

# A Study To Assess The Effectiveness Of Nurse Navigation Programme For Patients Undergoing Open Abdominal Surgery In Tertiary Care Hospitals Of Delhi - Pilot Study

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## ABSTRACT

**Objective:** To assess the effectiveness of nurse navigation programme for patients undergoing open abdominal surgery in tertiary care hospitals of Delhi.

**Methods:** A pilot study was conducted from Oct- Nov 2019 on 60 surgical patients according to the inclusion criteria in two tertiary care hospitals of Delhi. With the help of Non- Equivalent Control Groups Design, using purposive sampling technique the patients were equally divided into experimental group (n=30) and control group (n=30). The subjects of experimental group were administered nurse navigation programme by the researcher and they were provided education and counselling pre and post- operatively with the help of information booklet and video- assisted instruction developed by the researcher. The subjects of control group received routine care according to the hospital protocol. Standardised Numeric Pain Rating scale and self-developed structured tools such as Exercise Checklist, Comfort Checklist, Patient Satisfaction Questionnaire were utilized to collect data from patients for measuring the post- operative outcomes. The effectiveness of the nurse navigation programme was checked with regard to these post- operative parameters and patient self- care activities.

**Results:** The obtained mean difference of pain scores between subjects of control and experimental groups from POD 1 to 5 was found to be statistically significant at 0.05 level of significance ('t' value = 9.5, 9.66, 9.57, 8.73, 5.28) with the experimental group patients having better pain control. The obtained mean difference of exercise scores between subjects of control and experimental groups from POD 0 to 3 & 5 was found to be statistically significant at 0.05 level of significance ('t' value=16.25, 14.88, 10.06, 7.37, 1.53) with subjects of experimental group having better scores in the ability to perform exercise as compared to control group. The obtained mean difference of comfort scores between subjects of control and experimental groups on POD 1, 3, 5 was found to be statistically significant at 0.05 level of significance ('t' value= 17.42, 8.9, 4.45) with better comfort levels among experimental group patients. The obtained mean difference of post- operative patient satisfaction scores between subjects of control and experimental groups was found to be statistically significant at 0.05 level of significance ('t' value= 24.8) and the subjects of experimental group were more satisfied in comparison to the control group.

**Conclusion:** It was concluded that the nurse navigation programme is effective for patients undergoing open abdominal surgery.

**Key Words:** Nurse navigation programme, open abdominal surgery, education, information booklet, video-assisted instruction, post- operative outcomes, patient satisfaction.

## INTRODUCTION

The concept of patient navigation was originally created<sup>1</sup> in 1990 at the Harlem Hospital Center in New York City as a strategy to assist vulnerable population with timely access to breast oncology services. Since the mid-1990s, navigation programs have expanded to include many patient populations for specialized management and immediate access to health resources. Whether it is patient or nurse navigation, services are often managed by nurses and are widely recognized as proactive mechanisms to ensure continuity of care; alleviation of psychosocial concerns like fear, anxiety and accessibility to screening programs and other services. Nurse navigator systems have been successfully implemented to improve the care and management of specific patient groups such as those with HIV, Diabetes and cardiovascular disease for educating and empowering patients for self care.

Surgical patients and family members need pre-operative teaching<sup>2</sup> for improved outcomes post-operatively which include decreased anxiety, reduced complications, less need of analgesics, more rapid recovery indicated by early discharge, return to ADLs and work.

Nurse navigation is a newer trend in health care in which nurses guide and educate patients for better health outcomes and is applicable in various settings

Metaanalysis of several studies concluded that there was a positive effect of pre-operative education especially the use of videos and information booklet about surgery on post-operative patient initiatives.

It is determined through research that teaching program is effective when administered before the patient goes for surgery. Individually tailored educational material<sup>3</sup> that is best suited to the patient according to his needs and background is proved to be the most beneficial for patients.

It is vital to include surgical patients as active participants<sup>4</sup> in their own health recovery program to achieve healthy post-operative outcomes. The nurses must encourage patients and include them in activities for self-care and betterment of health.

With the help of Nurse Navigation programme nurses can successfully carry out this task of educating and guiding patients getting ready for the surgical procedure and help them in achieving the objective of healthy outcomes after surgery.

A quasi-experimental study was conducted<sup>5</sup> on 179 patients admitted in the Surgical department of a Hospital in Eastern Black Sea Region in 2016. The OR Nurse visited patients of experimental group a day prior to surgery and gave specific information and the subjects of control group received routine information. Data was collected from patients using questionnaires and it was found that subjects of experimental group had lesser pre-operative distress as compared to control group. The patients verbalised that nurse's visit was the reason for reduced pre-operative anxiety among the experimental group.

