

IMPACT OF PRE- ADMISSION EDUCATION ON RECOVERY PERIOD FOLLOWING LAPAROSCOPIC CHOLECYSTECTOMY

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Abstract:

Background: Minimally invasive surgery is one of the rapidly expanding fields of surgery. Since Eric Muhe's first laparoscopic cholecystectomy (LC) in 1985, it has become the gold standard of treatment of symptomatic cholelithiasis. The reasons behind the increasing number of laparoscopic surgeries are improved postoperative pain and improved healing time as compared to open cholecystectomy resulting in earlier recovery and discharge from the hospitals. **Aim** of study was to evaluate the impact of pre-admission education on recovery period following laparoscopic cholecystectomy. **Method:** A Quasi experimental study was used in carrying out this study, a convenience sample of 100 adult patients who attended to the surgical department at gastroenterology surgical center for laparoscopic cholecystectomy. Two tools were developed to collect the data, Tool I questionnaire sheet consisted of 2 parts demographic data and patient knowledge questionnaire sheet (pre education, post education), tool II pain assessment sheet (12 hr post operative, 2 weeks post discharge). **Results:** the study results showed that there were highly statistical significant regard feeling of pain between two groups 12hr post operative and 2 weeks post discharge and there were significant improvement on knowledge level of patients about post operative care post education. **Conclusion:** there was a beneficial effect of pre education on patient's knowledge and there was improvement in feeling of pain after education. **Recommendation:** ensuring that patient's informational needs have been met prior to hospital discharge sets the stage for successful self-management of recovery at home.

Keywords: knowledge, pre-admission education, pain, laparoscopic cholecystectomy.

Introduction:

Laparoscopic cholecystectomy has rapidly become the procedure of choice for routine gall bladder removal and is currently the most commonly performed major abdominal procedure in western countries(1)

It is important that the patient continues to have support following discharge home, whether this is via a post operative telephone call from the ward staff or from a nurse specialist attached to

the surgical team with expert knowledge in the field.

Post – operative telephone calls following surgery can help to reduce the patient's level of anxiety and pain, while also reducing the need for contact with the primary health care team(2)

Laparoscopic cholecystectomy has obvious advantages, including less scarring and quicker return to normal daily routines compared with open surgery procedures. Despite this, inter- individual

variability in recovery from laparoscopic cholecystectomy has been observed in terms of patient's experience of pain , speed of recovery and wound healing(3)

As the length of hospital stay continues to reduce for laparoscopic cholecystectomy with many now performed as day – only, it is imperative that patients are self –caring in the domiciliary setting. Knowledge of usual post- operative outcomes and management is essential for patient self – care and to enable patients to recognise when professional intervention and advice is required .It is the nurse's role to ensure that pre- admission education is directed at patient domiciliary self –care capacity (4) The preoperative nursing visit is one of the safest and the most effective methods to provide psychological support and education to the patient. This visit provides an opportunity to collect data for better patient management during surgery and to educate patients about cooperating with their surgical team and medical care. An informed surgical patient experiences less fear and anxiety (5)

There is no doubt that, patient should receive education a specific and appropriate to the care, treatment, and services provided; patient education content should be personalized to each patient depending on cultural differences and specific needs. Patient education should also be available in appropriate reading levels and be customizable to individuals. Successful patient education is the result of comprehensive, proven solutions that are thoughtfully set up by health care providers and integrated into the patient health care delivery system (6)

Methodology

Methodology of the study was discussed under the following four main designs:

1. Technical Design
2. Administrative Design
3. Operational Design
4. Statistical Design

1- Technical design:-

Technical design of the present study entails four main categories such as study design, study setting, subject of the study and tools of data collection

Study Design:

A Quasi – experimental research design was utilized to carry out this study.

Study setting:

This study was conducted in Gastroenterology surgical center (GSC) at Mansoura University.

