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Padma Priya S Ms

*Vydehi Institute of Nursing Science and Research Centre, Bangalore, Karnataka, India,*  
sashwya79@rediffmail.com

Erna Judith Roach Dr

*College of Nursing, Sultan Qaboos University, Sultan of Oman.,* erna\_judith18@yahoo.com

Daisy Josphine Lobo Ms

*Manipal College of Nursing,* daisylobo@yahoo.com

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# Effectiveness of pre-operative instruction on knowledge, pain, and selected post-operative behaviours among women undergoing abdominal hysterectomy in selected hospital, Bangalore, Karnataka

Padma Priya S\*, Erna Judith Roach, Daisy Josphine Lobo

Email: sashwya79@rediffmail.com

## Abstract

**Introduction:** Women who have an abdominal hysterectomy, typically experience significant physical and psychological problems, like fear and anxiety of the surgical outcomes, post-operative pain, effect on their daily activities, and sexual relationships. Providing pre-operative information on surgery is an effective measure to promote positive post-operative outcomes. **Objectives:** The objectives of the study were to evaluate the effectiveness of pre-operative instruction in terms of gain in knowledge, reduction of postoperative pain and improvement in selected post-operative behaviors and to find the association between knowledge score and pain score with selected baseline variables. **Methods:** A quasi-experimental pre-test and post-test control group designed with non-random assignment was used with sample size of 60 women, who were assigned to two groups: experimental and control with 30 women in each group. Study was conducted in Gynecological ward of Multispecialty Hospital. Experimental group was given pre-operative instruction. **Results:** Study results showed that there was significant gain in knowledge ( $p < .001$ ), reduction in post-operative pain ( $p < .001$ ) and significant improvement in the performance of selected post-operative behavior ( $p < .001$ ) of women in the experimental group.

**Key words:** Pre-operative instruction, knowledge, post-operative pain, post-operative behaviours, abdominal hysterectomy

## Introduction

Women experiencing gynecological disorders can suffer from diversity of symptoms. These symptoms are generating discomfort and inconvenience rather than genuine threats of life (Sebanti, Rekha, & Sibani, 2005). Hysterectomy operation is one of the major kinds of surgical treatments in gynecology and is helpful to save lives of women, who may have chances of

critical diseases, associated with uterus. Hysterectomy is performed to enhance women's quality of life, rather than to save life (Rannestad, Elkeland, Helland & Qvarnstrom, 2001). Most hysterectomies are performed for non-cancerous conditions and benign gynecological disorders like fibroid uterus, dysfunctional uterine bleeding, and endometriosis. Surgical procedure constitutes an aversive situation in which a patient faces pain, serious body image disturbances, and possible death due to pneumonia, lung atelectasis, intestinal obstruction, thrombophlebitis, and bleeding, which may arise after surgery (Oetker-Black, Jones, Estok & Ryan, 2003). Hence, abdominal hysterectomy is associated with a higher rate of complication than vaginal hysterectomy. Pulmonary complication constitutes the largest cause of morbidity and prolonged

**Padma Priya S<sup>1</sup>, Erna Judith Roach<sup>2</sup>, Daisy Josphine Lobo<sup>3</sup>**

<sup>1</sup>Prof & Head, Dept. of OBG Nursing, Vydehi Institute of Nursing Science and Research Centre, Bangalore, Karnataka, India.

<sup>2</sup>Associate Dean, College of Nursing, Sultan Qaboos University, Sultan of Oman.

<sup>3</sup>Associate Professor, Dept. of Medical Surgical Nursing, Manipal College of Nursing, Manipal University, Manipal, Karnataka, India.

\* Corresponding Author

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hospitalization after abdominal surgery (Gajarai, 2009; Howard, Debra, Joseph, & Robert, 1999). Interventions like providing pre-operative information, skill teaching of selected post-operative behaviors such as turning, sitting, mobility, deep breathing, and muscle relaxation exercises, which are essential and effective measures to improve knowledge, reduce post-operative pain and promote positive post-operative outcomes; since a woman, who is undergoing hysterectomy wants more explanation related to all areas of surgery (Stern & Lockwood, 2005). Post-operative recovery is an important task for nurses involved in the care of patients. Nurses must be educated and find guidelines to promote physical and psychological recoveries of post-operative patient, to normal conditions as quickly as possible. Moreover, providing pre-operative teaching is cost effective, non-invasive, and would be a helpful tool and an efficient regimen of prophylaxis against respiratory complications. Pre-operative instruction tends to decrease post-operative complication, increase patient satisfaction, shorten the length of hospitalization, and promote physical wellbeing (Ahmed, 2001; Meeker, 1994; Westerdhal, Lindmark, Hedenstierna, & Tenling, 2003). Hence, the promotion of patient's education, both before and after surgery, as well as motivation for movement soon after surgery helps to prevent further complication and promotes the quality of post-operative recovery.

