

بسم الله الرحمن الرحيم



**Shendi University**



**Faculty of Graduate Studies and Scientific Research**

*Research about:*

**Assessment the Effectiveness of Preoperative  
Education Among Post operative Patients in  
Elmak Nimer University Hospital**

*A thesis Submitted in Requirements of Partial Fulfill for The  
Master's Degree in Medical Surgical Nursing Science*

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# الآية

بسم الله الرحمن الرحيم

قال تعالى :

﴿وَأَسْوَفَ يُعْطِيكَ رَبُّكَ فَتَرْضَى \* أَلَمْ يَجِدْكَ يَتِيمًا  
فَأَوَى \* وَوَجَدَكَ ضَالًّا فَهَدَى \* وَوَجَدَكَ عَائِلًا فَأَغْنَى \*  
فَأَمَّا الْيَتِيمَ فَلَا تَقْهَرْ \* وَأَمَّا السَّائِلَ فَلَا تَنْهَرْ \* وَأَمَّا بِنِعْمَةِ  
رَبِّكَ فَحَدِّثْ﴾

صدق الله العظيم

سورة الضحى - الآية (5 - 11)



# Dedication

*I have dedicated this research to my dear parents  
Who gave me all efforts and facilities to my study from  
childhood until adulthood.*

*[Alsir AbdAlraheim and Eshraga AbdAlla]*

*To my dear husband who encourage me to reach this  
stage*

*To all my teachers:*

*Who are teaching me giving without take and patience  
without tedium.*

*Also I would like to dedicate it to my remaining  
brothers and sisters for their continuous assistance and  
help.*

*To all my friends:*

*Those who precede me and no longer with me,*

*Those who precede me and are still among me,*

*Those with me,*

*And to those who will follow me.*

# *Acknowledgment*

*First the greatest thanks to God Almighty*

*Allah.*

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***Dr. Sania Ahmed Mohammed Salih***

*For her support, guideline and patience, thanks a*

*lot for her.*

*Finally I would like to thanks all of  
the people who help me in this research*

## ملخص البحث

أجريت هذه الدراسة الوصفية بمستشفى المك نمر الجامعي بمدينة شندي في الفترة من يوليو إلى نوفمبر 2016م لتقييم مدى أثر توعية المرضى قبل العملية عليهم بعد العملية. شملت الدراسة 40 مريض حيث تم جمع المعلومات بواسطة استبيانين احدهما لتقييم معرفة المريض قبل التوعية والأخر لقياس مدى استفادة المريض من التوعية بعد العملية يحتوى الأول منهما على 15 والثاني على 7 أسئلة وتم تحليل النتائج عن طريق الحزم الإحصائية للعلوم الاجتماعية إصدار 20.

وتم عرضها في شكل جداول وأشكال بيانية، وتوصلت الدراسة إلى أن معظم المرضى لديهم معرفة ضعيفة عن التمارين بعد العملية؛ بالرغم من ذلك كانت هنالك استفادة كبيرة للمرضى الذين قدمت لهم التوعية وواجهت قبولاً منهم.

توصلت الدراسة إلى عدة توصيات أهمها علي إدارة المستشفى ورئيس وحدة التمريض عليهم تقديم كورسات لزيادة المعرفة وتحفيز الكوادر الطبية على إعطاء المريض التوعية اللازمة قبل العملية.

## **Abstract**

This study carried out in Elmek Nimer university hospital in Shendi city during period extended from July to November 2016, to evaluate the effectiveness of pre operative education on post operative patients. The study involve 40 patient The data was collected by structure questionnaire it has two questionnaire the first on pre operative patient knowledge regarding post operative breathing, mobility and coughing exercises included 15 question the other questionnaire about effective of preoperative education on post operative patients included 7 questions, it analyzed by statistical method (SPSS) version 20. The study reveals that most of patients have poor knowledge about coughing, breathing, mobility exercises; in spite of they had more beneficial about breathing, coughing and mobility exercises after educate them; The study recommended that the hospital managers, nursing direction and senior nurses should have provided nursing staff with update regarding pre operative education and preparation, this may through training programmed and short courses.

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# Introduction

It refers to the measurement or evaluation of planned teaching programme, systematically organized instruction regarding post-operative care among elective surgery patients in pre-operative period. <sup>1</sup>

Pre-operative is important to ensure a positive surgical experience for the client. Numerous research studies support the value of pre-operative instructions in reducing in both the incidence of post-operative complications and length of stay in hospitals. <sup>2</sup>

Pre-operative teaching allays anxiety and encourages clients to participate actively. Most of the patients are bed ridden and of chronic type. They need long term care in the wards, but lack in personal hygiene, nutrition, exercises, sleep etc. Some of them are immobilized and they lack in knowledge of selfcare and intern affects their physical and mental health. After operation, the client is likely to experience some degree of selfcare deficit in hygiene and dressing, limited mobility may decrease independence in selfcare and assistive devices may be required. <sup>3</sup>

A study was conducted on benefits of pre-operative education for adults-elective –surgery patients. The research says that patient education is a major concern for peri-operative nurses in an ambulatory surgery settings. It has proven difficult to develop formal pre-operative teaching programmes in the environment, but research has shown that pre-operative education can improve patients outcomes and satisfaction with the surgical experience. <sup>3</sup>

To better prepare patients and families for the inpatient hospital course, members of the multidisciplinary team developed a preoperative education class. The goal of the program was to reduce patient anxiety, increase participation in recovery, increase coordination and preparedness for the discharge process, and enhance patient and family knowledge about hospitalization and recovery therapy

that would take place postoperatively. Preoperative education enabled patients to understand their operation and after care, allayed their fears and anxieties, allowed them to experience a shorter LOS, and reduced the chance of readmissions. Patients were scheduled for the preoperative class 3-4 weeks before surgery, which usually corresponded with the day the patient came to the hospital for the preoperative evaluation with the anesthesiologist. <sup>4</sup>

A quasi experimental study was conducted on effective of preoperative instructions on postoperative outcome. A study comprised of 4018 subjects divided into 2 groups the experimental groups comprised of 2413 patients and in the control groups 1605 subjects. The experimental groups were given preoperative teaching on respiratory exercises, leg exercises and getting out of the bed in order to prevent postoperative pulmonary complications whereas the preoperative teaching was without to the control group. The results showed that the patient received any form of preoperative instruction had more favorable outcomes than 67% of a similar group who did not receive preoperative instruction. There was a 20% improvement in postoperative outcome in the experimental group. <sup>5</sup>

A study conducted on pre-operative assessment and post-operative care in elective surgery. Pre-operative assessment is required prior to the majority of elective surgical procedures, primarily to ensure that the patient is fit to undergo surgery, whilst identifying issues that may need to be dealt with by the surgical or anesthetic teams. The post-operative management of elective surgical patients begins during the peri-operative period and involves several health professionals. Appropriate monitoring and repeated clinical assessments are required in order for the signs of surgical complications to be recognized swiftly and adequately. This article examines the literature regarding pre-operative assessment in elective surgery <sup>6</sup>

A quasi experimental study was conducted on effective methods of preoperative education in patients undergoing abdominal surgery. The study was

conducted in community Medical Centre California. The study comprised of 39 patients under two groups. The patients were selected from the daily surgical schedule then divided into experimental group consists of 18 patients and in control group consists of 21 patients. Preoperative information was given to experimental group but withhold to control group. The findings of the study showed that the subjects who received the structured teaching programme in the experiment group showed a significantly higher satisfaction than the subjects in the control group. The study concluded the preoperative education is an important function of the nurses to enhance the knowledge and the satisfaction of the patients. <sup>3</sup>

## **Justification**

Enhances patient's understanding or control and can relieve stress related to the unknown or unexpected. Helps reduce the possibility of postoperative complications and promotes a rapid return to normal body function. Enhances learning and continuation of activity postoperatively.

