



IMPACT OF AUDIO-VISUAL COUNSELLING TO ALLEVIATE FEAR FACTOR IN PARENTS OF CHILDREN UNDERGOING SURGERY

Anaesthesiology

Shobha V*	Assistant Professor, Department of Anaesthesiology, Himalayan Institute Of Medical Sciences, Dehradun, Uttarakhand, India *Corresponding Author
Saurabh Mittal	Junior Resident, Department of Anaesthesiology, Himalayan Institute Of Medical Sciences, Dehradun, Uttarakhand, India
Veena Asthana	Professor, Department of Anaesthesiology, Himalayan Institute Of Medical Sciences, Dehradun, Uttarakhand, India

ABSTRACT

Background: A child's hospitalization and surgery is a source of anxiety, depression and stress for parents. The aim of the current study is to evaluate how audiovisual presentation impact preoperative parental anxiety of children undergoing elective surgery.

Materials and Methods: A total of 108 parents of children scheduled to undergo surgery, participated in this study. Participants were randomly assigned to one of two groups; verbal counseling only (Group A, n=54) and verbal counseling along with an audio-visual clip (Group B, n=54). During the evaluation, a Self Evaluation questionnaire was used a day prior to surgery and on the day of surgery.

Results: There were no significant differences in demographic characteristics between the groups. The mean anxiety score of parents were less in the group B compared to the group A after the intervention. The level of anxiety significantly decreased from high to moderate and from moderate to low intensity in Group B than in Groups A ($P < 0.001$ and $P < 0.001$, respectively).

Conclusion: The preoperative education program in the form of audiovisual presentation has shown to be effective in reducing parental anxiety and can be effectively used in pediatric surgical units to support the parents.

KEYWORDS

Audio-visual, counselling, fear, parents

Introduction

In this advanced era of technological development in child healthcare, the parents assume a greater role in the care of their child. A paediatric patient undergoing scheduled surgery is an unpleasant and stressful experience for a parent which is usually followed by preoperative anxiety due to child's disease, hospitalization, fear of anaesthesia and the surgery itself.^[1] However, it is well known that preoperative anxiety in children may lead to negative postoperative responses, including longer hospital stay, more pain, and long term behavioral problems.^[2,3] Studies are often focused on how child's response is affected by parental attitudes rather than on the serious detrimental effects upon the parents themselves and the potential for the development of stress-induced psychological illness states.^[4,5,6]

Various pharmacological and nonpharmacological methods are utilized to treat preoperative anxiety in children. Nonpharmacological interventions such as parental presence at the time of induction of anaesthesia^[7,8], the use of toys and art therapy^[9,10], family centered preparation and orientation programs and workshops^[11,12], hypnosis, music, and acupuncture^[13], can be used to alleviate anxiety in children and their parents. There are three methods well known for effective learning; i.e., visual (pictures, images, demonstrations), auditory (reading, words, listening), and kinesthetic (touch, taste). Visual images are important to visual learning, in which body language is also used. Auditory learning is also important which is informed by listening.^[14] Most people learn best using a combination of both, although visual learning is usually the prominent component.^[15] To the best of our knowledge, an auditory-related (listening) study outside of music therapy is not available for preoperative anxiety management while there are limited audiovisual studies involving parents in the literature.^[16,17]

A single blind randomized control trial proved the effectiveness of a standardized preoperative preparation in reducing the parental anxiety, and concluded that it is efficient in preparing parents for their child's surgery.^[18] It was also proved that a preadmission program was effective in preparing families psychologically for day surgery.^[19] A study has compared a tour of the OT (information-based), a commercially available videotape (modeling-based) and child life preparation (coping-based), to reduce preoperative anxiety among children and their parents.^[20] The use of videotape has been an effective mode of preoperative education as it facilitates information provision that is less costly.^[21-23] Minimization of preoperative stress in parents should be a priority for hospital personnel.^[24] Thus, it is essential for the health professionals to provide specific and appropriate information to prepare the parents for their child's surgery.

The current study was designed to determine the cause of anxiety in parents and compare the effects of audiovisual presentation and verbal counselling on preoperative anxiety in parents of children undergoing elective surgery. The primary end point being isolate factors associated with increased anxiety in parents and the secondary end point being parental counselling (audiovisual and verbal) in regard to the fear factor and to assess how this aspect can impact their anxiety level.

Materials and Methods

The study was conducted in Himalayan Institute of Medical Sciences, Uttarakhand, after approval from Institutional Ethics Committee and the informed consent of participants (parents). The study population comprised of 108 parents of children aged below 18 years undergoing elective surgery under general anaesthesia with literacy status of at least upper primary education level. Children with chronic illness, undergoing emergency surgery, cognitive disorders, and parents having child operated previously and those who refused to participate were excluded from this study.