## Materials and Methods

The conceptual framework of the study was based on the concept of Bandura self-efficacy theory. The study adopted an evaluative approach with a quasi-experimental pre-test and post-test control group design with non-random assignment. The study was carried out at gynecological ward of multispecialty hospital; Bangalore. Women undergoing abdominal hysterectomy for non-malignant condition were the focus population for this study. A purposive sampling technique was used for sample selection and sample consisted of 30 each in the experimental and control group. The sample size adequacy was estimated by use of power analysis with 95% confidence level and 5% level of significance. Ethical clearance was approved

by the ethical committee of the institution. Data was collected from the subjects, after the details of the study were explained to them and signature was taken on the written informed consent. The study data collection instruments were demographic pro-forma, structured knowledge questionnaire, numeric pain rating scale, and structured observation checklist. Reliability, content, and language validity was established for all tools.

Data was collected from the control group and then from the experimental group to eliminate possible contamination of the study participants as there was only one gynecological ward in the hospital. Experimental group was given 45 minutes instructional session regarding surgery in combination with training, which began with turning over on the side, sitting at the side of the bed, mobility, in addition with deep breathing and quick muscle relaxation exercises by having practice, until they were capable of accomplishing each procedure. The control group participants did not receive pre-operative instruction on surgery and selected post-operative behaviors. However, control group received routine hospital care. Data was analyzed using descriptive and inferential statistics with the help of Statistical Package for Social Sciences (SPSS) 11.5.

## Results

### Subject demographic characteristics

Maximum number of women in the experimental group 14 (46.67%) and in the control group 18 (60%) were in the age group of 45-54 years and all (100%) were married. Majority of women in experimental group 23 (76.67%) and in control group 26 (86.67%) were Hindus. With regard to domicile majority of women in experimental group 20 (66.67%) and in control group 19 (63.33%) hailed from rural areas. Primary education was the maximum level of education in both groups.

The frequency and percentage distribution of clinical characteristics are described in Table 1. Co-morbid illnesses were not reported from any study participants.

Table 1:  
Frequency and Percentage Distribution of Participants according to Clinical Data

N=60

Clinical characteristics	Experimental group (n=30)	Control group (n=30)
	Frequency (%)	Frequency (%)
<b>Number of child birth</b>		
Nil	----	01 (3.33)
01	07 (23.33)	05 (16.67)
02	13 (43.33)	11(36.67)
3 and above	10 (33.33)	13 (43.33)
<b>Previous hospitalization</b>		
Yes	01 (3.33)	02 (6.67)
No	29 (96.67)	28 (93.33)
<i>If yes specify reason</i>		
LSCS	01 (100)	01 (50)
Viral fever	----	01 (50)
<b>Previous surgery</b>		
Yes	01 (3.33)	01 (3.33)
No	29 (96.67)	29 (96.67)
<i>If yes, name of the surgery</i>		
LSCS	01 (100)	01 (100)
<i>Diagnosis</i>		
DUB	13 (43.33)	15 (50)
Fibroid uterus	10 (33.33)	12 (40)
Endometritis	04 (13.33)	03 (10)
Chronic cervicitis	03(10)	----

Note: LSCS= Lower segmental caesarean section, DUB= Dysfunctional uterine bleeding

Data presented in Figure 1 shows that in experimental group 20 out of 30 (66.67%) women had poor pre-test knowledge score. But, after the intervention 22 out of 30 (73.33%) had average knowledge score and 5 out of 30 (16.67%) had good knowledge score. Whereas, in the control group 16 out of 30 (53.33%) had poor pre-test knowledge score and in post-test majority of women 19 out of 30 (63.33%) had poor knowledge score.

The data presented in Figure 2 shows that in the experimental group, 12 out of 30 (40%) had reported moderate pain and 18 out of 30 (60%) had severe pain before pre-operative instruction was delivered. After pre-operative instruction, majority of women 21 out of 30 (70%) reported moderate pain and minimum that is nine out of 30 (30%) reported severe pain. Whereas, in the control group, received routine care, 15 out of 30 (50%) women reported moderate pain and 15 reported severe pain prior to receiving routine care i.e. during pre-test. In the control group, 14 out of 30 (46.6%) reported moderate pain and 16 out of 30 (53.3%) reported severe pain during the post-test.