This place affiliative to Mansoura University rules and regulations.(GSC) consist of two inpatient floor each one contain 3 big rooms with 7 beds in each , 2 rooms for male patients and 1 room for female patients . In those room patient stay before and after laparoscopic cholecystectomy(LC) and following any surgical operation Regarding to LC patients they stay in this room one day before operation to prepare then in the second day they transfer to operating theater for doing they operation then back to rooms for one another day then discharge from the center and came back after two weeks to outpatient department for follow up.

Subjects of the study:

A convenience sample of (100) adult patients who attended to the operation department at gastroenterology surgical center for laparoscopic cholecystectomy through a period of 3 months from the beginning of December 2014 to the end of February 2015 at previously mentioned above setting and divided into two main groups :

Group I: (Control group): composed of 50 patients who received routine hospital care.

Group II: (Study group): composed of 50 patients who received pre admission education.

Tools of Data Collection:-

The following two tools were developed to collect the data of the study

based upon reviewing related literature:-

Tool I: Structured interview sheet

Part 1: Demographic data sheet:-

It was developed by the researcher it composed of (7) questions concerned with demographic characteristic of patients in the study as age sex, occupation, marital status and level of education.

Part 2: Patient's knowledge questionnaire sheet

This tool was developed by the investigator based on thorough up to date literature review and constructed by the investigator in Arabic form. It used to assess patient's knowledge about operation and post operative care. It consists of (34 questions) in the form of multiple choices divided into 9 parts such as knowledge about gall bladder function, dealing with pain, breathing and coughing exercise, control of nausea and vomiting, diet regimen, wound care, activity of daily living, complication and finally knowledge about follow up .

Scoring system of Knowledge Questionnaire was done as follows, all choices in each question is correct so each answer given score one. The answers of patients were evaluated using model answer prepared by the investigator, for each part, the score of the items were summed up. These scores were converted into percent score as follows: Total scores of knowledge (141) grades, (100%).

Scoring interpretation:

The knowledge scoring system was categorized as follow:

- Poor: < 50% of total knowledge.
- Fair: 50<75% of total knowledge.
- Good: > 75% of total knowledge.

Tool II: Pain assessment sheet

This tool was adopted by **Melzack** to assess several features of pain level including location, intensity and pattern of pain. The indices used are the total pain Rating Index (PRI-T) the investigator modified tool based on reviewing recent literature and used after operation twice

times, first time 12 hr postoperative and second time 2 weeks post discharge, it was consist of seven parts.

2- Administrative design:-

To carry out the study, we should get official permission from faculty of nursing forward to the director of GSC to obtain the approval for carry out the study .At the time of data collection additional informed verbal consent was taken from the patients which participated in the study following clear explanation of the purpose of the study voluntary participation was assured, opportunity to refuse the participation or withdraw at any time and they were sure that all their information's would be used only for research purposes .

3- Operational design:-

This design involves the preparatory stage, pilot study, and field work which include sampling and data collection (assessment phase planning phase, implementation phase, and evaluation).

Validity & Reliability

The tool was tested for content-related validity by 5 experts, from Mansoura University, two professors of surgical department faculty of medicine, three assistance professor of medical-surgical nursing, who reviewed the English and Arabic tool for clarity, relevance, understanding, and applicability for implementation. According to their opinions minor modifications were done.

The reliability of the developed tools was estimated using the Cronbach's Alpha test to measure internal consistency of the tools. It was found that the reliability questionnaire was (r = 0 .854).

Pilot study:

1. The pilot study was carried out on 10% (10 patients), who were selected randomly from 110 patients. Those patients were not included in the actual study. The pilot study was done to

ascertain the relevance, clarity & applicability of the developed tool and to estimate the time needed to fill the questionnaire sheet. Based on the finding of the pilot study, modification was made such as omission, addition, and rewording in order to make the tool more applicable to patients.

Field Work

The study was implemented through the following four phases:

I: Preparatory phase (Assessment):

The investigator introduced herself to the study sample and talk with them about the idea and the aim of the study after that consent was obtained from each patient participate in the study .The **tool I** patient's knowledge questionnaire sheets were filling by the investigator in the patient room after interviewing each patient individually.

