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Assess the effectiveness of predesigned instructions for caregivers of children undergoing surgery on post operative outcomes at selected hospitals of Ambala, Haryana: A quasi experimental study

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Abstract

Background: Preoperative education is to not only prepare the child for their surgery, but also to reduce the risk of post-operative complications from occurring.

Objectives: To Assess and compare the post operative outcomes of the children undergoing surgery after administration of predesigned instructions in comparison and experimental group, and to find out the association of post operative outcomes with selected variables in comparison and experimental group.

Design: Quasi-Experimental research design "Non equivalent control group post test - only design was used.

Participants: Data was collected from 30 caregivers of children undergoing surgery (15 in each group) by convenience sampling technique.

Setting: Pediatric Surgical ward of Maharishi Markandeshwar Institute of Medical Sciences and Research Hospital, Mullana, Ambala, Haryana. Respiratory assessment scale & wound assessment scale were used to collect data.

Result: The mean post operative respiratory score of children was comparatively less in the experimental group (day 1- 6.47 ± 0.91 & day 4 - 6.40 ± 0.63) as compared to the comparison group (day 1- 6.93 ± 1.58 & day 4 - 6.47 ± 0.74) and the mean wound status score in experimental group (day 3- 7.80 ± 1.52) whereas in comparison group (day 3 - 8.20 ± 2.21) was found to be non significant at 0.05 level of significance. Significant association of post operative respiratory status and wound status of children with selected demographic variables.

Conclusion: Predesigned Instructions were effective for Caregivers of Children Undergoing Surgery in improving post operative outcomes of children and caregivers.

Keywords: predesigned instructions, caregivers, children undergoing surgery, post operative outcomes

Introduction

Children represent the future, and ensuring their healthy growth and development ought to be a prime concern of all societies [1]. Children cannot achieve optimal health alone. They are dependent upon adults in their family and community to provide them with an environment in which they can learn and grow successfully opportunity to reach their fullest developmental potential [2]. In India, about 35% of total population is children below 15 years of age. They are not only large in number but vulnerable to various health problems [3]. Pediatric surgery is any surgery performed on a patient under the age of 18 [4]. The common abdominal surgeries performed in children were appendectomy, cholecystectomy, herniorrhaphy, laparotomy, colostomy, gastrostomy and pyloromyotomy [5]. The exact incidence of common post-operative complications in children is not known. Most common one is post-operative nausea and vomiting followed by respiratory complications [6]. In upper abdominal surgeries the respiratory complications are nearly 40- 70% whereas 25-50% of post operative complications occur in major surgeries [7]. More than 80% of patients who undergo surgical procedures experience acute post-operative pain. Approximately 75% of those with post-operative pain, report the severity as moderate,

severe, or extreme [8]. Surgical site infections (SSI), one of the most common causes of nosocomial infections [9]. The SSI rate for the pediatric population varies between 2.5 and 20.0% [10]

Providing education to patients and their families is one of the most important aspects of nursing care. In terms of the surgical patient, some of the most important education we give them is the education before surgery, their preoperative education. The goal of preoperative education is to not only prepare the patient for their surgery, but also to prepare them for what to expect following the surgery [11].

As the philosophy of family-centered care, Parental involvement during surgery decreases children's postoperative pain, anesthesia-related side effects, anxiety, duration of recovery, parental anxiety and significantly reduces surgical departments' operating costs. Parental participation during a child's surgery or a hospitalization refers to the behaviors parents adopt to provide their child with physical, psychological or emotional care [12].

The first step in providing family-centered pediatric perioperative care occurs before the day of surgery. There is strong evidence that parent's anxiety on the day of surgery is highly associated with child's anxiety, thus, parents should also be active targets of family-centered preparation. Similar to children, parents desire information about their child's procedure. They have a right to know about all possible complications, details on pain or pain relief, and details on sedative premedicant [13].

