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Effectiveness of Computer Assisted Pre-Operative Teaching on Reduction of Post Operative Complications by Early Ambulation among Patient Undergoing Abdominal Surgeries

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Abstract

Objective: To assess the post operative activities (Ambulation, Deep breathing exercises, circulatory exercises, abdominal exercises and daily activities) among experimental and control group after pre operative teaching on early ambulation. To evaluate the effectiveness of computer–assisted pre operative teaching in reduction of post operative complications by early ambulation in experimental and control group.

Methods: Sixty samples (30 in experimental and control group) were selected by convenient sampling technique from the male and female surgical ward, post operative annex ward .The researcher used post test only design Interview schedule is used to collect the demographic information, Observational checklist deals with post operative activities and, Assessment of physiological parameters, used as an instrument to assess the effectiveness of computer assisted pre operative teaching in reduction of post operative complication among patient undergoing abdominal surgery.

Results: The finding of the study shows that ,the mean score for the 3rd day was 37.74(75.54%) with SD of 7.79 in experimental group, 18.07(36.14%) with SD of 1.82 in control group and their percentage of gain score difference is 39.40%. Since the percentage gain score difference is increasing it shows that computer assisted teaching has effectiveness in experimental than control group. There is no statistically significant difference in reduction of post operative complications in both groups.

Conclusions: The major conclusion drawn from this present study is that there is increasing level of activity occurs in the experimental group by means of computer assisted pre operative teaching. There is significant difference between the effectiveness of computer assisted pre operative teaching on early ambulation between experimental and control group.

Keywords: Early ambulation; Post operative complications; Abdominal surgery.

Introduction

Nursing is a healthcare profession focused on the care of individuals, families, and communities so they may attain, maintain, or recover optimal health and quality of life from conception to death. Nurses work in a large variety of specialties where they work independently and as part of a team to assess, plan, implement and evaluate care. so, Nurse's pressure are inevitable throughout the therapeutic intervention to minimize the complications, for easy recovery to provide the comprehensive care to decrease the length of hospitalization. Surgery is an ancient medical specialty that uses operative manual and instrumental techniques on a patient to investigate and/or treat a pathological condition such as disease or injury, or to help improve bodily function or appearance. Surgery is a major source of a hospital's income. Although major surgical interventions still occur in the hospital setting, the 1980s introduced a trend to perform surgery in ambulatory settings. Many of the services of the hospital's perioperative departments are now performed in outpatient settings. This change has had a positive impact on decreasing health care costs related to surgery.

The term abdominal surgery broadly covers surgical procedures that involve opening the abdomen. Surgery of each abdominal organ is dealt with separately in connection with the description of that organ (stomach, kidney, liver, etc.)

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Generally, patients are expected to stay in the hospital for 4 to 5 days after the surgery. During this period, the nursing of the patient plays a significant role in helping the patient to a speedy recovery after abdominal surgery. The nurse will help the patient to change position from lying his/her backside at an interval of two hours. After gaining the sufficient strength, he/she can carry out this process without any assistance. With the help of the nurse the patient will be expected to do some simple exercises, as advised by the expert and she will help him to make a short walk after the surgery.

The term ambulate means to walk. Ambulating the client keeps him more active and improves muscle tone and strength in his legs. It also slows loss of bone mass and density related to osteoporosis. The client who is up walking has increased peristalsis and circulation. The client also gets a sense of accomplishment and maintains greater independence. Some clients who have been ill or are recovering from an injury or surgery may need help with walking. The client may have decreased muscle strength or a change in his centre of gravity or posture. Some clients need help with ambulation because of a decrease in their sensory perception or impaired balance. Confusion, medications and distractions can all affect a client's ability to walk independently. Every hospitals should be aware of the important of early ambulation on post operative to prevent complication .According to the hospital protocol the nurse and the physiotherapist initiates and assist at the time of ambulation .It facilitate the patient to meet the activity of daily living, restoration of physiological activity and psychological well being.

Materials and methods

The researcher conducted the study with Sixty samples (30 in experimental and control group) were selected by convenient sampling technique from the male and female surgical ward, post operative annex ward .The researcher used post test only design Interview schedule is used to collect the demographic information, Observational checklist deals with post operative activities and, Assessment of physiological parameters, used as an instrument to assess the effectiveness of computer assisted pre operative teaching in reduction of post operative complication among patient undergoing abdominal surgery.

