

Factors related to anxiety before surgery in children in urological operating rooms

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Abstract

This study aimed to determine the factors associated with preoperative anxiety in school-age children and adolescents at one of top hospital in the capital city of Indonesia. This study used analytical cross-sectional study. The selection of respondents used proportional stratified random sampling with a total of 86 respondents consisting of 43 school age children and 43 adolescents. Data analysis employed was the Chi-Square and Independent T-Test. The results showed that anxiety was being experienced by 54.7% of respondents. In this study, it was found that there was a significant relationship ($p < \alpha$) among children anxiety before surgery and age, family presence, previous operating experience and patient waiting time. Meanwhile, there was no significant relationship between gender and anxiety level before surgery in children. The results of this study can be used as the basis and reference for the hospital in making policies regarding efforts to manage anxiety before surgery in children. Accordingly, nurses could make appropriate nursing care interventions in preoperative patients to overcome preoperative anxiety experienced by school-age children and adolescents.

Introduction

Anxiety is an emotional condition that has no specific object and is experienced subjectively with a sense of uncertainty, helplessness, isolation and insecurity.^{1,2} Anxiety is the thing most often reported when a child is exposed to a stressful surgery or medical procedure.³ Anxiety can also affect the physical and psychological health of children.^{2,3} An observational study conducted on children in the United States found more than 5 million children undergo surgery each year and more than 50–70% of children who undergo surgery experience fear and anxiety before surgery.^{3–6} Based on data obtained in the last ten months, namely January–October, the number of children hospitalized was 1081 and there were 233 children who underwent surgery in the urology operating room.⁴

Facts from the field show that in surgery with local anesthesia, good cooperation with children and the families is needed to help the operation run well. The uncooperative action with children and family can be the cause of the surgery cancellation in the urology operating room. Preoperative anxiety children can manifest their anxiety by crying loudly, rebelling, hitting, even biting the medical staff making it difficult to carry out the procedure and it leads to the surgery cancellation.⁷

Based on a simple interview conducted by the author with several nurses working in the urology operating room, it is shown that 70–80% pediatric patients indicate moderate anxiety on scheduled surgical procedure. They said they were afraid of anesthesia, post-surgery pain and being injected. The purpose of this

study was to determine the factors associated with anxiety prior to surgery in school-age children and adolescents in Dr. Cipto Mangunkusumo National Central Public Hospital (RSUPN Dr. Cipto Mangunkusumo) in 2020. This research is expected to be benefits to hospitals, society, science and researchers.

Materials and Methods

This research is an analytical study with a cross sectional design with a correlation study. Respondents were selected by proportional stratified random sampling method with a total of 86 respondents. Research data collection used a questionnaire instrument. The questionnaire in this study used the Chinese version of the State Anxiety Scale for Children (CSAS-C) anxiety questionnaire, which was modified by increasing the range of assessment score according to the research needs.⁷⁻¹⁰

Data collection using a questionnaire was carried out 10-15 minutes before the patient underwent surgery. Respondents were asked to provide answers or responses to each item of statements raised. The questionnaire had been tested for validity and reliability on 30 patients of school-age children and adolescents who would undergo surgery with the results of the Cronbach's Alpha reliability test of 0.935 (r table value of 0.355) meaning that the instrument was valid and reliable. This study has received approval from the FIK UI ethics commission and The Ethic Committee of the Faculty of Medicine, Universitas Indonesia.

After the respondent questionnaires were filled and collected, the data processed was carried out by means of edited, coded, scored, tabulated, data entry, and cleaned. After the total score was

obtained, the next process was to categorize the respondents based on the variables studied. The process of univariate data analysis in this study describes the frequency distribution of all the variables studied, namely the characteristics of the respondent (age, gender, previous operating experience, family presence and patient waiting time before surgery), independent variables related factors with anxiety and the dependent variable the level of anxiety before surgery.

Bivariate analysis used to determine the relationship between two variables, independent and the dependent variable, which were the factors associated with preoperative surgery a in school-age children and adolescents. The statistical tests used to determine the relationship and to prove the hypothesis of the relationship between the two variables in this study were the Chi-Square and the Independent T-test.

Results

Based on Table 1, it is indicated that of the 86 school-age children and adolescents who would undergo surgery at RSCM were mostly male (62.8%), had previous operating experience (65.1%), accompanied by family (60.5%), and required to wait before surgery for more than 30 minutes (51.2%).

Based on Table 2, it is shown that of the 86 school-age children and adolescents who would undergo surgery experienced moderate anxiety (54.6%).

Based on Table 3, of the 86 preoperative school-age children and adolescents, the average age of the respondent was 11.93 years (SD 3.198). The youngest was 7 and the oldest was 18 years old.

Table 1. Description of the characteristics of preoperative respondents at RSCM (n=86).