Preoperative information should include, Preoperative procedures and the rationale for these procedures such as fasting etc, Preparations required such as insertion of intravenous cannula, pre-medications and what sensations may be felt when the anesthesia is induced, Information regarding the post-anesthetic care unit, What to expect postoperatively; for example IV fluids and wound drains., postoperative activities the patient will be expected to do, such as deep breathing and coughing, and early mobilization, pain management, any other information specific to the surgery they are undergoing or relevant to the individual. Preoperative education is not only important to reduce the risk of postoperative complications from occurring; it also allows the individual to take an active role in their recovery [14]

There are many benefits associated with the practice of family-centered care. Nurses should not only establish rapport with the patient but also with the family. This allows for optimal collaboration and collaborating with the family maximizes each child's growth and well being. Working together parents and health care workers can make more personal and informed decisions regarding what the best treatment is for a child. Supporting a parent in coping with their child's illness allows them to provide better care for their child and enhances the stability of a parent child relationship. The nurse has a greater understanding of the family's capabilities and strengths allowing the nurse to further build upon and enhance those skills ensuring the patient is provided the best care even after discharge. Together the family, nurse, and healthcare staff are empowered to provide the most optimal care for a child [15].

Methodology

The study was conducted during the period from March 2018 to June 2019 in the state of Haryana, India. A sample of 30 caregivers of children undergoing (15 in comparison

and 15 in experimental group) participated in this study with the prior permission from Medical Superintendent of MMIMS&R Hospital Mullana, Ambala to conduct the study. The ethical clearance was obtained from university research ethics committee (MMU/IEC/1160) and the study was carried out in accordance with the guidelines laid by Indian Council of Medical Research ICMR (2006). The written consent as well as assent from caregivers was collected prior to the study. Quasi-Experimental Research Design "Non equivalent control group post test – only design" was used in this study. Caregivers of the children undergoing surgery who were between age 5-15 years only, admitted in pediatric surgery ward, available during the period of data collection, willing to participate in the study and able to understand Hindi were included in the study. Caregivers whose children were undergoing surgery in emergency conditions and undergoing surgical correction of congenital malformations were excluded. 30 caregivers of children undergoing surgery and admitted in Pediatric Surgical Ward at MMIMS&R Hospital, Mullana, Ambala, Haryana were selected for the study. Out of which 15 in comparison and 15 in experimental group were selected with convenience sampling technique. Data was collected by Respiratory assessment scale (self structured) and Wound assessment scale (self structured).

Description of Tool

1. Demographic Variables: The sample characteristics were divided into 3 sections:

- a. **Demographic variables of Caregivers:** Age of caregivers, Gender, Relationship to the child, Religion, Marital status, Educational level, Occupation, Family income, Area of residence, previous experience regarding care of child during hospitalization which was collected from participants with interview technique.
- b. **Demographic variables of Children:** Child's gender, Child's age, Siblings in the family, Number of previous hospitalization which was collected from participants with interview technique.
- c. **Clinical Variables of Children:** Type of surgery, BMI during preoperative period, Hemoglobin during preoperative period, Any associated illness during preoperative period which were collected from record analysis.

2. Respiratory Assessment Scale: It consists of 6 components with total score ranging from 6-18 and includes respiratory rate, cough, use of accessory muscles, wheezing, Rhonchi and crackles. The score 1 indicates normal, 2 indicate mild to moderate deviation and 3 indicate severe deviation from normal. The data was collected by the researcher by observation technique. The calculated inter-rater reliability was 0.86 (Acceptable range is 0.7-1).

3. Wound Assessment Scale: It consists of 6 parameters with total score ranging from 5-25 and includes skin colour, edges, exudates type, exudate amount and necrotic tissue. Each parameter score from 1 to 5. Fewer score indicates good healing. The data was collected by the researcher by observation technique. The calculated inter-rater reliability was 0.86 (Acceptable range is 0.7-1).