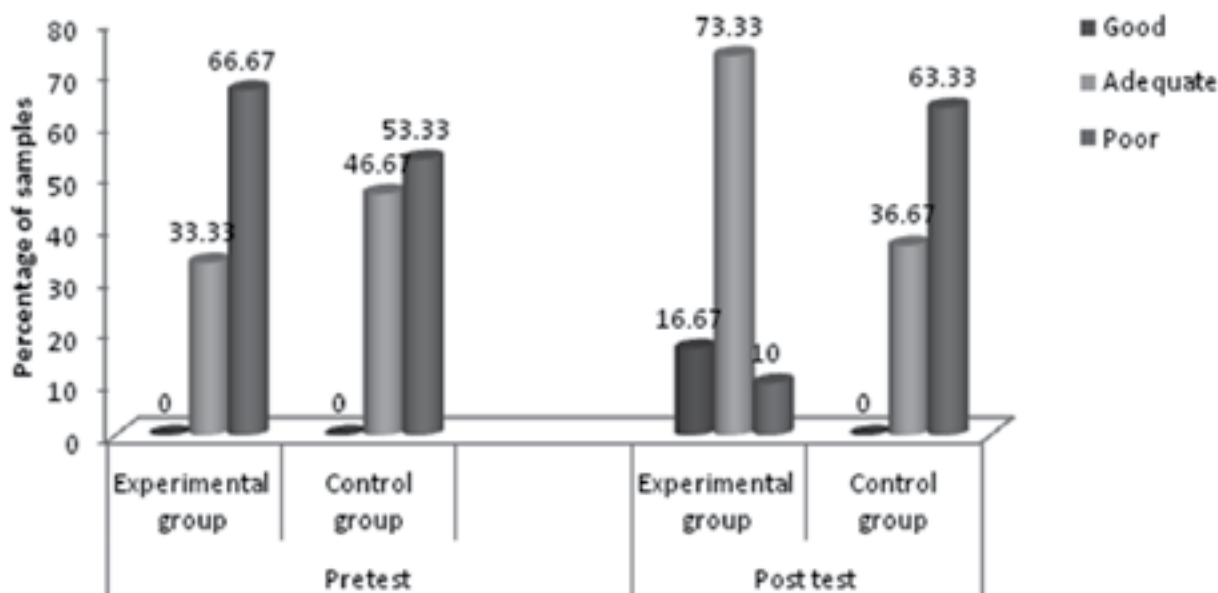


Figure 1: Distribution of Participants according to Pre-test and Post-test Knowledge Scores in Experimental and Control group