The investigator planned to collect the data in the respective wards twice a day from Monday to Sunday. On the first day of meeting with the people self introduction was made and the purpose of study was explained. Consent from the sample was obtained. Each sample took 10-15 mts approximately for collecting the demographic variable. The investigator collects the operation list day before surgery in the respective wards. Computer assisted teaching was given to the sample before the day of surgery. The investigator visits twice the day and assess the post operative activities of the sample from the 1st post operative day till 3rd day including physiological parameters. Activity score and physical parameters score were given in mean and standard deviation. Differences between experiment and control groups were analysed using student independent t-test.

Results

The present study consisted of 30 samples in experimental group who underwent preoperative teaching on early ambulation. Control group consisted of 30 samples who underwent abdominal surgery but no preoperative teaching. The statistical results of level of activities among experimental and control group were 5(16.7%) of experimental group and 26(86.7%) of control group, were doing the activities with assistance and 26(83.3%)of experimental group and 4(13.3%) them were doing the activities independently. The obtained c2 is 42.85 at the level of 0.001 it is very highly significant. It was analysed using pearson chisquare test.

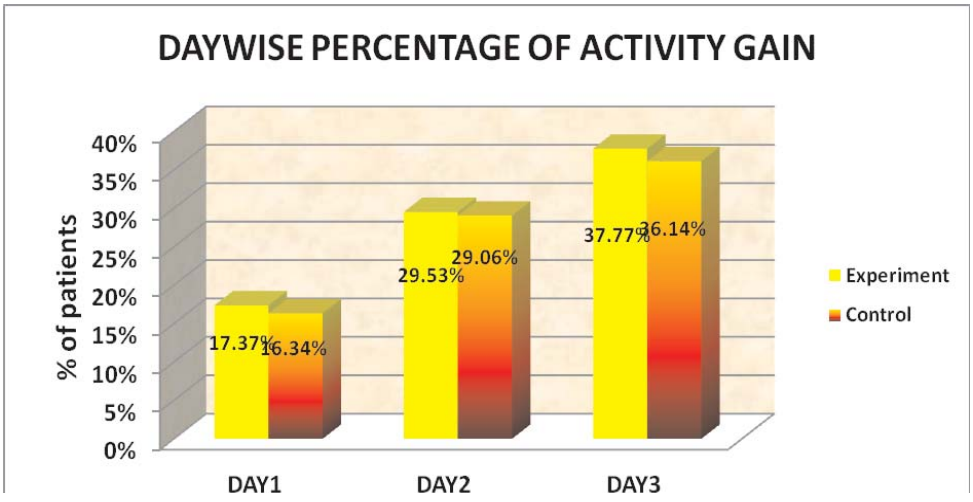
The statistical results of Effectiveness Of Computer Assisted Pre-Operative Teaching mean score was 37.74 with SD of 7.79 in experimental group, 18.07 with SD of 1.82 in control group and their percentage of gain score difference is 39.40%. Since the percentage gain score difference is increasing it show that computer assisted teaching has effectiveness in experimental than control group.

There is no statistical significant difference in reduction of post operative complications by early ambulation among experimental and control group.

	Level of activity	Experiment group		Control group		Chi square test
		n	%	n	%	
DAY 1	Poor	0	0.00%	0	0.00%	2=3.16 P=0.08 df=2 Significant
	Moderate	30	100.00%	30	0.00%	
	Good	0	0.00%	0	0.00%	
DAY 2	Poor	0	0.00%	0	0.00%	2=27.80 P=0.001*** df=2 Significant
	Moderate	11	36.70%	27	90.00%	
	Good	19	63.30%	3	10.00%	
DAY 3	Poor	0	0.00%	0	0.00%	2=42.85 P=0.001 *** df=2 Significant
	Moderate	5	16.70%	26	86.70%	
	Good	25	83.30%	4	13.30%	

*significant at P≤0.05 ** highly significant at P≤0.01 *** very high

	Min – Max score	Experiment group		Control group		Percentage of Gain score difference
		Mean score	SD	Mean score	SD	
DAY 1	0 -50	17.37	4.54	8.17	4.57	18.40%
DAY 2	0 -50	29.53	8.04	14.53	4.07	30.00%
DAY 3	0 -50	37.77	7.79	18.07	1.82	39.40%



