

Effect of Designed Nursing Guidelines on Reducing Postoperative Discomfort Among Patients Undergoing Abdominal Surgery

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Abstract

Patient's undergoing abdominal Surgery often experience more severe postoperative discomfort than others. Aim of the study was to : Assess of patient's needs, Design nursing guideline, Evaluate the effect of application of designed nursing guideline on reducing post-operative discomfort among Patients Undergoing Abdominal Surgery. **Research design:** Quasi-experimental research design was utilized in this study. **Patients and Method:** the study was conducted in the Surgical department in Qena hospitals, Sample of (60) adult patient. **Tools** three tool were used: Tool I "Patients assessment questionnaire sheet", Tool II "designed nursing guidelines", Tool III The Symptoms Assessment Scale". **Results showed that:** majority of both the study and control group were female, married, illiterate, and unemployed. **It was concluded that:** the level of knowledge & practice of the study group patients after application of nursing guidelines was higher than control group patients. Most of the study group patients had minimal post-operative discomfort after application of nursing guidelines. **It was recommended that** Nurse Administrators can provide an in-service training on postoperative discomfort assessment and management to their staff. Also Nurses would be able to differentiate patients at the high risk of developing severe discomfort after abdominal surgery.

Key words: *Abdominal Surgery , Post-Operative Discomfort & Nursing Guideline.*

Introduction

Abdominal surgery is a very common operative procedure. A national survey in the United States reported that operation on the digestive system is one of the three most frequent surgical procedures. Most patients experience some discomfort postoperatively. These are usually occur as the consequences of tissues damage, perioperative manipulations, and post-surgery treatments. The most common discomfort includes pain, nausea, vomiting, fatigue, anxiety, thirst, sleeplessness, elimination problems, and abdominal distension. (DeFrances et al., 2008). Studies reported a wide variance in the prevalence of discomfort following operation, such as pain (70%), nausea and vomiting (20%-30%), sleep disturbance (89%), fatigue/tiredness (20%-93%), and drowsiness (21%-36%). Other recognized discomfort are lack of appetite, dizziness, elimination problems, depression, headache The prevalence and intensity of discomfort vary over the time but the most severe period is the first three days after surgery. (Schulz et al., 2009). Nausea and vomiting occurs in many postoperative patients most often related to inhalation anesthesia, which may irritate the stomach lining and stimulate the vomiting center in the brain and results from an accumulation of fluid or food in the stomach before

peristalsis returns. May occur as a result of abdominal distention, which follows manipulation of abdominal organs. (National Institutes of Health, 2013)

Pain is a subjective symptom in which the patient exhibits a feeling of distress. Stimulation or trauma to certain nerve endings as a result of surgery causes pain that occurs between 12 and 36 hours after surgery and usually diminishes significantly by 48 hours. (Mei et al., 2009)

Lack of sleep is also an important postoperative discomfort. The duration of sleep after surgery was significant shorter than before hospitalization. Patients suffer from sleeplessness due to pain, noise, hospital procedures, or other discomfort feelings insufficient sleep might leads to tiredness, increase in pain intensity and prolong recovery. (Worster & Holmes, 2009)

Thirst occurs due to inhibition of secretions by preoperative medication with atropine. Fluid lost by way of perspiration, blood loss and dehydration due to preoperative fluid restriction. Constipation and gas cramps caused by manipulation of the bowel during surgery, as well as narcotic use. (Rosén & Matensson, 2009)

Postoperative discomfort is influenced by various factors classifying into three categories, which are physiologic, psychologic, and situational. Factors that can affect postoperative discomfort such as age, gender, size of incision, preoperative anxiety, social support and length of the operative procedure. (Nguyen, 2010)

Nursing guideline aimed at assisting patients to take care of themselves. Provides patients with the information required to understand their condition, surgery, and recovery to prevent and manage post-surgical discomfort and to decrease/reduce hospital readmission and improving knowledge of self-care. Nursing guideline covers topics related to medication management, activity performance, Breathing and Coughing exercises, nutrition, fluid intake,.....ect. Nurses play very important role in reducing postoperative discomfort this can be achieved through meeting patient's needs and providing planned effective care. Patients undergoing abdominal surgery have physical, psychological, educational and social needs. (Fredericks, 2010).

