PRE-OPERATIVE PARENTAL ANXIETY IN PAEDIATRIC SURGERIES: AN ASIAN EXPERIENCE

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Abstract

Paediatric surgery is a traumatic experience, often accompanied by anxiety in parents. There have been many studies regarding pre-operative anxiety among children, however, there are limited studies exploring the anxiety levels of parents accompanying their child for surgery. This study aims to identify the presence of depression, anxiety, and stress among parents of children undergoing elective surgery in a tertiary hospital in Malaysia. The study population consisted of children who were scheduled for elective minor surgery between January 2018 to June 2018. The 21-item depression anxiety stress scale (DASS-21) questionnaire was used. The majority of accompanying parents had a normal depression, anxiety, and stress scores. However, there was severe to extremely severe depression, anxiety, and stress in some parents. The results showed that accompanying parents with higher level of fear tend to develop more anxiety and stress. There were no significant changes in their scores in relation to gender, history of previous surgery or history of anaesthesia clinic visit. Anxiety among accompanying parents in children undergoing surgery is an underestimated problem. It needs to be identified and managed effectively to provide better care to the child undergoing surgery and anaesthesia.

Keywords*:* Anaesthesia, Anxiety, Pre-operative

Introduction

Preoperative anxiety is the feeling of nervousness, worry and tension related to an impending surgical experience (1). Paediatric surgery patients often feel an unpleasant and potentially "threatening" experience, which may be followed by preoperative anxiety in them due to the illness itself, hospitalization, fear of anaesthesia and fear of the surgery itself (2).

Uncontrolled preoperative anxiety in children may lead to negative postoperative responses, which includes longer hospital stay, more pain, and long-term behavioural problems (3). It was also seen that pre-operative anxiety in children has a significant impact on the level of anxiety of their parents (4, 5).

There have been many studies regarding pre-operative anxiety among children. However, not many are done to explore the anxiety levels among parents accompanying their child for surgery. To our knowledge, there is no recent studies concerning parental anxiety in Malaysia. Identifying parents with greater risk of anxiety presents a clinically important opportunity to improve their child's surgical experience and outcomes (6). We hypothesised that there is a high level of anxiety among accompanying parents of children undergoing surgery.

The primary endpoint of this study was to identify the presence of depression, anxiety, and stress among parents of children undergoing elective surgery in a tertiary hospital in Malaysia. Secondary endpoints include the association between the demography data (gender, history of previous surgery, history of anesthetic clinic visit and level of fear) with the levels of depression, anxiety, and stress.

Methodology

This was a cross-sectional study. Convenience sampling was done during the study period. The study was conducted at Sabah Women and Child Hospital (SWACH), after the

approval of National Medical Research Committee and informed consent of the parents.

The inclusion criteria were children aged one to twelve who were scheduled for elective minor surgery between January 2018 to June 2018. Exclusion criteria were children with developmental delay and families with a poor understanding of the Malay or English language. If both parents are present, only one will be selected, preferably the one staying in the hospital with the child.

This study protocol was approved by the Ethics Committee (NMRR-18-424-40180). The study population consisted of consecutive children coming in for elective surgery during the study period. A total of 200 children and their parents were enrolled. The collected demographic data included age and sex of the escorting parent, previous surgery, educational level of the parent, and history of anaesthetic clinic visit.

The 21-item depression anxiety stress scale (DASS-21) (7) was used in this study. It is a self-reporting tool designed to measure the psychological distress along the constructs of depression, anxiety and stress. This is the shortened version of the 42-item depression anxiety stress scale (DASS-42) (8). The shortened scale will be able to provide the same structure as the full version but requires a shorter time to complete. Several studies have been published on its reliability and validity, with all showing the DASS-21 is a well-established instrument to measure symptoms of depression, anxiety and stress (9).

Each of the three DASS-21 scales consist of 7 items, divided into subscales. The depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest or involvement, anhedonia and inertia. The anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The third scale, the stress scale, is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive and impatient. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items.