Logistical information about operating room (OR) schedule and locations (recovery room, postoperative room assignment), as well as where and when the surgeon will communicate with SO relieves stress and miss-communications, preventing confusion and doubt over patient's well-being.

# Objectives

## **General objective:**

To assess effectiveness of preoperative education among post operative patient

## **Specific objectives:**

- ❖ To assess the patient knowledge about benefit from preoperative education.
- ❖ To assess the patient knowledge about cough exercise, breathing and ambulate among the patients in the pre operative period.
- ❖ Assess the effectiveness of structured teaching on knowledge of patients regarding cough exercise, breathing and ambulate post surgery.

## **Literature review**

Preoperative education is defined as providing the patient with health related information, psychosocial support and the opportunity to learn specific skills in preparation for surgery.

This process of informing clients about their condition, surgery and postoperative care and Prepare patients for surgery and help them to manage their care postoperatively; it also Key to decreased complications and readmission; thus, improving cost effectiveness. <sup>(7)</sup>

Preoperative education programs might include a number of components: provision of information, interactive education done either individually or in groups, inclusion of family members, and teaching of specific skills helpful for recovery. <sup>(2)</sup>

By ensuring full understanding of the operation and postoperative routines, and promoting physical recovery and psychological well-being through preparatory information, it is hypothesized that patient will be less anxious, have a shorter hospital stay and be better able to cope with postoperative pain. <sup>(2)</sup>

Information can help patients to cope better preoperatively given it is targeted at adjusting patient's anxiety level to moderate level, while the successful use of information depends on the coping style patient adopts <sup>(8)</sup>

Client teaching is an essential nursing responsibility in the preoperative period. client education have appositive effect on the client physical and psychological well being, both before and after surgery. In an analysis of 102 studies, surgical client receiving client education and supportive intervention had less anxiety , experienced fewer complication ,were discharged sooner, were more satisfied with there care and returned to normal activities of care. These positive outcomes may be attributed in part to the perceived sense of control in client gain



thought the nurses teaching. The client teaching should be initiated as soon as the client is made aware of the up coming surgery. <sup>(6)</sup>

Teaching may be given as early as in the physician's office or at the time preadmission testing. Although the education program is continuous during post operative care, most of the teaching is carried out prior to surgery, because pain and effect of anesthesia can greatly diminish the client's ability to learn. The amount of information desired varied from client to client Therefore it is the nurse's responsibility to assess the client, need for and readiness to accept information. The teaching will be in part by the particular surgical procedures are being performed. In addition to teaching the client and family about measures that will decrease the risk of complication, the nurse provides other preoperative information to prepare the client and family for surgery. <sup>(6)</sup>

### **Goals of preoperative education:**

- Provide the means for patients to participate in treatment decisions with full understanding of factors relevant to their proposed care
- Decrease potential complications through patient education and family involvement
- Improve postoperative recovery
- Reduce surgical anxiety
- Mold attitudes regarding surgery, staff and the facility
- Clear up misconceptions and inaccurate information
- Address questions and concerns
- Provide emotional support
- Provide thorough and accurate information to patient and family
- Facilitate smooth flow of surgery schedule
- Preoperative teaching clinics improve efficiency in admission and screening of patients
- Preoperative teaching programs foster:

- decreased length of stay
- less demand for postoperative analgesic
- quicker recovery from surgery
- decreased infection rate. <sup>(9)</sup>

**This information includes the following:**

- ❖ Laboratory and diagnostic test – reason and preparation.
- ❖ Time family should arrive if surgery is scheduled in early morning.
- ❖ Preparation for day of surgery ( nothing by mouth after midnight priors to a morning surgery, skin preparation, indwelling catheter or bladder elimination, start of intravenous infusion, preoperative medication, handling of the valuable (ring , money).
- ❖ Sedative / hypnotic medication to be taken the night before surgery to promote rest and sleep.
- ❖ Informed consent.
- ❖ Expected time table for surgery and recovery room.
- ❖ Location of surgical waiting room.
- ❖ Transfer to recovery room <sup>(10)</sup>

Nurses have long recognized the value of preoperative instruction Each patient is taught as an individual, with consideration for any unique concerns or needs; the program of instruction should be based on the individual’s learning needs. Multiple teaching strategies should be used (e.g., verbal, written, return demonstration), depending on the patient’s needs and abilities. Preoperative teaching is initiated as soon as possible. It should start in the physician’s office and continue until the patient arrives in the operating room. <sup>(11)</sup>

**When and What to Teach:**

- ❖ Ideally, instruction is spaced over a period of time to allow the patient to assimilate information and ask questions as they arise.

- ❖ Frequently, teaching sessions are combined with various preparation procedures to allow for an easy and timely flow of information.

The nurse should guide the patient through the experience and allow ample time for questions. Some patients may feel too many descriptive details will increase their anxiety level, and the nurse should respect their wish for less detail.<sup>(2)</sup>

Teaching should go beyond descriptions of the procedure and should include explanations of the sensations the patient will experience. For example, telling the patient only that preoperative medication will relax him or her before the operation is not as effective as also noting that the medication may result in lightheadedness and drowsiness. Knowing what to expect will help the patient anticipate these reactions and thus attain a higher degree of relaxation than might otherwise be expected.

The ideal timing for preoperative teaching is not on the day surgery but during the preadmission visit when diagnostic tests are performed. At this time, the nurse or resource person answers questions and provides important patient teaching.<sup>(11)</sup>

The patient has a right to know what to expect and how participate effectively during the surgical experience. Preoperative teaching increases patient satisfaction and may reduce post operative fear, anxiety and stress. Teaching may also decrease complication , the duration of hospitalization, and the recovery time following discharge. In most surgical setting, patient often arrive only short time before the surgery scheduled. This includes the patient arriving for ambulatory and patient who will be hospitalized post operatively. Preoperative teaching for these patients is generally done in the surgeon's office or pre admission surgical clinic and reinforced on the day of surgery.<sup>(10)</sup>

The patient usually goes home several hours after the ambulatory surgery; the patient usually goes home several hours after the recovery depending on the patient's progress and procedure- specific needs. If ambulatory patient have not had preoperative teaching in an outpatient setting before surgery, teaching must address

needs of the highest priority and include information that focuses on the safety of the patient. When providing preoperative teaching for a patient several day before the surgery, the nurse must provide a balance between telling so little that the patient is unprepared and explaining so much that the patient is over whelmed. The nurse who observes carefully and listen sensitively to the patient can usually determine how much information is enough in each instance, remembering that anxiety and fear may decrease learning ability. The nurse must also assess what the patient wants to know right away and give priority to his or her concern. <sup>(10)</sup>

Generally preoperative teaching concerns three types of information sensory, process and procedural. Different patient's with varying cultures, back rounds and experience may want different types of information .with sensory information, patients want to know what they will see , hear , smell and feel during the surgery. Patients wanting press information may not want specific details but desire the general flow of what is going to happen. This information includes the patient's transfer to the operation theatre, and waking up in the postoperative care unit.