Procedure

Formal administration approval was obtained from the Medical Superintendent of MMIMS&R, Hospital, Mullana, Ambala, Haryana. Data collection was done in the month of October 2018 to January 2019. Self introduction was given to the caregivers of children and rapport was built up with them. Nature and purpose of the study was explained. Assurance was given to the caregivers of the children about the confidentiality of their responses. Written consent as well as assent was obtained from the caregivers and they were assured about the confidentiality of the responses. Convenience sampling technique was used to select the caregivers of children undergoing surgery who were admitted in the Pediatric Surgical ward of MMIMS&R, Hospital. Total 30 caregivers of children undergoing surgery were selected for the study. First the data collection procedure was completed with comparison group and then the experimental group to prevent the contamination among the patients of two groups.

In comparison group, routine care as per hospital policy has been provided to the caregivers as well as their children undergoing surgery. While in experimental group, along with routine hospital care individualized Predesigned instructions were given by the researcher one day before surgery regarding instructions to follow during pre operative period (physical preparation of child for surgery, Orientation of operation theater, Information about anesthesia, preoperative area, and recovery room) and instructions to follow in post operative period (coping with pain/distraction techniques, respiratory exercises as therapeutic play, caregivers involvement during hospitalization, wound management, recovery, discharge planning and follow up) for 40 minutes to each caregiver with the help of discussion method along with pamphlet which was handed over to caregivers for further reference. From postoperative day 1 to day 4 respiratory status in children was assessed daily by the researcher in morning time before medication and after ensuring that the bladder of the child was empty and no invasive procedure has been done during that time period. Wound status assessment was done on third postoperative day i.e. the day of first postoperative dressing. At the time of dressing (as the wound cannot be left open for longer duration), researcher took the photograph of the wound and based on that photo, the scores on wound assessment scale were given. Caregiver's anxiety was also assessed once in a day for 4 post operative days while caregiver involvement in

child care was assessed after observing the caregivers for the whole day for all 4 days in comparison and experimental group.

Data Analysis

Kolmogorov – Smirnov test was applied to check the normality of postoperative outcomes of children (pain, respiratory status, wound status). The data was found to be normally distributed as calculated K-S value was not significant at 0.05 level. Hence parametric test were applied for the analysis of data.

Descriptive statistics

Frequency and percentage distribution, range, mean and standard deviation was used to describe the sample characteristics.

Inferential statistics

Chi square to compare comparison and experimental group according to selected variables. Independent “t” test to compare mean score of postoperative outcomes. ANOVA and t-test for association of selected demographic variables with postoperative outcomes in comparison and experimental group.

Result

Homogeneity between the comparison and experimental group was checked by χ^2 test in terms of demographic variables of caregivers, (Age of caregivers, Gender, Relationship to the child, Religion, Marital status, Educational level, occupation, Family income, Areas of residence, Previous experience regarding care of child during hospitalization) variables of children (child's gender, child's age, siblings in the family, Number of previous hospitalization) and clinical variables of children (Type of surgery, BMI during preoperative period, Hemoglobin during preoperative period, Any associated illness during preoperative period, Antibiotic drugs prescribed during postoperative period, Analgesic drugs prescribed during postoperative period, Antipyretic drugs prescribed during postoperative period, Antiemetic drugs prescribed during postoperative period) which was found to be non significant at 0.05 level of significance. It inferred that both the groups were homogenous and comparable in terms of demographic variables of caregivers, children and clinical variables of children.