Variable	Frequency (n)	Percentage (%)
Gender:		
a. Male	54	62.8
b. Female	32	37.2
Experience in Surgery:		
a. Never	30	34.9
b. Ever	56	65.1
Family Presence:		
a. No (accompanied by other than parents)	34	39.5
b. Yes (accompanied by parents)	52	60.5
The length of time the Patient waits before surgery:		
a. more than 30 minutes	44	51.2
b. less than 30 minutes	42	48.8

Table 2. Frequency distribution of preoperative anxiety levels in school-age children and adolescents in RSCM (n=86)

Anxiety level	Frequency(n)	Percentage(%)
Mild	25	29.1
Moderate	47	54.6
Severe	14	16.3
Total	86	100.0

Table 3. Frequency distribution of preoperative respondents based on Age at RSCM (n=86).

Variable	Mean	SD	Min-Max	95%CI
Age (Years)	11.93	3.198	7-18	4.678-7.373

From the statistical test, it can be concluded that there was a relationship between age and anxiety before surgery in children in the urological operating rooms (Table 4).

From the results of the Chi Square test, the relationship between gender and anxiety levels in preoperative children at RSCM showed a p-value of 0.113 (p value>0.05) using 5% alpha (0.05) (Table 5). This can be concluded that Ho was accepted, which means that there was no relationship between gender and anxiety levels before surgery in school-age children and adolescents. The relationship between previous operation experience and anxiety level before surgery indicated a p-value of 0.02 ($\alpha=0.05$) using 5% alpha (0.05). This can be concluded that Ho was rejected, which means that there was a relationship between previous operating experience and anxiety levels before surgery in school-age children and teenagers.

The relationship between family attendance and anxiety levels before surgery in children indicated a p-value of 0.00 ($\alpha=0.05$) using 5% alpha (0.05). This can be concluded that Ho was rejected meaning that there was a relationship between family attendance and anxiety levels before surgery in school-age children and teenager. The relationship between the explicitness of surgery information with preoperative anxiety levels in children shown that respondents with a complete information about the operation experienced mild anxiety as much as 29.1%, moderate anxiety 54.7% and severe anxiety 16.3%. The relationship of patient waiting time prior to surgery with anxiety levels in preoperative children showed a p-value of 0.022 ($\alpha=0.05$) using 5% alpha (0.05). This can be concluded that Ho was rejected, which means that there was a relationship between waiting time and the level of anxiety prior to surgery in school-age children and teenager.

Discussion

The results showed that of 86 respondents 54.6% of respondents were preoperative children with moderate anxiety. Most of

them experienced moderate anxiety in a total of 47 (54.6%); meanwhile, those who experienced mild anxiety were in a total of 25 (29.1%), and the number for severe anxiety sufferers was 14 (16.3%). Furthermore, the mean age of respondents with mild anxiety level was 15.24 years SD=1.422; this is the lowest compared to those with moderate anxiety which is 10.98 years SD=2.566, and those with severe anxiety which is 9.21 years SD=2.751. Also, most of male respondents experienced moderate anxiety in a total of 63%. Likewise, most female respondents experienced moderate and mild anxiety in a number of 40.6%. The sex of the respondents involved in this study was prevalently male than female. For female, it is only a small proportion in number representing characteristics based on gender. This study was conducted in the urology operating room and the cases occurred mostly in male patients, such as those with hypospadias.

Respondents who have never had surgery before experienced different levels of anxiety, such as moderate anxiety as much as 53.3%, mild anxiety by 16.7% and severe anxiety by 30%. Respondents who had previously undergone surgery experienced moderate anxiety more in a total of 55.4% and severe anxiety in a number of 8.9%. In this study, the experience of surgery in children can occur due to congenital diseases that require surgery to be carried out in stages and also because of reconstructions or surgeries that require insertion of tools (implants) and removal of the tools within a certain period of time. Regarding the relation between family presence and anxiety levels in preoperative children, it is indicated that out of 52 children with family presence, experienced moderate anxiety in a total of 37 (71.2%), and severe anxiety in a number of 3 (5.8%); meanwhile, those without family presences had moderate anxiety in a total of 10 (29.4%) and severe anxiety in a number of 11 (32.4%).

Regarding the patient's waiting time before surgery and the level of anxiety in preoperative children, it is shown that respondents who underwent on time surgery experienced moderate anxiety namely 19 (45.2%) and 5 (11.9%) experienced severe anxiety. Meanwhile, 28 respondents (63.6%) experienced moderate anxiety and 9 (20.5%) experienced severe anxiety. This state of anxiety

Table 4. The relationship between age and anxiety levels in preoperative school-age children and adolescents in RSCM (n=86)

Variable	Mild Anxiety			Moderate Anxiety			Severe Anxiety			P
	Mean	SD	SE Mean	Mean	SD	SE Mean	Mean	SD	SE Mean	
Age (Years)	15.24	1.422	0.284	10.98	2.566	0.374	9.21	2.751	0.735	0

Table 5. Description of the relationship variables of preoperative respondents at RSCM (n=86).