With procedural information, desired details are more specific. This information would include that an IV line will be started while patients are in the holding area. Other information includes that when patients are transferred to the operating room, they will be asked to move onto the narrow bed and a safety strap will be put over their thighs. <sup>(10)</sup>

Preoperative teaching provided to the patient must be communicated to the nurses providing postoperative care so that learning can evaluated and duplication of teaching can be prevented. Because the nurse has limited time for teaching, the team approach is usually used. Nurses in offices, falls, or clinics may initiate the teaching. The preoperative nurses continue teaching and evaluate the patients understanding of the content. The discharge nurse provides written instructions and additional information for reinforcement .community nurses may also be involved if the patient continuing learning needs that these nurses address during home visits

after patients are discharged .All teaching should be documented in the patient's medical record <sup>(8)</sup>

### **Deep breathing, coughing and incentive spirometry :**

A true experimental study was conducted on controlled trial with intermittent positive pressure breathing incentive spirometry and deep breathing exercises in preventing pulmonary complications after abdominal surgery at Australia. A randomized trial with posttest only design was used for the study. The study comprised of 172 patients divided into four groups. The control group (group -1) consists of 45 patients received no respiratory treatment, intermittent positive pressure groups (group -2) consists of 45 patients received intermittent positive pressure breathing therapy 45 minutes for 4 times daily. The incentive spirometry groups (group-3) consists of 42 patients were received deep breathing and coughing exercises by incentive spirometry, the fourth group consists of 41 patients carried out deep breathing and coughing exercises under supervision. The findings of the study showed that, the frequency of developing pulmonary complications was 48% in control group (group -1) 22% in intermittent positive pressure breathing group (group -2), 21% in the incentive spirometry group (group -3) and 21% in deep breathing and coughing exercises group (group -4). The study concluded that the number of hospital stay also reduced in the incentive spirometry and deep breathing and coughing exercises group that in the control group. <sup>(12)</sup>

A true experimental study was conducted at Australia on prevention of respiratory complications after abdominal surgery. A stratified random trial was used for sample selection. The study comprised of 456 patients undergoing abdominal surgery was divided into two groups. Group 1 was considered as incentive spirometry group, group 2 were considered as deep breathing and coughing exercise group. The results of the study showed that the incidence of respiratory complications was 15% (35/231) in the incentive spirometry group whereas 12% (28/225) in deep breathing and coughing exercise group. The study

concluded that the most efficient regimen of prophylaxis against respiratory complications after abdominal surgery is deep breathing exercises for low risk patients .<sup>(13)</sup>

A true experimental study was conducted at Korea on effect of deep breathing and coughing exercises in prevention of postoperative pulmonary complications. Posttest only design was used in the study. The study comprised of 90 patients divided into 3 groups, 30 patients in each group. Incentive spirometry techniques was given to patients in group 1, deep breathing and coughing exercise was given to patients in group 2 and patient in group 3 had received no respiratory treatment. The findings of the study showed that the patients in group 1 and 2 who performed deep breathing and coughing exercises under the supervision of the investigator for 15 minutes 4 times a daily following abdominal surgery were prevented the pulmonary complications from 30% to 16.7%.<sup>(14)</sup>

Post operative pulmonary and circulatory complication remain serious concern despite the recent advance in anesthesiology and surgical technique ,pulmonary complication are the most causes of prolonged hospitalization and increase mortality after surgery .Studies has demonstrated that preoperative instruction in deep breathing and coughing exercised have been effective in promoting speedy recovery after surgery.<sup>(1)</sup>

One goal of preoperative care to teach the patient how to promote optimal lung expansion and resulting blood oxygenation after anesthesia.The patient assumes a sitting position to enhance lung expansion .the nurse then demonstrate how to take deep, slow breath and how to exhale slowly after practicing deep breathing several times ,the patient is instructed to breathe deeply, exhale through the mouth. Take a short breath and cough from deep in lung ,the nurse also demonstrate how to use an incentive spirometer, device that provide measurement and feedback related to breathing effectiveness. In addition to enhancing respiration, these exercises may help the patient relax.<sup>(1)</sup>

Research indicate that some patient benefit from intensive inspiratory muscle training in the preoperative period. If thoracic or abdominal incision is anticipated ,the nurse demonstrate how to splint the incision to minimize pressure and control pain, the patient should put the palm of both hand together, interlacing the finger snugly, placing the hands across the incision site acts as an effective splint when coughing, in addition the patient is informed that medications are available to relieve pain should be taken regularly for pain relieve so that effective deep breathing and coughing exercise can be performed. <sup>(15)</sup>

The goal is promoting coughing is to mobilize secretion before coughing stimulates the cough reflex. If the patient and does not cough effectively atelectasis, pneumonia may occur <sup>(1)</sup>

### **Teaching a Patient to Cough and Deep-Breathing:**

- ❖ Introduce yourself.
- ❖ Provide explanation.
- ❖ seek permission to perform procedure
- ❖ Enlist patient participation.
- ❖ Obtain history.
- ❖ provide privacy.
- ❖ ascertain need for analgesia
- ❖ Assess breath sound as per physical examination auscultation of the chest guideline.
- ❖ ensure tissues and sputum receptacles are within reach demonstrates the following deep breathing:
  - place hand palm down on the border of rib(age and inhales slowly and evenly through the nose untill a greatest chest expansion is achieved)
  - hold the breath for 2-3 second, exhale slowly through the mouth with pursed lips and exhalation untill maximum chest contraction is achieved
- ❖ Assist them to sitting position.

- ❖ if patient is unable to sit instruct patient to bend knees to reduce tension of the back and abdominal muscles.
- ❖ instruct the patient to do three deep breathing exercises:-
  - Ask the patient to inhale deeply, Hold the breath for a few second and then cough one or two times.
  - Ensure that the patient coughed deeply and did not just clear the throat.
- ❖ for surgical patient: demonstrate show how the patient could support(SPLINT) the incision postoperatively as the patient cough that is:
  - Place the palm of the hands on either side of the incision or directly over the incision, holding the palm of one hand over the other.
  - Instruct the patient how to splint the incision independently with a firmly rolled.
  - instruct the patient to start the exercises as soon as she or he is able after surgery
- ❖ Encourage patient with abdominal or chest surgery to carry out deep breathing and coughing at least three or five time daily and at each session to take a minimum of five breath and not greater than twelve in any one session.
- ❖ Explain to the patient that deep breathing and coughing exercises will increase lung expansion and prevent to accumulation of secretion, which might occur after anesthesia or during prolonged bed rest.
- ❖ Note characteristic of any sputum expectorated and documents observation and characteristic notes.
- ❖ Terminates encounter suitably exercises <sup>(4)</sup>

### **Mobility and active body movement:**

The goals of promoting mobility postoperatively are to improve circulation, prevent venous stasis and promote optimal respiratory function. The patient should be taught that early and frequent ambulation immediately postoperative as tolerated will help to prevent complication. The nurse explain the rational for frequent



position change after surgery and then show the patient how to turn from side to side and how to assume the lateral position without causing pain or disrupting intravenous line, draining tube or other equipment. Any special position the patient need to maintain after surgery is discussed, as is the importance of maintaining as much mobility as possible despite restriction, review the process before surgery is helpful because the patient may be too uncomfortable or drowsy after surgery to observed new information <sup>(10)</sup>.

