

## Research Article

# State Anxiety in Jordanian Parents of Children Undergoing Same Day Surgery

Hala Mahmoud Obeidat<sup>1</sup>, Doa'a Abdullah Dwairej<sup>2</sup>, and Rose E. Constantino<sup>3\*</sup>

<sup>1</sup>Department of Nursing, Mutah University, Jordan

<sup>2</sup>Department of Nursing, University of Jordan, Jordan

<sup>3</sup>Department of Health and Community Systems, University of Pittsburgh, USA

**\*Corresponding author**

Rose E. Constantino, Department of Nursing, University of Pittsburgh, School of Department of Health and Community Systems, 3500 Victoria Street, Pittsburgh, PA 15261, USA, Tel: 412-624-2063; Fax: 412-383-7293; Email: rco100@pitt.edu

**Submitted:** 03 August 2017

**Accepted:** 20 March 2018

**Published:** 22 March 2018

**ISSN:** 2379-9501

**Copyright**

© 2018 Constantino et al.

**Keywords**

• Parental state anxiety; Same day surgery; Pediatric surgery; Jordan

**Abstract**

**Background:** Same day pediatric surgery is becoming more prevalent, with thousands of children undergoing such surgery globally. Perioperative parental stress and anxiety have been associated with lack of adherence in pre- and post-operative instructions, including inadequate pain management by parents. Majority of research has been conducted in Western countries. This descriptive study adds to the body of literature within the context of Middle Eastern culture, specifically Jordan. Such work contributes to the development of intervention programs to ameliorate parental anxiety.

**Purpose:** The purpose of this study is to describe pre- and post-operative parental state anxiety in a pediatric same day surgery.

**Method:** This descriptive study was conducted with a convenience sample of 46 parents. Parental levels of state anxiety were measured using the State Trait Anxiety Inventory (STAI-S) prior to and one hour following their child's surgery.

**Results:** Seventy-four percent of the parents have exhibited clinically significant state anxiety before surgery ( $43.63 \pm 9.48$ ). There was a significant decline in the level of parental state anxiety post surgery ( $t=3.93$ ;  $p<0.005$ ). Fifty percent of the parents have experienced clinically significant anxiety postoperatively.

**Conclusions and recommendations:** The majority of parents approached their child's same day surgery with high level of state anxiety which decreased significantly after surgery. The need for strategies to deal with parents' state anxiety is essential. Perioperative nurses can play a vital role in parent's preparation for their child's surgery.

**INTRODUCTION**

Parents play a pivotal role in supporting their children scheduled for pediatric surgery [1-3]. Impending pediatric surgery can be stressful for children and their parents [4-6]. Scrimin and others [7] found that 47% of parents were anxious and 27% of parents were experiencing stress. Other researchers reported that most parents exhibit high levels of anxiety and stress [6,8-10]. The ability of anxious parents to provide supportive emotional care for their children anticipating surgery may be diminished or impeded [1,2]. Compared to preoperative levels of parental anxiety, researchers found anxiety decreased significantly at 24 hours postoperatively and one month after pediatric surgery [7,9,10].

Perioperative parental stress and anxiety have been reported to be associated with factors including the lack of adherence with preoperative instructions [11,12], and rendering the child inadequately prepared for surgery [13,14]. Worry about pain management, potential postoperative complications, and the ability of the parents to care for their child during physical recovery in the home postoperatively contribute to feelings of stress and anxiety [7,8,10,13].

Parental stress and anxiety may have an effect on preoperative pediatric anxiety [15], complicate the process of the child's anesthesia induction [16] and result in inadequate management of postoperative pain [13,17,18]. Nurses have reported that dealing with anxious parents is a challenge which hinders provision of family centered care [19]. Uncertainty about the medical condition and treatment, uncertainty about the ability to provide nursing care at home, and worries about postoperative complications are among factors contributing to parental anxiety and stress [8,10,13,20].

Demographic factors such as gender, socioeconomic status, educational level as well as social support may also play a role in parental reactions to their child having surgery [7,8]. Locus of control, beliefs about self-efficacy, cognitive emotional regulation, and type of surgery are also significantly related with parental stress and anxiety [7,21].

