assessment of pain and administration of analgesics. They also discuss the plan of management with parents.[22,23]

Gender differences have a great influence on preoperative anxiety. Some studies have shown that females are more anxious than male children who received the same information and the same preoperative medical and non-medical conditions. However, this may not reflect the true picture of anxiety among males as they may express no anxiety or fear and they are anxious actually, while females' rating of anxiety always reflects truth when completing the Hospital Anxiety and Depression Scale (HADs) for anxiety measures. On the other hand, Mitchell[24] conducted a survey to measure anxiety in 674 preoperative 1-day surgery patients: 57% of them were females, and they found through the questionnaire that 83% of the patients showed anxiety where both males and females were less anxious than the real picture which was observed by the nurses before surgery. Moreover, Krohne and Slangen[25] performed a supportive emotional program for patients before surgery. The results displayed that anxiety levels were lowered significantly than those who were not exposed to that program, while males showed a higher anxiety than normal male patients. Until now, there is no clear evidence of the gender influence on preoperative anxiety.[25]

Anxiety is greatly affected by the type of anesthesia given to the patients. General anesthesia (GA) is mostly associated with a greater level of anxiety than local anesthesia. Children who undergo surgery using GA require more effort from parents to calm their child before the day of surgery, as this reduces their anxiety.[25,26] Nurses and the surrounding environment in the theater of surgery also have a great role in calming the child and reducing his fear and anxiety on the day of surgery. Local anesthesia accompanied by intravenous sedation is the most preferred type of anesthesia for pediatric day-case surgery. This later type not only decreases the anxiety, pain, fear, and cognitive dysfunction of children but also helps them to recover and return to their normal activities more rapidly than GA.[24,27]

The use of premedications will also help in lowering the anxiety in those children. Previous studies have shown that patients who received dextropropoxyphene hydrochloride at 32.5 mg, Paracetamol at 325 mg, and metoclopramide at 10 mg for children who are <50 kg and double the dose was given to those children >50 kg developed less pain, nausea, vomiting, and anxiousness than those who did not receive any premedications.[28]

Cognitive behavioral therapy (CBT), music, and audiovisual distractions are techniques used recently and have shown great results in minimizing pediatric anxiety. CBT is an active form of distraction where the child is encouraged to participate in certain activities before surgery to distract him from the anxious stimulus and keep him calm. On the other hand, music and audiovisual distractions are passive distractions where the patient is hearing or watching certain scenes and cartoons that distract him from the surrounding environment and keep him quiet. Studies have shown that active distraction (CBT) is a more effective method in lowering preoperative anxiety than passive distraction.[29,30]

3. Alleviating fears: Practical approaches to easing anxiety in pediatric day surgery

Procedures generally cause a feeling of distress in patients and their families, but children specifically experience these symptoms more than adults due to a lack of knowledge or experience. This requires special measures to be taken in daycare surgery for both the children and their guardians. Several interventions, comprising both pharmaceutical and psychological approaches, have been developed to address anxiety and compliance issues in children undergoing surgical procedures. Research studies have shown that using sedative premedication is more effective than other interventions in minimizing anxiety and promoting compliance in children. However, this method may not be the most cost-efficient or advantageous in the long run, as it only tackles the immediate situation without instilling coping mechanisms for similar situations in the future. Therefore, psychological preparation programs have become increasingly prevalent, using techniques such as games, narratives, and coping strategies to prepare children for surgery in a manner suitable for their developmental stage.[31–39] The effectiveness of parents being present in the operating theater until the administration of anesthesia is a controversial issue, with certain studies indicating positive outcomes, while others suggest that it may be counterproductive, particularly if the parents are also experiencing anxiety.[40–44] The best results seemed to be accomplished by combining pharmacological and psychological interventions in terms of reducing agitation during awakening from anesthesia and lessening preoperative anxiety in children and parents as well.[45–47] A randomized controlled trial showed that incorporating engaging role-playing activities, hands-on exploration of medical instruments, and psychological assistance may prove advantageous in equipping children for surgeries within pediatric medical facilities rather than distracting them with unrelated things to the operation.[48] Also, the choice of sedatives can cause a significant



Figure 1. The summary of all possible approaches in pediatric day surgery.

physiological effect on children undergoing daycare surgery. Although GA is a common choice for outpatient procedures, regional anesthesia and monitored anesthesia care (MAC) have recently gained more attention due to their potential advantages. Along with preemptive and multimodal analgesia, and antiemetic therapy, these techniques have contributed to improvements in recovery quality. Patient outcomes, safety, satisfaction, cost-effectiveness, efficiency, and access have become the focus of attention. While premedication with sedatives, amnesiacs, or anxiolytics does not typically cause significant delays in recovery after brief outpatient surgeries, some recent research has suggested that using such agents may have negative effects on the perioperative experience. Therefore, anxiolytic-sedative agents should be used sparingly and only when essential. To ensure patient comfort, anesthesia techniques should aim to minimize stress and reduce residual effects, while providing fast onset and offset, early return of cognitive function, and minimal postoperative nausea and vomiting, dizziness, or drowsiness. These features are especially important for patients undergoing surgery who need to quickly recover and return to normal activities.[49–52] Figure 1 shows the summary of all possible approaches in pediatric day surgery.

4. Conclusions

In conclusion, collaborative care is a powerful approach to mitigating anxiety in pediatric day surgery. By fostering a strong partnership between healthcare professionals, parents, and the child, it is possible to create an environment that addresses anxiety, supports emotional well-being, and promotes a positive surgical experience. Through effective communication, shared decision-making, and tailored strategies, collaborative care empowers children and their families to navigate the surgical journey with confidence and resilience.

Ethical approval

Ethical issues are not involved in this paper.

Conflicts of interest

All contributing authors declare no conflicts of interest.

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