The average time taken to fill out the form was 20to 30 minutes on individual basis to be filled depending on the degree of understanding and response of the patient.

The researcher coded the questionnaires to assure the anonymity of the subjects. Finally, the researcher scored the responses, and compiled them for data analysis.

II: Planning phase

Based on the information obtained from initial assessment, in addition to literature, the researcher designed the educational program under the guidance of the supervisors. Its main aim was to educate patients regarding their disease, pre and post operative care that they should be know. A simple booklet was developed for patients, which covered all items related to cholecystitis and laparoscopic cholecystectomy pre and post operative care.

It included the following items:

Definition of gall bladder, Definition of laparoscopic cholecystectomy, Indication of laparoscopic cholecystectomy,

Manifestation of cholecystitis, Pre operative education include Breathing and coughing exercise, Post operative care include: Wound care, Diet, Control of pain, Control of nausea and vomiting, Activity of daily living, Complication post operative and how to deal with it, and Follow up.

The Educational booklet was written in simple Arabic language with different illustrated colored pictures to enhance the learning process and facilitate patients understanding of the content.

III: Implementation phase

The educational program designed for this study has been carried out in patient's room at gastroenterology center. The program implantation was within the schedule of their operation time at the day of the operation, and permission was taken to choose and take number of patients which ranged from 4to 6 patient per day .The program was conducted through talking with each patient after complete assessment and give him copy from educational colored booklet in Arabic format with simple explanation.

This booklet included sex main parts and it was instructed in one session which took about 30 minutes.

IV: Evaluation phase

The evaluation phase focused on assess the effect of the program through patient's knowledge questionnaire sheet tool (**I**) and pain assessment sheet tool (**II**) which used in pre-program assessment after implementing the education program and this done two weeks post operative throw phone call to patients at home. The results were compared to the immediate post operative results to evaluate the impact of the program on knowledge of the patients through save recovery period without complications, and assess pain level 12 hour post operative and 2 weeks post discharge.

Statistical analysis:

Data entry and analysis were performed using the Statistically Package for Social Sciences version 16 (SPSS, Inc., Chicago, IL, USA). The quantitative data were presented as numbers and percentages. The chi- square (χ^2) and Monte Carlo was used to find the

association between variable of qualitative data throw p value. Graphs were done for data visualization using Microsoft excel.

Results:

Part I: Socio – demographic characteristics of subjects.

Table (1): Distribution of the study and control groups according to their socio – demographic characteristics (n=100).

Items	Groups				MCP
	Study		Control		
	No=50	%	No=50	%	
Age (years)					0.220
▪ 25-	7	14.0	15	30.0	
▪ 35-	19	38.0	18	36.0	
▪ 45-	15	30.0	12	24.0	
▪ 55-60	9	18.0	5	10.0	
Gender					0.015*
▪ Male	9	18.0	20	40.0	
▪ Female	41	82.0	30	60.0	
Marital status					0.214
▪ Single	2	4.0	7	14.0	
▪ Married	43	86.0	38	76.0	
▪ Widowed	5	10.0	5	10.0	
Education					0.188
▪ Illiterate	8	16.0	5	10.0	
▪ Read & write	13	26.0	8	16.0	
▪ Middle education	24	48.0	25	50.0	
▪ University	5	10.0	12	24.0	
Occupation					0.070
▪ Working	18	36.0	27	54.0	
▪ Not working	32	64.0	23	46.0	
Living with others					0.041*
▪ Yes	0	0.0	4	8.0	
▪ No	50	100.0	46	92.0	

Table (1): This table shows that in relation to gender, females account for more half of the sample (82%) were female in studied group while (60%) in control group Regarding educational level about half of the study group (48%) are attained secondary education, (10%) of patients are university education. In relation to work

(64%) of the study group not working, (36%) are working. Finally, regarding living alone all patients in study group not live alone (100 %) while in control group (92%) not live alone.

Part II: General Knowledge of study group pre education and post education.

Table (2): Distribution of the study group according to their knowledge pre and post education (n = 50).

