

# Value of Peri- Operative Nursing Education for Open Abdominal Surgery Patients- A Literature Review

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## ABSTRACT

**Objective:** To summarize the major findings from research on peri- operative nursing education for abdominal surgery patients

**Methods:** A narrative literature review of relevant papers in this context known to the author was conducted

**Results:** It is evident that surgery and related hospitalization creates stress for surgical candidates due to pain, anaesthesia, alteration in body image or loss of body part and dependence on others. It is known that a thorough peri- operative nursing education improves the post – operative outcomes such as response to pain, decreased anxiety, early return to ADLs, faster recovery and lesser post- operative complications.

**Conclusion:** The collaborative role of the health team is essential for patients undergoing surgery. The pre-operative education of patients and their caregivers about surgery and related post- operative care is essential and challenging for the nurses. The need for good peri- operative nursing education must be utilized by the nurses in optimum care and recovery of surgical patients.

**Key Words:** peri- operative, nursing education, stress, patient education, open abdominal surgery, post-operative pain, self- care, activity

## INTRODUCTION

Perioperative period may refer to pre-operative, intra-operative, and post-operative phases of surgery but it is preferably used for the pre and post- operative phases only, meaning, "around" the time of the surgery. It is the collaborative effort<sup>1</sup> of the health team that is responsible for good post- operative outcomes. The pre-operative education of patients regarding surgery and optimum post- operative outcomes is essential and challenging for the nurses. Hospitalization for surgery causes extreme anxiety among patients due to anaesthesia, post-operative pain, loss of body parts and altered body image and dependency on others.

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.

An extensive review of literature was done to gain knowledge of the topic. Online and offline sources of journals, books, thesis, PubMed, GoogleScholar, Clinical Key, Medline, Scopus, Google search engines were searched to get as much information as possible on this area.

The reviewed literature has been divided into the followed sections:

## 1. Pre- Operative Stress

The factors causing stress<sup>3</sup> in surgical patients as expressed by them include surgery postponement, harm from mistake during surgery, insufficient attention from caregivers, not waking up after surgery, short intra-operative and post-operative analgesia, ineffective intra-operative analgesia, unsuccessful surgery, hospital bills and financial loss, nakedness on the operation table, unfamiliar surroundings, complications from anesthesia, hospital smells and noise, blood transfusion and post-operative nausea and vomiting. Anxious patients require higher intra and postoperative analgesic drugs. Patients receive pre-medication before surgery to reduce anxiety as anxiety is responsible for stress and resultant sympathetic stimulation.

A quasi-experimental study was conducted<sup>4</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.

In 2016, a prospective study<sup>5</sup> on 27 patients was carried out and correlation was sought on intra-operative nociception response and pre-operative anxiety levels using regression analyses. It showed an inverse correlation<sup>2</sup> with preoperative anxiety ( $\beta = -0.353$ ;  $P = 0.041$ ). It means that if pre-operative anxiety is less intra-operative pain response is better and requirement of analgesia is less.

## 2. Patient Education

A prospective randomised placebo controlled superiority trial<sup>6</sup> was carried out in three tertiary public hospitals in Australia and New Zealand to assess the effectiveness of physiotherapy session pre-operatively. 441 adults scheduled for open abdominal surgery were randomly assigned to receive either an information booklet (n=219; control) or preoperative physiotherapy (n=222; intervention) and followed for one year. 30 minute physiotherapy education and breathing exercise training session was imparted to subjects of intervention group. It was revealed from the analysed data that the rate of post-operative complications was halved (adjusted hazard ratio 0.48, 95% confidence interval 0.30 to 0.75,  $P=0.001$ ) in the intervention group as compared with the control group (95% confidence interval 7% to 22%). Patients reported improved quality of life and, physical function post-operatively.

A pre-experimental study was conducted<sup>1</sup> in Odisha hospital with one group pre-test post-test design to assess the effectiveness of pre-operative video assisted teaching (VAT) on knowledge and anxiety among 60 patients undergoing abdominal surgery. A self-structured questionnaire for knowledge assessment ( $r = 0.72$ ) and standardized Hospital Anxiety Depression Scale for anxiety were used. There was a significant increase in knowledge score (mean difference=8.12) and decrease in anxiety (mean difference=9.79) and a negative correlation was found between knowledge and anxiety. It was concluded that pre-operative education must be utilized for improving the knowledge among surgical patients.

A cross-sectional survey<sup>7</sup> on 80 patients of open abdominal surgery observed that 78.8% subjects had pre-operative anxiety out of which 47.5% had high-state anxiety. They desired information on details of surgery, nursing care, anesthesia as important measures to reduce anxiety.