Table 1: Mean, Mean Difference, Standard Deviation Of Difference, Standard Error of Mean Difference and ‘t’ Value of Postoperative Respiratory Status among Children in Experimental and Comparison group after Administration of Predesigned Instructions N= 30

Day	Group	Mean \pm S.D.	M _D	SE _{MD}	‘t’ value	df	P value
Day 1	Comparison Group (n = 15)	6.93 \pm 1.58	0.46	0.47	0.99	28	0.3 ^{NS}
	Experimental Group (n = 15)	6.47 \pm 0.91					
Day 2	Comparison Group (n = 15)	7.00 \pm 1.46	0.33	0.44	0.75	28	0.4 ^{NS}
	Experimental Group (n = 15)	6.67 \pm 0.90					
Day 3	Comparison Group (n = 15)	6.67 \pm 1.04	0.13	0.34	0.38	28	0.7 ^{NS}
	Experimental Group (n = 15)	6.53 \pm 0.83					
Day 4	Comparison Group (n = 15)	6.47 \pm 0.74	0.06	0.25	0.26	28	0.7 ^{NS}
	Experimental Group (n = 15)	6.40 \pm 0.63					

^{NS}= Not significant (p>0.05) t (28) = 2.05

Table 1. Shows comparison between comparison and experimental group in terms postoperative respiratory status among children after administration of predesigned instructions. On postoperative day 1, the mean postoperative

respiratory score in comparison group was 6.93 whereas in experimental group was 6.47 and the computed ‘t’ value (t= 0.99, p=0.3) was found to be non-significant at 0.05 level of significance. On postoperative day 2, the mean

postoperative respiratory score in comparison group was 7.00 whereas in experimental group was 6.67 and the computed 't' value ($t = 0.75, p = 0.4$) was found to be non-significant at 0.05 level of significance. On postoperative day 3, the mean postoperative respiratory score in comparison group was 6.67 whereas in experimental group was 6.53 and the computed 't' value ($t = 0.38, p = 0.7$) was

found to be non-significant at 0.05 level of significance. On postoperative day 4 the mean respiratory score in comparison group was 6.47 whereas in experimental group was 6.40 and the computed 't' value ($t = 0.26, p = 0.7$) was found to be non-significant at 0.05 level of significance. Hence research hypothesis was rejected and null hypothesis was accepted.

Table 2: Mean, Mean Difference, Standard Deviation of Difference, Standard Error of Mean Difference and 't' Value of Postoperative Wound Status among Children in Experimental and Comparison group after administration of Predesigned Instructions N=30

Day	Group	Mean ± S.D.	M _D	SE _{MD}	't' value	df	P value
Day 3 (On the day of first dressing)	Comparison Group (n = 15)	8.20 ± 2.21	0.40	0.69	0.57	28	0.5 ^{NS}
	Experimental Group (n = 15)	7.80 ± 1.52					

^{NS}= Not significant ($p > 0.05$) $t(28) = 2.05$

Table 2. shows that on 3rd post operative day i.e. day of first dressing the mean wound status score in comparison group was 8.20 whereas in experimental group was 7.80 and the computed 't' value ($t = 0.57, p = 0.5$) was found to be non significant at 0.05 level of significance. It is inferred that

there was a significant difference in the mean wound status score on 3rd post operative day i.e. day of first dressing day of first dressing. But p value was found to be non significant. Hence research hypothesis was rejected and null hypothesis was accepted.

Table 3: one way ANOVA and 't' value showing association of Post test respiratory status among children with selected variables in comparison and experimental group. N = 30