### **Teaching Patient Move in BED:**

- ❖ Position the patient supine, bed rail up
- ❖ Instruct patient to (when turning left):

bend leg sliding foot flat along the bed and flexing knee reach right arm across the chest and grab the opposite bed rail take deep breathing, splint any abdominal or chest incision

Pull on the bed rail while pushing of with right foot. <sup>(9)</sup>

### **Exercise of extremities:**

Exercise of extremities include extension and flexion of the knee and hip joint unless contraindicating of surgical procedure, the foot is rotated as through tracing the largest possible circle with the great toe.

The elbow and shoulder are exercise through their range of motion, at first the patient is assessted and reminded to perform these exercise later the patient is encouraged to do them independently.

Muscle tone is maintain so that ambulation well be easier, the nurse should remember to use proper body mechanics and to instruct the patient to do the same, whenever the patient is positioned his or her body need to be properly aligned <sup>(10)</sup>

## **3. Methodology**

### **3.1. Study design:**

This was Descriptive, hospital-based study, done to assess the effectiveness of preoperative education among post operative patient In Elmak Nimer university hospital

### **3.2. Study duration:**

This study was done during the period which extended from July to November 2016.

### **3.3. Study area:**

This study was done in Shendi city, river Nile state, Sudan, which located in the north of Khartoum about 176Km, its population about 80000 persons (WHO 2003) most of them are farmers.

Shendi city now is one of the rich cities in health care facilities; it contains three main hospitals, Elmak Nimer University hospital. Shendi teaching hospital and military hospital, and also there is Hoshbannaga hospital and Elmiseiktab hospital.

### **3.4. Setting:**

This study was carried out at Elmak Nimer University hospital. This hospital was established since 2002. And it's the second university hospital in Sudan. The hospital provides most types of medical services (medicine, surgery, Obs/Gyne, and pediatric). Beside these there are cardiac, renal, and oncology centers). In the hospital there is a big theater complex in which most type general operations can be done (caesarean, GIT surgery and orthopedic surgery ...etc.) There was an outpatient clinic in the hospital established science 2009.

The hospital system frame work, for nursing staff, morning shift for 8 hours in duration, and afternoon, evening shift for 16 hours, and is the distribution of

nursing staff according to need of hospital departments ,nurses they will rotated frequently without fixed intervals according to the need.

Intensive care unit is important part of the hospital and contains 9 beds to involved critical medicine case and the nurse who work in it very skillful.

Cardiac care unit is another important part and it divided into three parts

### **3.5. Study population:**

The study involves all age groups of surgery patient in Elmak Nimer hospital. During study period.

### **3.6. Sampling & Sample size:**

The study group was chosen using convenience sampling from all surgery patients whom undergoing surgical operation. they were forty surgery patients are included in this study.

### **3.7. Data collection tools:**

One tool is used in this research questionnaire. Standard closed ended questioner was been developed by researcher ; and it can fill by face to face, based on the Literature review composed from two section.

#### **➤ Section one about pre operative assessment**

**Part one:** demographic data (age, sex, residence ,education level, occupation,).

**Part two:** regarding knowledge of patient, include (deep breathing, coughing exercise, mobility )

Section two about effectiveness of post operative teaching programme in early post operative.

### **3.8 Scoring system:**

#### **Questionnaire:**

Scoring system was established by researcher which the data was distributed two categories to measured the level of patients knowledge about post operative exercises, if the patients respond to right choice it consider good knowledge, and if

patients respond to wrong choice consider poor knowledge.(right ,wrong) based on literature reviews .

### **3.9. Data collection technique:**

The data was collected during 4 weak daily during three shift, the filled questioner by the researcher, no one refuse to participate and there was no missing

### **3.10. Data analysis and presentation:**

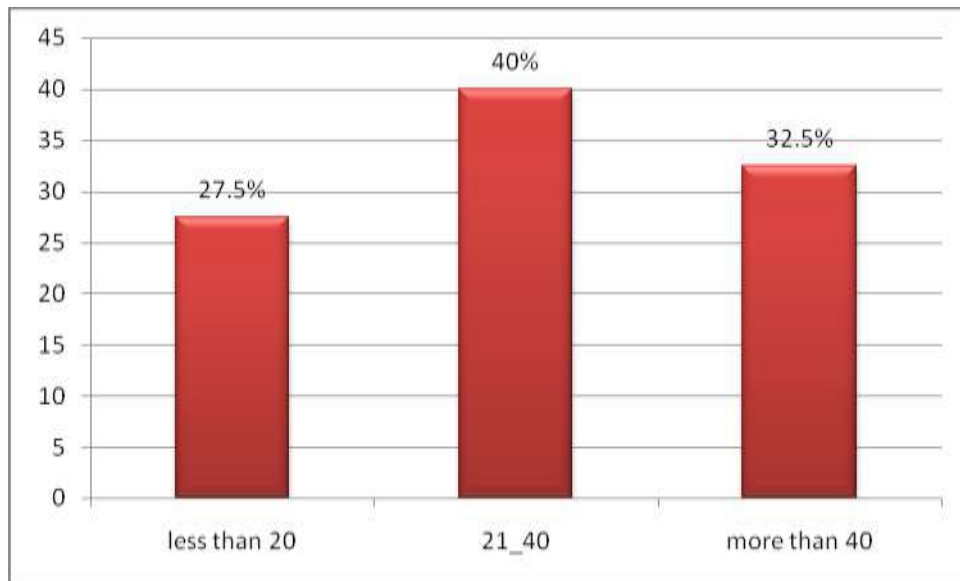
The data was coded and analyzed manually and then by SPSS program version (20) by using statistical measure; percentage, frequency, s and chi squire test and presented in forms of tables and figures.

### **3.11. Ethical consideration:**

The proposal was approved from the scientific committee board, and then permission was taken from general hospital manger and the head nurse to conduct the research.

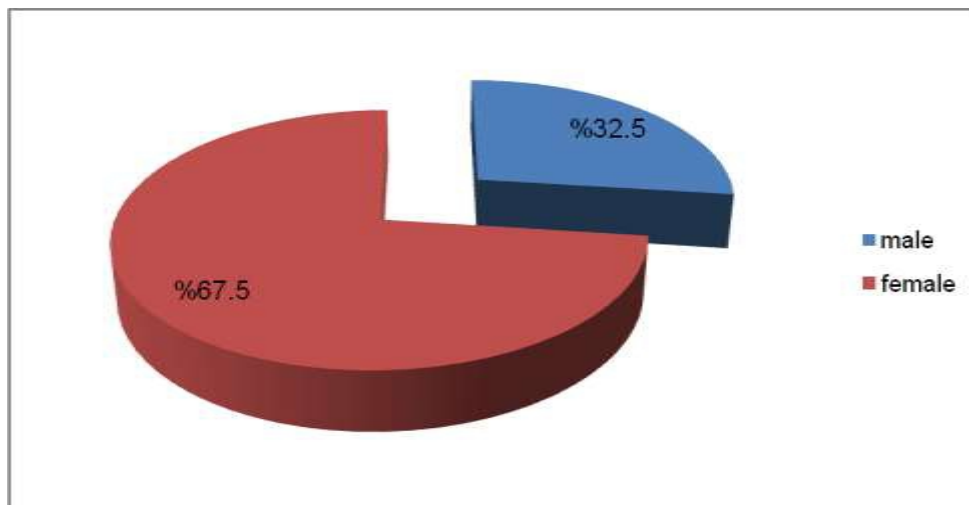
The purpose of the study has been explained verbally clearly to participant and their information should be used for the purpose of study only and there have chance to continuous, or stopped at any time they wish.