The DASS-21 is based on a dimensional rather than a categorical conception of psychological disorder. The assumption on which the DASS-21 was developed is based on that fact that the differences between the depression, anxiety and the stress experienced by normal subjects and clinical populations are essentially of different degrees. The DASS-21 therefore has no direct implications for the allocation of patients to discrete diagnostic categories postulated in classificatory systems such as the Diagnostic and Statistical Manual of Mental Disorders (DSM) and the International Classification of Diseases (ICD). The single administration of this questionnaire allows researchers to measure the incidence and relation of depression, anxiety and stress among their participants. The depression, anxiety and stress is categorized into normal, mild, moderate, severe or extremely severe.

For our study we are using a Bahasa Malaysia (BM) Dass-21. The BM DASS-21 had very good Cronbach's alpha values of 0.84, 0.74 and 0.79 respectively for depression, anxiety and stress subscales. It also has a good factor loading value for most items (39 to 73) (10).

Data was collected from the patients using the questionnaire one day prior to the surgery. The study participants were recruited during the pre-operative anaesthesiology review by the anaesthesiology team. The study participants were oriented on the questionnaire and a written consent was obtained before the data collection. They were given around 30 minutes to complete the questionnaire. All questionnaires were returned to the researcher.

The participation was completely voluntary. They were assured that they are not obliged to participate and not participating will not affect the surgery in any way. They were assured that anonymity was ensured throughout the study.

Descriptive statistics was used to describe the demographic data and level of anxiety and depression. Inferential statistics (one-way ANNOVA and unpaired t-test) were used to describe the relationship between demographic data and level of anxiety and depression.

Results

Consecutive parents whose child was admitted for surgery were given the questionnaire regarding their depression, anxiety, and stress levels during the study period, after considering the inclusion and exclusion criteria. A total of 200 parents were enrolled. The demographic data are shown in Table 1.

Table 1: Demographic profile of the parents

Demographic profile	N (%)
Gender	
Male (Father)	35 (17.5)
Female (Mother)	165 (82.5)
Education	
Primary school	25 (12.5)
Secondary school	123 (61.5)
Higher secondary	18 (9.0)
University level	34 (17.0)
History of previous surgery	
Yes	49 (24.5)
No	151 (75.5)
Visited Anaesthetic clinic	
Yes	79 (39.5)
No	121 (60.5)
Level of fear	
Nil	20 (10.0)
Mild	154 (77.0)
Severe	26 (13.0)
Reason of fear	
Anaesthetic factor	19 (9.5)
Surgical Factor	80 (40.0)
Both	101 (50.5)

For most of the parents (75.5%), this was their first time accompanying their child for surgery. It was normal in Malaysia that mothers will accompany their children to stay in the hospital. Therefore, it was not surprising that 82.5% of accompanying parent was the mother.

Most of the accompanying parent (77%) had mild fear, and the surgical factor was the biggest reason of fear. From the DASS-21 questionnaire, the majority of accompanying parent had a normal depression, anxiety, and stress scores. There was severe to extremely severe depression (4.5%), anxiety (16%) and stress (5%) in some patients. Table 2 demonstrates the percentage of depression, anxiety, and stress levels among the accompanying parents of children undergoing surgery. Chi square test of association between demographics and level of depression, anxiety and stress level was done. The results are presented in Table 3.

Table 2: Descriptive statistics of the parents DASS-21 score

Level	Depression N (%)	Anxiety N (%)	Stress N (%)
Normal	162 (81.0)	114 (57.0)	162 (81.0)
Mild	16 (8.0)	37 (18.5)	16 (8.0)
Moderate	13 (6.5)	17 (8.5)	12 (6.0)
Severe	4 (2.0)	12 (6.0)	6 (3.0)
Extremely severe	5 (2.5)	20 (10.0)	4 (2.0)

Table 3: Chi square test of association between demographics and level of depression, anxiety and stress level

