

# **RESEARCH ARTICLE**

### EFFECTIVENESS OF PRE OPERATIVE TEACHING REGARDING LEG EXERCISES ON EARLY AMBULATION AMONG POST OPERATIVE PATIENTS UNDERGOING SELECTED ABDOMINAL SURGERIES IN THE SELECTED HOSPITAL, GANDHINAGAR

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#### ..... Manuscript Info Abstract

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..... An experimental study was conducted to effectiveness of pre operative teaching regarding leg exercises on early ambulation among post operative patients undergoing selected abdominal surgeries in the selected hospital, Gandhinagar. The 'general system model' was used as conceptual framework. A quantitative approach with experimental study design was used to achieve the objectives of the study. The sample consisted of 30 from selected areas of Gandhinagar. The random sampling technique was used to collect the sample. In the experimental group the mean early ambulation was 6.533 with standard deviation 0.80 and in the control group was 4.866 with SD 0.718. The calculated't' value was 7.376 where as table value is 1.69 in 0.05 level which shows highly significant. So, the pre operative leg teaching was highly effective in early ambulation during the post operative phase.

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### \_\_\_\_\_ Introduction:-

Surgery is a great stressor to patients and causes large physiological changes, ranging from tissue trauma, immobility and systemic effects to psychological distress and reduced quality of life.

Physical capacity appears to be an important predictor for postoperative recovery.<sup>2</sup>

Especially in elderly patients, physical capacity is often reduced due to a lack of regular physical activity before surgery. Improvement of their functional capacity by means of preoperative exercise may enhance physical capacity at the moment of hospital admission and may facilitate better recovery after surgery.<sup>3</sup>

Karin Valkenet. et al Conducted a systematic review study on the effects of preoperative exercise therapy on postoperative outcome, postoperative complication rate and length of hospital stay. A primary search of relevant key terms was conducted in the electronic databases of PubMed, EMBASE, PEDro and CINAHL. Twelve studies of patients undergoing joint replacement, cardiac or abdominal surgery were included. The study concluded that the Preoperative exercise therapy consisting of inspiratory muscle training or exercise training prior to cardiac or abdominal surgery led to a shorter hospital stay and reduced postoperative complication rates.<sup>4</sup>

### Need for the study:

Exercise is an important component of recovering after abdominal surgery because failing to exercise could cause a hernia. The muscles of the abdomen weaken because the incision goes through muscle and fascia, which is connective tissue. This will also negatively affect the posture and balance.<sup>5</sup>

Eldawati and Uun Nurjanah have conducted a quasi and post test control to evaluate the effectiveness of preoperative exercise of muscle strength before surgery, maintains muscle strength and prepare early postoperative ambulation lower limb fracture with 28 samples. Statistical test results obtained p-value of 0.017 ( $\alpha$ <0.005), meaning that at alpha 5% a significant difference was seen in the average ability of early ambulation between respondents in the intervention group and the control group. The study concluded that there is evidence to suggest that pre-operative exercise of muscle strength is beneficial to early ambulation postoperative lower limb fracture.<sup>6</sup>

Following surgery, especially abdominal surgery, there is a tendency for the lungs to produce more mucous than usual and not to expand fully. This is partly due to the effects of the anesthetic, and partly because patients are not moving around as freely following the surgery. In addition, due to the decreased activity, patients are also at risk of developing blood clots, especially in legs.<sup>7</sup>

### **Objectives of the study:-**

- 1. To assess the effectiveness of pre operative teaching regarding leg exercises on early ambulation among post operative patients undergoing selected abdominal surgeries in the selected hospital.
- 2. To compare the post test score between the experiment and control group.
- 3. To find out the association between selected demographic variables of the experimental group.

### **Hypothesis:**

 $H_0$  1: There is no significant effectiveness of pre operative teaching regarding leg exercises on early ambulation among the experimental group.

 $H_0 2$ : There is no significant association between post test score of early ambulation among the experimental group.

 $H_i$ : There is significant effectiveness of pre operative teaching regarding leg exercises on early ambulation among the experimental group.

H<sub>2</sub>: There is a significant association between post test score of early ambulation among the experimental group.