Chorney and others [22] postulate that parents' behavior before surgery is a major predictor of their child's behavior before and after surgery. Parental stress is defined as a subjective feeling of being troubled, anxious, worried, and overwhelmed with the prospect of their child having surgery [13]. Perioperative

parental anxiety may be a “contagious phenomenon”; that is, such anxiety is transmitted to their child. In multiple studies, parental anxiety was a major predictor of a high level of anxiety in children [2,8,9,23,24]. Physiological indicators of parental anxiety and stress were significantly correlated with their child’s anxiety. Autonomic nervous system activity of the mothers and their children as measured by heart rate variability before surgery were positively correlated [25].

Over the last two decades with tremendous advances in the surgical and anesthesia techniques, the trends toward same day surgery have increased [26,27]. Same day surgery is a common practice in pediatric surgery. Since children usually present with uncomplicated conditions with no associated significant systemic illnesses, they are considered ideal candidates for such type of surgery [28]. In addition to its economic benefits, the same-day surgery minimizes the psychological disturbances and anxiety associated with hospitalization and reduces the risk of hospital-acquired infections in children [14,26,29].

## STATEMENT OF THE PROBLEM

Same day pediatric surgery is becoming more prevalent, with thousands of children undergoing such surgery globally. Perioperative parental stress and anxiety have been associated with lack of adherence in pre- and post-operative instructions, including inadequate pain management by parents. Majority of research has been conducted in Western countries. This descriptive study adds to the body of literature within the context of Middle Eastern culture, specifically Jordan. Such work could contribute to the development of intervention programs to ameliorate parental anxiety. The purpose of this study was to assess pre- and post-operative parental state anxiety in a pediatric same day surgery.

## DESIGN AND METHODS

This descriptive study aimed to identify levels of parental state anxiety when their child is having same day surgery. Following institutional review board approval and informed consent, a convenience sample of 46 Jordanian parents whose children were scheduled for pediatric surgery under general anesthesia Inclusion criteria included: literate parents with no known emotional illness, 18 years of age or older, and having a child under the age of 18 years scheduled for pediatric surgery. Parental levels of state anxiety were measured using the State Trait Anxiety Inventory-State sub scale (STAI-S) before and after one hour following their child’s surgery. Spielberger, Gorsuch, & Lushen (1983) STAI scale is a self-report measurement scale which is used to measure the intensity of state anxiety (that is related to a specific or certain situation) and trait anxiety (which reflect the human propensity to appraise the events as stressful). It consists from 40 items, two 20 items subscale. Each item is scored as 4 points Likert scale (Balsamo, et al., 2013).

The sample size was determined by an a priori power analysis at a significance level of 0.05, and power of 0.90 (paired t-test). The sample completed the 20 item state subscale of the State Trait Anxiety Inventory for Adults (STAI) [30]. The total score of this sub scale ranges from 20 to 80 with higher scores indicates higher level of state anxiety (Balsamo, et al., 2013). A cut of point

of 39-40 has been determined to indicate clinically significant state anxiety (Knight, Waal-Manning, & Spears, 1983).

Parents completed the STAI state anxiety subscale before and after their child’s same day surgery, with scores of 39-40 on the four point Likert scale is an indication of clinically significant parental anxiety. The Arabic version of the scale [31] was used in the current study with a correlation coefficient on state anxiety 0.85 and high internal consistency (Cronbach’s alpha=0.89) [31]. In the study sample, the STAI-S Cronbach’s alpha=0.85.

## Setting and data collection

The study was conducted in the Queen Rania Pediatric Hospital in Amman, Jordan, which is the first specialized pediatric hospital in Jordan with the largest pediatric surgery division in the country. The hospital provides care for children aging from newborn to 14 years of age from many countries in the Middle East. The tool was explained for the parents prior to their child’s surgery. When the child was accompanied by his both parents, both were invited by the researcher to participate and each one was asked to answer separately. The parents’ anxiety level was measured again one hour after the child’s surgery. Parents also completed demographic forms.

## Statistical analysis

The statistical package for social science (SPSS) software, version 19.0 was used for data analysis. After data cleaning the descriptive statistics were used to describe the sample in term of demographic characteristic. The descriptive statistics was also used to describe the pre and postoperative level of parents’ state anxiety. All descriptive statistics was written as mean  $\pm$  standard deviation.

To test the null hypothesis of that there is no difference between the distribution of parental pre and postoperative level of anxiety, the parametric paired t was used by comparing the mean of the two groups (Kellar & Kelvin, 2013). Two tailed test with a significant level of 0.05 was used in this study.