Knowledge items		Study Group				MHP
		Pre		Post		
		No 50	%	No 50	%	
General knowledge	▪ Poor	12	24.0	0	0.0	0.001*
	▪ Fair	38	76.0	50	100	
Dealing with pain	▪ Poor	26	52.0	1	2.0	0.001**
	▪ Fair	24	48.0	37	74.0	
	▪ Good	0	0.0	12	24.0	
Deep breathing exercises	▪ Poor	45	90.0	7	14.0	0.001*
	▪ Fair	4	8.0	14	28.0	
	▪ Good	1	2.0	29	58.0	
Nausea & vomiting control	▪ Poor	36	72.0	10	20.0	0.001*
	▪ Fair	14	28.0	40	80.0	
Dietary system	▪ Poor	41	82.0	4	8.0	0.001*
	▪ Fair	9	18.0	46	92.0	
Post operative wound care	▪ Poor	0	0.0	3	6.0	0.210
	▪ Fair	38	76.0	35	70.0	
	▪ Good	12	24.0	12	24.0	
Daily activities	▪ Poor	34	68.0	0	0.0	0.001*
	▪ Fair	16	32.0	41	82.0	
	▪ Good	0	0.0	9	18.0	
Post operative complications	▪ Poor	49	98.0	14	28.0	0.001*
	▪ Fair	1	2.0	36	72.0	
Follow-up knowledge	▪ Poor	3	6.0	2	4.0	0.001*
	▪ Fair	47	94.0	20	40.0	
	▪ Good	0	0.0	28	56.0	
Knowledge total	▪ Poor	40	80.0	0	0.0	0.001*
	▪ Fair	10	20.0	9	18.0	
	▪ Good	0	0.0	41	82.0	

Table (2) shows the effect of pre admission education on studied patients knowledge score level, while **pre** is mean before operation and before receiving education and **post** mean after operation and receive planned education, Table (2) revealed that, there was a significant improvement about Dealing with pain from poor to fair knowledge level after

education (52% & 74%) so there were highly statistical significant. In relation to Deep breathing exercises there was improvement from poor to good knowledge level (90% & 58%).

Part III: Knowledge items of study group and control group post education.

Table (3) comparison between the study group and control group regarding to their knowledge post education (n=50).

Knowledge items		Study group		Control group		MHP
		Post		Post		
		No50	%	No50	%	
General knowledge	▪ Poor	0	0.0	8	16.0	0.564
	▪ Fair	50	100	42	84.0	
Dealing with pain	▪ Poor	1	2.0	13	26.0	0.042*
	▪ Fair	37	74.0	35	70.0	
	▪ Good	12	24.0	2	4.0	
Deep breathing exercises	▪ Poor	7	14.0	43	86.0	0.846
	▪ Fair	14	28.0	6	12.0	
	▪ Good	29	58.0	1	2.0	
Nausea & vomiting control	▪ Poor	10	20.0	15	30.0	0.001*
	▪ Fair	40	80.0	35	70.0	
Dietary system	▪ Poor	4	8.0	14	28.0	0.001*
	▪ Fair	46	92.0	36	72.0	
Post operative wound care	▪ Poor	3	6.0	4	8.0	0.029*
	▪ Fair	35	70.0	42	84.0	
	▪ Good	12	24.0	4	8.0	
Daily activities	▪ Poor	0	0.0	7	14.0	0.014*
	▪ Fair	41	82.0	37	74.0	
	▪ Good	9	18.0	6	12.0	
Post operative complications	▪ Poor	14	28.0	49	98.0	0.315
	▪ Fair	36	72.0	1	2.0	
Follow-up knowledge	▪ Poor	2	4.0	0	0.0	0.001*
	▪ Fair	20	40.0	39	78.0	
	▪ Good	28	56.0	11	22.0	
Knowledge total	▪ Poor	1	2.0	14	28.0	0.001*
	▪ Fair	48	96.0	36	72.0	
	▪ Good	1	2.0	0	0.0	

Table (3): Revealed that pre admission education effect on patient's knowledge level varied from poor to good post education. As regard to questions about Dealing with pain, Nausea and vomiting control, Dietary system, Wound care, Daily activities, Follow up post operative after implementing education was (24%,58%,80%,92%,24%,18%,56) between fair and good level in study group while in control group it was

(4%,70%,72%,8%,12%,22%) which reveals that there were statistical differences in regard to knowledge items between two group post education (P0.05) and a significant improvement in studied patients knowledge total (96%) while in control group (72%).