## **Results**



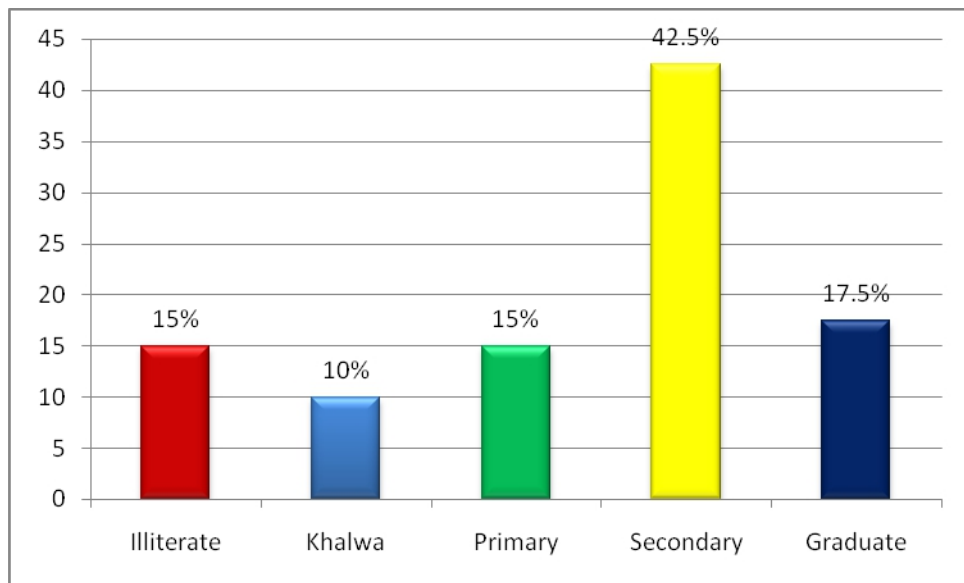
**Figure No (1): the distribution of patients according to their age:**

The figure showed that, (27.5%) of patient have less than 20 years, (40%) from (21-40 years ) and (32.5%) more than 40 years.



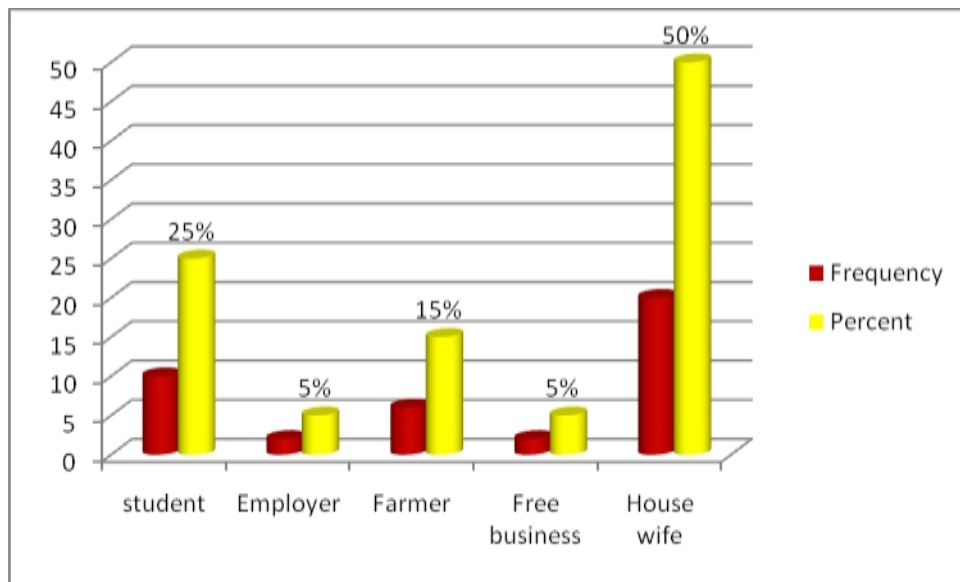
**Figure No (2): distribution of patient's according to sex:**

The figure showed that (67.5%) of patient is female and (32.5) is male.



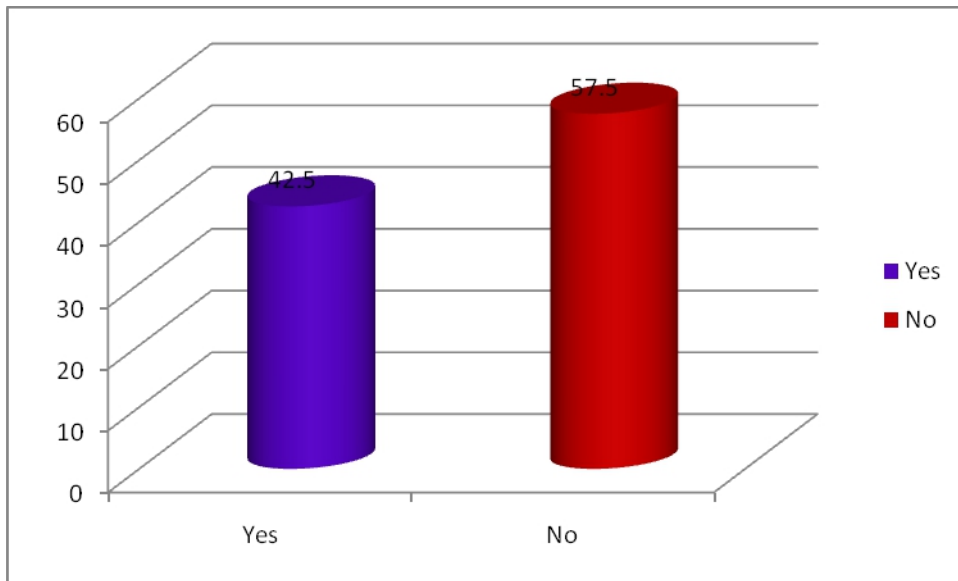
**Figure No (3): the distribution of patients according to their level of education.**

The figure showed that (15%) of patients are illiterate and (10%) Educate in khalwa, and(15%) study to primary, (42.5%) study to secondary school, (17.5%) are graduate.