## RESULTS

### Demographics

The majority of the 46 parents involved in the study were females 61 % (n=28), with the sample ages ranging from 21-50 years with a mean age of 32.56. Fifty percent of the parents were college graduates and 43.5% had a secondary education. One study participant had postgraduate degree and two had primary education. The children who underwent surgery were predominantly males 63% (n=29), ranging from one to 12 years with a mean age of 5.07. The children underwent various types of same day surgeries including ENT, eye, dental, orthopedic, genitourinary, and other surgical conditions.

### Parental state anxiety levels

Parental preoperative state anxiety scores ranged from 26-65 with a mean score of 42.64  $\pm$  9.48. The mean score of preoperative state anxiety exceeded the cutoff point (39 or greater). Postoperatively, scores ranged from 20-60 with a mean state anxiety score of 37.378  $\pm$  10.70. Statistically there was

a significant decline in the parents' levels of state anxiety ( $t=3.93$ ;  $P<0.005$ ). Seventy-four percent of the parents exhibited clinically significant state anxiety before their child's surgery, which declined after the surgery to 48%. A larger percent of mothers (82%) experienced clinically significant state anxiety than fathers (61%).

Postoperatively over 50% of the mothers exhibited clinically significant state anxiety compared to 67% of the fathers reported non-clinically significant state anxiety. The percentage of fathers and mothers who exhibited clinically significant state anxiety was greater in the preoperative period (mothers 82%, fathers 61 %).

Eighty-two percent of mothers showed clinically significant levels of state anxiety preoperatively, while after surgery maternal anxiety declined but remained high at 57%. Fewer fathers exhibited clinically significant anxiety than mothers both pre and postoperatively.

## DISCUSSION

Pediatric day surgery is stressful for both children and their parents. Anxiety is a normal human response under stress situations. However, high levels of pre-operative parental anxiety associated with children's surgery could have a detrimental effect on overall outcomes. In this study 74% of parents experienced clinically significant levels of state anxiety before surgery with a relatively high score of 44. These findings corresponded with those of previous studies which indicated that parents have experienced clinically significant anxiety before their child's surgery [5,9,10,32]. The mean state anxiety experienced by parents in this study was similar to the mean state anxiety exhibited by the parents in a recent Turkish study [8]. The Akdag study [8] also used the STAI-S and parental age was similar to those in this study.

Many parents approach their child's surgery with a high level of anxiety [1,33]. The high level of parental anxiety in the current study may have been related the parental appraisal of surgery as a stressful experience with a potential threat to their child's health. According to stress appraisal and coping theory [34], threat appraisal which is characterized by anxiety and fear

**Table 2:** The comparison of paired differences in mean of anxiety level for pre and postoperative periods.

	Preoperative	postoperative	t	p
<b>State anxiety(M± SD)</b>	43.63±9.48	37.78±10.70	3.93	<0.005

take place when there is a possible damage or harm that has not occurred yet. In our study, the appraisal of threat before surgery was aroused as parents anticipated complications after surgery. Some might even think about death as a possible outcome of surgery for high level of anxiety.

Previous studies have concluded that the lack of sufficient information was major source of parent preoperative anxiety [1,8,13,35]. In our facilities lack of information related to the surgical procedure, the anesthesia as well as outcomes of the surgery is not uncommon. The surgical environment with a rapid pace and technological focus that the parents are unfamiliar with may also explain the high level of anxiety the parents experienced in the same day surgery wards. The unknown is also anxiety provoking.

The results of the current study showed that the level of anxiety declined after surgery. While there was a significant decline in the mean parental state anxiety ( $p<0.005$ ) after surgery forty eight percent of parents (48%) exhibited clinically significant state anxiety postoperatively ( $>39$ ). The results of this study supported the findings of a previous study which found that the parents exhibited a significant decline in the anxiety level after their children's surgery with relatively low maternal state anxiety after surgery (mean=33) [32]. However, the Akinci research [32] differed from the current study in the point of time at which the anxiety was measured. Mothers were telephoned one week after the surgery to complete the STAI questionnaire. In addition, parents were given an educational booklet prior to the surgery [32].