Significance of the Study

From the extensive literature review and clinical experience in Qena hospitals we observed that most patients undergoing abdominal surgery experienced many post-operative discomforts such as pain, nausea, vomiting, fatigue, anxiety, thirst, sleeplessness, elimination problems, and abdominal distension. The patients with abdominal surgery are in need for nursing care and teaching to reduce their postoperative discomfort.

Aim of the Study

The study aimed to

- Assess of patient's needs.
- Design nursing guideline.
- Evaluate the effect of application of designed nursing guideline on reducing postoperative discomfort.

Patients & Method

Research design

Quasi-experimental research design was utilized in this study.

Setting of the study

The study was conducted in general surgical department at Qena University hospital and General Qena Hospital.

Patients

A convenience sample of (60) adult patient from both sex, their age ranged between (18-65) years who were admitted in the surgical department undergoing

major abdominal surgery operation. And divided into equal two groups: study and control (30 for each).

Tools

Data collected through using the following tools:

Tool I: Patient assessment sheet.

To assess the patient's needs, knowledge and physical assessment state It was developed by the researcher after review of national and international literature. It consists of:

Part I: patient's Socio-demographic data

Included age, gender, level of education, occupation, marital status.

Part II: Medical data

included: diagnosis, name of operation, past experience of previous operation.

Part III: Assessment of the Patients knowledge regarding abdominal surgery

Assessment of patient's knowledge about, pre-operative preparation, post-operative discomfort such as pain, nausea, vomiting, thirst, fatigue, anxiety, sleeplessness, abdominal distention and elimination problems.

Part IV: An observational checklist sheet

It was designed to assess patient's performance toward patients nursing care practice. It included the following items:

Breathing and coughing exercises leg and foot exercise, early ambulation.

Tool II: Designed nursing guidelines

This tool was developed by the researcher based on patients assessment needs after reviewing current national and international literature. It was formulate and introduced to the patients in the forms of sessions. The nursing guidelines booklet was revised and modified based on the medical and nursing expertise comments, it was written in Arabic simple language with illustrations and it was concerning Information about preoperative preparation, management of post-operative discomfort.

Tool III: Memorial Symptoms Assessment Scale (MSAS)

To evaluation of patients and assessment of postoperative discomfort It developed by (Lobchuk, 2003) It included 9 common post abdominal surgery symptoms pain, nausea, vomiting, fatigue, anxiety, thirst, sleeplessness, elimination problems, and abdominal distension. The frequency score ranged from 1 (rarely) to 4 (almost constantly) and the severity score ranges from 1 (slight) to 4 (very severe). Other five-item it will used to evaluate the discomfort distress, ranged from 0 (not at all) to 4 (very much). Total score for an individual discomfort was the sum score of all three dimensions, ranged from 0 to 12. The sum score of all discomfort, ranged from 0 to 108.

Methods

Technique for data collection

A review of current and past, local and international related literature in the various aspects of the problems using books, articles, periodicals, and magazines was done. The proposed study setting was assessed for the numbers of patients hospitalized for abdominal surgery.

Content validity

It was established by panel of five expertises from the staff of medicine and nursing field to test contents and relevance, and comprehensiveness of the tools.

pilot study

The purpose of this pilot study was of 2 folds: first to ensure the clarity of designated study tools. Second, to examine the utility of the designed tools and too identify any difficulties or problems needed to be handled before applying it. Six patients in the pilot study were excluded from the actual study sample. Modification of the sheet and checklist was done to develop the final form that is most suitable.

Procedures

- All data were collected by structured interview after the approval from University and General Qena Hospitals.
- Data were collected during the period from 1/6 /2014 to 1/12/2014. At initial interview the researcher introduced herself to initiate line of communication in order to facilitate the implementation of the tools.
- The researcher divided the patients into two group control and study and interviewed with each patient individually and explained the nature and purpose of the study.
- The control group (patients who would not be expose to the designed nursing guidelines) was interviewed and assessed by using (tool I and tool III).
- While study group exposed to the designed nursing guidelines(tool II), preoperatively then the researcher continued to give patients the guidelines during the post-operative period until they were discharged. assessed By using (tool I) was done for all study group patients at the time of admission, and by using (tool III) was done to all study group post operatively before discharge.
- On the day one, day two, and day three after surgery, the investigator revisited patients (control & study group) once per day to assess their discomfort by using tool (III) and to assess post-operative activity by using(tool I Part IV Observation checklist).
- Each patient in the study group obtained a copy of the designed nursing guidelines booklet.

