



Full Length Research Article

EFFECTIVENESS OF PREOPERATIVE ORIENTATION PROGRAM ON PSYCHOPHYSIOLOGICAL PARAMETERS AMONG CHILDREN SUBJECTED TO ELECTIVE SURGERY

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Accepted 03rd August 2015; Published Online 30th September 2015

ABSTRACT

The health care delivery system at tertiary level has sophisticated and modernized equipment to meet the child's need and attain quality care. The investigator during her clinical experience observed that children were very anxious and had poor coping ability to overcome. Keeping this in view the investigator aimed to effectiveness of preoperative orientation program on psycho physiological parameters among children subjected to elective surgery. 60 children subjected to elective surgery for the first time were randomly selected, 30 children of study group received preoperative orientation to the operation theater and preoperative care prior to the surgery and 30 children of the control group received only the routine preoperative orientation prior to the surgery. The findings of the study depicted an evidence of significant difference between pretest and posttest values of all physiological measures. For the study group hence current study supported the fact that preoperative orientation program had an impact on psycho physiological parameters significant at $p < 0.001$.

Key words: Psycho physiological parameters, elective surgery.

INTRODUCTION

Illness and hospitalization are the first crisis the children face. Especially the early years of childhood is vulnerable to the crisis of illness and hospitalization because, there is a change from the usual state of health and environmental routine to something else and children have a limited number of coping mechanisms to resolve stressors. Children's reaction to the crisis is influenced by their developmental age, their previous experience like illness, separation, or hospitalization, their innate and acquired coping skills, the seriousness of the diagnosis, and the availability of support.

The induction of anesthesia is one of the most stressful moments for a child who undergoes the surgery: it is estimated that 60% of children suffer anxiety in preoperative period. Preoperative anxiety is characterized by subjective feelings of tension, apprehension, nervousness and worries. These reactions reflect the child's fear of separation from parents and home environment, as well as loss of control, unfamiliar routines, surgical instruments, and hospital procedures. High levels of anxiety have been identified as predictors of post operative troubles such as sleeplessness, irritability, nightmares and changes in heart rate and pulse from their normality. That can persist for 6 months after the procedure. Both behavioral and pharmacological interventions are available to treat preoperative anxiety in children.

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In this decade, the health care delivery system at tertiary level has sophisticated and modernized the equipment to meet the patient's need and attain quality care. The investigator during her clinical experience observed that children subjected to the surgery irrespective of major or minor, were very anxious and had poor coping ability to overcome. Though each child possess unique capacity of their own coping skills. Keeping this in view the investigator has taken up this study to institute an intervention to patients undergoing elective surgery, in order to have a decline in the level of anxiety and physiological parameters by developing coping skills.

Conceptual Framework

The conceptual framework for this study was adopted from Ernestine Wiedenbach's "The Helping Art of Clinical Nursing" (1964). Wiedenbach's model focuses on the concept of implementing need based care. Wiedenbach considered the nurse to identify the individual's behaviour as consistent or inconsistent and investigate patient's experience of discomfort or incapability and enable the nurse to direct her intervention based on available resources and implement accordingly. Finally, the nurse reconstructs experiences to ascertain whether the needs are met and thereafter takes further appropriate action.

MATERIALS AND METHODS

The research design that is chosen for the study is randomized control trial.

The sample was selected randomly that consist of 60 children subjected to elective surgery for the first time, 30 children of study group received preoperative orientation to the operation theater and preoperative care prior to the surgery and 30 children of the control group received only the routine preoperative orientation prior to the surgery. The data collection was done every day in the morning. All the children were interviewed through demographic data. The worry level was pretested using modified child surgery worries questionnaire before the intervention. The interpretations of scores were little worried (<25%), Moderately worried (26-50%), considerably worried (51-75%) and extremely worried (>76%). After assessing the worry level, the study group was provided with preoperative orientation to Operation Theater and oriented them all the aspects such as one day prior preparations, level of pain, anesthesia, type of surgery and team members and post operative procedures, wound care and diet. Laptop was placed on a table and the study samples were seated comfortably in the chair in front of the laptop in Paediatric Ward. Teaching and orientation to Operation Theater lasted for 20 minutes and the investigator clarified their doubts. Control group received routine preparation. Post assessment was done using modified child surgery worries questionnaire prior to the surgery for both the group.