S. No	Selected Variables	Comparison Group (n=15)				Experimental Group (n=15)			
		Mean	df	t/f	p value	Mean	df	t/f	p value
1	Caregiver's Variables								
	Age in year								
	20-25	6.50	3/11	4.97	0.2 ^{NS}	6.75	3/11	0.99	0.4 ^{NS}
	25-30	6.13				6.67			
	30-35	7.50				6.00			
35-40	6.00	6.00							
2	Gender								
	Male	6.75	13	1.32	0.2 ^{NS}	6.00	13	0.95	0.3 ^{NS}
	Female	6.27				6.54			
3	Relationship to child								
	Father	6.75	2/12	0.92	0.4 ^{NS}	6.40	2/12	0.25	0.7 ^{NS}
	Mother	6.30				6.56			
	Any other	6.00				6.00			
4	Religion								
	Hindu	6.42	13	0.19	0.8 ^{NS}	6.58	13	1.23	0.2 ^{NS}
	Muslim	6.33				6.00			
5	Marital status								
	Married	6.43	13	0.64	0.5 ^{NS}	6.47	-	-	-
	Unmarried	6.00				0			
6	Educational status								
	Graduate	7.00	4/10	4.16	0.3 ^{NS}	-	3/11	0.76	0.5 ^{NS}
	Intermediate or diploma	6.00				-			
	High school certificate	8.00				7.00			
	Middle school certificate	6.50				7.00			
	Primary school certificate	-				6.00			
Illiterate	6.20	6.40							
7	Occupation								
	Elementary occupation	7.00	13	2.03	0.06 ^{NS}	6.00	13	1.23	0.2 ^{NS}
	Unemployed	6.25				6.58			
8	Family income								
	6327- 18949	6.75	13	1.32	0.2 ^{NS}	6.67	13	0.84	0.4 ^{NS}
	<6323	6.27				6.33			
9	Area of residence								
	Urban	7.50	13	3.59	0.00*	0	-	-	-
	Rural	6.23				6.47			
10	Previous experience regarding care of child during hospitalization								
	Yes	6.33	13	0.19	0.8 ^{NS}	6.67	13	0.50	0.6 ^{NS}
	No	6.42				6.42			
	Children Variables								

11	Child's gender								
	Male	6.50	13	0.85	0.4 ^{NS}	6.54	13	0.95	0.3 ^{NS}
	Female	6.20				6.00			
12	Child's age (in years)								
	5-10	6.29	13	0.64	0.5 ^{NS}	6.78	13	2.25	0.4 ^{NS}
	10-15	6.50				6.00			
13	Siblings in the family								
	Yes	6.36	13	0.98	0.3 ^{NS}	15	-	-	-
	No	7.00				0			
14	Previous hospitalization								
	Yes	6.40	13	0.00	1.0 ^{NS}	6.67	13	0.50	0.6 ^{NS}
	No	6.40				6.42			
	Clinical Variables								
15	Type of surgery								
	Major	6.50	13	1.24	0.2 ^{NS}	6.36	13	0.88	0.3 ^{NS}
	Minor	6.00				6.75			
16	BMI during preoperative period								
	< 15	6.13	13	1.97	0.06 ^{NS}	6.78	13	2.25	0.04*
	15 – 25	6.71				6.00			
17	Hemoglobin during preoperative period								
	>10	6.29	1/13	12.4	0.1 ^{NS}	6.46	2/12	0.41	0.6 ^{NS}
	7.0- 10	8.00				6.00			
	<7.0	-				7.00			
18	Any associated illness during preoperative period								
	Yes	0	-	-	-	0	-	-	-
	No	6.40				6.47			
19	Antibiotics prescribed during postoperative period								
	Yes	6.40	-	-	-	6.47	-	-	-
	No	0				0			
20	Analgesics prescribed during postoperative period								
	Yes	6.30	13	0.85	0.4 ^{NS}	6.54	13	0.95	0.3 ^{NS}
	No	6.60				6.00			
21	Antipyretics prescribed during postoperative period								
	Yes	6.46	13	0.95	0.3 ^{NS}	6.42	13	0.50	0.6 ^{NS}
	No	6.00				6.67			
22	Antiemetic prescribed during postoperative period								
	Yes	6.60	13	1.88	0.08 ^{NS}	6.50	13	0.23	0.8 ^{NS}
	No	6.00				6.40			

*Significant (p ≤ 0.05) Not Significant (p > 0.05)

t (13) = 2.16, F (3/11) = 3.59, F (2/12) = 3.88, F (4/10) = 3.48, F (1/13) = 4.67

Table 3. One way ANOVA and 't' Value showing association of Postoperative respiratory status of children with selected demographic variables in comparison and experimental group. In comparison group there was significant association of respiratory status with area of

residence (t=3.59,p=0.001) and in experimental group there was significant association with BMI during preoperative period. (t=2.25,p=0.04) Hence research hypothesis was partially accepted and null hypothesis was partially rejected.