The above table indicates the association between level of activity and age group 10(100%) of them were doing good belong to the age group of 20-30 yrs, 1(76%) of them were doing moderate level of activity,2 (92.4%) of them were doing good activity level. Belong to the age group of 31 -40 yrs, 2(40%) of them were doing moderate level of activity, 3 (60.0%) of them were doing good activity level belong

Demographic variables		Level of Activity(Day 3)					Chi square test
		Moderate		Good			
		n	%	n	%	N	
Age	20 -30 yrs	0	0.0%	10	100.0%	10	
	31 -40 yrs	1	7.6%	12	92.4%	13	**2=11.12 P=0.01**
	41 -50 yrs	2	40.0%	3	60.0%	5	**DF=3 Significant**
	51 -60 yrs	1	50.0%	1	50.0%	2	
Gender	Male	2	8.3%	22	91.7%	24	**2=6.00 P=0.01**
	Female	3	50.0%	3	50.0%	6	**DF=1 Significant**
Marital status	Married	5	17.9%	23	82.1%	28	2=0.42 P=0.51
	Unmarried	0	0.0%	2	100.0%	2	DF=1 Not Significant
Religion	Hindu	5	19.2%	21	80.8%	26	2=0.92 P=0.63
	Muslim	0	0.0%	2	100.0%	2	DF=2 Not Significant
	Christian	0	0.0%	2	100.0%	2	
Education status	Illiterate	5	18.8%	11	81.3%	16	**2=7.58 P=0.02**
	Primary/middle	0	16.7%	9	83.3%	9	**DF=2 Significant**
	High school/HSc	0	0.0%	5	100.0%	5	
Occupation status	Daily Wage Labourer	2	11.1%	16	88.9%	18	
	Industrial Worker	0	0.0%	5	100.0%	5	2=7.00 P=0.07
	Govt Employee	2	66.7%	1	33.3%	3	DF=3 Not Significant
	None	1	25.0%	3	75.0%	4	
Monthly income	Rs 3000 - 5000	3	15.8%	16	84.2%	19	
	Rs 5001 - 7000	0	0.0%	7	100.0%	7	2=4.61 P=0.20
	Rs 7001 -10000	1	50.0%	1	50.0%	2	DF=3 Not Significant
	>Rs.10000	1	50.0%	1	50.0%	2	
Surgical diagnosis	APPENDICITIS	2	28.6%	5	71.4%	7	
	LIH	1	12.5%	7	87.5%	8	2=6.76 P=0.15
	PREV.LSCS	0	0.0%	1	100.0%	1	DF=4 Not Significant
	RIH	1	7.7%	12	92.3%	13	
	UMBILICAL SEPSIS	1	100.0%	0	0.0%	1	
name of the surgery	APPENDECECTOMY	2	28.6%	5	71.4%	7	
	HYSTERECTOMY	1	100.0%	0	0.0%	1	2=6.71 P=0.15
	LSCS	0	0.0%	1	100.0%	1	DF=4 Not Significant
	LT.HERNIOPLASTY	1	11.1%	8	88.9%	9	
	RT.HERNIOPLASTY	1	8.3%	11	91.7%	12	

* significant at P≤0.05 ** highly significant at P≤0.01 *** very high significant at P<0.001

to the age group of 41-50 yrs, 1 (50%) of them were doing moderate and good activity level belong to the age group of 51 -60 yrs. The obtained c2 value is 11.12 (P=0.01) which is statistically significant hence there is association occurs between age and activity level. When look into the association between level of activity with gender, 2 (8.3%) of them were doing moderate , 22 (91.7)were doing good –were male, 3(50%) of them were doing moderate and good level of activity belongs to female. The obtained c2 value is 6.00 (P=0.01) which is statistically significant hence there is association occurs with gender and activity level. And the association between level of activity with educational status 5 (18.8%) of them were doing moderate, 11 (81.3%) were doing good –was illiterate, 9(83.3%) of them were doing good level of activity had primary/ middle level of education, 5(100%) of them were doing good

level of activity had high school education The obtained c2 value is 7.58 (P=0.02) which is statistically significant hence there is association occurs with education and activity level.

Discussion

Quasi experimental study with post test only control group was conducted to evaluate the effectiveness of computer assisted pre-operative teaching on reduction of post operative complications by early ambulation among the patient undergoing abdominal surgeries.

