



بسم الله الرحمن الرحيم



**Shendi University**  
**Faculty of Graduate Studies and Scientific**  
**Research**

**Effect of Preoperative Preparation on  
Patients Outcome Among Patients  
Undergoing Surgical Operations at Almik  
Nimir Hospital - Sudan**

*A thesis*

*submitted for fulfillment of Ph.D. in medical surgical  
nursing*

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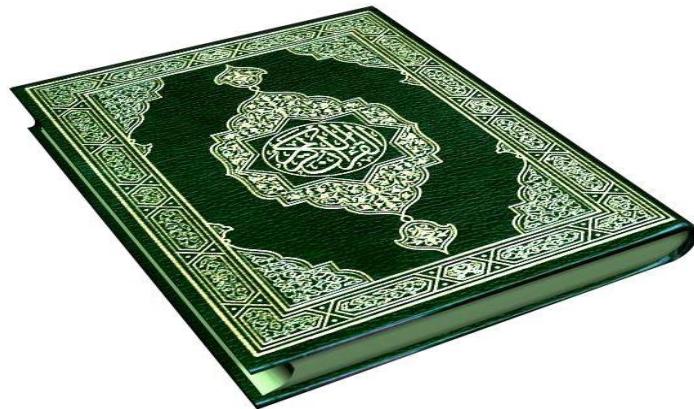
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**June 2019**

# الآية



قال الله تعالى

( فَتَعَالَى اللَّهُ الْمَالِكُ الْحَقُّ  
وَلَا تَعْجَلْ بِالْقُرْآنِ مِنْ قَبْلِ أَنْ يُقْضَى إِلَيْكَ وَحْيُهُ  
وَقُلْ رَبِّ زِدْنِي عِلْمًا )

طه {١٤} . صدق الله العظيم

# Dedication

*To my dear father*

*To my mother*

*To my wife. (Tasnim)*

*To my dear brothers.*

*To my friends and colleagues.*



# Acknowledgment

*First of all, my deep and sincere thanks and gratitude  
to Allah*

*For giving me the ability to do and complete this  
research.*

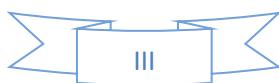
*Thanks for shendī university, graduate college .*

*I am deeply indebted to my supervisor: Prof: Higazi  
Mohammed Ahmed*

*For his continuous encouragement, his patience  
generous help, endless support and continuous efforts  
and valuable advice during the continuation of the  
study.*

*Thankful to all the nurses, surgeons and other staff in  
the Elmik Nimir university hospital for their support  
and guidance and them help fullness during collection  
of data.*

*Special thank for all patients from deferent site of  
shindig locality who participated in the study for their  
patience with me.*



## **Abstract**

Preoperative preparations of the patients physically and psychologically are the cornerstone of the good outcomes.

This prospective quasi-experimental hospital-based study was conducted in Sudan, Shendi city at Elmek Nimer university hospital to evaluate the impact of preoperative preparation on patients outcome among patients undergoing general surgery. In the period of June 2016 to May 2019.

This study was included a hundred patients undergoing general elective surgery, data were collected by interviewing questionnaire, anxiety scale, pain assessment tool, postoperative parameter, and patients satisfaction tool, data were collected in two phases (pre& postoperative). The data were analyzed by the computer software program (SPSS) version 20.

The results showed that more than two third (79.4%) of the patient had poor knowledge about the importance of preoperative preparations, but improve after implemented program and this was reflected on patient behavior and outcome in the postoperative phase . (70%) had reported no anxiety to mild in the postoperative phase. in regard of postoperative pain, majority of patients (70%) experienced moderate to severe level of pain in the first 4 hours, this level of pain reduce to mild to no pain level in (82%) of patients in next 12hours. Most of the patients had full to good satisfaction regarding preparations and outcome. The study support and justifies the effectiveness of the preoperative preparations on patient outcomes. The study recommended surgical nurses have to provide proper explanation and teaching for elective surgical patients to be adherence with the care plan to promote good surgical outcome.

## ملخص البحث

تعتبر التحضيرات الفسيولوجية والنفسية من الركائز الاساسية للحصول على نتائج ايجابية بعد العملية الجراحية ومن ثم تقليل المضاعفات وتعزيز الشفاء. وهنا يكمن دور التمريض اساسياً" ويمثل حجر الزاوية في تحضير المريض مما يساعد في تقليل ومنع المضاعفات بعد العملية.

أجريت هذه الدراسة المقطعة شبه التجريبية بالسودان بمدينة شندي في مستشفى المك نمر الجامعي في الفترة من يونيو 2016 الى مايو 2019. بغرض تقييم تأثير التحضيرات قبل العملية الجراحية في النتائج الفسيولوجية والنفسية بعد العملية في المرضى الذين يخضعون للعمليات الجراحية العامة.

شملت هذه الدراسة مائة من المرضى، تم جمع البيانات على مرحلتين باستخدام استبيان مقابلة ، مقياس القلق، اداة تقييم الالم ومقاييس رضا المريض. تم تحليل البيانات باستخدام الحزمة الاحصائية للعلوم الاجتماعية اصدار 20.

اظهرت الدراسة ان 79.4% من عينة الدراسة كانت مستوى المعرفة لديهم ضعيفة حول اهمية التحضيرات قبل العملية ، ولكن تحسنت مستوى المعرفة لديهم بعد تنفيذ البرنامج التعليمي وانعكس ذلك في سلوك المرضى والنتائج الايجابية بعد العملية.

ووجدت الدراسة ان التحضيرات قبل العملية ايضاً" ادى الى تخفيض مستوى القلق بعد العملية لدى 70% من عينة الدراسة ، وايضاً" توصلت الدراسة الى ان 82% من المرضى خفض حدة الالم بعد 12 ساعة الى مستوى بسيط الى منعدم مقارنة بشدة الالم بعد بالأربع ساعات الاولى حيث كانت مستوى الالم شديد الى متوسط لدى 70% من المرضى. توصلت الدراسة ايضاً" على ان التحضيرات قبل العملية تؤثر على رضا المرضى .

خلصت الدراسة الى ان التحضيرات قبل العملية لها اثر فعال في تحقيق النتائج الايجابية بعد العملية وتعزيز استشفاء المريض.

توصلت الدراسة الى عدة توصيات اهمها كانت متمثلة في تحفيز دور الممرضين في قسم الجراحة وتقديم المعلومات والتحضيرات الكافية للمريض. وقيام ورش عمل ومؤتمرات يدعم التمريض الجراحي .