Table 4: One way ANOVA and 't' value showing association of Post test wound status among children with selected variables in comparison and experimental group. N = 30

S. No	Selected Variables	Comparison Group (n=15)				Experimental Group (n=15)			
		Mean	df	t /f	P value	Mean	df	t /f	P value
1	Age in year								
	20-25	6.50	3/11	4.97	0.2 ^{NS}	6.75	3/11	0.99	0.4 ^{NS}
	25- 30	6.13				6.67			
	30-35	7.50				6.00			
	35-40	6.00				6.00			
2	Gender								
	Male	9.75	13	1.75	0.1 ^{NS}	10.50	13	2.55	0.3 ^{NS}
	Female	7.64				7.75			
3	Relationship to child								
	Father	6.75	2/12	0.92	0.4 ^{NS}	6.40	2/12	0.25	0.7 ^{NS}
	Mother	6.30				6.56			
	Any other	6.00				6.00			
4	Religion								

	Hindu	7.92	13	0.99	0.3 ^{NS}	8.17	13	0.44	0.6 ^{NS}
	Muslim	9.33				7.67			
5	Marital status								
	Married	8.21	13	0.09	0.9 ^{NS}	8.07	-	-	-
	Unmarried	8.00				0			
6	Educational status								
	Graduate	10.00	4/10	0.12	0.9 ^{NS}	0	3/11	1.23	0.3 ^{NS}
	Intermediate or diploma	9.00				0			
	High school certificate	10.00				10.00			
	Middle school certificate	8.50				7.00			
	Primary school certificate	0				8.50			
	Illiterate	9.00				7.70			
7	Occupation								
	Elementary occupation	10.33	13	2.07	0.05 [*]	9.33	13	1.49	0.1 ^{NS}
	Unemployed	7.67				7.75			
8	Family income								
	6327- 18949	8.00	13	0.20	0.8 ^{NS}	7.83	13	0.41	0.6 ^{NS}
	<6323	8.27				8.22			
9	Area of residence								
	Urban	8.00	13	0.13	0.8 ^{NS}	0	-	-	-
	Rural	8.23				8.07			
10	Previous experience regarding care of child during hospitalization								
	Yes	8.00	13	0.16	0.8 ^{NS}	8.33	13	0.29	0.7 ^{NS}
	No	8.25				8.00			
	Children variables								
11	Child's gender								
	Male	7.90	13	0.73	0.4 ^{NS}	8.00	13	0.37	0.7 ^{NS}
	Female	8.80				8.50			
12	Child's age (in years)								
	5-10	7.29	13	1.57	0.1 ^{NS}	8.22	13	0.41	0.6 ^{NS}
	10-15	9.00				7.83			
13	Siblings in the family								
	Yes	8.63	13	1.03	0.3 ^{NS}	8.07	-	-	-
	No	6.00				0			
14	Previous hospitalization								
	Yes	7.80	13	0.48	0.6 ^{NS}	8.33	13	0.29	0.7 ^{NS}
	No	8.40				8.00			
	Clinical Variables								
15	Type of surgery								
	Major	8.50	13	1.05	0.3 ^{NS}	7.64	13	1.72	0.1 ^{NS}
	Minor	7.00				9.25			
16	BMI during preoperative period								
	< 15	8.25	13	0.09	0.9 ^{NS}	8.22	13	0.41	0.6 ^{NS}
	15 – 25	8.14				7.83			
17	Hemoglobin during preoperative period								
	>10	6.29	1/13	12.48	0.1 ^{NS}	6.46	2/12	0.41	0.6 ^{NS}
	7.0- 10	8.00				6.00			
	<7.0	0				7.00			
18	Any associated illness during preoperative period								
	Yes	0	-	-	-	0	-	-	-
	No	8.20				8.07			
19	Antibiotics prescribed during postoperative period								
	Yes	8.20	-	-	-	8.07	-	-	-
	No	0				0			
20	Analgesics prescribed during postoperative period								
	Yes	7.70	13	1.26	0.2 ^{NS}	7.69	13	2.55	0.02 [*]
	No	9.20				10.50			
21	Antipyretics prescribed during postoperative period								
	Yes	8.23	13	0.13	0.8 ^{NS}	8.33	13	1.23	0.2 ^{NS}
	No	8.00				7.00			
22	Antiemetic prescribed during postoperative period								
	Yes	8.60	13	0.99	0.3 ^{NS}	8.10	13	0.10	0.9 ^{NS}
	No	7.40				8.00			