193 patients formed the database<sup>6</sup> of a review protocol for post-operative pain management programme managed by Nurse Navigator. The setting was a medium care nursing unit with additional cardiac monitors. The nurse navigator was allowed to administer analgesic medication to cardiac patients without consulting with the doctor. Pain score of review protocol group subjects was 2.2 as compared to 2.8 of control group ( $p < 0.0001$ ). The Nurse Navigator Programme was found to be effective and patients did not require readmissions to ICU.

A study was conducted to assess whether Spanish and English videos<sup>7</sup> are superior to routine discussion. 112 patients were enrolled and randomly allocated to experimental ( $n=56$ ) and control groups ( $n=56$ ). Mean knowledge scores of subjects were higher in the video group (68.1%) compared to routine discussion (47.8%) (95% confidence interval for the difference 12.6% to 28.1%). Video-group patients exhibited greater satisfaction as compared to routine-discussion patients (86.8% [95% CI 74.6% to 94.5%] versus 77.4% [95% CI 63.8% to 87.7%]). The video-assisted education was found to be very effective.

A study was conducted on 129 patients<sup>8</sup> suffering from cancer who had an implanted port for at least 6 months. They were provided information about ports and pre test and post test were taken from the subjects before and after intervention. 43% subjects reported that they had received little information about ports and preferred information before the port was put. After reading the booklet patients' knowledge improved significantly as measured by a validated seven-item tool ( $p < 0.001$ , effect size = 0.689). It was concluded that information booklet is a good means of providing knowledge to patients and also helps in increasing patient's confidence.

A pilot study was conducted from 25.10.2019 to 29.11.2019 in St. Stephen's Hospital and G.B. Pant Hospital on 60 subjects. The objective was to assess the effectiveness of Nurse Navigation Programme for patients undergoing open abdominal surgery by assessing its relationship with outcome parameters.

## **HYPOTHESIS**

1. There will be a significant difference in the mean pain scores of patients undergoing open abdominal surgery in tertiary care hospitals between the experimental and control groups as measured by the Numeric Pain Rating Scale at 0.05 level of significance
2. There will be a significant difference in the mean exercise scores of patients undergoing open abdominal surgery in tertiary care hospitals between the experimental and control groups as measured by the self-structured Exercise Checklist at 0.05 level of significance

3. There will be a significant difference in the mean comfort scores of patients undergoing open abdominal surgery in tertiary care hospitals between the experimental and control groups as measured by self-structured Comfort Checklist at 0.05 level of significance
4. There will be a significant difference in the mean satisfaction scores of patients undergoing open abdominal surgery in tertiary care hospitals between the experimental and control groups as measured by the self-structured Patient Satisfaction Questionnaire at 0.05 level of significance

## METHODOLOGY

Patients belonging to ASA Grades I-III between age group 20- 60 years and undergoing open abdominal surgery involving all abdominal organs were included in the study. Transplant and laparoscopic surgeries were excluded from the study. With the help of Non- Equivalent Control Groups Design, using purposive sampling technique 60 subjects were divided into Experimental group containing 30 subjects and Control group containing 30 subjects. The subjects of Experimental group were administered Nurse Navigation Programme consisting of Information Booklet and Video- Assisted Instruction to aid in peri- operative counselling and containing information about open abdominal surgery to empower patient for self- care by the researcher a day before surgery and after surgery. The Control group received routine hospital care. Numeric Pain Rating Scale was the standardised tool used for assessing post- operative pain. The researcher developed structured tools for measuring other post- operative outcomes such as Exercise Checklist to assess ability to do exercises, Comfort Checklist to assess patient's level of comfort, Patient Satisfaction Questionnaire to assess patient satisfaction and Surgical Stress Coping Scale to assess pre and post- operative patient stress levels and related coping. The developed tools were validated by experts from related fields and then used for collecting data from patients. Administrative permission was obtained for the study from the institutions. Self- introduction and complete information regarding the study including assurance of patient confidentiality was provided to patients in the Patient Information sheet. Informed Consent form was also given to patients to obtain written informed consent from patients for voluntary participation in the study.