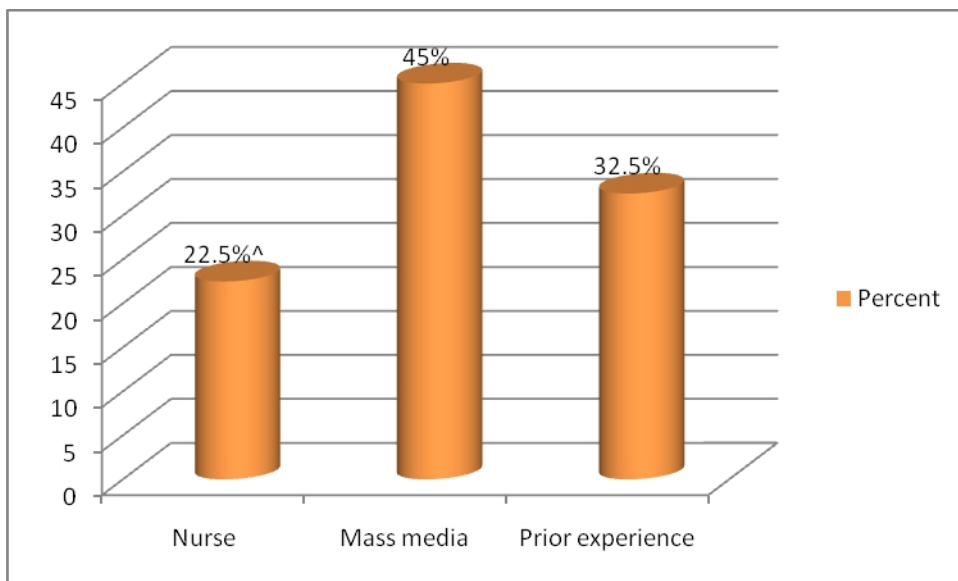
**Figure No (5): the distribution of patients according to their occupation.**

The figure showed that (50%)of patients are house wife, and (5%)are employers, and (15%) of them are student, and (25%) are farmers, (5%) are free business.



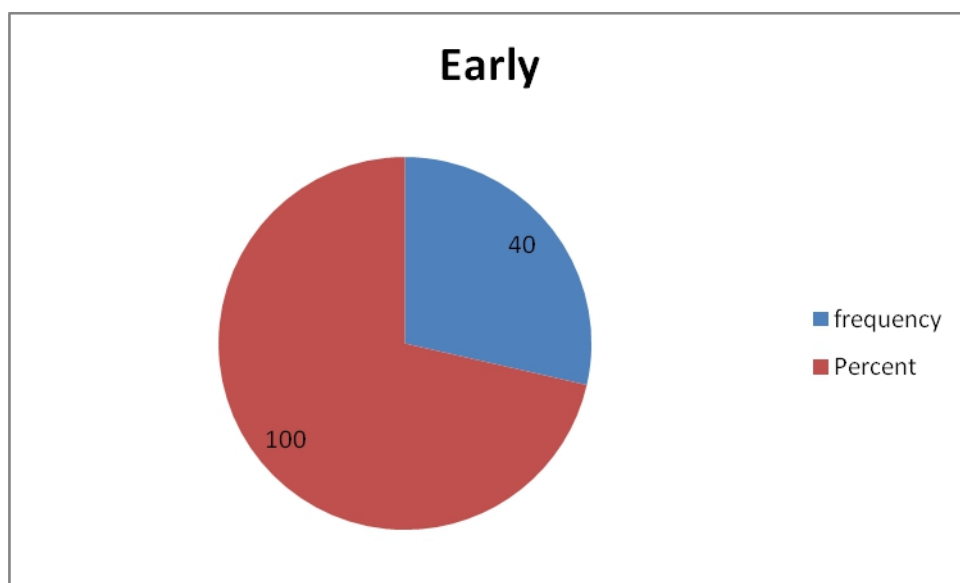
**Figure No (6): the distribution of patients according to their previous surgery.**

The figure showed that (57.5%) of patients have no history of previous surgery, and (42.5%) has previous surgery.



**Figure No (7): the distribution of patients according to source of their knowledge.**

The figure showed most of patients (45%) take their knowledge from mass media, and (32.5%) their knowledge from prior experience, and (22.5%) take their knowledge from nurse.



**Figure No (8): the distribution of patients according to When their start mobility on post operative period:**

The figure showed that all patients have start the mobility early.

**Table (1): Distribution of patients according to their knowledge regarding post operative exercise:**

Item	Frequency	Percentage
Not known	22	55%
Little information	17	42.5%
Mobility	1	2.5%
Total	40	100%

The above table showed that (55%) of patients do not know about post operative exercises, (42.5%) have little knowledge, and (2.5%) their knowledge regarding mobility exercise only.



**Table (2): Distribution of patients according to their knowledge regarding durations breathing exercise:**

<b>Item</b>	<b>Frequency</b>	<b>Percentage</b>
3-5 times	3	7.5%
5-7 times	2	5%
More than 7 times	2	5%
Not known	33	82.5%
Total	40	100%

The above table showed that (82.5%) of patients do not know about frequency of breathing exercises, (7.5%) have good knowledge, and (5%) have poor knowledge regarding post operative breathing exercise.

**Table (3): Distribution of patients according to their knowledge regarding time of doing breathing exercise:**

<b>Item</b>	<b>Frequency</b>	<b>Percentage</b>
On pain	3	7.5%
On dyspnea	6	15%
Not known	31	77.5%
Total	40	100%

The above table showed that (77.5%) of patients not know about time of doing breathing exercises, (15%) have poor knowledge, and (7.5%) have good knowledge regarding post operative breathing exercise.

**Table (4): Distribution of patients according to their knowledge regarding their comfortable when doing breathing exercises:**

<b>Item</b>	<b>Frequency</b>	<b>Percentage</b>
More comfortable	3	7.5%
Sometimes	4	10%
Not known	33	82.5%
Total	40	100%

The above table showed that (82.5%) of patients not known about their feeling when doing breathing exercises, (10%) sometimes feeling comfortable, and (7.5%) were feel more comfortable after doing breathing exercise.

**Table (5): Distribution of patients according to their knowledge regarding steps When doing coughing exercise:**

<b>Item</b>	<b>Frequency</b>	<b>Percentage</b>
Take deep breathe	10	25%
Start coughing	30	75%
Total	40	100%

The above table showed that (75%) of patients have poor knowledge about steps When doing coughing exercise, (25%) have good knowledge.

**Table (6): Distribution of patients according to their knowledge regarding How coughing start:**

Item	Frequency	Percentage
Strong	1	2.5%
Moderate	4	10%
Weak	8	20%
Not known	27	67.5%
Total	40	100%

The above table showed that (67%) of patients not known about how coughing start, (20%) have good knowledge, (12.5%) have poor knowledge.

**Table (7): Distribution of patients according to their knowledge regarding time of start the mobility:**

Item	Frequency	Percentage
After full recovery	22	55%
After pain subside	8	20%
Not known	10	25%
Total	40	100%

The above table showed that ( 55%) of patients have good knowledge about time of start the mobility, (20%) have poor knowledge, (25%) not known.

**Table (8): Distribution of patients according to their knowledge regarding Their mobility start:**

Item	Frequency	Percentage
By Hands	20	50%
By Foot	11	27.5%
Not known	9	22.5%
Total	40	100%

The above table showed that (50%) of patients have good knowledge about start of mobility, (27.5%) have poor knowledge, (22.5%) not known.