Ethical consideration

- Research proposal approved from Ethical committee in the Faculty of Nursing.
- There was no risk for study subject during application of the research.
- The study followed common ethical principles in clinical research.
- Written consent obtained from patients or guidance that are willing to participate in the study, after explaining the nature and purpose the study.
- Confidentiality and anonymity was assured.
- Study subject have the right to refuse to participate and or withdraw from the study without any rational any time.
- Study subject privacy will be considered during collection of data.

Statistical design

Data were collected and analyzed by computer program SPSS. Data expressed as mean, standard deviation, number and percentage. Tests for significance were applied, t-test, and one way ANOVA test, T-test is used to determine significant for numeric variable. Chi-square test is used to determine significant for non-parametric variable. A probability level of 0.05 was adopted as a level of significance.

Results

Table (1): Distribution of studied sample (both control and study groups) as regarding to their socio-demographic characteristics.

Items	Control(n=30)		Study(n=30)	
	No.	%	No.	%
Age				
Less than 20 years	3	10.0	0	0.0
From 20 to less than 30 years	9	30.0	11	36.7
30 years and over	18	60.0	19	63.3
Mean \pm SD	42.3 \pm 4.6		43.1 \pm 5.4	
Gender				
Male	9	30.0	7	23.3
Female	21	70.0	23	76.7
Educational level				
Illiterate	12	40.0	13	43.3
Primary	3	10.0	5	16.7
Secondary	12	40.0	8	26.7
University education	3	10.0	4	13.3
Marital status				
Single	7	23.3	5	16.7
Married	20	66.7	22	73.3
Divorced	1	3.3	0	0.0
Widowed	2	6.7	3	10.0
Occupation				
Not working	23	76.7	24	80.0
Working	7	23.3	6	20.0

Table (2) Distribution of studied sample (both control and study groups) as regarding to medical data.

Items	Control (n=30)		Study(n=30)		
	No.	%	No.	%	
Type of operation					
Appendectomy	10	33.3	9	30.0	
Cholecystectomy	5	16.7	13	43.3	
Exploration	7	23.3	0	0.0	
Splenectomy	2	6.7	0	0.0	
Repair inguinal hernia	3	10.0	4	13.3	
Repair umbilical hernia	2	6.7	4	13.3	
Repair Hernia on the diaphragm	1	3.3	0	0.0	
Previous operation	Yes	3	20.0	15	50.0
	No	27	80.0	15	50.0

Table (3) Distribution of Patients' knowledge (both control & study groups) about postoperative discomfort (pre &post) application of nursing guidelines.

Items	Correct answer in pre-test (n=30)				P. value	Correct answer in post-test (n=30)				P. value	P1	P2
	Control		Study			Control		Study				
	No	%	No	%		No	%	No	%			
- Prepare the patient before the operation	7	23.3	8	26.7	0.776	10	33.3	28	93.3	<0.001**	0.567	<0.001**
- Discomfort can occur after the operation	6	20.0	5	16.7	0.739	9	30	27	90.0	<0.001**	0.552	<0.001**
- factors help to cause discomfort after surgery	11	36.7	9	30	0.584	14	46.7	29	96.7	<0.001**	0.601	<0.001**
Complications of postoperative discomfort	7	23.3	5	16.7	0.519	9	30	26	86.7	<0.001**	0.771	<0.001**
Important of postoperative Exercise	8	26.6	10	33.4	0.573	9	30	27	90.0	<0.001**	0.774	<0.001**
Pain	23	76.6	21	70	0.559	21	70	30	100	0.001**	0.771	0.001**
- Nausea and vomiting	22	73.4	21	70	0.774	19	63.4	30	100	<0.001**	0.581	0.002**
-Thirst	17	56.7	20	66.7	0.426	20	66.7	26	86.7	0.067	0.596	0.125
- Anxiety	19	63.3	21	70	0.584	21	70	29	96.7	0.006**	0.785	0.012*
Sleeplessness	18	60	20	66.6	0.592	16	53.3	28	93.3	0.001**	0.795	0.021*
- Fatigue	24	80	21	70	0.371	21	70	30	100	0.001**	0.552	0.002**
- Abdominal distention	17	56.7	19	63.4	0.598	21	70	25	83.3	0.222	0.422	0.143
-Constipation	20	66.6	22	73.3	0.573	18	60	30	100	<0.001**	0.789	0.005**
- Urinary retention	26	86.6	28	93.3	0.389	23	76.6	30	100	0.005**	0.506	0.492

Table (4): Distribution of Patients' knowledge (both control & study groups) about postoperative discomfort (pre &post) application of nursing guidelines.