## List of abbreviation

<b>Abbreviation</b>	<b>Full words</b>
AORN	Association of pre-Operative Registered Nurses
DASS	Depression, Anxiety and Stress Scale
LOS	Level Of Satisfaction.
MBP	Mechanical Bowel Preparation
NSAID	Non-Storied Ant Inflammatory Drugs
NRS	Numerical Rating Scale
PCA	Patient Controlled Analgesia
POF	Pre-Operative Fasting
RNAO	Registered Nurse Association of Ontario
STAI	State-Trait Anxiety Inventory
SSI	Surgical Site Infection
TKA	Total Knee Arthroplasty
USA	United Stat of America
UPAT	Universal Pain Assessment Tool
VAS	Visual Analogue Scale

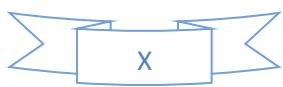
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# **1. Introduction**

## **1.1. Background**

Surgical care is essential for managing various health conditions such as injuries, malignancy, infections, and cardiovascular disease. (Meara, et al.2015)

surgery patients at risk for preoperative anxiety due to fear from unknown, postoperative pain and complications, this negative perception regarding the what happen after surgery can effect on recovery from anesthesia, which can lead to poor outcome and longer hospitalization, so is an important nursing responsibility and care provider in preoperative phase to inform patient about surgery, pain control, postsurgical explanation. This can promote recovery and achievement of the optimal goal. (Gerlitz.2017; Powell.et al.2016)

Patients who are physically and psychologically prepared for surgery tend to have better surgical outcomes. The patients were capable of managing postoperative pain more effectively. Patients who are more aware of what to expect after surgery and who have an opportunity to express their goals and opinions, often cope better with postoperative pain .so the Preoperative preparation is extremely essential before any surgical procedure. (Elkalashy and Masry.2018;Samnani.et al.2014)

Evidence based practice has shown that, preoperative exercise therapy and information provision is effective on postoperative outcome, in reducing complication, length of hospital stay and improve patient satisfaction. (Grossweiler.2012 : Thorell, et al.2016)

## **1.2. Rational**

Several studies highlighted the relationship between patient preoperative preparations and outcomes. suggesting, patient preparations physiologically and psychologically promote the patient's postoperative outcomes in reducing the length of hospital stay, lessened pain level, and anxiety. ( Almalki et al, 201 ; Akinsulore et al; 2015<sup>1</sup>; Itisha.et al.2016 )

It was observed surgical staff nurses have limited time and resources to adequately educate preoperative patients, these Impediments mean that most patients have inadequate preoperative preparation and education. In El mike Nimir university hospital, The use of planned preoperative education in nursing practice for the surgical patient is not introduced.

Actual preoperative information and instruction giving in current nursing practice are limited, with relatively little interaction between nurses and surgical patients, and information rarely supported by written information and demonstrating the exercise. Addition, using the appropriate model according to international preoperative nursing practice is not applied in general elective surgery patients.so the designed and evaluation of new preoperative education method is needed.

No studies have been conducted in Sudan to evaluate of the effect of preoperative preparation on patients outcome. So, conduct this study to find out the effectiveness of preoperative preparations.

### **1.3. Problem statement**

Approximately 312.9 million surgical procedure are performed worldwide yearly (Weiser, et al.2015;Esquivel, et al.2015). The incidence rate of major complications following inpatient surgical procedures has been reported as up to 22% with a mortality of up to 0.8%. and about seven million patients yearly will experience serious problems as a result of surgical procedure and around one million patients can pass away as a result of complications after surgery. ( Glaysher and Cresswell.2017)

Regarding the surgery outcome in Africa, the previous studies from 25 countries for all in-patient surgeries reported that one in five surgical patients in Africa developed a perioperative complication, and one in ten patients died. (Biccard, et al.2018)

Sudan considered under low economical counters, so it suffers from a lack of development of the health system, especially in the surgical approaches, the patient's problem in surgical treatment may be lack of adequate preoperative preparations which is the effect on patient physiologically and emotionally. And also effect on postoperative patient's outcome and incidence rate of mortality.

## **1.4. Objective**

### **General objective:**

To study the effect of preoperative preparation on patients outcome among patients undergoing elective general surgical operations .

### **Specific objectives:**

- ❖ To assess patient knowledge about the importance of preoperative preparations.
- ❖ To assess the effect of the implement of preoperative educational program on anxiety, postoperative pain, and length of hospital stay
- ❖ To assess the effect of preoperative preparation on patient satisfaction.

## **2. Literature review**

### **2.1. Definition of terms :**

#### **Effect:**

Refers to the extent to which preoperative preparation is useful in promoting postoperative outcome among patients undergoing elective surgical operations .

#### **Preoperative preparation :**

Refers to care given before surgery when physical and psychological preparations are made for the operation, according to the individual needs of the patient.

#### **Postoperative outcome:**

‘Postoperative outcome’ refers to the restoration of physiological condition of those patients who have undergone surgery as measured in terms of the length of postoperative hospital stay, postoperative complications, pain and postoperative anxiety.

### **2.2. Education of surgical patient**

Preoperative patient education is a key part of nursing consideration aimed at helping patients to clarify information about their operation, and what happens after surgery, based on patient need, level of knowledge and patient condition. (**Lobo.2016**)

Preoperative education has proven useful in decreasing postoperative complications and duration of stay as well as positively influencing recovery. Patients who are properly prepared with specific preoperative preparation deal more effectively with their surgical treatment and are better prepared to manage their pain and ability to perform postoperative activities. (**Kaur, et al, 2007; Kruzik, 2009**). The main purpose of this integrated

approach is to reduce the psychological and physiological stresses associated with surgical illness. (**Rizalar and Topcu, 2015**)

Most importantly, pre-operative education may reduce anxiety and pain level, study by (**Yeola and Jaipuriya 2016**) which investigated the “effect of different pre-operative education programs on the anxiety and pain levels of patients”, the patients in the group that had received routine care reported the highest level of pain, while patients on planning preoperative education had a low level of pain and anxiety.

Preoperative teaching has been administered in various methods including written materials, audio-visual presentations, oral information in the form of one-to-one counseling or group discussion, or combinations of some or all of these. Previous studies have shown that each approach has both advantages and limitations. Additionally, due to an increasing trend toward shorter times between hospital admission and surgery, there has been a limited time that nurses can spend with patients before surgery. Thus, reliance on verbal information giving alone may not always be effective. The use of media such as booklet and videos can help to deliver information in a potentially more efficient and interesting way. A systematic review of randomized controlled trials concluded that the use of video and printed information for preoperative education has a positive impact on anxiety and knowledge. (**Guo et al,2012; Sousa, et al, 2015.**)

Registered nurse association of Ontario recommends the use of images and pictures to communicate health information. Visual aids, pictures, and illustrations are useful in enhancing other formats of materials especially with clients with low health literacy given that illustrations and maybe non-ambiguous and utilize text in simple language to improve health literacy and understanding. (**Gerlitz. (2017)**

## **2.3. Preoperative preparation:**

Preoperative preparation of the patient physically and psychologically is an essential both for the patient who is to undergo surgical intervention and nursing staff the way in which it is performed, can influence the evolution of the healing process by minimizing a major complication (Anghelu.etal,2013).