Part IV: Pain assessment divided to:

A-Pain assessment of study group 12 hr post operative and 2weeks post discharge.

Table (4) Distribution of the study group according to their pain level 12 hr post operative and 2 week post discharge (n = 50).

Pain assessment	Study				MH P
	12 hr post operative		2 weeks post discharge		
	No	%	No	%	
Feel of pain					
▪ No	0	0.0	36	72.0	0.001*
▪ Yes	50	100.0	14	28.0	
Nature of pain					
▪ Stabbing	5	10.0	1	3.0	0.033*
▪ Burning	8	16.0	14	42.4	
▪ Pricking	35	70.0	17	51.5	
▪ Cramp	0	0.0	1	3.0	
▪ Squeezing	2	4.0	0	0.0	
Degree of pain					
▪ moderate	14	28.0	31	62.0	0.001*
▪ mild	34	68.0	19	38.0	
▪ sever	2	4.0	0	0.0	
Place of pain					
▪ Umbilical	29	58.0	23	69.7	0.527
▪ Upper abdomen	7	14.0	4	12.1	
▪ Rt. Side	14	28.0	6	18.2	
Duration of pain					
▪ Intermittent	50	100.0	33	100.0	—
Factors aggravates pain					
▪ Sudden movement	37	74.0	10	30.3	0.001*
▪ Cough	3	6.0	8	24.2	
▪ Constipation	1	2.0	0	0.0	
▪ Pressure on the wound	9	18.0	14	42.4	
▪ During dressing	0	0.0	1	3.0	
Factors suppress pain					
▪ Relaxation	21	42.0	27	81.8	0.001*
▪ Hot compress	0	0.0	1	3.0	
▪ Walking	3	6.0	0	0.0	
▪ Analgesic	26	52.0	5	15.2	

Table 4: Illustrated that, as regard to feeling of pain all the studied patients complain of pain 12 hr post operative (100%) while less than half of them complain of pain 2 weeks post discharge (28%). Regarding to nature of pain more

than half of studied patients describe their pain like Pricking pain (70%) compared with (17%) of them with same description post discharge.

Part V: Statistical Relationships between the study patients variables.

Table (6): Relations between pain assessment of study group and knowledge total pre education and post education (n = 50).

Pain assessment at study group	Pre education		P	Post education		P
	Knowledge total			Knowledge total		
	Mean	SD		Mean	SD	
Feel of pain						
▪ No	.	.	-	55.9	4.6	0.007*#
▪ Yes	30.0	5.7		49.3	9.2	
Nature of pain						
▪ Stabbing	27.6	5.3	0.422	37.0	.	0.193
▪ Burning	32.0	4.3		52.3	7.7	
▪ Pricking	30.2	6.0		47.2	9.8	
▪ Cramp	.	.		56.0	0.0	
▪ Squeezing	26.0	5.7		.	.	
Degree of pain						
▪ moderate	32.9	6.0	0.028*#	49.5	8.8	0.533#
▪ mild	28.9	5.3		45.5	17.7	
Place of pain						
▪ Umbilical	30.1	6.0	0.215	49.5	8.2	0.719
▪ Upper abdomen	33.0	6.3		46.0	12.6	
▪ Rt. Side	28.4	4.5		50.8	11.6	
Factors aggravates pain						
▪ Sudden movement	29.4	5.5	0.256	48.4	10.3	0.718
▪ Cough	28.0	6.2		47.6	8.9	
▪ Constipation	35.0	0.0		.	.	
▪ Pressure on the wound	33.0	6.2		50.3	9.0	
▪ During dressing	.	.		58.0	0.0	
Factors suppress pain						
▪ Relaxation	32.1	5.4	0.050*	49.2	9.2	0.994
▪ Hot compress	.	.		50.0	0.0	
▪ Walking	30.3	2.3		.	.	
▪ Analgesic	28.3	5.8		49.6	11.2	

Table 6: Showed that study patient's knowledge was improved post education in relation to feeling of pain and degree of pain (P=0.007, 0,028 respectively).