Variable	Mild Anxiety (n=25)		Moderate Anxiety (n=47)		Severe Anxiety (n=14)		P Value*
	n	%	N	%	n	%	
Gender							
a. Male	12	22.2	34	63	8	14.8	0.113
b. Female	13	40.6	13	40.6	6	18.8	
Experience in Surgery							
a. Never	5	16.7	16	53.3	9	30	0.02
b. Ever	20	35.7	31	55.4	5	8.9	
Family Presence							
a. No (accompanied by other than parents)	13	38.2	10	29.4	11	32.4	0
b. Yes (accompanied by parents)	12	37	37	71.2	3	5.8	
Patient waiting time before surgery							
a. Late start of surgery, if the patient's waiting time > 30 minutes	7	15.9	28	63.6	9	20.5	0.022
b. Start surgery on time, if patient's waiting time ≤ 30 minutes	18	42.9	19	45.2	5	11.9	

was a psychological problem associated with the occurrence of negative effects on children during preoperative and this was not expected by the patient.⁸ As argued by Aytekin and Kucukoglu, there are several reasons for patients who enter the hospital and will undergo surgery experiencing anxiety before surgery, such as being away from parents, losing control over themselves, being unfamiliar with operating room environment, being scared of anesthesia and surgical procedures, having no experience previous operations, and having the need for social support from the family.^{5,7,12,13} This was in line with research conducted by Perry, Hooper, and Masiogale which states that there are more than 5 million children who experience surgery every year, and more than 50–70% of children who undergo surgery experience fear and anxiety before surgery.⁶

Most of preoperative children experienced moderate anxiety levels in a total of 47 (54.6%), with mild anxiety levels in a number of 25 (29.1%), and 14 (16.3%) with severe anxiety. This is in line with the research of Ahmed *et al.* which stated that more than 65% of children who experience anxiety are related to anxiety in the preoperative period. Ahmed *et al.* also explained that anxiety before surgery occurred due to various factors, namely child factors (age, temperament, previous operating experience, quality of parent-child relationships, children with delayed growth and development), parental factors and operating room environmental factors (stimulus, anesthesia techniques and medical staff).¹⁶

This is in line with research by Lita Nurlita explaining that there was a strong relationship between age and anxiety scores, but there was a negative correlation direction (-0.198) which the older the patient, the more anxiety score decreases.¹⁰ This is reinforced by the theory of Stuart stating that someone who was younger was more prone to experiencing anxiety disorders than someone who was older.⁸ Ahmed *et al.* also explained in their research on Preoperative Anxiety in Children Risk Factors and Non-Pharmacological Management that one of the factors in children experiencing anxiety before surgery was previous operating experiences. Children with bad operating experiences would remember until they grew up, and it is stated that 67% of children developed negative postoperative behaviors.¹⁶

The anxiety experienced by parents during medical procedures and children's hospitalization would affect the ability of parents to respond to children's emotional needs and to help children in using effective coping strategies.⁹ The one that could calm the child at the initial procedure of anesthesia was the parent. It is stated that stress could be transferred from the parent to the child; so when the parent was not anxious the child was expected to calm down too.^{13,14} This is in line with the opinion of Ahmed *et al.* regarding Preoperative Anxiety in Children Risk Factors and Non-Pharmacological Management. Ahmed *et al.* explained that an increase in the level of anxiety in children is related to an increase in the number of people or health workers in the anesthesia induction room and the longer the waiting time for children in the preparation room for surgery, the more the child's anxiety would increase.⁶

Nursing implication

The service institution (hospital) as the policy holder is expected to pay more attention to the age factor of the children being treated and to make therapeutic approaches and communications according to age levels. The service institution (hospital) is also advised to facilitate the improvement of the human resource capacity of nursing through dissemination of research results, seminars, training and other formal education. Nurses who work in the children's room are expected to be able to help families overcome the anxiety faced by children and also parents by providing emotional

and psychological support in generalist and specialist therapy related to handling anxiety in children and parents.

Conclusions

The characteristics of the respondents in this study were 11.93 years old with the majority of male patients. Most respondents have had previous surgery and mostly with family presence before surgery. All respondents got complete information about surgery. Some of them underwent late surgery. Most preoperative respondents in urology surgery rooms experienced moderate anxiety. There was a significant relationship among the age of respondents, the experience of previous surgery, family attendance (parents), preoperative patient waiting time and the level of anxiety in preoperative school-age children and adolescents. There is no significant relationship between gender and the level of anxiety in preoperative school-age children and adolescents.

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