Ethical Consideration

The permission was obtained from the institutional ethics committee. Before collecting data, mothers were explained and consent was taken. Confidentiality was assured

Data Analysis

Descriptive statistics- frequency, percentage, mean and standard deviation used to assess the respiratory status. Inferential statistics- wilcoxon, mann- whitney, and chi-square used to check the effectiveness and association between the respiratory status and the selected demographic variables.

RESULTS

Table 2 shows that 19(63.3%) of the study group and 23(76.7%) of the control group were considerably worried and 11(36.7%) of the study group and seven(23.3%) of control group were extremely worried. Table 3 shows that 30(100%) of the study group had experienced moderate worry and from control group 18(60%) had considerable worry and 12(40%) had extreme level of worry. Table 4 illustrates that the worry and respiratory rate were statistically significant at the level of $p < .001$ and heart rate was significant at the level of $p < .05$. Table 5 shows heart rate, systolic blood pressure, worries were statistically significant at $p < .001$ level and the respiratory rate was significant at $p < .01$

DISCUSSION

The mean value of heart rate in the study group was 62.6 with SD of 10.7 and control group was, 84.6 with SD of 9.8. The mean value of respiratory rate was 16.43 with SD of 1.8 in the study group and 18.03 with SD of 2.8 in the control group.

Table 1. Frequency and Percentage distribution of the demographic variables among the children subjected to elective surgery (N=60)

Demographic variables	Study group (n=30)		Control group (n=30)	
	No.	%	No.	%
1.Age (in years)				
a.11-14	17	56.7	20	66.7
b.15-18	13	43.3	10	33.3
2.Sex				
a. Male	14	46.7	17	56.7
b. Female	16	53.3	13	43.3
3.Educational status				
a. Higher secondary	9	30.0	3	10
b. Secondary	20	66.7	24	80
c. Primary	1	3.3	3	10
4.Residential area				
a. Urban	7	23.3	8	26.7
b. Rural	23	76.7	22	73.3
5.Surgery expenditure met by				
a. Parents only	12	40	9	30
b. Insurance	15	50	14	46.7
c. Other	3	10	7	23.3
6.Previous history of surgery for family members				
a. Yes	14	46.7	15	50
b. No	16	53.3	15	50
7.Previous history of hospitalization for child				
a. Yes	9	30	5	16.7
b. No	21	70	25	83.3
8.Surgery performed				
a. ENT	1	3.3	3	10.1
b. Cardiac	17	56.7	13	43.3
c. Gastro intestinal	7	23.3	8	26.7
d. Genito urinary	2	6.7	4	13.3
e. Anorectal	2	6.7	1	3.3
f. Renal	1	3.3	1	3.3