### **2.3.1. Preoperative physiological assessment:**

There are many problems related to physiological status can effect on anesthesia and vital signs during the operation, so the patient's physiological and psychological condition should be assessed properly. To gather information about risk factor and perioperative management decisions are made to place the patient in the best condition after surgery and to minimizing postoperative hospital stay. In a line of these, a study carried out in Pakistan showed that Lack of preoperative assessment results in the delay of surgery or perioperative complications that increase the stay of the patient at the hospital. (Tariq.2016; Ali. et al,2012)

The effective preoperative patient assessment encompasses holistic patient's care aspect that includes physical, physiological, psychological, socio-cultural, emotional, spiritual and individual surgical needs. Traditionally, preoperative ward visits to collect data at the patients' bedside or in the clinic in elective surgeries gave perioperative nurses time to directly observe and learn patients' behavior.(Omondi,2016; DeHert ,etal 2018)

### **2.3.2. Preoperative fasting:**

Traditional fasting guidelines before elective surgery have required the patient to fast starting at midnight before their surgery. The use of general anesthesia can alter gag, cough, and swallow reflexes that protect the

lungs from stomach contents. Fasting is intended to reduce stomach content acidity as well as volume in an attempt to decrease morbidity and mortality rates from anesthesia-related aspiration. (Brown, Heuberger,2014)

Physiologically, it is recommended that surgical patients should not take food the night before the day surgery. However, patients could be given clear fluid up to two hours and food up to six hours before surgery since fasting can be difficult to manage when the operation can be canceled or delayed. Also prescribed preoperative medications should be given to patients and only essential medicine should be given with those that need to be taken orally given with little water. It is stated that preoperative medications help to relieve patients anxiety, pain, prevent nausea and vomiting, and reduces aspiration. (Adugbire,2015)

Lack of knowledge, level of education, and/or poor strategies for disseminating fasting guidelines among the clinical team impede patient understanding and fasting compliance. So, enhanced patient knowledge regarding preoperative fasting is important to improve patient compliance, by applying the clear instructions for preoperative fasting (POF) by clinical team members, namely, nurses, physicians, anesthetists, or surgeons. The instructions should be clear including the objective of POF, duration, and the expectations as well as the consequences of non-adherence. (Njoroge et al,2017)

### **2.3.3. Important of Bowel preparation:**

Strategies for infectious complications earlier than surgical treatment in order to lessen the morbidity and mortality of the patients. The main intention of such a practice is to reduce postoperative complications in addition to easing the intra-operative handling of the bowel. specifically, the concept of bowel postoperative complications which include anastomotic dehiscence's, intra-stomach septic complication and wound

infections become nourished by using the fact that these forms of complications precipitated approximately half of the postoperative deaths in advance patient series (**Olsen et al.2016; Müller-Stich et al,2006**)

Enemas for rectal cleansing have been commonly used as part of mechanical bowel preparation (MBP) for colorectal procedures. Options for enemas include sodium phosphate, glycerin, or saline solutions. While in the United States they may be self-administered at home, in Europe, they are more commonly administered in the hospital, 2 to 4 hours before surgery. The theoretical benefit of rectal cleansing with enema solutions is that the reduction of fecal matter in the rectal vault prevents extrusion of bowel contents and mechanical obstruction during insertion of the stapling devices for anastomosis creation. This may be especially useful in rectal surgery, and it is commonly reported that physicians perform an on-table saline rectal washout before such procedures. (**Kumar et al,2013**)

#### **2.3.4. Preoperative skin preparation:**

Despite major advances in infection control interventions, healthcare-associated infections remain a major public health problem and patient safety threat worldwide. The global data suggests that the surgical site infection (SSI) incidence rate varies from 0.5 to 20% depending upon the type of operation and underlying patient status. Several factors preoperative, intraoperative & postoperative, determine the occurrence of surgical site infections, Preoperative hair removal is considered as a risk for the development of surgical site infections. (**Kurien et al, 2018**)

Maintenance of personal hygiene before surgery is very vital in preventing infection, it is therefore important that surgical patients shower using soap and water the evening before surgery. Practicing personal hygiene provides the framework for achieving quality nursing care and also indicates nurse's contributions to improving health care

outcome. Also, the removal of hair around the incision site where necessary should be done on the day of surgery. Patients that have been prepared for surgery should remove the pants, brassier, jeweler, earrings, dentures and this should be done in a manner that patient comfort and dignity is maintained. (Adugbire.2015)

The several studies have found that preoperative shaving of the surgical site increases the risk of surgical site infection, so is important preoperative nursing role to inform patient don't shave the hair until transferred to operation room .and aware it for dangerous of shaving. (Al Maqbali.2016).

### **2.3.5. Psychological preparation:**

The psychological component involved in an effective preoperative preparation to minimize emotional states is here highly emphasized in the nurse's role. so is which requiring a more active valorization and intervention by the nurses to assuring the patient and decreased the level of anxiety by applied proper preoperative education. (Batista dos Santos et al,2014)

#### **2.3.5.1. Preoperative anxiety:**

Preoperative anxiety is a challenging concept in the preoperative care of patients. Most patients awaiting elective surgery experience anxiety and it is widely accepted as an expected response. The elevated levels of preoperative anxiety have serious outcomes and can increase the risk of postoperative complications such as pain, prolonged recovery, longer hospitalization, and death. Furthermore, the high level of preoperative anxiety is associated with an increased need for anesthesia. The common causes of elevated preoperative anxiety include fear of pain, physical injury, complications, and death. the preoperative anxiety is common and

the reported prevalence of preoperative anxiety among patients underwent various types of surgery was found as high as 60% to 90%. (**Almalki et al, 2017**)

Preoperative anxiety incidence can be affected by many factors such as gender, level of education, age, cultural background, type of surgery, previous history of hospitalization and surgery. In a study carried out in Turkey on patients undergoing surgery, most of the patients awaiting surgery experienced high levels of preoperative anxiety, the anxiety scores were found to be higher among females than males. Results suggest that individuals with a high level of education may more accurately estimate the risk of surgery; however, individuals with low levels of education may fear the unknown and therefore have high levels of anxiety. There was no association between age and anxiety. (**Nigussie et al 2014**)

To reduce the incidence and intensity of anxiety among preoperative patients there is a need to identify the associated factors which can be modified. Identified and determining the factors influencing preoperative fear and anxiety in the patients may help nurses in the management of a patient. (**Ebirim and Tobin, 2010**). Study conducted in Pakistan mentioned that factors which had been positively correlated with anxiety have been females gender, high education level and younger age, factors which were shown to lessen anxiety have been the previous revel in of surgical operation and preoperative anesthesia clinic visit. (**Jafar and Khan 2009**)

Study in Nigeria reported, Fear of complications and the result of operation were the most common factors responsible for preoperative anxiety. Provision of adequate psychological preparation by adequate information on identified factors may help in reducing preoperative anxiety. (**Akinsulore et al, 2015**)

Study found that Patients who undergo surgical procedures experience a high level of stress and anxiety, which could have negative consequences on postoperative outcomes. Preoperative preparation can alleviate potential problems through the provision of preoperative education and proper explanation of patient regarding surgery and postsurgical expectation. In addition, the study advocates the positive impact of the provision of information to surgical patients during the preoperative period on reducing anxiety levels, the time of recovery, surgical complications, and use of analgesia and improving patients' satisfaction and adherence to treatment. (Gonçalves et al;2017, Nahm et al, 2012)

A quasi-experimental study was conducted to examine the effect of preoperative education on reducing anxiety among cardiac surgical patients at Andhra Pradesh, India. Reported that, was a significant difference between pre and post anxiety levels after preoperative education. (Lobo.2016)

#### **2.3.5.2. Preoperative anxiety assessment tools:**

Various instruments have been used in the assessment of levels of anxiety in adult surgical patients in developed countries. The commonly used scales include the Depression, Anxiety and Stress Scale (DASS) and the Visual Analogue Scale of Anxiety (VAS). And Spielberger's State-Trait Anxiety Inventory (STAI), it is widely used in a clinical setting. (Jafar and Khan 2009;(Akinsulore et al,2015)

### **2.4. Postoperative Pain:**

Pain, is defined as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage. (Dumolard , et al.2017)