The significant decline in the level of anxiety after surgery may indicate that great number of preoperative concerns may be diminished after the child's recovery from anesthesia. In another study, the parents' level of anxiety declined significantly at one and six months after surgery, but 14% still had clinically significant levels of state anxiety [9]. Scrimin and his colleagues [7], concluded that the majority of parents exhibited normal levels of anxiety 24 hour after surgery. However, in their study, more than 25% of parents showed a clinically significant level of anxiety one day postoperatively [7]. In this current study, one hour after surgery, 50% of parents scored anxiety level that exceeded the clinical cutoff.

The type of pediatric surgery, the parents' propensity to experience trait anxiety, as well as the parental gender were found to be factors that impact the parents' postoperative state anxiety [7]. Results of this study show anxiety levels are higher in mothers than in fathers both before and after surgery. Considering social roles that are culturally determined, the fathers are expected be strong. So, being anxious might be interpreted as a feminine or demonstrate a weakness. Additionally, the mothers are usually the primary care givers and because of potentially high levels of emotional attachment mothers may have more difficulty with any potential suffering that may occur when a child has surgery.

**Table 1:** Parents and child ages listed as mean +/- SD; gender and education values listed.

<i>Demographics</i>	
Variable	Mean ± SD
<b>Parents' age(years)</b>	32.57 ± 6.96
<b>Children's age(years)</b>	5.07±2.19
Variable	
<b>Parents' gender (%)</b>	
Male	18 (39.1)
Female	28(60.9)
<b>Parental education (%)</b>	
Primary	2 (4.3)
Secondary	20 (43.5)
University	23 (50)
Postgraduate	1 (2.2)
<b>Children's gender (%)</b>	
Male	29( 63)
Female	17( 37)

Despite of the significant decline in the anxiety level, 50% of the parents in the current study exhibited a relatively high level of anxiety postoperatively. This is might be explained in part by the fact that the measurement of anxiety took place one hour after surgery immediately after the child's recovery from the anesthesia. The parents at this point of time might be emotionally exhausted. In the past, parents have reported they are most concerned about postoperative pain, emergence from anesthesia, and postoperative nausea [35]. Furthermore, the fact that parents provide postoperative care for their child may heighten the level of parental anxiety. Changing the surgical dressing, pain management and the other aspects of care which are the nursing responsibility in case of inpatient surgeries might put a considerable amount of stress upon the parents after same day surgery [8,13].

Postoperative anxiety might be also aggravated if the parents are not adequately prepared and educated about their children's care. In the setting where this study was conducted the parents are not provided with information about surgery and anesthesia by booklets, websites or preadmission visits. The education and the instruction are provided verbally at the same day of surgery, which might be not be adequate. In previous studies, parents have indicated they preferred to receive the education one week or one day before their child surgery [35,36]. At the same day of surgery parents are usually more anxious which might interfere with the processing and understanding of the information. Increasing the amount of information provided might not be effective, but the way of communication and education should be modified at the time of psychological distress [7].

## CULTURAL PERSPECTIVES

Cultural beliefs and practices have an effect on how parents deal with encounters with health care delivery systems. Some beliefs and practices might be beneficial and should be encouraged by the health care team; while others may be harmful and should be discouraged. So the nurses should seek to become culturally competent in the provision of culturally sensitive care [37].

Jordanian Muslim parents have a religious affiliation toward Islam, which usually has a protective effect upon them at the difficult moments such as pediatric surgery. The existential Islamic beliefs, such as belief in God's power, wisdom and mercy; in addition this belief in fate may moderate the experience of parents in such stressful situations. Additionally, some practices such as praying of parents' for their children health and protecting their children with verses from Quran and Sunna might alleviate their anxiety and make meaning of their experience with their child's surgery.

In the current study, which is the first to have been conducted in Jordan describing parental anxiety associated with pediatric same day surgery, those beliefs may have an effect on the parental experience and might play role in mitigating the intensity of experienced anxiety. Those beliefs and religious practices might also explain that 26% of parents exhibited non-clinically significant anxiety before surgery and 50% showed non-clinically significant anxiety after surgery. Further research is needed to clarify this however.

This study sampled a small number of parents and was conducted in one setting which may have interfered with the external validity and limit generalization of the current study findings. The internal validity might be also threatened as a result of selection bias related to convenience sampling. Nevertheless, the findings of this study are comparable to other studies on parental anxiety in pediatric surgery.