The collected demographic data included age and sex of the parent, number of children, and educational level of the parent (where high level indicates university education, medium level-secondary education, and low level-primary education) were obtained from the parent who accompanied the child.

The intervention in the study was the preoperative education program which consisted of an audio-visual aid on pre-, intra-, and postoperative events a child would face during a surgery, where the parent watched along with their child during the interactive sessions and parental anxiety was assessed using a self evaluation questionnaire a day prior to surgery and on the day of surgery. The Self evaluation questionnaire consisted of set of 20 statements, each statement score is based on a 4 point scale (1= never, 2=sometimes, 3=often, 4=always) with a total score of 20–80 in each subscale (Annexure 1). The scores were categorised into three levels : low intensity (20–30), moderate (31–49) and high intensity (50–80) of anxiety.

A day prior to surgery, parents who are eligible were enrolled and a self evaluation questionnaire (Hindi/English) was handed over to the parent accompanying the child by a trained nursing staff in the ward, assuring the participant's well-being, privacy and safety and asked to fill by encircling the present feeling about each statement. After completion, the study participants were allocated to the groups using a computer-generated randomization list: group receiving verbal counselling only (Group A, n=54) and group receiving verbal counselling along with an audio-visual clip (Group B, n=54). The

parents are counseled verbally by the clinician in terms of hospital stay, pros and cons of surgery and anaesthesia, care given to the child, pain management (Group A) along with audio-visual aid (Group B). On the morning of surgery in the pre-operative room, the parents were again asked to respond to the same questionnaire by a trained nursing staff.

Statistical analysis

Statistical analysis of the data was performed using the Statistical Package for the Social Sciences (SPSS), version 19.0. Categorical variables were expressed as numbers and percentages, whereas continuous variables were summarized as a mean and standard deviation (SD). The Kolmogorov-Smirnov test for normality was performed. Student's t-test was used to determine differences in anxiety scores between two groups. The chi-square test was used to evaluate any potential association between categorical variables.

Results

Study result showed that all the parents in group A and group B were in the age group of 30-40 years, majority being female in both groups. Forty eight percent parents in group A and 55.6% in group B had low level of education. Majority of parents had a single child in both the groups (Table 1).

Table 1: Demographic data of parents

	Group A	Group B
Age (years)	35.9±5.4	36.4±4.3

Table 2: Means of parental anxiety score before and after counselling in each group

	Group A			Group B		
	Before Counselling	After Counselling	P	Before Counselling	After Counselling	P
1. I am worried about the disease	45.4±3.8	44.84±4.5	0.48	48.2±2.1	45.6±3.12	0.43
2. I am worried about anaesthesia	62.3±7.6	60.5±4.3	0.13	64.8±6.3	59±3.1	<0.0001*
3. I am worried about the surgery	69±8.9	67±7.7	0.21	66.8±6.4	64.6±5.4	0.22
4. I am tensed about pain	72.1±4.7	70.44±6.2	0.11	73.23±4.9	64.9±3.11	<0.0001*
5. I am worried about IV cannula/ injection	26.7±4.1	25.9±5.2	0.38	28.3±3.8	27.7±4.22	0.44
6. I am worried about hospital stay	56.4±6.22	52.6±7.2	0.004*	58.3±5.8	54.2±4.3	<0.0001*
7. I am scared of my child acquiring infection	36.8±3.23	35.6±3.41	0.06	35.34±3.3	35.2±1.6	0.77
8. I am afraid if my child worries about being away from us	66.34±8.7	64.22±3.5	0.09	68.6±2.3	62.8±1.8	0.0001
9. I am scared of postoperative complications	44.7±6.11	42.6±6.6	0.08	43.56±6.3	41.7±5.1	0.09
10. I am tensed about cosmetic disfigurement disability following surgery.	59.5±4.8	58.1±3.81	0.09	60.11±6.3	59.4±4.33	0.5
11. I am bothered about blood loss	67.34±5.2	63.21±2.2	<0.0001*	65.63±5.6	61.53±1.9	<0.0001*
12. I am worried about care given to my Child	69.33±2.6	68.45±1.52	0.059	71.44±3.1	66.8±1.2	<0.0001*
13. Will my child be aware of the procedure	72.12±5.2	70.55±4.3	0.09	73.76±4.6	68.72±2.54	<0.0001*
14. I am worried about my child kept nil oral	43.89±5.8	41.89±3.8	0.03*	44.68±3.12	42.67±2.11	0.0002*
15. Will my child be confused following surgery	54.2±4.2	53.8±3.8	0.6	56.4±1.5	52.5±2.4	<0.0001*
16. Will my child have breathing problem when he wakes up from anaesthesia.	65.7±4.7	64.3±2.3	0.052	66.8±3.55	63.4±1.67	<0.0001*
17. I am worried about vomiting after Surgery	35.6±3.2	34.44±4.3	0.11	33.6±2.54	33.2±1.8	0.35
18. I am worried if my child requires an ICU stay following surgery	57.56±3.8	56.7±3.7	0.24	56.32±4.1	54.67±2.4	0.01*
19. I am satisfied with the information provided by the surgeon regarding disease	68.9±3.4	68.2±2.31	0.21	68.43±4.22	67.9±3.88	0.49
20. I am scared about drug allergy/ blood transfusion reaction.	48.92±4.6	47.45±5.7	0.14	47.48±3.8	46.42±4.6	0.19