Postoperative pain is one of the factors that affect postoperative recovery and interferes with daily activities and is one of the patient's concerns that lead to anxiety after the operation, inadequate control of pain after surgery may lead to increase used analgesia and long days of hospitalization. (**Lanitis et al.2015**)

Study reported, More than 80% of patients who undergo surgical procedures experience acute postoperative pain and approximately 75% of those with postoperative pain report the level of pain as moderate, severe, or extreme. In a systematic literature review in which pain scores were pooled from 165 studies of acute pain following major surgery (abdominal, thoracic, orthopedic, and gynecological), in the first 24 hours after surgery, mean incidence of moderate-severe pain and severe pain was 30% and 11%, respectively. (**Gan,2017;Chou et al.2016**). In other study suggests that pain is highly subjective and that patients reporting could vary widely across different groups depending on several factors. in regard of this highlighted that culture plays an important role in predicting the levels of pain. Additionally, type of surgery, gender, age, physical status, and level of education can impact on pain experience level after surgery (**Hussain.2015; Kless,2010**)

A prospective study in Korea to investigate the impact of educational status on the postoperative perception of pain, concluded that educational status may be a significant predictor of postoperative pain due to various reasons, including the poor understanding of the preoperative information. (**Lanitis et al.2015**)

Inadequate management of postoperative pain leads to serious complications that may result in physiological disturbances, and delay recovery of the patient .so the provision planning preoperative education

for management is an important aspect in a nursing role. this may include assessment method to be used, and management intervention and what the patient can do to actively participate in the management of their pain. (Chou et al.216)

#### **2.4.1. Relation between postoperative pain and preoperative anxiety:**

Positive relations between preoperative anxiety and acute postoperative pain are reported in individuals submitted to different surgical procedures, the direct correlation between the preoperative anxiety level and the pain degree referred to times of analgesic used after surgery, patient how to experience a higher level of anxiety in preoperative phase requirement more analgesic medication postoperatively and prolonged hospital stay. (Bandeira et al.2017)

Study reported that, increased levels of pain that the patients are feeling could be associated with fear. Also mentioned that significant relationship between postoperative anxiety and pain related to their condition. (Hussain.2015). In other study investigate factor related postoperative pain following total knee arthroplasty (TKA), found that female gender and higher levels of preoperative anxiety were associated with severe levels of pain during the early postoperative period after TKA. Anxiety is a recognized risk factor for persistent postsurgical pain. (Kornilov,et al, 2016)

#### **2.4.2. Assessment of postoperative pain:**

Postoperative care nurses are responsible to assess the patient's pain, teach the patient strategies to deal with the pain, apply the analgesic treatment plan, and evaluate the results of treatment. In order to manage the postoperative pain effectively, the pain level must be measured appropriately. The goals of pain assessment are to determine the pain severity, appropriate management of pain, and document the

effectiveness of pain treatment. Ideally, the patient is encouraged to actively participate in pain assessment. Regarding frequent of pain assessment, in the surgical post anesthesia care should be assessed every 15 min initially, then every 1-2 has pain intensity decreases. And on the surgical ward, evaluate, treat, and reevaluate regularly (e.g. every 4-8 h) both the pain and the patient's response to treatment. (Yüceer,2011)

#### **2.4.3. postoperative pain assessment tools:**

Today, there are a variety of different pain assessment tools are used in the postoperative phase to determine the level of pain. Some of these tools are the faces of pain scale, The Wong-Baker FACES of the pain scale, the Visual Analogue Scale (VAS), and the Numerical Rating Scale (NRS). The primary use of these tools is to allow patients to describe their pain to the medical staff, so the nursing staff can take the proper steps to provide patient comfort. In other words, pain is described as subjective because each individual has a different pain perception and tolerance. The Wong-Bakers FACES is very similar to the FPS. It uses facial 10 expressions along with a numerical pain scale. At zero, there is a smiling, cheerful face while the ten is represented with a crying face. NRS is preferred by a heterogeneous age group of patients, regardless of the cause of pain, and is considered simple to use by both patients and healthcare professionals (Eriksson, 2017)

#### **2.4.4. Postoperative Pain Management:**

After surgery one of the main priorities in the postoperative care to relieve the patient from pain when awakening from anesthesia. the surgical incision done during the surgery and anesthesia causes the patient to feel pain, discomfort, and restlessness. When pain is adequately managed, it also helps patients to breathe properly and start early

ambulation as soon as possible, acute pain begins from mild and develops into severe phase if the pain is not managed well. pain affects the patient overall recovery because of uncontrolled pain, influencing the self-care and early mobilization. Also, pain uncontrolled may increase the physiological and psychological complications. (Sandika et al,2015). additionally, elimination of pain level postoperatively, leads to higher patient satisfaction. (Taghavi Gilani, et al.2016).

Measurement of the quality of pain management encompasses evaluation of the processes of care delivery including communication and pharmacological and non-pharmacological treatment of the pain, and outcomes, including pain severity, the impact of pain on physical and psychological function, and patient satisfaction with care received. (Lorentzen et al.2012)

#### **2.4.4.1. pharmacological method of pain management**

Opioid analgesics are one of the cornerstone options for postoperative pain treatments, more specifically, paracetamol is the most commonly used antipyretic and analgesic worldwide, mainly because of its low risk of adverse reactions and proven analgesic efficacy. Addition to that, Morphine is an opioid used to treat severe pain and a standard to determine the action of other opioids administered orally or by injection..(Misiolek et al,2014).

Patient-controlled analgesia (PCA) with intravenous opioids and patient-controlled epidural analgesia using an opioid either alone or in combination with a local anesthetic are two methods in the management of pain after major surgery. PCA has been proposed as a safe and effective technique for postoperative analgesia and is considered to be the

“gold standard” for pain relief after major surgery. (**Moawad and Mokbel,2014**).

Non-opioid analgesics are increasingly being used before, during, and after surgery to facilitate the recovery process especially after ambulatory surgery because of their anesthetic-and analgesic-sparing effects and their ability to reduce postoperative pain, opioid analgesic requirement, and side effects, thereby shortening the duration of the hospital stay to expand. Recent studies have confirmed that a rational combination of different nonopioid analgesics, when given as part of multimodal analgesia, reduces postoperative pain. (**Sivrikaya,2012**).

Several classes of non-opioid pharmacological agents that target pain via differing pathways have been evaluated as a means of improving postoperative outcomes, although the research remains limited. In three prospective, randomized trials, patients receiving the nonsteroidal anti-inflammatory drug (NSAID) ibuprofen or the COX2 inhibitor parecoxib did not achieve a significant reduction in persistent pain after surgery. (**Gan,2017**)

#### **2.4.4.2. Non-pharmacological method of postoperative pain management:**

Non-pharmacologic treatments are important adjuncts to treatment modality for patients with pain. Non-pharmacological methods may be used independently with mild pain. In addition, it can be used along with pharmacological therapy as a complementary option for moderate to severe pain .is divided into multiple categories, including physical, psychological and psychosocial modalities, physical modalities are most frequently used (**Mashaqbeh and AbuRuz ,2017**).