Knowledge	Control				P. value	Study				P. value
	Pre-test		Post-test			Pre-test		Post-test		
	No.	%	No.	%		No.	%	No.	%	
Good	9	30.0	10	33.3	0.781 ^{Ns}	9	30.0	28	93.3	<0.001**
Poor	21	70.0	20	66.7		21	70.0	2	6.7	

Table (5): Distribution of Patients' practice for study groups (pre &post) application of nursing guidelines.

	Practice		T-test	P. value
	Pre-test	Post-test		
Study	54.8±14.6	94.0±14.0	-10.63	<0.001**
T-test	-0.313	-10.53		
p. value	0.755	<0.001**		

Table (6): Pearson correlation coefficient between socio-demographic data & discomfort during three days.

Items	Total discomfort score
Age	0.44**
Gender	0.27*
Educational level	0.31*
Marital status	0.11
Occupation	0.03
Knowledge	-0.72**

Table (7): Pearson correlation coefficients between socio-demographic data and knowledge.

Items	Knowledge score	
	Control	Study
Age	0.44*	0.47*
Gender	0.09	0.11
Educational level	0.68**	0.74**
Marital status	0.14	0.08
Occupation	0.33*	0.37*

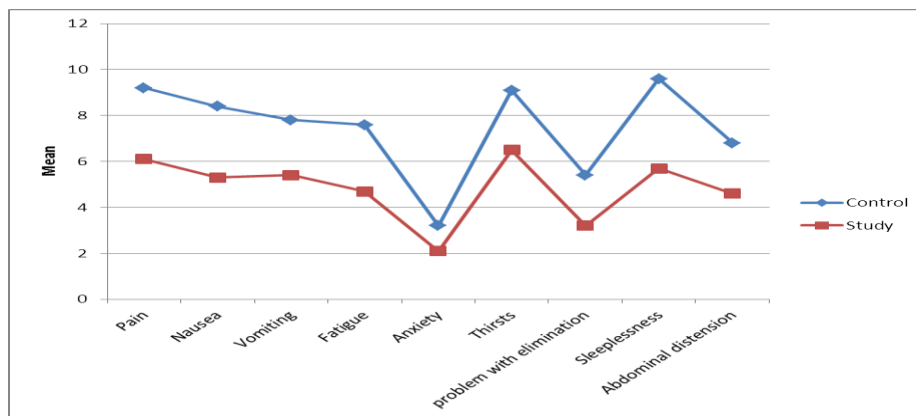


Fig: (1) Assessment of post-operative discomfort for patient's in the study and control groups for first day.

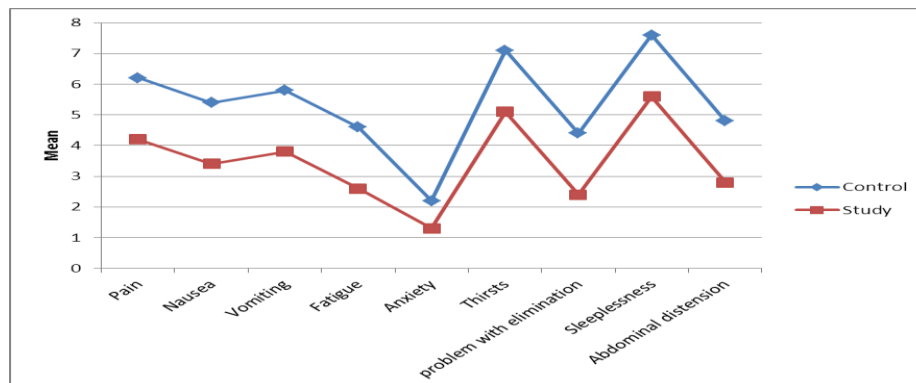


Fig (2): Assessment of post-operative discomfort for patient's in the study and control groups for second day.