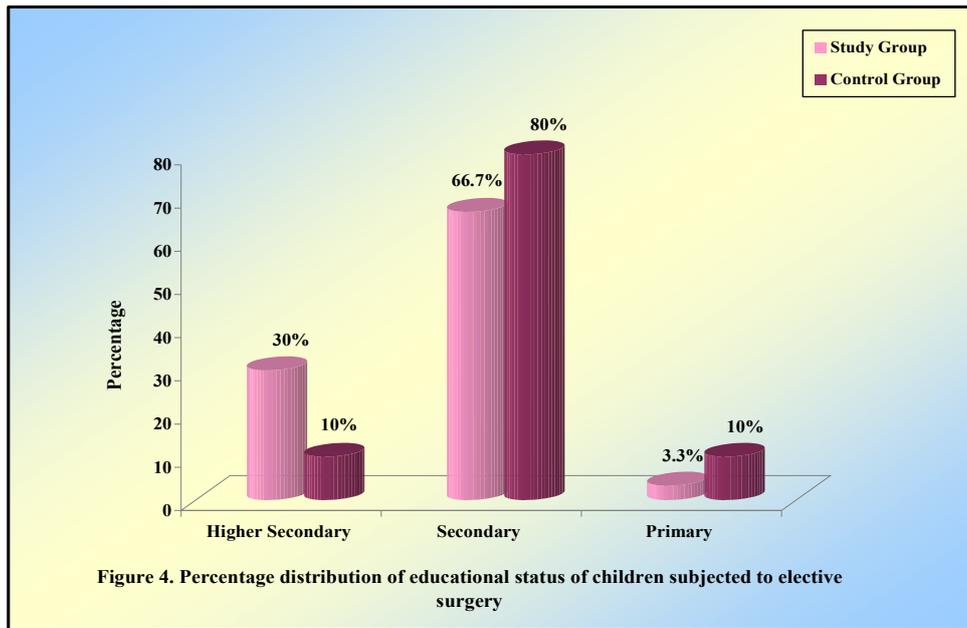


Figure 4. Percentage distribution of educational status of children subjected to elective surgery

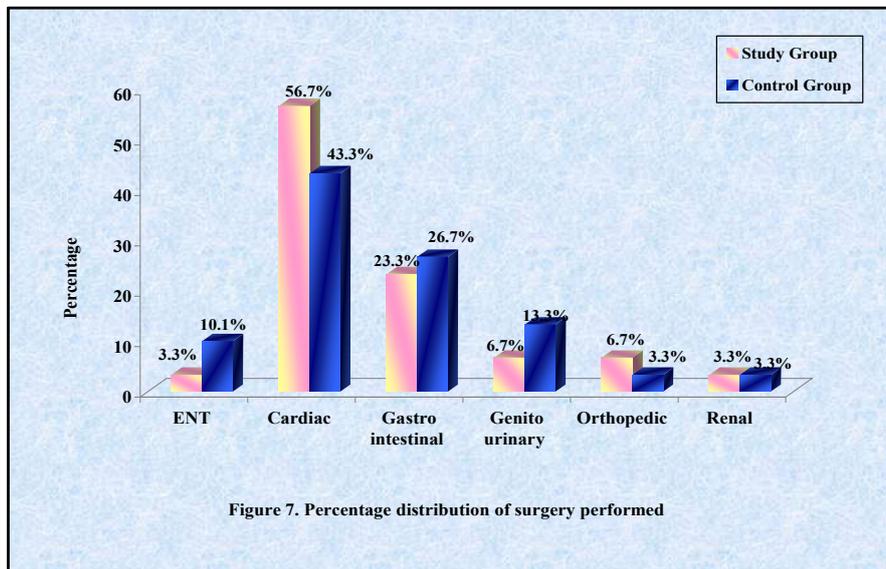


Figure 7. Percentage distribution of surgery performed

Similarly, the systolic blood pressure had a pretest mean value of 120.3 with SD of 4.9 for study group and that of control group was 125.3 with SD of 5.1. This holds the same for the diastolic blood pressure of the pretest mean value of 78.33 with SD of 4.61 in the study group and 88.9 with SD of 6.4 in the control group. The mean value of worry in the study group was 61.33 with SD of 9.73 and that of control group was 88.9 with SD of 5.09. The variation in the changes of physiological parameters might be because of the increased level of worries in children that influenced the physiological parameters. In the study group, the respiratory rate and worry were statistically significant at $p < 0.001$ level and heart rate was statistically significant at $p < 0.05$ level. The findings of the study depicted an evidence of significant difference between pretest and posttest values of all physiological measures. For the study group hence current study supported the fact that preoperative orientation program had an impact on psycho physiological parameters. The study results were similar to the descriptive study conducted by Riddhiputra (2006) on using the detailed systemic information with a set of real photographs based on the technical illustration provided to the patients before

performing surgery which had a significant result in reducing anxiety and psycho physiological parameters such as heart rate and respiratory rate. Results shown that the preparatory interventions using systemic illustration of technical procedures on surgery could significantly reduce anxiety. The association of demographic variables with psycho physiological measures among children subjected to elective surgery was assessed using chi square and ANOVA test. To conclude the discussion the investigator's current study findings revealed that there was no significant association between the selected demographic variables and with preoperative orientation program and psycho physiological measures among children in both the groups.

Similarly, Honton (1998) revealed that the preadolescent had severe anxiety and also problems including feelings of isolation, depression, boredom, hopelessness, exhaustion, lack of privacy, financial burden, role strain and family description. Likewise in the investigator's current study had variations in psycho physiological parameters before and after the study but that was not related to the selected demographic variables.