## IMPLICATIONS FOR NURSING PRACTICE

As members of the health care team, nurses have the *most* frequent contact with both children and their parents. Thus nurses are in an ideal position to deal with parent's fear and anxiety in pediatric surgery. Parents' adherence with protocols both pre and postoperatively is vital. It is essential to target the nurses' efforts toward providing the appropriate education in the right way and at the right time so it would be communicated effectively in such stressful situations [38,39]. The importance of the nurses' role as educators in pediatric surgery cannot be overemphasized.

Pediatric nurses play an essential role in preoperative preparation of both parents and their children, found beneficial in alleviating anxiety [4,40]. Such educational programs have a significant impact on parents by decreasing their state anxiety associated with surgery and enhancing their positive coping skills [1,4]. The importance of family-centered perioperative nursing care cannot be overemphasized [41]. Addressing parents' anxiety is a critical aspect of family centered nursing care.

In addition to studies of parental anxiety related to pediatric surgery conducted in the United States, studies have been conducted in other countries with different cultural perspectives, including Hong Kong [10], Germany [13], Israel [9], Nigeria [5], Portugal [33], Sweden [1], Turkey [8], and the United Kingdom [42], which reflect the perspectives of many cultures. Such cultural diversity might affect parental anxiety, or there may be many similarities across cultures. This study adds to the body of literature by extending the research to a Jordanian sample of parents, reflecting potential cultural variations in the Middle East.

The findings of the current study document the importance of nurses approaching the child as well as his/her parent's holistically. The holistic nursing implies that the entire patient experience should be considered and that both physical and psychological aspect of care should be addressed. In pediatric nursing, the child and his/her parents are an un-separable unit, requiring that nurses expand their caring activities to involve the parents who are usually ignored despite of their potentially extreme anxiety levels.

Emotional support is beneficial in enhancing security and feeling of control. So, to reduce parental struggle, nurses would benefit from learning core therapeutic techniques such as validating emotional experiences. Such emotional support is crucial in enhancing the parents coping abilities which is important in relieving their anxieties. Mothers usually exhibit higher levels of anxiety than fathers do and they are the primary care givers. Targeted attention should be directed toward them in the day case surgery of the child.

## CONCLUSIONS AND RECOMMENDATIONS

A high percentage of parents exhibited clinically significant anxiety before their child's surgery. There was a significant decline in the mean state anxiety score after surgery, but 50% of parents still exhibited state anxiety that exceeded the cutoff point one hour after the child's surgery. Parental perioperative anxiety appears to be a cross-cultural phenomenon. The parents across cultures have exhibited similar patterns and intensity of state anxiety. Across the studies of diverse cultural groups, mothers usually exhibited higher anxiety levels than the fathers did.

The importance of providing holistic and family centered approaches of care within the context of pediatric same day surgery cannot be overemphasized [43,44]. Furthermore, the nurses' role in providing education and emotional support is essential in perioperative pediatric practice. Policies that allow both parents to be present across the pediatric surgical continuum are recommended. It is also recommended that a structured educational program based on parental needs and preferences be implemented. Developing policies designed to deal with the emotional aspects of health care such as a preoperative preparation program is recommended. Preoperative trips to the surgical theatre for the parents and their children to familiarize them with the surgical environment might be beneficial. Hiring a clinical psychologist and a culturally competent nurse with a holistic nursing preparation at the waiting area to provide continuous and organized psychological service in such setting is also suggested.

To capture a more detailed aspect of the phenomenon further studies with qualitative approach is recommended. The emerging evidence from the tool can be used to guide the development of a qualitative methodology to examine more complex aspects of this topic in particular those related to gender and culture. Larger studies with a multifactorial approach in a different setting with larger random samples and mixed methods data collection and data analyses are also recommended to enhance the external validity of the findings. Lastly, we suggest randomized clinical trials that examine the impact of stress and anxiety reduction programs for parents of children going into day surgery.