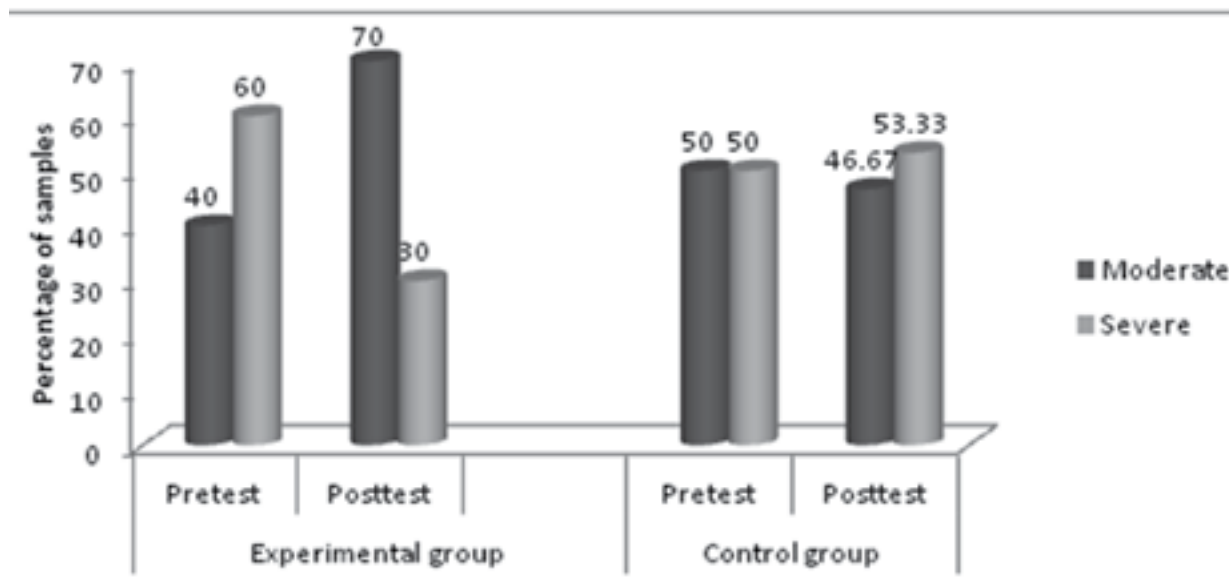


Figure 2: Distribution of Participants according to the Pre-test and Post-test Pain Scores in Experimental and Control group

The data in Figure 3 depicts that in the experimental group 15 out of 30 (50%) had moderate level of performance and remaining 15 (50%) had good level of performance. Whereas in the control group, all women 30 (100%) had poor selected post-operative behavior scores.

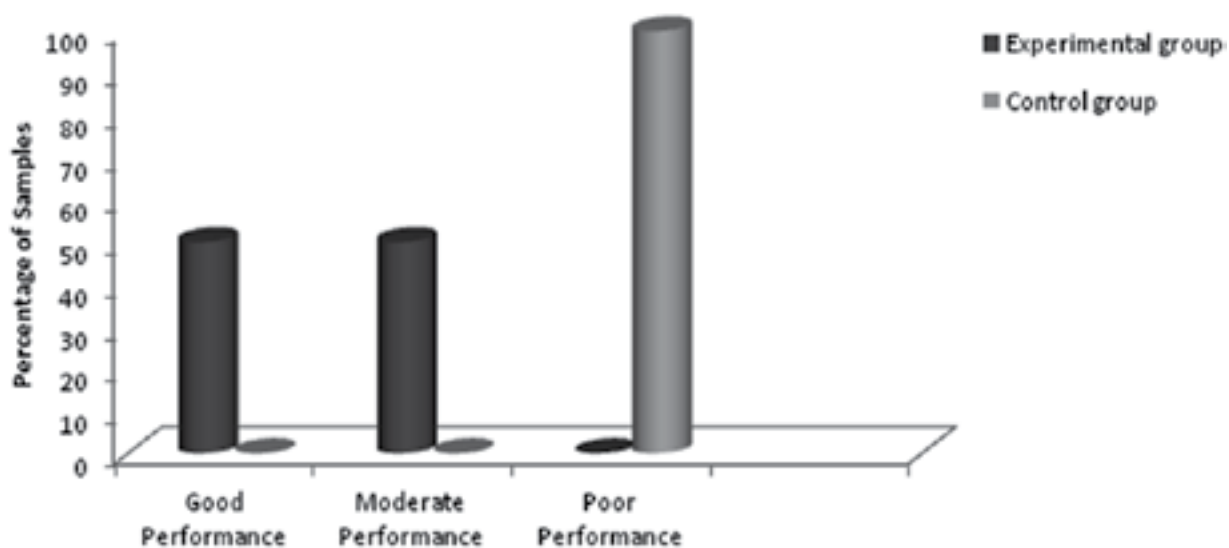


Figure 3: Distribution of Participants according to the Post-test selected Post-operative Behaviors scores in Experimental and Control group

### Effects of pre-operative instruction on knowledge

Table 2:

Mean, SD, MD, 't' value, and p value computed between the Post-test Knowledge Scores of Participants in Experimental and Control group

Group	Test	Max. Score	Mean	SD	MD	't' value	p
Experimental Group	Post-test		15.53	4.091			
Control Group	Post-test	30	9.10	2.916	6.43	7.013*	.001

df=58 \* significant at .05 level

The experimental group mean post-test knowledge score ( $M=15.53, SD=4.091$ ) was higher than the control group mean post-test knowledge score ( $M=9.10, SD=2.916$ ). There was a significant gain in knowledge level ( $t(58) = 7.013, p < .001$ ) among the experimental group (Table 2).

### Effects of pre-operative instruction on post-operative pain

Table 3:

Mean, SD, MD, 't' value and p value computed between the Posttest Pain Scores of Participants in Experimental and Control group.

Group	Test	Max. Score	Mean	SD	MD	't' value	P
Experimental Group	Post-test		6.100	0.758			
Control Group	Post-test	10	6.600	0.723	-.50	2.611*	.001

df=58 \* significant at .05 level

The experimental group mean post-test pain score ( $M=6.10, SD=0.758$ ) was less than the control group mean post-test pain score ( $M=6.60, SD=0.723$ ). There was a significant reduction in pain level ( $t(58) = 2.611, p < .001$ ) among the experimental group (Table 3).