Non-pharmacological therapies, such as relaxation, massage, guided imagery, and acupuncture, have been found to have benefits impact on relief the pain for different types of surgeries. more importantly, Relaxation therapy highlighted; it is psychological and physical intervention to relieve the stress, reduce the anxiety, and promote a feeling of peace and calmness. (***dos Santos Felix et al,2017***)

Moreover, Relaxation by creating balance between the posterior and anterior hypothalamus, reducing the activity of the sympathetic system and catecholamine secretion can reduce muscle tension and physiological adverse effects such as lowering blood pressure, heart rate and muscle spasms caused by stress, rhythmic abdominal breathing that is one of the simplest and most ancient relaxation techniques. In addition to relaxation advantages, this technique leads to cognitive distraction and a change in harmful stimulus structure like pain and stress. (***Bozorg-Nejad,et al,2018***)

A randomized control trial study by (***Youssef and Hassan,2017***) reported that massage therapy is an effective modality in helping to relieve postoperative pain among women who have been treated with surgery for breast surgery.

Perception and postoperative pain expectation can lead to increase anxiety and they are stimulated nervous system regarding pain intensity, addition to that, the patient may require more analgesic medication, so modifying patient perception by good counseling regarding pain management approach is a priority. Finding suggesting that, preoperative education intervention influencing positively on post-operative pain management and lead to reduced pain intensity during the first 24 hours postoperatively, and good outcome compared with those who did not receive the education. (***O'donnell,2015***).

## **2.5. Postoperative exercise:**

Pre-operative exercise training should be offered to patients scheduled for major or complex elective surgery. As highlighted, provision information on preoperative exercise and demonstrated patient about exercise such as deep breathing, coughing exercise and early mobilization, is an important nursing intervention during preoperative preparation, more importantly, preoperative exercise turning is benefits on physiological and psychological status of the surgical patient, by minimizing the complication and the lengths of hospital stay. (Tew,2018)

Prolonged immobility is associated with a significant incidence of problems including deep venous thrombosis, muscle weakness, and impact on the respiratory system, addition to that can affect negatively on psychological status, postoperative pain severity, and recovery. So, it is important to encourage the patient the benefits of early ambulation. (Brown et al,2018)

Also, in the literature, it was stated postoperative early mobilization following surgery, mention that can prevent patient from Thromboembolism, also it promotes movement of secretion to help patient ventilate properly and prevention respiratory complication. furthermore, patient mobilization positively influencing on quality of life, patient satisfaction, postoperative pain level and desried hospital stay. (Chatterley. 2017)

Some studies showed that time, frequency and duration of mobilization had positive effects on pulmonary functions after surgeries. Also, in the literature, it was stated that mobilization implemented for the purpose of recovering pulmonary functions, supporting to the cardiovascular system,

preventing postoperative complications and improving the sensation of wellness reduced the length of stay. (**Topcu,et al,2016**)

Post-operative respiratory insufficiency is common in operative patients, and this is a very complicated and costly too. It had been evident that some of lung expansion exercise like deep breathing exercise, coughing exercise, if demonstrated during pre-operative preparation and continued in post-operative phase may decline the post-operative pulmonary complications. (**Tripathi and Sharma,2017**). Other study reported that the non-provision of preoperative respiratory physical therapy is an independent risk factor for postoperative pulmonary complications. (**Yokogawa et al,2018**)

According to a review, post-operative pulmonary complications are more common than other complications. The incidence of postoperative pulmonary complications following major surgery is reported to be between 2 and 40%, associated with an increased hospital stay, morbidity, and mortality. So is an important nursing aspect to emphasize patient knowledge regarding the benefits of the deep berthing exercise. Deep breathing exercise is used to decrease the incidence of pulmonary complication such as pneumonia and atelectasis, during exercise education, the nurse explains and demonstrates how to take a deep, slow breath, and how to exhale slowly, 3 to 5 times every 1 or 2 hr. (**Ünver, et al,2018**)

A quasi-experimental study in Egypt concluded to postoperative breathing exercises improve the quality of recovery among postoperative patients in term of pain level, emotional state, and length of hospital stay after surgery. (**Hussein and Taha,2018**)

## **2.6. Patient satisfaction**

Patient satisfaction is an important and widely used guidance for promoting the quality of nursing care and outcome. (**Tsai, et al,2015**)

Poor patient satisfaction can prompt poor adherence to treatment with therefore poor results. So, the satisfaction of patient affects the result of treatment and to keeping up a good relationship. On this line, evaluating the satisfaction of patients with nursing care is essential so as to determine the area of dissatisfaction and in the meantime improve the nursing care plan. (**Varghese,2009**)

Clear communication and education are essential for delivering quality patient care and ensuring patient satisfaction, more specifically in surgery patient are an important provide adequate information regarding his operation and postoperative expectation if patient explained properly increase patient compliance among treatment and there can positively impact on satisfaction level. Therefore, education of the patient is a priority nursing, surgeon, anesthesiologist role to achieve an excellent outcome. In other study reported that the use of specific written patient education has a positive impact on postoperative patient satisfaction with pain management. (**Fasulo et al.2018; Best,et al,2018**)

Moreover, many factors may impact on the level of satisfaction, such as age, postoperative pain management, and factor related to surgery, in addition to that instruction provided is a highly significant impact on patient satisfaction. (**Lemos,et al,2009**)

A study conducted in Scotland on the satisfaction of patients after day surgery revealed that waiting times between admission, operation, and discharge, and postoperative pain affected satisfaction negatively despite the overall patient satisfaction was high. (**Gebremedhn and Lemmam,2017**)

A quasi-experimental study in turkey conducted to investigate the effectiveness of nurse practitioner-driven preoperative education on Total Knee arthroplasty patient satisfaction, reported, that provide preoperative teaching and discussion has the ability to noticeably improve patient satisfaction postoperatively. (White,2015)

Surveillance Study conducted in the USA, by (Ortiz,et al,2015) to identify the Preoperative patient education impact on improvement satisfaction and reduce anxiety, these studies conclude to that patients how are adequately informed by using printed booklet preoperatively concerning their anesthesia, pain management approaches, information for days surgery was a high level of satisfaction but did not reduction on anxiety level.

## **2.7. Postoperative recovery and length of hospital stay:**

Rising healthcare costs have prompted physicians to attempt limiting the length of stay after major surgical procedures. Patients who develop postoperative complications will have the longest length of stay. Preoperative interventions not only minimize the presence of postoperative complications but also help in a shorter hospital stay. Postoperative recovery is a process of returning to the preoperative level of physical, psychological, social and behavioral functions. Providing planned preoperative preparation to patients' instruction, exercise training and psychological support contribute significantly to their postoperative recovery. (Lobo.2016)

Surgical complications result in patient morbidity and mortality, and it is important to audit surgical practice in order to reduce the incidence of complications. Clearly, avoidance is better than cure, but when complications occur intra- or postoperatively, expeditious detection and management are required. Surgical complications can be classified

temporally (intra-/immediate/early and late postoperative periods); and regionally (local versus systemic). complications occur commonly: bleeding and infection are probably the most important complications to be aware of. (**Bhatia.2011**)

Complications arising from surgical operation create a serious health care challenge and are related to prolonged hospitalization and increase surgical mortality rates. surgical pneumonic complications are one among the most typical complications following surgical operation, with a reported incidence of 2–40% (**Moore et al,2017**)

A quantitative study conducted in Pakistan indicated that postoperative complication is a disturbing phenomenon. It was reported that 29.6% of surgical patients had complications mostly like nausea and vomiting, wound infection and respiratory pneumonia, Related to several causes, such as insufficient preoperative assessment, poor postoperative management. (**Adugbire, 2015**)

Implementation of enhanced recovery strategies is a success in optimization excellent postoperative outcome. on this fact study reported that educate the patient to early mobilization after surgery significantly reduces the incidence of perioperative complications, addition to that can lead to the decrease of hospital stay. (**Adogwa et al,2017**).