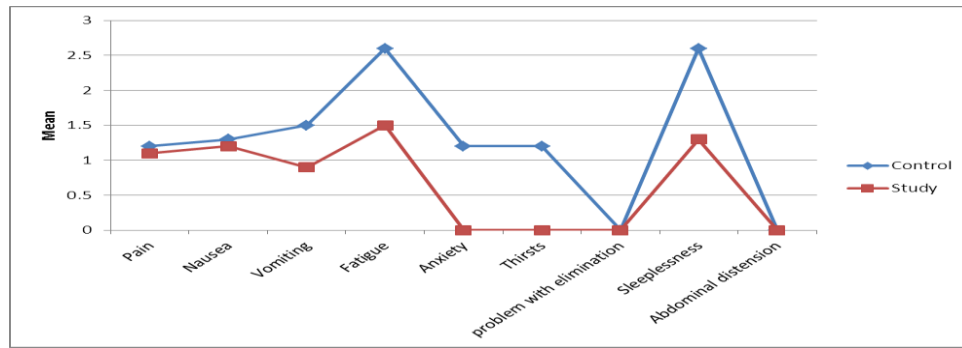


Fig:(3): Assessment of post-operative discomfort for patient's in the study and control groups for third day.

Table (1): shows that the highest percentage in both the study and control group were between the ages 30 years and over respectively. Majority of the sample in the study and the control groups were female illiterate, married, and not working.

Table (2): shows that the most common operation of control group was appendectomy (33.3%), where the most common operation of study group was cholecystectomy (43.3%).

Table (3): Shows that there was no statistical significant difference between pre-test and post-test regard knowledge in control group. While there was statistical significant difference between pre-test and post-test regarded knowledge in study group.

Table (4): shows that there was significant statistical difference between pre and post application of guidelines for the study group.

Table (5): shows that there was significant statistical difference between pre and post application of practice for the study group.

Table (6): This table shows strong positive correlation between discomfort and age, but negative correlation between discomfort and knowledge, mild correlation between gender and educational level.

Table (7): This table shows that there is a positive strong correlation between educational level and knowledge about discomfort in both control and study group. Where positive moderate correlation in age and occupation.

Fig (1) : significant statistical difference between study and control group in post-operative discomfort Assessment of post-operative discomfort for patient's in the study and control groups for first day.

Fig (2): Assessment of post-operative discomfort for patient's in the study and control groups for second day.

Fig (3): Assessment of post-operative discomfort for patient's in the study and control groups for third day

Discussion

As regard to sociodemographic characteristics: The finding showed that, the highest percentage of both the study and control group were illiterate & not working, the majority of both group was females, The age ranged between 30 and over , and more than half of them were married.

Regard to medical data: the finding showed that: the most operation of control group was appendectomy, were the most operation of study group was cholecystectomy.

As regard to patient's knowledge about, post-operative discomfort the present study showed that: statistical significant difference between pre-test and post-test in study group. These results agreed with **Thomas, (2012)** who carried out a study to investigate the impact of a designed nursing teaching this study found that there was highly significant between pre-knowledge and post-knowledge.

In a similar study conducted by **Mohamed et al., (2012)** reported that, there were highly statistically significant between pre/post nursing guidelines implementation for study group.

In this regard, **Abdelhameed et al., (2012)** supported these result when reporting that, a higher statistically significant difference between patient's knowledge score pre and post exposure to the nursing designed protocol, and revealed that, there was significant statistical correlation between educational level and mean knowledge scores among both (control and study groups).

In agreement with this, a study conducted by **Hussain and Mohamed, (2012)** in the outpatient medicine clinics in Elnasr Health Insurance and Zagazig University Hospitals reported that; the implementation of the nursing guidelines program led to significant improvements in patients knowledge at the post test.

The present study showed that there was statistical significant difference between pretest and posttest for

study group regarded practices toward patient's activity. It included the breathing and coughing exercise early amputation, leg exercise, pain control. This finding was supported by **Kibler, (2012)** who reported that All members of the health care team agree that consistent, early, and frequent postoperative ambulation improves both patient and provider satisfaction and has decreased postsurgical paralytic ileus, improved patient progress, and facilitated appropriate patient discharges.

As regard to post-operative discomfort The present study showed that all patients (study & control group) complained to have pain, sleeplessness, and fatigue during three days. This finding is also in agreement with previous study **Milgrom et al., (2004)** who reported that all patients demonstrated pain, fatigue, and sleeplessness occurring along three days after surgery.