## RESULTS

1. Pain score of post- operative patient was assessed using Numeric Pain Rating Scale from Post- Operative Day(POD) 0-5

Table 1- Comparison of Post- Operative Pain Scores of Subjects Undergoing Open Abdominal Surgery from POD 0-5 Between Control and Experimental Groups

Day	Group	N	Mean Score	Variance	df	't' Value
POD 0	Control	30	8.6	0.24	37	6.67 NS
	Experimental	30	6.86	1.77		
POD 1	Control	30	7.53	0.74	47	9.5 *
	Experimental	30	4.56	2.18		
POD 2	Control	30	6.4	1.42	52	9.66 *
	Experimental	30	2.7	2.97		
POD 3	Control	30	5.03	2.44	55	9.57 *
	Experimental	29	1.51	1.54		
POD 4	Control	29	3.86	2.05	49	8.73 *
	Experimental	23	0.91	0.99		
POD 5	Control	27	2.77	1.87	29	5.28 *
	Experimental	12	0.75	0.93		

Score Range 0- 10

\*Significant at 0.05 level of significance

The data presented in Table 1 shows that the obtained mean difference of pain scores between subjects of control and experimental groups from POD 1 to 5 was found to be statistically significant at 0.05 level of significance as evident from the 't' value. Therefore, the obtained mean difference is a true difference and not by chance. Thus, the null hypothesis is rejected and research hypothesis is accepted.

## 2. Exercise level of post- operative patient was assessed using Exercise Checklist from POD 0-5

Table 2- Comparison of Post- Operative Exercise Scores of Subjects Undergoing Open Abdominal Surgery from POD 0-5 Between Control and Experimental Groups

Day	Group	N	Mean Score	Variance	df	't' Value
POD 0	Control	30	1.0	0	29	16.25 *
	Experimental	30	3.96	0.99		
POD 1	Control	30	2.26	1.23	58	14.88 *
	Experimental	30	6.4	1.07		
POD 2	Control	30	4.33	4.02	46	10.06 *
	Experimental	30	8.56	1.28		
POD 3	Control	30	6.46	2.25	44	7.37 *
	Experimental	29	8.75	0.61		
POD 4	Control	29	7.62	1.88	45	3.7 NS
	Experimental	23	8.74	0.57		
POD 5	Control	27	8.18	1.38	24	1.53 *
	Experimental	12	8.72	0.81		

Score Range 1- 9

\*Significant at 0.05 level of significance

The data presented in Table 2 shows that the obtained mean difference of exercise scores between subjects of control and experimental groups from POD 0 to 3 & 5 was found to be statistically significant at 0.05 level of significance as evident from the 't' value. Therefore, the obtained mean difference is a true difference and not by chance. Thus, the null hypothesis is rejected and research hypothesis is accepted.

## 3. Comfort level of post- operative patient was assessed using Comfort Checklist on alternate days from POD 0-5.

Table 3- Comparison of Post- Operative Comfort Scores of Subjects Undergoing Open Abdominal Surgery on alternate days from POD 0-5 Between Control and Experimental Groups

Day	Group	N	Mean Score	Variance	df	't' Value
POD 1	Control	30	3.23	1.35	58	17.42 *
	Experimental	30	8.6	1.48		
POD 3	Control	30	6	4.55	32	8.9 *
	Experimental	30	9.5	0.25		
POD 5	Control	27	8.48	0.87	22	4.45 *
	Experimental	8	9.62	0.26		

Score Range 1- 10

\*Significant at 0.05 level of significance

The data presented in Table 3 shows that the obtained mean difference of comfort scores between subjects of control and experimental groups on POD 1, 3, 5 was found to be statistically significant at 0.05 level of significance as evident from the 't' value. Therefore, the obtained mean difference is a true difference and not by chance. Thus, the null hypothesis is rejected and research hypothesis is accepted.

## 4. Post- operative patient satisfaction score using Patient Satisfaction Questionnaire

Table 4- Comparison of Post- Operative patient satisfaction scores of Subjects Undergoing Open Abdominal Surgery Between Control and Experimental Groups

Group	N	Mean Score	Variance	Df	't' Value
Control	30	35.6	19.54	57	24.8 *
Experimental	30	62.03	14.30		

Score Range 1- 70

\*Significant at 0.05 level of significance

The data presented in Table 4 shows that the obtained mean difference of post- operative patient satisfaction scores between subjects of control and experimental groups was found to be statistically significant at 0.05 level of significance as evident from the 't' value. Therefore, the obtained mean difference is a true difference and not by chance. Thus, the null hypothesis is rejected and research hypothesis is accepted.

## CONCLUSION

The obtained mean difference of exercise scores between subjects of control and experimental groups from POD 0 to 3 & 5 was found to be statistically significant at 0.05 level of significance with subjects of experimental group having better scores in the ability to perform exercise as compared to control group. The obtained mean difference of comfort scores between subjects of control and experimental groups on POD 1, 3, 5 was found to be statistically significant at 0.05 level of significance with better comfort levels among experimental group patients. The obtained mean difference of post-operative patient satisfaction scores between subjects of control and experimental groups was found to be statistically significant at 0.05 level of significance and the subjects of experimental group were more satisfied in comparison to the control group. It is concluded that the nurse navigation programme is effective for patients undergoing open abdominal surgery.

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