Provision of preoperative education has several important for the reduction of anxiety and subsequent pain, improve patient satisfaction, As a consequence of this psychological support, positive effectiveness of preoperative instruction on level of satisfaction(LOS) and postoperative outcomes. Addition to that can achieve earlier discharge from the hospital for the patient and more rapid recovery. so is

important to the implementation of enhanced recovery strategies as preoperative explanation and counseling. (**Gustafsson et al,2018**)

A study conducted in California reported that preoperative education was associated with a significant reduction in LOS following total laryngectomy without increased readmissions, which suggests that it may promote safe, earlier patient readiness for discharge. (**Shenson,et al,2017**)

Randomized controlled trial study examine the effect of a preoperative expectation-optimizing psychological intervention on length of stay in patients undergoing elective cardiac surgery reported that Changing patients' preoperative expectations via a psychological intervention leads to decrease days stay in the hospital. (**Auer et al.2017**)

On the other hand, randomized controlled study designed to determine the effectiveness of a nurse-led preoperative education on anxiety and postoperative outcomes. And the study revealed that Preoperative education delivered by nurses minimized anxiety and postoperative complications of patients undergoing cardiac surgery, but it was not effective in reducing the length of postoperative stay. (**Kalogianni,et al,2016**)

### **3. Methodology**

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

Prospective quasi-experimental hospital-based study conducted to evaluate the effectiveness of the preoperative preparation on patient outcome among patients undergoing elective surgical operations .

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

This study was done during the period which extended from June 2016 to May 2019.

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

The study was carried out at Shendi town which is 176km north to Khartoum and 110 km south to Elldamer, the capital of River Nile State; Shendi town is lies on the eastern bank of the River Nile with a total area of about 14596 Km2. The total population of Shendi locality is estimated at about 197589 of whom 116713 live in rural areas and 80876 in urban areas, most of them are farmers. Shendi city now is one of the rich cities in health care facilities and education institution, it contains four main hospitals which are Elmak Nemir University hospital; Shendi teaching hospital and military hospital, and also there are Hosh bannaga hospital and Elmiseiktab hospital.

#### **3.4. Setting:**

This study was carried out at Elmeck 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). Besides these there is cardiac, renal center). In the hospital, there is a big two-theater complex

in which most type of general operations. The hospital system for work, for nursing staff, morning shift for 8 hours in duration, and 16 hours, and is the distribution of nursing staff according to need of hospital departments, nurses rotate frequently without fixed intervals according to the need. The surgery department within the hospital is divided into two sections. include preoperative and postoperative ward occupying 17 beds and 20 nurses rotated according to hospital policy, they work shift morning; afternoon night shift per day.

The general elective surgical procedures were done according to department schedule in fixed two days per week (Sunday; Tuesday), by rate of (8-10) surgical procedure\day. Also, the surgical department it contains outpatient clinic with a dressing room and laboratory.

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

This study includes all patient`s admitted in Elmak Nimer university hospital for elective surgery during the time of the study.

#### **3.5.1. Inclusion criteria:**

Adult patients of both sexes with elective general surgery, who agreed to participate.

#### **3.5.2Exclusion criteria:**

- Psychiatric patients.
- Patients with emergency surgical procedures.
- Obstetric surgery.

### **3.6. Sampling and sample size:**

#### **3.6.1. Sampling method**

- All patients whom admitted to the hospital for elective general surgery were enrolled.

### **3.6.2. Sample size: -**

The study included (112) patients were admitted to the hospital for elective surgery for three months and were met the inclusion and agreed to participate. seven patients were discarded because of cancelation in the day of surgery, and however, five patients refused to follow participations. (100) patients were included in the study using simplified formula for determine sample size " the yamane formula " (Israel, 1992) as follow:

$$n = \frac{N}{1+N(e)^2} = \frac{880}{1+880(0.1)^2} = 89$$

n = the sample size

N = the population size

e = the level of confidence

So the minimum sample size for patients = 89 patients

## **3.7. Variables:**

### **3.7.1. Independent variables:**

Demographic characteristic of study group.

### **3.7.2. Dependent variables:**

Level of Anxiety, pain, satisfaction level, postoperative complication, length of hospital stay, knowledge of patient, benefits level of patient.

## **3.8. Data collection tools:**

Four tools were used:

- I. Structured questionnaire.
- II. State Anxiety Inventory form (Akinsulore et al,2015;Jafar and Khan 2009)
- III. Universal pain assessment tool (Menabde ,etal.2017)

1.V. Satisfaction scale form (Karen instrument form) ( Andersson and Lindgren,201)

### **I. Structural questionnaire for patients:**

The interview questionnaire had been designed based on literature review and research objective, is composed of three sections.

#### **Section one**

Concerned with the socio-demographic and clinical information includes question-related to patient age, gender, education level, marital status, occupation, residence, bad habits, history of chronic disease; previous surgery; the type of present surgery and anesthesia.

#### **Section two**

Its include questions about patient knowledge about the importance of the preoperative general preparation include preoperative fasting, bowel, bladder, skin, knowledge about important of postoperative exercise and pain control after surgery.

#### **Section three**

Concerned with the postoperative assessment and follow up (benefit gained from exercise, vital sign parameter, postoperative complication, post-operative mobilization, use of pain medication, and length of hospital stay).

### **II. State Anxiety Inventory form:(SAI)**

This tool had been used to evaluate the current anxiety level (how you feel right now). State anxiety inventory consists of twenty items; including positive and negative items, a 4point scale was used (not at all(1), somewhat (2), moderately so(3), and very much so(4). To quantify

the patient response for each item. the positive items of state anxiety inventory were reversed coded. (Akinsulore et al,2015;Jafar and Khan 2009)

### **III. Universal pain assessment tool (UPAT):**

The pain assessment tool is intended to help patient care provider to assess pain according to individual patient need. Numerical rating scale (0-10) and facial expression was used, the patients were requested to select the number that represents their pain intensity.

Rating scale interpreting as:

(0 ) no pain,( 1 – 3) mild ,( 4 -6 ) moderate,(7 – 9) severe pain, ( 10 ) worst pain possible.

### **IV. Satisfactory level form (Karen instrument) :**

The Karen satisfaction instrument was used, this tool consists of 13 statements; which identify patient satisfaction level; To quantify the patients' responses, a 5-likert point scale had been used (strongly disagree (1), disagree (2), undecided (3), agree (4), strongly agree (5)). ( Andersson and Lindgren,201)

### 3.9.Scoring system

1- Pain level score	Worst pain	Sever	Moderate	Mild	No pain
	<b>10</b>	<b>7 – 9</b>	<b>4 – 6</b>	<b>1 – 3</b>	<b>0</b>
2- Satisfaction Level score	<b>Full</b>	<b>Good</b>	<b>Moderate</b>	<b>Poor</b>	<b>Unsatisfied</b>
	<b>53 – 65</b>	<b>40 - 52</b>	<b>27 – 39</b>	<b>14 - 26</b>	<b>1- 13</b>
3- Anxiety level score	<b>High level</b>		<b>Moderate</b>	<b>Low</b>	<b>No anxiety</b>
	<b>61 – 80</b>		<b>41 – 60</b>	<b>21 – 40</b>	<b>1 – 20</b>
4- Level of Post-Operative Benefits	<b>A lot</b>		<b>Satisfied</b>	<b>Little</b>	<b>No benefit</b>
	<b>More than 14 – 20</b>		<b>More than 7 – 14</b>	<b>1 – 7</b>	<b>0</b>
5- Knowledge level score	<b>Knowledgeable</b>		<b>Satisfied Knowledge</b>		<b>Poor Knowledge</b>
	<b>3 – 4 response</b>		<b>2 responses</b>		<b>1 – don't know</b>

### **3.10. Validity and reliability:**

The structured questionnaire has been examined by two nursing teachers they indicated that some items needed to be modified, and they assured that each tool was achieved the aim of the study.