*Significant (p ≤ 0.05)

Not Significant (p > 0.05)

t (13) = 2.16, F (3/11) = 3.59, F (2/12) = 3.88, F (4/10) = 3.48, F (1/13) = 4.67

Table 4. One way ANOVA and 't' Value showing association of Postoperative wound status of children with selected demographic variables in comparison and experimental group. In comparison group there was significant association of wound status with occupation ($t=2.07, p=0.05$) and in experimental group there was significant association with analgesics drugs prescribed during postoperative period. ($t=2.55, p=0.02$) Hence research hypothesis was partially accepted and null hypothesis was partially rejected.

Discussion

The findings of the present study revealed that majority of the caregivers of children in comparison (73.3%) and experimental group (86.7%) were female (mothers). Majority of the caregivers in comparison (80%) as well as in experimental group (80%) were unemployed and majority of caregivers of children in comparison (80%) as well as experimental group (80%) were not having previous experience regarding care of child during hospitalization. The study findings were consistent with the study conducted by ARANHA *et al.* to assess the impact of multimodal preoperative preparation program on parental anxiety in which majority of the parents 99% were female, highest

number of parents in comparison and experimental group were unemployed (homemakers) and majority of parents in the control group 80% and the experimental group 90.9% did not have previous surgical experience [16].

The present study showed that the mean post operative respiratory score of children on day 1 to day 4 were less in the experimental group ($6.47 \pm 0.91, 6.67 \pm 0.90, 6.53 \pm 0.83,$ and 6.40 ± 0.63) as compared to the comparison group ($6.93 \pm 1.58, 7.00 \pm 1.46, 6.67 \pm 1.04,$ and 6.47 ± 0.74) the study findings were consistent with findings of the study conducted by Sumathi. PV, Dr. Sreedevi T.R. The mean respiratory status score in the experimental group was (10.56 ± 0.82) as compared to the control group mean of (13.05 ± 1.74) [17].

The findings of the present study showed that there was significant association of respiratory status with selected demographic variables. The study findings were similar with the findings of another study conducted by Namrata Punder *et al* to assess the effectiveness of breathing exercises as play method on cardiopulmonary parameters among children with acute respiratory tract infections in which there was significant association found between cardiopulmonary parameters and selected demographic variables [18].