**Table (9): Distribution of patients according to their benefit regarding post operative breathing exercises:**

Item	Frequency	Percentage
High	15	37.5%
Moderate	18	45%
No change	2	5%
Not apply	5	12.5%
Total	40	100%

The above table showed that ( 37.5%) of patients have high benefit from post operative breathing exercises, (45%) have moderate benefit, (5%) have no change, and about (12.5%) not apply breathing exercises.

**Table (10): Distribution of patients according to their benefit regarding post operative coughing exercises:**

Item	Frequency	Percentage
High	27	67.5%
Moderate	13	32.5%
Total	40	100%

The above table showed that ( 67.5%) of patients have high benefit from post operative coughing exercises, (32.5%) have moderate benefit.

**Table (11): Distribution of patients according to their benefit regarding post operative coughing exercises:**

Item	Frequency	Percentage
High	38	95%
Moderate	2	5%
Total	40	100%

The above table showed that ( 95%) of patients have high benefit from post operative mobility exercises, (5%) have moderate benefit.

**Table (12): Distribution of patients according to their benefit regarding post operative vital sign (Pulse rate):**

Item	Frequency	Percentage
Normal	40	100%
Total	40	100%

The above table showed that all patients have normal pulse rate.

**Table (13): Distribution of patients according to their benefit regarding post operative vital sign (respiratory rate):**

Item	Frequency	Percentage
Normal	40	100%
Total	40	100%

The above table showed that all patients have normal respiratory rate.

**Table (14): Distribution of patients according to their have complication:**

Item	Frequency	Percentage
Not occurred	40	100%
Total	40	100%

The above table showed that all patients without complication.

**Table (15):Correlation between patients gender and benefit from mobility exercises:**

Item		Benefit				Total		<i>P value</i>
		High		Moderate		F	P	
		F	P	F	P			
Gender	Male	12	30%	1	2.5%	13	32.5%	0.00
	female	26	65%	1	2.5%	27	67.5%	0.00
Total		38	95%	2	5%	40	100%	

*P value* < 0.05 = 0.00 (high significant)

**Table (16): Correlation between patients education level and benefit from mobility exercises :**

Item		Benefit				Total		P value
		High		Moderate				
		F	P	F	P	F	P	
Educational level	Illiterate	5	12.5%	1	2.5%	6	15%	0.00
	Khalwa	4	10%	0	0%	4	10%	0.00
	Primary	5	12.5%	1	2.5%	6	25%	0.00
	secondary	17	42.5%	0	0%	17	42.5%	0.00
	Graduate	7	17.5%	0	0%	7	17.5%	0.00
Total		38	95%	2	10%	40	100%	

*P value < 0.05 = 0.00 (high significant)*

**Table (17): Correlation between patients previous surgery and benefit from mobility exercises:**

Item		Benefit				Total		P value
		High		Moderate				
		F	P	F	P	F	P	
Previous surgery	Yes	17	42.5%	0	0%	17	42.5%	0.00
	No	21	52.5%	2	5%	23	57.5%	0.00
Total		38	95%	2	5%	40	100%	

*P value < 0.05 = 0.00 (high significant)*

**Table (18): Correlation between patients gender and benefit from coughing exercises:**

Item		Benefit				Total		P value
		High		Moderate		F	P	
		F	P	F	P			F
Gender	Male	11	27.5%	2	5%	13	32.5%	0.00
	Female	16	40%	11	27.5%	27	67.5%	0.00
Total		27	67.5%	13	32.5%	40	100%	

*P value < 0.05 = 0.00 (high significant)*

**Table (19): Correlation between patients education level and benefit from coughing exercises:**

Item		Benefit				Total		P value
		High		Moderate		F	P	
		F	P	F	P			F
Education level	Illiterate	3	7.5%	3	7.5%	6	15%	0.00
	Khalwa	2	5%	2	5%	4	10%	0.00
	Primary	1	2.5%	5	12.5%	6	15%	0.00
	secondary	14	35%	3	7.5%	17	42.5%	0.00
	Graduate	7	17.5%	0	0%	7	17.5%	0.00
Total		27	67.5%	13	32.5%	40	100%	

*P value < 0.05 = 0.00 (high significant)*



**Table (20): Correlation between patients previous surgery and benefit from coughing exercises :**

Item		Benefit				Total		P value
		High		Moderate		F	P	
		F	P	F	P			
Previous surgery	Yes	10	25%	7	17.5%	17	42.5	0.00
	No	17	42.5%	6	15%	23	57.5%	0.00
Total		27	67.5%	13	32.5	40	100%	

*P value < 0.05 = 0.00 (high significant)*

**Table (21): Correlation between patients gender and benefit from breathing exercises:**

Item		Benefit								Total		P value
		High		Moderate		No change		Not apply		F	P	
		F	P	F	P	F	P	F	P			
Gender	Male	4	10%	5	12.5	1	2.5%	3	7.5%	13	32.5%	0.00
	Female	11	27.5%	13	32.5%	1	2.5%	2	5%	27	67.5%	0.00
Total		15	37.5%	18	45%	2	5%	5	12.5%	40	100%	

*P value < 0.05 = 0.00 (high significant)*

**Table (22): Correlation between patients education level and benefit from breathing exercises:**

Item		Benefit								Total		P value
		High		Moderate		Not apply		No change				
		F	P	F	P	F	P	F	P	F	P	
Education level	Illiterate	0	0%	3	7.5%	0	0%	3	7.5%	6	15%	0.00
	Khalwa	0	0%	3	7.5%	1	2.5%	0	0%	4	10%	0.00
	Primary	1	2.5%	3	7.5%	0	0%	2	5%	6	15%	0.00
	secondary	8	20%	8	20%	1	2.5%	0	0%	17	42.5%	0.00
	Graduate	6	15%	1	2.5%	0	0%	0	0%	7	17.5%	0.00
Total		15	37.5%	18	45%	2	5%	5	12.5%	40	100%	

*P value < 0.05 = 0.00 (high significant)*

**Table (23): Correlation between patients previous surgery and benefit from breathing exercises :**

Item		Benefit								Total		P value
		High		moderate		No change		Not apply				
		F	P	F	P	F	P	F	P	F	P	
Previous surgery	Yes	5	12.5%	9	22.5%	1	2.5%	2	5%	17	42.5%	0.00
	No	10	25%	9	22.5%	1	2.5%	3	7.5%	23	57.5%	0.00
Total		15	37.5%	18	45%	2	5%	5	12.5%	40	100%	

*P value < 0.05 = 0.00 (high significant)*

## 5.1. Discussion

Currently, only a limited time (10-15 minutes) is allocated for preoperative teaching in the ambulatory care settings. Based on the current health care trend, patients will likely spend less time in the hospital in the future, which will result in less time for preoperative education. Thus, clinicians need innovative methods to deliver effective preoperative education.