In 2017, a study<sup>8</sup> using non-equivalent control groups design was conducted on 60 women undergoing abdominal hysterectomy to assess the effectiveness of pre-operative teaching on post-operative outcomes. It was concluded that among subjects of experimental group receiving pre-operative education there was significant knowledge gain ( $p<0.001$ ), less post-operative pain ( $p<0.001$ ) and improved post-operative outcomes ( $p<0.001$ ) as compared to the control group.

A study was conducted on 150 patients (control group) and 152 patients (experimental group) undergoing surgery in 2 hospitals of India between 2012- 14. The aim of the study was to assess benefits of pre-operative patient education on outcome parameters. Pre-operative education and counselling was provided to patients of experimental group. Chi-square value of 15.805 & 18.169 showed a statistically significant difference between

the two groups in pain rating on post-operative days 1 and days 6-8 respectively. 'p value' calculated using Mann Whitney U test was 0.016 (<0.05) indicating an early return to daily work schedule in the experimental group. It was concluded that patient education has significant positive outcome<sup>9</sup> on surgical patients.

A seven weeks project including three educational sessions for nurses was carried out on 30 surgical patients receiving nursing care in surgical units in Aga Khan University teaching hospital, Karachi Pakistan in 2012<sup>10</sup>. It was concluded that it is essential for nurses to do a complete assessment and provide thorough patient education for better patient outcomes. The nurse's role as 'leader change agent and teacher' was emphasized in peri-operative care of surgical patients.

### 3. Post- Operative Pain

A systematic review and meta-analysis<sup>11</sup> were performed to evaluate the effects of psychosocial methods for post-operative pain management among adults undergoing surgery from 1980 till 2016. A total of 62 RCTs were included with a pooled sample size of 4,908. Psychosocial interventions significantly reduced postoperative pain (Hedges'  $g = 0.31$  [95% confidence interval = 0.14, 0.48]) and pre-operative and post-operative anxiety ( $g = 0.26$  [0.11, 0.42] and  $g = 0.4$  [0.21, 0.59], respectively). Furthermore, psychosocial interventions improved recovery ( $g = 0.38$  [0.22, 0.54]). However, no significant effects were found for post-operative analgesic use ( $g = 0.16$  [-0.01, 0.32]) and quality of life ( $g = 0.14$  [-0.05, 0.33]). Patient education and relaxation techniques showed the most consistent positive effects, showing benefits on pain, anxiety and recovery after surgery. It was also observed that cognitive or behavioral techniques improved recovery. It was recommended to include psychosocial methods as adjunct for pain management after surgery.

Despite the significant developments<sup>12</sup>, post-operative pain management in adult patients remains suboptimal. Effective pain management needs provision of appropriate education tailored to the patients' needs and level of understanding. Pain assessment is the fifth vital sign and recorded correctly. Analgesia should be used in multimodal combination and "by the clock" according to the patient's requirements. Patient education provided before surgery has been shown to result in greater pain relief during the early post-operative period. Psycho-educational care has shown to reduce pain, anxiety and bears a positive effect on shortened length of hospital stay and enhanced patient satisfaction. It has been observed that the nursing staff have the theoretical knowledge about pain management but they lack practice skills because they depend on their own judgement of patients' pain levels instead of questioning the patient and using a pain assessment tool. Doctors have limited opportunity than nurses to assess pain as their visit to patients are for a short time, and they do not witness the patients' daily activity such as coughing, bathing, ambulation which is when pain usually occurs.

### 4. Patient Self Care and Activity

A study was conducted to assess the effectiveness of a health education app Interaktor<sup>13</sup> with regard to self care activity and quality of life among patients undergoing pancreatic surgery. Patients in the intervention group (n=26) had access to this app. There were 33 subjects in the control group. Health-related quality of life and self-care activity were collected before surgery, and six weeks and six months after surgery. Six weeks after surgery the intervention group rated significant emotional and physical functioning and less nausea, pain. Six months after surgery the intervention group rated significantly fewer hepatic symptoms and higher self-care activity level. The first four weeks, patients reported symptoms in a median 95% of the intended days, and for the rest of the period in median 83%. It was concluded that patient education is a major indicator in enhanced self care activity levels after surgery.

A multicentre randomised controlled trial<sup>14</sup> was done at seven teaching hospitals in the Netherlands. 344 subjects were scheduled for abdominal surgery and were divided into experimental (n=173) and control (n=171) groups. Participants in the intervention group had access to a peri-operative, personalised, e-health-care programme and provided individualized post-operative guidance of patient. The control group received usual care and access to a placebo website containing general recovery advice. Median time until return to normal

activities was 21 days (95% CI 17–25) in the intervention group and 26 days (20–32) in the control group (hazard ratio 1.38, 95% CI 1.09–1.73;  $p=0.007$ ).

There is enough research evidence to suggest the need for good peri- operative nursing education and care for surgical patients. Nursing guidelines or instructions help the nurses to identify the areas of patient education, monitoring and care for successful post- operative outcomes and discharge from hospital.

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