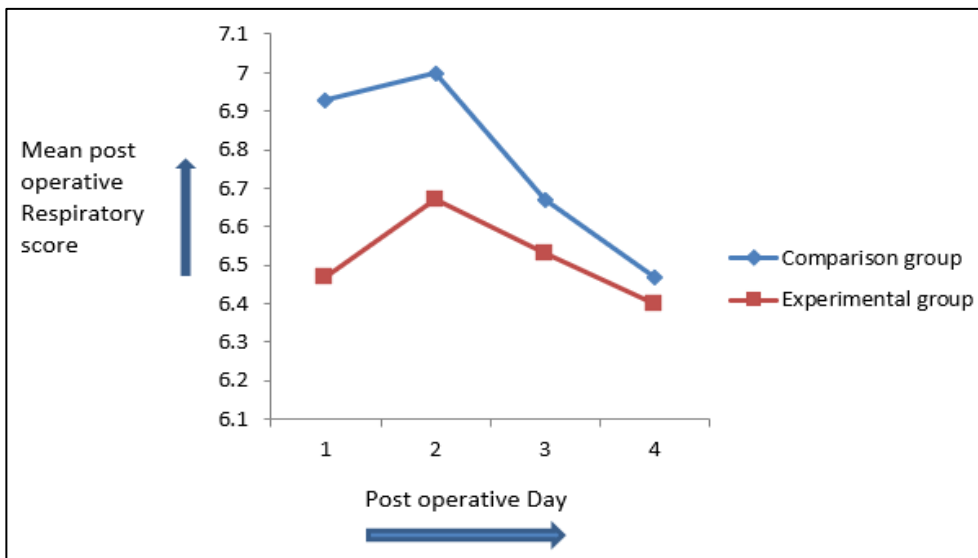


Fig 1: Line Graph showing the mean Post Operative score of Respiratory status among Children in Experimental and Comparison group

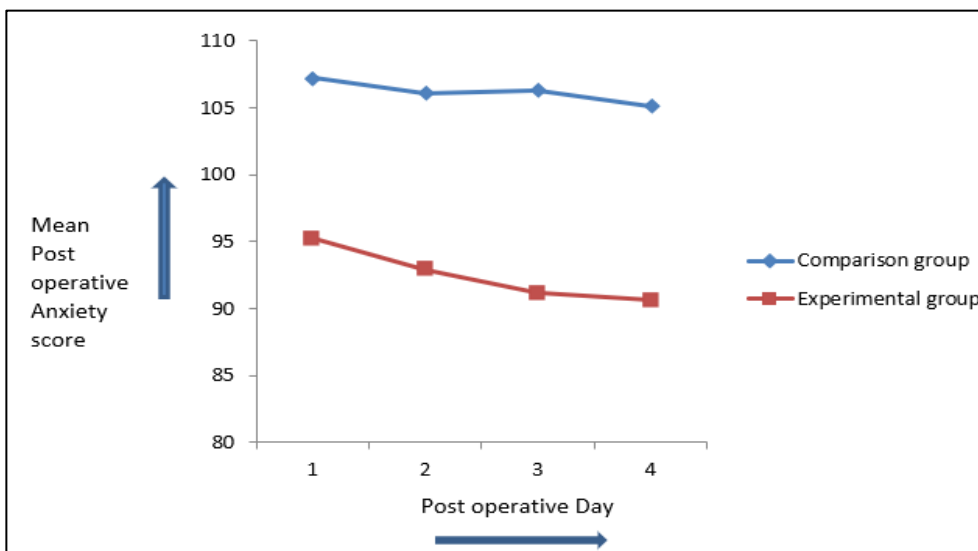


Fig 2: Line Graph showing the Mean Post Operative Anxiety among Caregivers in Experimental and Comparison group

Conclusion

Following conclusions are drawn from the finding of the study Based on the findings of the study, it can be concluded that Predesigned Instructions were effective for Caregivers of Children Undergoing Surgery in improving post operative outcomes of children and caregivers.

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Ethical approval

The ethical clearance was obtained from university research ethics committee of Maharishi Markandeshwar (Deemed to be University), Mullana, Ambala (MMU/IEC/1160) and the study was carried out in accordance with the guidelines laid by Indian Council of Medical Research ICMR. The permission was taken to conduct the study from Medical Superintendent of MMIMS&R, Hospital, Mullana, Ambala, Haryana. The written consent as well as assent was obtained from the caregivers prior to the study. The purpose for carrying out research project was explained and assurance of confidentiality was given to the participants.

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