Less than half of patients age (40%) between (21 – 40) years; while the majority were female(67.5%), and near to half were studied to secondary school (42.5%),the study group were distributed equally between towns and villages. Half of them were house wife and quarter of them were students, More than half (57.5%) has no history of previous surgery. while about (55%) of patients have not known about post operative exercises, these finding represent that patient should be at risk to develop complication due to insufficient knowledge and lake of experience

Unfortunately (82.5%) of patient do not known about technique of breathing exercises ; deep breathing which was very important in increasing lung expansion and decrease anxiety post surgery. Moreover , more than two third of study group (77.5 %) do not known about when they doing breathing exercises, (82.5%) said do not known about their feeling, Much of them (75%) have poor knowledge about steps When doing coughing exercise.(67%) of them have not known about how coughing start , these finding may be related to either not perform the exercise in ideal way or they used different methods. Their (55%) of patients do know suitable time of start the mobility, Half of them have good knowledge about what body part start at first, this exercise helpful in decreasing staying in hospital, while near to half (45%) take their information from mass media.

(37.5%) of patients have high benefit from post operative breathing exercises, (45%) have moderate benefit; and (67.5%) of patients have high benefit from post operative coughing exercise, although the majority of them (95%) have

high benefit from post operative mobility exercises. All of them (100%) have normal pulse rate and respiratory rate, and can start their mobility in early post operative just after full recovery these result agree with my literature the early mobility decrease risk for develop complications <sup>(10)</sup>; fortunately all patient (100%) not develop complication, these honorably result can indicate succeeded preoperative teaching and it correlate with the most efficient regimen of prophylaxis against respiratory complications after abdominal surgery is deep breathing exercises and coughing exercise for low risk patients. <sup>(15),(14)</sup>

Finally they was high significant between gender and beneficial from post operative coughing exercised (  $p =0.00$ ) near to half (40%) were female, they was high significant between gender and beneficial from post operative mobility exercised (  $p =0.00$ )more of them were female(65%) and they was high significant between gender and beneficial from post operative breathing exercised (  $p =0.00$ ) less than half were female(32.5%) these result show the female had desire to learn and apply their learning, also they was high significant between educational level and beneficial from post operative coughing exercised (  $p =0.00$ ) ;(35%)educate to secondary school , also they was high significant between educational level and beneficial from post operative mobility exercised(  $p =0.00$ ) near to half(42.5%) learn to secondary school, and they was high significant between educational level and beneficial from post operative breathing exercised (  $p =0.00$ ) (20% ) learn to secondary school, in addition to they was high significant between patient history of previous surgery and beneficial from post operative coughing exercised (  $p =0.00$ ) near to half(42.5%) without history of previous surgery , they was high significant between patient history of previous surgery and beneficial from post operative mobility exercised (  $p =0.00$ ) above half(52.5%) without history of previous surgery and they was high significant between patient history of previous surgery and beneficial from post operative breathing exercised(  $p =0.00$ ) quarter of them without history of previous surgery, these result indicate patient without

history of previous surgery had motivate to learning about post operative exercised and applying their learn into practice.

## 5.2. Conclusions

**Based on the finding present study, it was concluded that:-**

- Patient education handouts improved patient's satisfaction regarding their knowledge of the preoperative process that can reduce anxiety related to surgery.
- The provision of effective preoperative patient education is vital to the quality of preoperative nursing care.
- The findings showed beneficial effects that based on preoperative educational program associated with health outcomes.
- Gender and education level and history of previous surgery were highly statistically significantly associated with high benefit of post operative breathing, mobility and coughing exercised. ( $p = 0.00$ )

## 5.3. Recommendations

**Based on the result and conclusion of the study the following is recommended:**

- The hospital should establish regular training program about preoperative patient education and preparation
- To keep these programs continuous by encouraging the rotation between the staff in the hospital.
- Comprehensive policy guideline that will address to management of pre operative care must be put in place and made available to nursing staff. In addition a procedure of preoperative needs to be developed
- further studies should include more direct clinical outcomes, such as patients' adherence to the postoperative care protocols and their recovery outcomes.
- The benefits, in particular, have a great potential to empower patients to be in charge of managing their own care. To generalize the findings, more studies using larger and more diverse samples are needed.

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**11. When you doing coughing exercise are you:**

take deep breathing first ( )      start coughing ( )

**12. How coughing start:**

Strong ( )      moderate ( )      weak ( )      don't know ( )

**13. When you start the mobility after:**

Full recovery ( )      pain subside ( )      don't know ( )

**14. The mobility start first by:**

Hands ( )      foot ( )      don't know ( )

**15. From where you can take your knowledge:**

Nurse ( )      mass media ( )      prior experience ( )

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

Shendi university

Faculty of graduate studies and scientific research

Questionnaire about assessment the effectiveness of preoperative  
education among post operative patient

**Section two:**

**Post teaching questionnaire:**

**1. Do you get benefit from:**

	High	Moderate	No change	Don't apply
Breathing				
Coughing				
Mobility				

**2. When you start mobility:**

Early ( ) late ( )

**3.**

Vital sign	Normal	High	Low
Pulse rate			
Respiratory rate			

**4. If you have complication:**

DVT ( ) embolism ( ) infection ( ) pneumonia ( ) not occurred ( )

# Teaching program

## Teaching a Patient to Cough and Deep-Breathing:

- ❖ Introduce myself.
- ❖ Provide explanation.
- ❖ seek permission to perform procedure
- ❖ Enlist patient participation
- ❖ provide privacy
- ❖ ensure tissues and sputum receptacles are within reach demonstrates the following deep breathing:-
  - place hand palm down on the border of rib (age and inhales slowly and evenly through the nose until a greatest chest expansion is achieved)
  - hold the breath for 2-3 second, exhale slowly through the mouth with pursed lips and exhalation until maximum chest contraction is achieved.
- ❖ Assist them to sitting position.
- ❖ if patient is un able to sit instruct patient to bend knees to reduce tension of the back and abdominal muscles.
- ❖ instruct the patient to do three deep breathing exercises:-
  - Ask the patient to inhale deeply, Hold the breath for a few second and then cough one or two times.
  - Ensure that the patient coughed deeply and did not just clear the throat.
    - Place the palm of the hands on either side of the incision or directly over the incision ,holding the palm of one hand over the other.
    - Instruct the patient how to splint the incision independently with a firmly rolled.
    - instruct the patient to start the exercises as soon as she or he is able after surgery

- ❖ Encourage patient with abdominal or chest surgery to carry out deep breathing and coughing at least three or five times daily and at each session to take a minimum of five breaths and not greater than twelve in any one session.
- ❖ Explain to the patient that deep breathing and coughing exercises will increase lung expansion and prevent accumulation of secretion, which might occur after anesthesia or during prolonged bed rest.

### **Mobility and active body movement:**

The patient should be taught that early and frequent ambulation immediately postoperative as tolerated will help to prevent complications. frequent position change after surgery and then show the patient how to turn from side to side.

### **Teaching Patient Move in BED:**

- ❖ Position the patient supine, bed rail up
- ❖ Instruct patient to (when turning left):

bend leg sliding foot flat along the bed and flexing knee reach right arm across the chest and grab the opposite bed rail take deep breathing, splint any abdominal or chest incision, Pull on the bed rail while pushing off with right foot.

### **Exercise of extremities:**

Exercise of extremities include extension and flexion of the knee and hip joint unless contraindicating of surgical procedure, the foot is rotated as though tracing the largest possible circle with the great toe.

The elbow and shoulder are exercised through their range of motion, at first the patient is assessed and reminded to perform these exercises later the patient is encouraged to do them independently.

Muscle tone is maintained so that ambulation will be easier, whenever the patient is positioned his or her body needs to be properly aligned.