Discussion

The most common surgeries performed in laparoscopic surgeries is laparoscopic cholecystectomy, and its called the "gold standard". It performed for the first time in 1989 then after three year Laparoscopic Cholecystectomy was

endorsed as a legitimate tool for the treatment of symptomatic cholelithiasis.

There were a lot of articles and researches has been published to explain and clarify the benefits of health education to patients and their careers. The most important information the patient need to know is preoperative education because it effect on postoperative recovery.

Discussion of the result will be presented in the following sequences:

- 1- Demographic characteristics of the studied patients.
- 2- General knowledge of study group pre education and post education.
- 3- Pain assessment of study group 12 hr post operative and 2 weeks post operative.
- 4- Relations between variables of the study.

I-Sociodemographic characteristics of studied patients:

The present study finding revealed that the majority of the studied patients were female. This is in agreement with *Kanduru (2017)* who stated that, significant female preponderance was seen showing strong associated of female with the disease. This was in the same line with *Nasser, et al., (2015)* who stated that most of their studied samples were females.

As regards to age, the finding of the present study illustrate that above one third of the studied patients were between the age of 35 and 45 years old. This was in line with *Naqqash, et al., (2016)* who stated that gall bladder disease is seen more frequently in middle age population whose age range from 35 to 45 years old, and also *Muhammad,et al.,(2016)* supported this result who stated that the mean age of 46.6 years + 14.2 SD in patients have acute cholecystitis underwent early laparoscopic cholecystectomy.

2-General knowledge of study group pre education and post education

This study results clarify that before implementing the planed health education; the majority of study subjects have poor knowledge level as general and in certain items.

Regarding to dealing with pain before implementing the education, results of this study reveals that more than half of

studied patients have poor level of knowledge related to dealing with pain and their knowledge improve after education, this is in agreement with *Henderson A, et al.,(2001)* who stated that information related to wound care and pain management is the most important information need to maximum well being of patients after discharge. Generally patients who received information related to pain relief and how to deal with pain they feel that it was sufficient for them before discharge and it remind with them 1 to 2 weeks after discharge. On contrary *Mitra,et al.,(2011)* mentioned that Pain after LC is often not effectively treated. This pain is usually managed with parenteral and oral opioids Therefore; alternative means of pain relief have been studied over time to limit the hospital stay with improved patient satisfaction.

In the current study there is a great improvement in patients knowledge about Deep breathing exercises after receive planed education and this proved the importance of preoperative education in raising knowledge of patients about importance of this exercise and this is supported with *Zeena,et al.,(2017)* who stated that Educating patients preoperatively about postoperative exercises can be beneficial in reducing the risk of postsurgical complications following abdominal surgery Coughing and deep breathing exercises reduce the risk of pulmonary complications (e.g., atelectasis, pneumonia). Also *Patricia,et al.,(2015)* stated that patients anxiety level controlled by nursing care. A lot of patients in their study complain of less pain 4 hours after surgery which gradually decrease during first 24 hours post surgery, they also can changed position more comfortably and able to perform deep respiration and coughing exercises effectively post operative.

Considering knowledge of patients regarding to nausea and vomiting control the majority of the studied patients have respectively improvement after education. This is in the same line with *Leila, et al., (2013)* who showed that nursing visit affect positively in studied group status such as post operative pain and nausea, post operative complications and physical recovery.

The significant improvements demonstrated at the post-education indicate that these patients were in real need for such information and education pre operative to help them in recovery period.