Table 2. Frequency and Percentage distribution of the level of worry on the pretest among children subjected to elective surgery in the study group and the control group (N=60)

Level of worry	Study group (n=30)		Control group (n=30)	
	No.	%	No.	%
<25%	00	00	00	00
26-50%	00	00	00	00
51-75%	19	63.3	23	76.7
>76%	11	36.7	07	23.3

Table 3. Frequency and Percentage distribution of the level of worry on the posttest among children subjected to elective surgery in the study group and the control group (N=60)

Level of worry	Study group (n=30)		Control group (n=30)	
	No.	%	No.	%
<25%	00	00	00	00
26-50%	30	100	00	00
51-75%	00	00	18	60
>76%	00	00	12	40

Table 4. Mean and Standard deviation of the psycho physiological parameters between the pretest and posttest among children subjected to elective surgery in the study group (n=30)

Psycho physiological Measures	Pretest		Post test		Paired t value	p value
	Mean	SD	Mean	SD		
Heart Rate	79.07	5.14	62.6	10.7	2.88	0.005**
Respiratory Rate	21.67	2.11	16.43	1.8	3.81	0.000***
Systolic BP	124.0	5.7	120.3	4.9	0.93	0.358
Diastolic BP	78.83	4.61	78.3	4.61	0.178	0.86
Worry	86.87	6.404	61.3	9.73	15.44	0.000***

p<.01, *p<.001

Table 5. Mean and Standard deviation of the psycho physiological parameters among children subjected to elective surgery in the study group and the control group (N=60)

Psychophysiological measures	Study group (n=30)		Control group (n=30)		Independent t value	P value
	Mean	SD	Mean	SD		
1.Heart Rate	62.6	10.7	84.9	9.6	8.4	0.000***
2.Respiratory Rate	16.43	1.8	18.03	2.8	8.4	0.01**
3.Systolic BP	120.3	4.9	125.3	5.1	2.6	0.000***
4.Diastolic BP	78.33	4.6	77.3	6.4	3.9	0.490 NS
5.Worries	61.33	9.73	88.9	5.1	13.8	0.000***

p<.01, *p<.001, NS Non Significant

Nursing Implications

- Preoperative orientation program to be included as a supplementary nursing care which helps to reduce worries and prevents deterioration of other physiological measures.
- This study guides the nurses to take initiative in practicing the same, thereby improving the comfort of the child both physically and psychologically.
- Every student should enhance their knowledge pertaining to the psychological aspects of children.
- Curriculums for various nursing programs should have psychological preparation along with the alternative and complementary therapy.
- Findings of the study imply that the nurse administrator can organize in-service education and can conduct nursing conferences regarding the benefits of preoperative orientation program among children.
- Nurse administrator must be assertive enough to discuss with the hospital management in formulating policies regarding preoperative orientation program to promote the evidence based on practice. They can utilize this strategy for better quality care.

Recommendations

- A similar study by employing larger samples using randomization.
- Study done among children with cancer showing chemotherapy, radiation therapy, dietary patterns and prevention of infections.
- Similar study can be modified using visual and auditory display and performed in children prior to surgery, prior to any of the invasive procedure.
- Same study can be replicated by assessing the effectiveness of preoperative orientation program in presurgical and post surgical period.
- Similar study can be performed in major surgery patients.

Conclusion

Preoperative orientation is a very effective method in reducing anxiety and to improve coping ability in children. It improves psychophysiological measures. This study proves that preoperative orientation is effective in improving psychophysiological measures in children subjected to elective surgery.

Acknowledgements

It's my privilege to thank Managing Trustee, for permitting me to use available resources in the university. My heartfelt thanks and gratitude Prof. P.V. Ramachandran, M.Sc (N)., Chairman, Nursing Education, Mrs. Hepzibah Beulah, M.Sc (N)., Reader, Department of paediatric nursing and Dr. Anita David, M.Sc (N)., Reader, Department of paediatric nursing, Sri Ramachandra College of Nursing, Sri Ramachandra University for their never ending guidance, support for the research completion.

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