#### **3.10.1. Pilot test**

The data collection tools were pilot tested using (12) patient undergoing general surgery at the hospital by the researcher to test the applicability of the tools of data collection and find out unclear or ambiguous questions, and to estimate the time required for filling each form. Data from the pilot study has been analyzed and we found that 10% of the questions need to be modified in accordance with patients understandings.

- **The Cronbach's alpha of study tools was :**
  - o Questionnaire (knowledge section) = 0.88
- Based on pilot results the modification was done and further the researcher refined tool, Finally, making the assurance that tool as a whole achieved the aim of the study.
- The pilot study (12 patients) was excluded from the total subject of the research work.

### **3.11. Data collection technique: -**

The data was collected in two phases of surgery pre& postoperative phases.

**In preoperative phase** data was collected after consenting for the surgery by patient or relative, enough verbal explanation was given after describing the study objectives, then written consent was taken. demographic and health profile data were collected, then section two

from a questionnaire filled to assess patient knowledge regarding important of preoperative preparation, postoperative exercise. And preoperative anxiety was assessed using the State Anxiety Inventory Scale.

After this, each patient had been interviewed separately and given full preoperative teaching program by using (booklet, boosters, videos) and demonstrating postoperative exercise (deep breathing, cough exercise, and leg exercise, turning and lifting) by using the observational checklist as guidance to steps of each exercise.

### **The preoperative preparation program:**

Planned preoperative education has been designed by researcher based on preoperative nursing preparation and strategies of enhancing postoperative recovery in light on literature review.

The preparation program has been established in simple Arabic language to facilitate patient understanding and cover the patient question and need in all phases of surgery (pre\intra\and postoperative) also others teaching methods such as demonstration, short videos, booster have been used.

The preparation program has consisted of preparations related to the preoperative phase as physiological assessment, bowel, bladder, skin, and preoperative fasting. Addition to the information about the environment of the theater room and sterilization technique.

The final part of preparation included information about postoperative phase as preparation the patient for postoperative exercise, instruction about the wound of operation, adaptation for pain control and information related to discharge from hospital.

The program has been implemented in the day before the surgery, each patient was interviewed separately through 40 -45 minutes and given sufficient information and then the patient was trained on postoperative exercises.

### **Materials:**

- Media : "IPAD" , stand poster , photos . videos
- As real object: pillow.

**In Postoperative phase (post I)** after patient returned from surgery to postoperative ward, vital sign parameters (blood pressure, pulse, respiratory, temperature) was evaluated immediately and the pain was assessed by using the numerical rating scale after 4hours.

During the postoperative phase, the patients were encouraged to execute deep breathing and coughing, early mobilization and leg exercise

**post-II** Then after patient fully recovering from anesthesia the postoperative anxiety was assessed by using the same tool. Vital sign parameter was recorded and the pain was assessed by using the same tool after 8hours later.

After that, during follow up phase the patient had been evaluated for any complication present.

**post III** was conducted on discharge day, satisfaction level regarding preparation and outcomes was evaluated by using the "Karen instrument", and length of hospital stay was recorded.

### **3.12. Ethical considerations:**

The study was approved by the ethical committee of the college and the institutional research board of the university.

Before conducting the study, permission was taken from the hospital general manager.

Before obtaining the patients' consent, they were informed about the purpose and nature of the study. The researcher assured them that the data collected from the questionnaire and other tools will remain confidential and it's not allowed for any person to identify it. Responders were explained that they could refuse to participate in the study, and withdraw from it at any time. with no effect on their care.

Clarification of the aim of the study to each of the patients had been explained verbally, and then written consent has been taken.

### **3.13. Data management (Statistical design):**

After the data was collected, then transferred into a specially designed format so as to be suitable for computer feeding, following data entry, checking and verification process was carried out to avoid any errors during data entry. Frequency analysis, correlation, cross tabulation, and manual revision were all used to detect any errors and through SPSS program version 20.

#### **The following statistical measures was used:**

1. Descriptive measures include: frequency, percentage, mean, standard deviation
2. statistical test includes: person correlation, chi-test.
3. The level of significance selected for this study was P value equal to or less than 0.05.

### **3.14. Limitation of study:**

There was no specific place available in the hospital to carry out the preoperative education this is lead to disrupt the patient's attention during implementing the program.

## **4. Results**

**The results were presented into the following sequences:**

**Section I:** Frequency and distribution of study group according to their Sochi demographic data and clinical characteristic.

**Section II:** frequency and distribution of study group according to their knowledge regarding the importance of the preoperative preparations.

**Section III (A)** Frequency and distribution of study group according to their level of benefits gained from preoperative instruction, postoperative exercise.

**Section III (B)** Frequency and distribution of study group according to their postoperative outcome (pain level, anxiety level, vital sign parameters, postoperative length of hospital stay, and satisfactory level).

**Section (IV)** The statistical relationship between variables.

## Section (I)

**Table NO (1) Demographic characteristic of the study group:  
N=100**

Items	Frequency	Percent	Total
Gender:			
▪ Male	43	43%	
▪ Female	57	57%	100%
Age:			
▪ 18-30 years	19	19%	
▪ 31-40 years	24	24%	
▪ 41-50 years	14	14%	
▪ 51- 60 years	11	11%	100
▪ Above 60 years	32	32%	100%
Education:			
▪ Illiterate	32	32%	
▪ Primary	29	29%	
▪ Secondary	32	32%	
▪ Graduate	6	6%	100
▪ Post graduate	1	1%	100%
Marital status:			
▪ Single	25	25%	
▪ Married	74	74%	100
▪ Widow	1	1%	100%
Occupation:			
▪ Employee	12	12%	
▪ Free worker	30	30%	
▪ Retried	3	3%	
▪ House wife	42	42%	100
▪ Job less	13	13%	100%
Place of residence:			
▪ Suburban	11	11%	
▪ Shendi city	45	45%	100
▪ Rural	44	44%	100%
bad habits:			
▪ Smoking	14	14%	
▪ Tobacco	7	7%	100
▪ Never	79	79%	100%

The above table showed that, more than half (57%) were female and age less than fifty years. More than two third (74%) of them were married. near one third (32%) of the study group were illiterate and more than half

(61%) of them belonged at school level of education. less than half (45 %) residence in rural area , also study reflect that majority (79%) of them had no bad habits.