3-Pain assessment of study group 12 hr post operative and 2 weeks post operative:

Regarding to feeling of pain among studied patients 12 hr post operative and 2 weeks post discharge. The study revealed that all the studied patients complain of pain 12hr post operative while less than half of them complain of pain 2 weeks post discharge

This results are on the same line with *Blay, (2005)* None of the trials reported pain scores at four to eight hours. One trial reported the pain scores at 9 to 24 hours. The pain scores were 5.05 in the intervention group versus 6.66 in the control group. Also *AKM person, et al., (2017)* revealed that in his study Pain was measured by a 100-point visual analogue scale (VAS), by a five-point verbal rating scale, and by the consumption of analgesics. Pain was the most frequent symptom, both before and after the operation. The mean level of pain was 37 VAS points 5 h after the operation and declined to 16 points on the third day. In 106 patients the intensity of pain was higher than 50 VAS points.

In relation to degree of pain most of patients have moderate degree 12 hr post operative. This is supported with

Mitra, et al., (2011) who stated that Incisional pain is usually mild to moderate in intensity, and maximal immediately postoperatively, subsiding with time. Often the pain following LC can arise from the incision site (incisional pain), visceral structures (abdominal pain), or referred from the subdiaphragmatic region as shoulder pain. Also *Mary Pat, et al., (2011)* revealed that one third of ambulatory surgery patients experience moderate to severe pain in spite of postoperative analgesic interventions

On contrast *AKM Persson, et al., (2017)* mentioned that the individual dose of opiate analgesia required for postoperative analgesia varies significantly with one third of patient reporting no significant pain after LC. Also *A. Padmaja, et al., (2015)* stated that after laparoscopic surgeries, the most frequent complaint is pain and most common cause for post operative morbidity.

Regarding to factors suppress pain, the present study revealed that there is significant difference in the study group as more than half prefer taking analgesic while most patients prefer using relaxation technique, this is in agreement with *Topcu et al., (2012)* who mentioned that Abdominal surgery often results in moderate to severe postoperative pain that can interfere with the muscles used for deep breathing. In addition to pharmacologic pain relief methods, nonpharmacologic pain relief methods can be used to focus attention, facilitate breathing, and promote relaxation. Relaxation exercises can be performed to reduce postoperative pain. This nonpharmacologic strategy can be used independently or in conjunction with pain medication to increase the effect of the analgesic.

4-Relations between variables of the study.

In my study there was relation between pain intensity of study group and their knowledge post education in relation to felling of pain and degree of pain as it show improvement in their knowledge. **Breemhaar, et al.,(2014)** stated that. Nearly half of the patients reported their worried about anesthesia, postoperative pain, and postoperative complications. They need more information about recovery at home to pass this period without complication and felling improvement in physical condition.

In an interview within 1 week post discharge, half of patients stated that the nurse give them discharge information, and one third received discharge information from the physician; about half of patients need more discharge information. Also there were some patients complained that they received more information on the day of admission, compared with little information on the day of discharge which make them unsatisfied for their needs. As well, **Watt-Watson, et al, (2006)** A lot of the patients in his study received no information at discharge about analgesic use, and how to deal with pain and other post operative complications. Also **James (2010)** found that patients in the education group reported significantly less pain than their cohorts in the control group.

These pre education program are urgently designed to help patients in enhancing the knowledge to improve patient perception of surgery and recovery. **Guo P, et al., (2012)** agreed that the better effect of a preoperative nursing visit on physical recovery and postoperative complications are observed immediately rather than for long-term.

Conclusion:

Based on the present study findings, it was evident from these findings that there was a beneficial effect of pre admission education on patient's knowledge and

there was an improvement in felling of pain post education in recovery period.

Recommendations:

- 1- Focus on information provision at pre-admission as it helps patients' achieve optimal self-care capacity.
- 2- Emphasize the importance of nurses roles in assess and provide patients with proper update information about post operative care.
- 3- Ascertain patients' ability to recall provided information and the adequacy of information to meet their care requirements.
- 4- Encourage the importance of availability of updated pre-admission booklet for the patients to provide them with all information they need at any time as reference.

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