## REFERENCES

1. Andersson L, Johansson I, Österberg SA. Parents' experiences of their child's first anaesthetic in day surgery. *Br J Nurs*. 2012; 21: 1204-1210.
2. Draskovic B, Simin JM, Kvrđic IM. Psychological aspects of pediatric anesthesia. *Med Pregl*. 2015; 68: 29-34.
3. Royal College of Nursing. *Children and young people in day surgery*. London, England: Author; 2015.
4. Frisch AM, Johnson A, Timmons S, Weatherford C. Nurse practitioner role in preparing families for pediatric outpatient surgery. *Pediatr Nurs*. 2010; 36: 41-47.
5. Osuji RI, Coker AO, William OM, Ajai O. Assessment of parental distress and psychiatric morbidity before elective surgery in a Lagos teaching hospital. *East Cent Afr J Surg*. 2012; 17: 22-28.
6. Pai MS, MCh V, Prabhu PS, Sundeept PT. Effectiveness of hospital based intervention on parenting stress among mothers of pediatric surgery children in South India. *International Journal of World Research*. 2014; 1: 25-34.
7. Scrimin S, Haynes M, Alto G, Bornstein M, Axia G. Anxiety and stress in mothers and fathers in the 24 hours after their child's surgery. *Child Care Health Dev*. 2009; 35: 227-233.
8. Akdağ M, Baysal ZY, Atlı A, Samancı B, Topçu İ. A multi-centric prospective study: Anxiety and associated factors among parents of children undergoing mild surgery in ENT. *Journal of Clinical & Experimental Investigations*. 2014; 5: 206-210.
9. Ben-Amitay G, Kosov I, Reiss A, Toren P, Yoran-Hegesh R, Kotler M, Mozes T. Is elective surgery traumatic for children and their parents? *J Paediatr Child Health*. 2006; 42: 618-624.
10. Li H, Lam H. Paediatric day surgery: impact on Hong Kong Chinese children and their parents. *J Clin Nurs*. 2003; 12: 882-887.
11. Kushnir J, Djerassi R, Sofer T, Kushnir T. Threat perception, anxiety and noncompliance with preoperative fasting instructions among mothers of children attending elective same day surgery. *J Pediatr Surg*. 2015; 50: 869-874.
12. Chahal N, Manlhiot C, Colapinto K, Van Alphen J, McCrindle BW, Rush J. Association between parental anxiety and compliance with preoperative requirements for pediatric outpatient surgery. *J Pediatr Health Care*. 2009; 23: 372-377.
13. Hug M, Tönz M, Kaiser G. Parental stress in paediatric day-case surgery. *Pediatr Surg Int*. 2005; 21: 94-99.
14. Litke J, Pikulska A, Wegner T. Management of perioperative stress in children and parents. Part I—the preoperative period. *Anaesthesiol Intensive Ther*. 2012; 44: 165-169.
15. Cagiran E, Sergin D, Deniz MN, Tanattı B, Emiroglu N, Alper I. Effects of sociodemographic factors and maternal anxiety on preoperative anxiety in children. *J Int Med Res*. 2014; 42: 572-580.
16. Chundamala J, Wright JG, Kemp SM. An evidence-based review of parental presence during anesthesia induction and parent/child anxiety. *Can J Anaesth*. 2009; 56: 57-70.
17. Chieng Y, Chan W, Liam J, Klainin-Yobas P, Wang W, He H. Exploring influencing factors of postoperative pain in school-age children undergoing elective surgery. *J Spec Pediatr Nurs*. 2013; 18: 243-252.
18. Pagé MG, Campbell F, Isaac L, Stinson J, Katz J. Parental risk factors for the development of pediatric acute and chronic postsurgical pain: A longitudinal study. *J Pain Res*. 2013; 6: 727-741.
19. Hamilton G, Corlett J, Dowling M. Adult-trained perioperative nurses' practice of family-centered care. *Br J Nurs*. 2014; 23: 477-482.
20. LeRoy S, Elixson EM, O'Brien P, Tong E, Turpin S, Uzark K. Recommendations for preparing children and adolescents for invasive cardiac procedures: A statement from the American Heart Association Pediatric Nursing Subcommittee of the Council on Cardiovascular Nursing in collaboration with the Council on Cardiovascular Diseases of the Young. *Circulation*. 2003; 108: 2550-2564.
21. Miklósi M, Szabó M, Martos T, Galambosi E, Forintos DP. Cognitive Emotion regulation strategies moderate the effect of parenting self-efficacy beliefs on parents' anxiety following their child's surgery. *J Pediatr Psychol*. 2013; 38: 462-471.
22. Chorney J, Torrey C, Blount R, McLaren C, Chen W, Kain Z. Healthcare provider and parent behavior and children's coping and distress at anesthesia induction. *Anesthesiology*. 2009; 111: 1290-1296.
23. Fortier MA, Del Rosario AM, Martin SR, Kain ZN. Perioperative anxiety in children. *Paediatr Anaesth*. 2010; 20: 318-322.
24. Tsao JC, Lu Q, Myers CD, Kim SC, Turk N, Zeltzer LK. Parent and child anxiety sensitivity: Relationship to children's experimental pain responsiveness. *J Pain*. 2006; 7: 319-326.