The discussion of the present study is based on the findings obtained from statistical analysis based on the objectives of the study. The study findings revealed the mean activity score of 17.37 with SD of 4.54 in experimental and in control group mean activity score was 8.17 with SD of 4.57. The obtained t value was 7.82 significant at 0.001 level. 2nd daywise assessment of mean activity score among experimental group was 29.53 with SD of 8.04 and in control group mean activity score was 14.53 with SD of 4.07. The obtained t value was 9.11 significant at 0.001 level 3rd daywise assessment of mean activity score among experimental group was 37.77 with SD of 7.79and in control group mean activity score was 18.07with SD of 1.82. The obtained t value was 13.48 significant at 0.001 level .Hence there is increase level of activities for the 3 days .

To assess the effectiveness of computer assisted teaching, the mean score for the 3rd day was 37.74 (75.54%) with SD of 7.79 in experimental group, 18.07 (36.14%) with SD of 1.82 in control group and their percentage of gain score difference is 39.40%. Since the percentage gain score difference is increasing it show that computer assisted teaching has effectiveness in experimental than control group. To evaluate the effectiveness of computer –assisted pre operative in reduction of post operative complications by early ambulation in experimental and control group**.** The study findings show that,the mean score for SBP was 114.33 with SD of 10.06. The obtained t value was 1.85, (P=0.07) hence it is not statistically significant. On 2nd day The mean score for SBP was 117.33with SD of 6.91. The obtained t value was 1.16, (P=0.87) hence it is not statistically significant. On 3rd day The mean score for SBP was 117.33with SD of 6.40. The obtained t value was 1.42, (P=0.16) hence it is not statistically significant. In this study none of the physiological parameters such as (temperature, pulse rate, blood pressure, saturation), have influenced with early ambulation for 3 days. In general there is no statistically significant difference between experiment and control group in reduction of post operative complications by means of early ambulation . From this above findings revealed that there is no significant reduction in post operative complications by computer assisted pre operative teaching.

According to this findings there is increasing level of activity occurs in the experimental group by means of computer assisted pre operative teaching. There is significant difference between the effectiveness of computer assisted pre operative teaching on early ambulation between experimental and control group .There is no statistically significant difference in reduction of post operative complications by early ambulation.

Nursing Implications

Health is the wealth of the people. To preserve health in a fruitful way, a quality care is needed. This care should be staring from the pre operative stage to prevent from post operative complications.

Nursing Education

The present study emphasis the need for a computer assisted pre operative teaching on early ambulation following abdominal surgery.

Nursing Research

Research is done to draw out new facts from already existing things and broaden the body of knowledge hence this study can be applied to large sample size.

Nursing Practice

- The study implies the importance of pre operative teaching on early ambulation for patient undergoing abdominal surgery .
- Motivate the staff and student nurse to be aware of the post operative complications, hospital acquired infections.

- Make them to understand the need for pre operative teaching.
- Make them to understand the importance of early ambulation following abdominal surgery.

Nursing Administration

- The nurse administrator should conduct survey of the hospital and need to be aware of the current problems and standard of care and hospital policies.
- The nurse administrator should initiate to organize health education programme about the post operative care during their pre operative stage which should covers the holistic needs of the individual .
- The administrator should provide inservice education for the staff and students to create awareness about the pre operative care so that the knowledge can be impacted to those who are admitting in the respective wards which will helps in reduction of post operative complications, decreased length of stay etc.

Recommendations

- A similar study can be conducted for large sample size for the generalization of the findings.
- A similar study can be conducted with pre test and post test control group design.
- A similar study can be conducted with different tools.
- A similar study also can be conducted in different hospitals .
- The same study can be conducted using live demonstration in the place of teaching slides during pre operative teaching .

Limitation

The patient under the age group of 50-60 years face more difficult to do the exercises than the age group of 20-49 years.

Conclusion

The major conclusion drawn from this present study is that there is increasing level of activity occurs in the experimental group by means of computer assisted pre operative teaching. There is significant difference between the effectiveness of computer assisted pre operative teaching on early ambulation between experimental and control group. There is no significant difference in reduction of post operative complications between the experimental and control group by early ambulation. There is significant difference in effectiveness of computer assisted pre operative teaching on early ambulation with selected demographic variables.

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