### Methodology:-

Research methodology indicates the general pattern of organizing the for gathering valid and reliable data for an investigations. An experimental study was undertaken with 30 samples i.e. 15 in experimental group and 15 in control group. The data collection was done by structured exercise checklist and ambulation checklist and the data analysis was done by descriptive and inferential statistics.

SI No	Demographic variable	Frequency (f)	Percentage(%)		
1	Age	5	16.66		
	a. 20-25 Years				
	b. 26-30 Years	9	30		
	c. 31-35 Years	6	20		
	d. 35-40 Years	6	20		
	e. More than 40 Years	4	13.33		
2	Gender	16	53.33		
	a. Male				
	b. Female	14	46.66		
3	Type of family	21	70		
	a. Joint				
	b. Nuclear	9	30		
4	Marital status				

#### Data Analysis:

Frequency and percentage distribution of demographic variable N=30.

	a. Married	27	90
	b. Unmarried	3	10
5	Educational status a. Primary	2	6.66
	b. Secondary	11	36.66
	c. Graduate	13	43.33
	d. Post graduate and above	4	13.33

The above table depicts the distribution in number and percentage of study subjects according to their demographic variables. Out of 30 samples 16.66% were in the age group of 20 - 25 years, 30% were in the age group of 26-30 years, 20% were in the age group of 31-35 years, 20% were in the age group of 35-40 years and 13.33% were in 40 years and above. In relation to gender, 53.33% were Males, 46.66% were females. Regarding to type of family, 70% were in joint, 30% in were from nuclear family. In relation to marital status, 90% were marries, 10% were unmarried. In relation to educational status, 6.66% studies up to primary grade, 36.66% up to secondary, 43.33% up to graduate and 13.33% studied up to postgraduate and above.

Frequency and percentage distribution of early ambulation on experimental and control group N=30.

	Experimental group		Control group			
Ambulation	Frequency	Percentage (%)	Frequency	Percentage (%)		
No problem	10	66.66	2	13.33		
Mild	3	20	4	26.66		
Moderate	2	13.33	9	60		
Severe	0	0	0	0		
Total	15	100	15	100		

Comparison of mean, standard deviation of early ambulation of experimental and control group N=30.

Group	Mean	SD	SDM	Calculated 't' value	Table 't' value	df	Level of significance
Experimental	6.533	0.805	0.207				
Control	4.866	0.718	0.185	7.376	1.69	39	0.05

The table shows the comparison of mean, standard deviation in experimental and control group. In the experimental group the mean early ambulation was 6.533 with standard deviation 0.80 and in the control group was 4.866 with SD 0.718. The calculated 't' value was 7.376 where as table value is 1.69 in 0.05 level which shows highly significant. So, the research hypothesis ( $H_1$ ) being accepted.

Association with selected demographic variables of experimental group N=15.

Demographic variables		No problem F %		Mild F %		Moderate F %		Chi –square
	20-25 years	2	13.33	1	6.66	0	0	
	26-30 years	3	20	1	6.66	1	6.66	
Age	31-35 years	2	13.33	1	6.66	0	0	3.599
	35-40 years	1	6.66	0	0	0	0	
	More than 40	2	13.33	0	0	1	6.66	
Gender	Male	6	40	1	6.66	1	6.66	
	Female	4	26.66	2	13.33	1	6.66	0.667
Type of	Joint	7	46.66	2	13.33	1	6.66	
family	Nuclear	3	20	1	6.66	1	6.66	0.305

Marital status	Married	10	66.66	2	13.33	2	13.33	
	Unmarried	0	0	1	6.66	0	0	4.07
	Primary	1	6.66	0	0	1	6.66	
Educational	Secondary	4	26.66	1	6.66	1	6.66	
status	Graduate	3	20	1	6.66	0	0	3.956
	Post graduate and	2	13.33	1	6.66	0	0	
	above							

The above table revealed association between the selected demographic variable and their post test score of early ambulation among experimental group. Statistical significance was calculated using chi square test hence  $H_02$  stated that there is no significant association between the post test score of early ambulation among experimental group and selected demographic variable and hence  $H_02$  is accepted.

## **Conclusion:-**

The present study assessed Effectiveness of pre operative teaching regarding leg exercises on early ambulation among post operative patients in selected hospitals of Gandhinagar and concluded that leg exercises are an effective method of early ambulation in postoperative phase for selected abdominal surgeries.

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