Mei et al., (2009) who reported that abdominal surgery is a required treatment for many body's important organs, but abdominal surgery is followed by very problematic discomfort characterized by both high prevalence and intensity.

Deglin & Vallerand (2007) asserted the analgesic used to control pain on the first day after surgery can cause extreme fatigue.

Kehlet, (2002) which demonstrated that the impairment of nutrition status is significantly related to tiredness among abdominal surgery population.

The present study showed that there is statistical significant difference between control and study groups in day one, day two and day three. The discomfort score of study group decreased day by day along three days after surgery faster than control group, this improvement related to application of nursing guideline and improve of their knowledge to the study group.

That was agreement with previous study **Hayward(2013)** showed that patients who had received preoperative information required less analgesia and recovered faster than those who had not.

Fink, (2013) who reported that Patients should be knowledgeable about monitoring the development and managing postoperative discomfort are subjective experiences reflecting changes in a person's biopsychosocial function, sensation, or cognition discomfort that are commonly experienced following abdominal surgery include pain, , fatigue, nausea, vomiting, sleep disturbances, thirst, problem with elimination and mood alterations.

Moore, (1995) asserted provides patient with the information required concerned with their condition, surgery, and recovery; that improving knowledge of self-care to prevent and manage post-surgical

discomfort and to decrease/reduce hospital readmission and morbidity and mortality rates.

This study revealed that the patients of control group reported high score and gradual decrease of post-operative discomfort, due to lack of knowledge.

Taylor and Stanbury, (2009) described that the lack of knowledge from both patients and healthcare workers is one of the main barrier to an effective pain management.

The study finding none of participants in study group reported abdominal distension, thirst, anxiety and elimination problem on the day three after surgery. This result supported by **Rosén et al., (2009)** reported The daily reduction of discomfort demonstrated that postoperative recovery was improving.

Smeltzer, (2008).which demonstrated that The absence of abdominal distension on day three reflects a good recovery of gastrointestinal function.

As Regard relationship between discomfort and sociodemographic (age, gender and educational level) the result of this study showing following: This result show Positive relation between age, gender and educational level and discomfort in this study. This finding in an Agreement with **Fredericks, (2010)**. Age reflects the person's state of development whereby older persons have higher levels of development and are more have experience; they tend to rely on their experience to guide self-care behaviors.

The present study showed that Females in both group more experience post-operative discomfort than male This in an Agreement with **Fredericks et al (2010)**. Reported that gender differences in self-care knowledge, self-care behavior, and discomfort experience are well recognized. Women tend to engage in self-care more than men and to report higher levels of discomfort severity, particularly pain, mood alterations, and sleep disturbance.

The present study showed that there is a positive strong correlation between educational level and knowledge about discomfort in both control and study group. Where positive moderate correlation in age and occupation. The study conducted by **Mohamed et al., (2012)** is an contrary to the present study there were no correlation between patients' level of education and their level of knowledge.

Finally, it can be concluded that, the designed nursing guidelines for patients has achieved its objectives by improving patients' knowledge & practice. That has a large role to minimize postoperative discomfort.

Conclusions

In the this study finding the level of knowledge and practice of the study group patients after application

of nursing guidelines was higher than the level of knowledge of control group patients who didn't receive the nursing guidelines.

The most aggressive period of discomfort occurrence is the first three days after operation. Discomfort score of study group decreased day by day along three days after surgery faster than control group, result in effect of guideline which improve their knowledge. In addition, same discomfort disappear on the day three after surgery in study group.

Recommendations

- Establishment of continuous health education program at surgical department to provide health teaching using booklet and illustrated pamphlets for each patient in all hospitals.
- The first day was the hardest day to patients in the present study, characterized by a highest discomfort scores. Thus, proper nursing care on the first postoperative day is essential
- Nurse administrators can provide an in-service training on postoperative discomfort assessment and management to their staff. Also, provisions of the refreshment courses should be set regularly to all staff nurses who are taking care of postoperative patients. In addition, nurse administrators should encourage their staff to join the conference related to postoperative discomfort management and postoperative care in abdominal surgery.
- Nurses would be able to differentiate patients at the high risk of developing severe discomfort after surgery. From that, nurses could prioritize interventions in order to prevent and relieve effectively postoperative discomfort.
- Replication of the study on a larger probability sample acquired from different geographical areas in Egypt to figure out the main aspects of this problems.

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