Demographic profile	Depression	Anxiety	Stress
Gender			
Father	29^a (6)^b	23^a (12)^b	28^a (7)^b
Mother	133^a (32)^b	91^a (74)^b	134^a (31)^b
	X^2 =0.095, p=0.758	X^2=1.314, p=0.252	X^2=0.028, p=0.868
History of previous surgery			
Yes	41^a (8)^b	28^a (21)^b	40^a (9)^b
No	121^a (30)^b	86^a (65)^b	122^a (29)^b
	X^2=0.301, p=0.058	X^2=0.001, p=0.981	X^2=0.017, p=0.897
Anaesthetic clinic visit			
Yes	60^a (19)^b	38^a (41)^b	61^a (18)^b
No	102^a (19)^b	76^a (45)^b	101^a (20)^b
	X^2=2.164, p=0.141	X^2=4.219, p=0.050	X^2=1.215, p=0.270
Level of fear			
Nil	19^a (1)^b	16^a (4)^b	18^a (2)^b
Mild	124^a (30)^b	89^a (65)^b	128^a (26)^b
Severe	19^a (7)^b	9^a (17)^b	16^a (10)^b
	X^2=3.631, p=0.163	X^2=9.671, p=0.008	X^2=7.900, p=0.019

^{a} = Normal, ^{b} = Abnormal (Mild to extremely severe)

This study showed that accompanying parents with higher levels of fear tend to develop more anxiety and stress; X^2(2, N=200) = 9.671, p=0.008 and X^2(2, N=200) = 7.900, p=0.019 respectively. There were no significant changes in their scores in relation to gender, history of previous surgery or anaesthesia clinic visit.

Discussion

Our study identified the levels of depression, anxiety, and stress among parents of children undergoing elective surgery in a tertiary hospital in Malaysia. We also identified the association between the demography data (gender, history of previous surgery, history of anaesthetic clinic visits and level of fear) with the levels of depression, anxiety and stress. This study finding coincides with other studies done, where anxiety levels of parents of children undergoing surgery were raised (11, 12). The study also showed that the more fear the parents had, the more anxiety and stress was noted.

Not all anxiety has a negative effect (13). The psychological symptoms and significance of an individual is dependent on how much anxiety he or she is coping with. However, too much anxiety may cause a negative effect.

There are four levels of anxiety (14); mild, moderate, severe, and panic. However, mild anxiety can be seen as a positive reaction to stress, which may be good.

Management of anxiety can be divided into either pharmacological or non-pharmacological, or in combination (15). However, it would not be wise to give pre-medication to parents, as they will need to take care of their child during their hospitalization.

To treat the anxiety in accompanying parents, psychological preparation for both anaesthesia and surgery is important (16). Psychological preparation refers to preparedness, mental and emotionally. The main goals of this preparation is to minimize the anxiety levels, improving post operation

adjustment and familiarize the patient and family with the procedure (17).

To reduce parental anxiety, information regarding the surgery and anaesthesia must be conveyed to the parents. It can be either in verbal or written form, or both (18). This could be done at the clinic or during the admission for surgery with the help of doctors, nurses, and medical social workers. Medical social workers can play an important role in providing care and providing psychosocial services to patients and families (19). With more knowledge regarding the surgery and anaesthesia, parents will be more relaxed and understanding.

The Pre-anaesthesia clinic would also be a good place to explain the anaesthesia process to the child and parents. Informative video shows might also be used during the clinic visit or at home (20, 21).

It has been observed that most children in their 10 years of their life had neither meaningful expression nor the ability to comprehend complex issues, motives, and feelings (22). The process of play is important to regulate emotions and bridging action to thought (23 ,24). Therapeutic play provides a structured play activity which follows the principles of play therapy, and has specific objectives to be achieved. Therapeutic play has shown to reduce postoperative anxiety in children (25, 26). This play may also help the parents to understand the whole process of surgery and anaesthesia. Several methods can be used for therapeutic play.

Most of the studies done used dolls and hospital objects to show children and their parents the procedure (27). This can be continued by their parents at home. The level of family anxiety is strongly related to the demographics and the type of family relationship among its members. Parents are seen to be always beside their child, to provide support and encouragement in pre-surgical situations (28).

Another technique is to bring the parent into the operating theatre. Parental presence in the induction room of the operating theater does increase parental satisfaction with the anaesthesia process (29), and with proper instructions and preparation, their presence can be an advantage to the child and themselves (30).

Conclusion

There is a significant level of anxiety among parents of children undergoing surgery. However, this is an underestimated problem. It needs to be acknowledged and managed effectively. With a relaxed parent, better care can be given to the child undergoing surgery and anaesthesia.

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Competing Interests

The authors declare that they have no competing interests.

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