### Effects of pre-operative instruction on selected post-operative behaviour

Table 4:

Mean, SD, MD, 't' value and p value computed between the Experimental and Control Post-test selected Post-operative Behavior Scores.

Group	Test	Max. Score	Mean	SD	MD	't' Value	p
Experimental Group	Post-test		23.03	3.249			
Control Group	Post-test	35	5.96	1.629	17.86	26.923*	.001

df=58 \* significant at .05 level

The experimental group mean post-test selected post-operative behaviour score ( $M=23.03, SD=3.249$ ) was higher than control group mean post-test selected post-operative behavior score ( $M=5.96, SD=1.629$ ). There was a significant improvement in the performance of selected post-operative behavior ( $t(58) = 26.923, p < .001$ ) within experimental group (Table 4).

The chi-square test show no significant association was found between knowledge score, pain score and selected baseline variables, at 0.05 level of significance.

### Discussion

The findings of the present study reveal that there was significant gain in knowledge of women in the experimental group, who received pre-operative instruction. These findings are consistent with study by Anganan (2003), who reported that pre-operative teaching program is effective in improving knowledge and satisfaction of patients undergoing surgery. Similar study findings conducted by Blay and Donoghue (2005) also revealed that pre-admission education

intervention helps to improve patient's knowledge of self-care and complication management after surgery. The current study shows there was significant reduction on post-operative pain and improved selected post-operative behaviors of women in experimental group. It suggested that providing pre-operative instruction on surgery and performance of selected post-operative behaviors was effective. Thus, the results of this study, value the pre-operative instruction in terms of effective performance of selected post-operative behavior which includes turning, sitting, early mobilization, deep breathing, and relaxation exercises. Hence, it was consistent with a study findings by Cox (2003) that pre-operative instruction and training regarding deep breathing, coughing, and relaxation techniques is effective for prevention of post-operative complication, reduction in post-operative pain, and anxiety ( $p < .05$ ). Another study conducted by Callaghan and Li (2002); Westerdhal, Lindmark, Hedenstierna, and Tenling, (2003) and Orfanos et al., (2009) also found the program consisting of pre-operative and post-operative instruction and training regarding relaxation exercises

and breathing techniques, is effective in reducing post-operative pain and improving performance of daily activities during hospitalization ( $p=.05$ ;  $p=.01$ ). It was concluded in other studies that pre-operative instructions are effective for positive post-operative outcomes, such as reduction of pain and anxiety (Oetker-Black et al., 2003 and Orfanos, 2009).

Information focused on specific details about the surgical outcomes, such as post-operative pulmonary complication, wound infection, urinary tract infection, and length of the hospital stay were not included under the study. But, both groups were assessed with respect to development of post-operative complication from patient case reports. Both groups did not show any signs of developing clinically significant post-operative complication. On the sixth day after surgery, one woman in the experimental group and on the fourth post-operative day, two women in the control group developed fever ( $39^{\circ}$  C). However, no post-operative complication was reported until the day of discharge. Hence, the study has a certain limitation that the participants were selected purposively from only one setting and lack of true randomization.

### Conclusion

The study findings concluded that the pre-operative instruction was extremely effective than no instruction in terms of gain in knowledge, reduction of post-operative pain and improved selected post-operative behaviors. Pre-operative instruction is increasingly recognized today as an important component of health care. Nurses must be educated and find guidelines to promote physical and psychological recoveries of post-operative patient, to normal conditions as quickly as possible. The study also highlighted that pre-operative instruction had demonstrable effects on knowledge, post-operative pain, and selected post-operative behaviors of women, who received pre-operative instruction.

### Implication

The result of the study emphasizes the need for correlating the concepts in order to understand the effectiveness of pre-operative instruction. The students should be given an opportunity to follow

these measures in a holistic manner, which will enable them to provide comprehensive care to the patients, undergoing surgery. Pre-operative information has significant clinical benefits of patients undergoing surgery. Health professionals should be made aware of the need of pre-operative education for patients preparing for surgery, thus improve their nursing practice and patient's outcome. Pre-operative instruction must be included as a part of routine care for all patients admitted for surgery. The community health nurses can follow-up clients, to see that they follow the instruction at home, to promote their health, and prevent post-surgical complication.

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