To compare the effectiveness of intervention between the two groups, t - test was computed. The data in Table 3 show the mean ± SD for the parental anxiety where there is a significant change ($p < 0.05$) in the score following audiovisual counselling (Group B) regarding anesthesia, pain, hospital stay, child being away from them, blood loss, care given to the child, child being aware of the procedure, confusion, breathing problems and ICU stay following surgery in comparison to verbal counselling only (Group A).

Table 3: Comparison between the groups after counselling

	Group A	Group B	p value
1. I am worried about the disease	44.84±4.5	45.6±3.12	0.31
2. I am worried about anaesthesia	60.5±4.3	59±3.1	0.04*
3. I am worried about the surgery	67±7.7	64.6±5.4	0.06
4. I am tensed about pain	70.44±6.2	64.9±3.11	<0.0001*
5. I am worried about IV cannula/ injection	25.9±5.2	27.7±4.22	0.051
6. I am worried about hospital stay	52.6±7.2	54.2±4.3	0.03*
7. I am scared of my child acquiring infection	35.6±3.41	35.2±1.6	0.44
8. I am afraid if my child worries about being away from us	64.22±3.5	62.8±1.8	0.009*
9. I am scared of postoperative complications	42.6±6.6	41.7±5.1	0.43

Gender		
Female	32 (59.3%)	38 (70.4%)
Male	22 (40.7%)	16 (29.6%)
Education		
High Level	8 (14.8%)	6 (11.11%)
Medium Level	20 (37.1%)	18 (33.33%)
Low Level	26 (48.1%)	30 (55.6%)
Number of children in the family		
1 Child	34 (63%)	30 (55.6%)
2 Children	12 (22.2%)	20 (37.0%)
More than 2 children	8 (14.8%)	4 (7.4%)

It was observed that, in group A parents were more anxious about hospital stay (56.4±6.22) which decreased following verbal counselling (52.6±7.2). Also they had anxiety regarding blood loss (67.34±5.2) and child kept nil oral (43.89±5.8) which significantly decreased following counselling (63.21±2.2, 41.89±3.8 respectively). In group B, parents had high intensity of anxiety about anaesthesia (64.8±6.3), pain (73.23±4.9), hospital stay (58.3±5.8), child being away from them (68.6±2.3), blood loss (65.63±5.6), care provided to the child (71.44±3.1), child being aware of the procedure (73.76±4.6), having confusion (56.4±1.5), having breathing problems (66.8±3.55), requiring ICU stay following surgery (56.32±4.1) and moderate intensity of anxiety regarding child being kept nil orally (44.68±3.12) which significantly decreased following audiovisual counselling ($p < 0.0001$) (Table 2).

10. I am tensed about cosmetic disfigurement/disability following surgery.	58.1±3.81	59.4±4.33	0.1
11. I am bothered about blood loss	63.21±2.2	61.53±1.9	<0.0001*
12. I am worried about care given to my child	68.45±1.52	66.8±1.2	<0.0001*
13. Will my child be aware of the procedure	70.55±4.3	68.72±2.54	0.008*
14. I am worried about my child kept nil oral	41.89±3.8	42.67±2.11	0.19
15. Will my child be confused following Surgery	53.8±3.8	52.5±2.4	0.03*
16. Will my child have breathing problem when he wakes up from anaesthesia	64.3±2.3	63.4±1.67	0.021*
17. I am worried about vomiting after surgery	34.44±4.3	33.2±1.8	0.053
18. I am worried if my child requires an ICU stay following surgery	56.7±3.7	54.67±2.4	0.001*
19. I am satisfied with the information provided by the surgeon regarding disease	68.2±2.31	67.9±3.88	0.62
20. I am scared about drug allergy/ blood transfusion reaction.	47.45±5.7	46.42±4.6	0.3

It was observed that, 5.6% of parents had low intensity, 63% had moderate intensity and 31.5% had high intensity of anxiety following verbal counselling while 14.8%, 77.8% and 7.4% of parents had low, moderate and high intensity of anxiety respectively following audiovisual counselling. The level of anxiety significantly decreased from high to moderate and from moderate to low intensity in Group B than in Groups A ($P < 0.001$ and $P < 0.001$, respectively) (Table 4) (Figure 1).