25. Arai YP, Ueda W, Ushida T, Kandatsu N, Ito H, Komatsu T. Increased heart rate variability correlation between mother and child immediately pre-operation. *Acta Anaesthesiologica Scandinavica*. 2009; 53: 607-610.
26. Bellani ML. Psychological aspects in day-case surgery. *Int J Surg*. 2008; 6: 44-46.
27. Li HW, Lopez V, Lee TI. Psychoeducational preparation of children for surgery: The importance of parental involvement. *Patient Educ Couns*. 2007; 65: 34-41.
28. Royal College of Anaesthetists. Guidance on the provision of paediatric anaesthesia services. London, England. 2010.
29. Brennan LJ, Prabhu AJ. Paediatric day-case anaesthesia. *Critical Care & Pain*. 2003; 3: 134-138.
30. Abdullatif QA, Spielberger CD. First report on the Arabic State Trait Anxiety Inventory (STAI): Methodological, cultural, and linguistic considerations. *J Psychol*. 2011; 8: 50-60.
31. Michael A. A study for state trait anxiety scale on Syrian universities' students' sample. *Journal of Damascus University*. 2003; 19: 11-71.
32. Akinci SB, Köse EA, Ocal T, Aypar U. The effects of maternal presence during anesthesia induction on the mother's anxiety and changes in children's behavior. *Turk J Pediatr*. 2008; 50: 566-571.
33. Sampaio CEPL, Silva RV, Romano RAT, Comino LBD. Adaption mechanisms (coping of the companions of children submitted to outpatient surgery). *Journal of Nursing UFPE*. 2012; 6: 1880-1886.
34. Lazarus RS, Folkman S. Stress, appraisal, and coping. New York: Springer. 1984.
35. Wisselo TL, Stuart C, Muris P. Providing parents with information before anesthesia: What do they really want to know? *Paediatr Anaesth*. 2004; 14: 299-307.
36. O'Shea M, Cummins A, Kelleher A. Setting up pre-admission visits for children undergoing day surgery: a practice development initiative. *J Perioper Pract*. 2010; 20: 203].
37. Nayak MG, Sharada GA. Socio-cultural perspectives on health and illness. *Nitte University Journal of Health Science*. 2012; 2: 61-67].
38. Fincher W, Shaw J, Ramelet A. The effectiveness of a standardized preoperative preparation in reducing child and parent anxiety: A single-blind randomized controlled trial. *J Clin Nurs*. 2012; 21: 946-955.
39. Ghabeli F, Moheb N, Hosseini Nasab SD. Effect of toys and preoperative visit on reducing children's anxiety and their parents before surgery and satisfaction with the treatment process. *J Caring Sci*. 2014; 3: 21-28.
40. Berghmans J, Weber F, van Akoleyen C, Utens E, Adriaenssens P, Klein J, et al. Audiovisual aid viewing immediately before pediatric induction moderates the accompanying parents' anxiety. *Paediatr Anaesth*. 2012; 22: 386-392.
41. Chorney JM, Kain ZN. Family-centered pediatric perioperative care. *Anesthesiology*. 2010; 112: 751-755].
42. Shirley PJ, Thompson N, Kenward M, Johnston G. Parental anxiety before elective surgery in children A British perspective. *Anaesthesia*. 1998; 53: 956-959.
43. Kain ZN, Caldwell-Andrews AA, Mayes LC, Weinberg ME, Wang SM, MacLaren JE, et al. Family-centered preparation for surgery improves perioperative outcomes in children: a randomized controlled trial. *Anesthesiology*. 2007; 106: 65-74.
44. Sorensen H, Card C, Malley M, Strzelecki J. Using a collaborative child life approach for continuous surgical preparation. *AORN J*. 2009; 90: 557-566.

**Cite this article**

Obeidat HM, Dwairej DA, Constantino RE (2018) State Anxiety in Jordanian Parents of Children Undergoing Same Day Surgery. *Ann Nurs Pract* 5(1): 1091.