Table 4: Level of anxiety				
Level of anxiety	Group A		Group B	
	Before (n)	After(n)	Before (n)	After(n)
1. Low intensity	2 (3.7%)	3 (5.6%)	2 (3.7%)	8 (14.8%)
2. Moderate intensity	29 (53.7%)	34 (63%)	36 (66.7%)	42 (77.8%)
3. High intensity	23 (42.6%)	17 (31.5%)	16 (29.6%)	4 (7.4%)

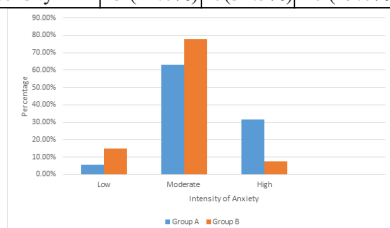


Figure 1: Bar diagram showing comparison of level of anxiety among parents between the group after counselling

DISCUSSION

It is essential to optimize preoperative anxiety of the parents as it can influence the outcome of children. McEwen et al. have reported that preoperative information videos can lessen the anxiety of parents.^[25]

The current study showed that preoperative audiovisual presentation is effective in reducing parental anxiety of children undergoing surgery. The findings were consistent to assess the anxiety and stress of fathers and mothers before surgery, which reported that there was a high level of stress and anxiety among parents of child scheduled for surgery. According to the findings of the present study, the factors that clearly related to high anxiety levels in parents were anaesthesia being provided to the child, pain, hospital stay, child being away from them,

blood loss, care provided to the child, child being aware of the procedure, having confusion, having breathing problems, requiring ICU stay following surgery where the parents who viewed an audiovisual clip regarding pre-, intra- and postoperative events exhibited decreased anxiety.

In literature, a study^[26] was carried out to assess the effect of preoperative cognitive behavioral program on the parental anxiety during their children's surgery which concluded that the preoperative education program can significantly reduce the parental anxiety that supports the current study findings. As it was found by multivariate analysis in a study conducted by Charana A et al.^[27] and is indicated in others^[28,29], parental anxiety influences their children negatively, as it was found to be the strongest independent risk factor (beta-coefficient 0.366) for children's preoperative anxiety levels.

CONCLUSION

It is a challenge for the healthcare professionals to prepare parents for their child's surgery as parental anxiety negatively affects the child's postoperative responses. Audiovisual presentation is an effective and inexpensive method to decrease preoperative parental anxiety. As the parents received the preoperative education program, the knowledge gained regarding the pre-, intra-, and postoperative events enabled them to prepare well for the child's surgery. It is a more memorable and interesting approach to enlighten the parents for their child's upcoming surgery.

Annexure I

SELF EVALUATION QUESTIONNAIRE

Please fill the following information: Counseling:

Name _____ Age _____ Gender _____
 Patient UHID No. _____
 Child's name _____
 Education level _____
 Number of children _____

Below Is A List Of Statements That Describe Yourself At This Moment "how You Feel". For Each Statement Please Circle The Response That Best Describes Your Present Feeling. please Answer All.

	Never	Sometimes	Often	Always
1. I am worried about the disease	1	2	3	4
2. I am worried about anaesthesia	1	2	3	4
3. I am worried about the surgery	1	2	3	4
4. I am tensed about pain	1	2	3	4
5. I am worried about IV cannula/injection	1	2	3	4
6. I am worried about hospital stay	1	2	3	4
7. I am scared of my child acquiring infection	1	2	3	4
8. I am afraid if my child worries about being away from us	1	2	3	4
9. I am scared of postoperative complications	1	2	3	4
10. I am tensed about cosmetic disfigurement/ disability following surgery	1	2	3	4
11. I am bothered about blood loss	1	2	3	4
12. I am worried about care given to my child	1	2	3	4
13. Will my child be aware of the procedure	1	2	3	4
14. I am worried about my child kept nil oral	1	2	3	4
15. Will my child be confused following surgery	1	2	3	4
16. Will my child have breathing problem when he wakes up from anaesthesia	1	2	3	4
17. I am worried about vomiting after surgery	1	2	3	4
18. I am worried if my child requires an ICU stay following surgery	1	2	3	4
19. I am satisfied with the information provided by the surgeon regarding disease	1	2	3	4
20. I am scared about drug allergy/ blood transfusion reaction	1	2	3	4
Is there anything else that you are really afraid of? YES/ NO	1	2	3	4
Please write down what it is _____				

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