**Table NO (2): Clinical characteristics of the study group:**

**N=100**

Items	Frequency	Percent	Total
<b>Chronic diseases:</b>			
▪ Diabetic	19	19%	
▪ Hypertensive	11	11%	
▪ Asthma	1	1%	
▪ Thyroid disease	3	3%	
▪ Rheumatoid disease	1	1%	100
▪ No chronic disease	65	65%	100%
<b>Previous Minor Surgery:</b>			
▪ Once	9	9%	
▪ Twice	3	3%	
▪ Three times	1	1%	
<b>Previous Major Surgery</b>			
▪ Once	17	17%	100
▪ Twice	6	6%	100%
<b>No previous surgery</b>	64	64%	
<b>Types of anesthesia:</b>			
▪ General	83	83%	100
▪ Spinal	17	17%	100%

The table above showed that more than half (65 %) of the study group had no history of chronic diseases, (64%) of them had no history of previous surgery, most (83%) of them were undergoing general anesthesia.

## Section (II)

**Table No (3) Distribution of the study group according to types of surgery.**  
**N =100**

Type of surgery	Frequency	Present	Total
▪ Cholecystectomy	22	22%	
▪ Appendectomy	12	12%	
▪ Inguinal hernia repair	10	10%	
▪ Thyroidectomy	9	9%	
▪ Renal stone removal	7	7%	
▪ Laparotomy	6	6%	
▪ Amputation	6	6%	
▪ Hemorrhoidectomy	6	6%	
▪ Prostate removal	6	6%	
▪ Mastectomy	4	4%	
▪ Rectal repair	3	3%	
▪ General biopsy cellulitis	2	2%	
▪ Lipoma removal	2	2%	
▪ Knee tumor removal	2	2%	
▪ Necrotizing forearm infection	2	2%	
▪ Nephrectomy	1	1%	
			100%

The above table revealed to that majority (77%) of them had major surgery most type of surgery in the abdominal region (appendectomy, Cholecystectomy, inguinal hernia, renal stone,) and prostate removal.

**Table NO (4): Distribution of study group according to the knowledge regarding the importance of the preoperative preparations:**

**N=100**

<b>A. Importance of Preoperative general preparations</b>						
<b>Items</b>	<b>knowledgeable</b>	<b>Satisfied knowledge</b>	<b>Poor knowledge</b>			<b>Total</b>
▪ Preoperative fasting	3	3%	17	17 %	80	80%
▪ Bowel preparation	6	6%	12	12 %	82	82%
▪ Bladder preparation	7	7%	11	11 %	82	82%
▪ Skin preparations	17	17%	23	23 %	60	60%
▪ Pain control after surgery	6	6%	25	25 %	69	69%
<b>B. Importance of Preoperative instructions regarding exercises</b>						
▪ Turning & lifting	7	7 %	16	16 %	77	77 %
▪ Importance of massage	2	2 %	6	6 %	92	92 %
▪ Coughing & breathing	4	4 %	12 %	12	84	84 %
▪ leg exercise	1	1 %	15 %	15	84	84 %
▪ Early mobility	3	3 %	13	13 %	84	84 %

The table above revealed to that majority (74.6%) of the study group had poor knowledge about important of preoperative fasting, bowel and bladder preparation, skin preparation and pain control after surgery. Also the result above had reflected that most (84.2%)of them had poor knowledge about important of postoperative exercise.

### Section III (A)

**Table NO (5): Distribution of the study group according to their opinion and level of benefits gained from preoperative instructions:**

**N=100**

<b>Patients opinions about instructions reassuring.</b>	<b>Frequency</b>	<b>Percent</b>	<b>Total</b>
▪ Enough	98	98%	100
▪ Not enough	2	2%	
<b>Level of Benefits gained from instructions</b>			
▪ Allot	73	73 %	100
▪ A little	26	26 %	
▪ No benefit	1	1%	

The table above showed that the reassuring is enough in most (98%) of the study group, more than two-thirds (73%) had a lot of benefits from instruction .

**Table NO (6): Distribution of study group according to the level of benefits gained from postoperative exercise:**

<b>Benefited level</b>	<b>Frequency</b>	<b>Percent</b>	<b>Total</b>
▪ A lot	52	52%	100
▪ Satisfied	36	36%	
▪ Little	12	12%	

The above table showed that more than half (52%) of the study group was gained a lot of benefits, (36%) had satisfied benefits, and (12%) had little benefits.

**Table NO (7): Distribution of study group according to the mobility after surgery:** **N=100**

<b>Mobility time</b>	<b>Frequency</b>	<b>Percent</b>	<b>Total</b>
▪ Early (1-6 h post-operative)	44	44%	100 100%
▪ Lately more than 6 h post-operative)	50	50%	
▪ Immobile	6	6%	

The above table revealed that less than half (44%) of them were mobilized early within 6 hours after surgery, while (50%) of them mobilized lately after more than six hours.

### **Section III (B)**

**Table NO (8) Distribution of study group according to the level of pre-& post-operative anxiety:**

**N=100**

<b>Level of anxiety</b>	<b>Frequency</b>	<b>Percent</b>	<b>Total</b>	<b>Mean</b>	<b>SD</b>
<b>Pre-operative</b>					
▪ No	8	8%	100		
▪ Low	23	23%	100%	2.86	0.88785
▪ Moderate	44	44%			
▪ High	25	25%			
<b>Post-operative anxiety</b>					
▪ No	17	17%	100		
▪ Low	53	53%	100%	2.14	0.69660
▪ Moderate	29	29%			
▪ High	1	1%			

The above table showed that the severity of anxiety in preoperative, less than half (44%) had moderate anxiety and (25% ,23%) had high, low anxiety respectively. while anxiety decrease in postoperative, (53%) had low anxiety and (29%) had moderate anxiety level.

**Table NO (9): Distribution of study group according to the level of pain in 4<sup>hr</sup> and 12<sup>hr</sup> postoperatively:**

N=100

Items	Frequency	Percent	Total	Mean	SD
<b>Pain level (after 4hours)</b>					
▪ No pain	5	5%			
▪ Mild	25	25%			
▪ Moderate	42	42%	100	2.93	0.85582
▪ Sever	28	28%	100%		
<b>Pain level (after 12 hours)</b>					
▪ No pain	20	20%			
▪ Mild	62	62%	100		
▪ Moderate	18	18%	100%	1.98	0.61922
▪ Sever	0	0%			

The above table showed that the pain severity in first **4hr** (42%) had moderate pain, and (28%,25%) had sever and mild level respectively. While after 12hr there decreasing in the pain, more than half (62%) of patient s had mild level of pain.

**Table NO (10): Distribution of study group according to the frequency of administration of pain medication after surgery:**

N=100

Times	Frequency	Percent	Total
▪ Once	31	31%	100
▪ Twice	56	56%	
▪ Three times	11	11%	
▪ More than 3 times	2	2%	

The above table reflected that more than half (56%) of the study group had received pain medication twice the time, while less than third (31%) was received once time.

**Table NO (11): Distribution of study group according to the vital signs on immediate and 8hr postoperative phase:**

**N=100**

<b>Immediate post-operative vital sign</b>						
<b>Vital signs</b>	<b>Normal</b>	<b>High</b>		<b>Low</b>	<b>Total</b>	
▪ Pulse rate	83	83%	14	14 %	3	3% 100 %
▪ Respiratory rate	44	44%	56	56%	0	0% 100 %
▪ Blood pressure	63	63%	29	29 %	8	8% 100 %
Temperature	89	89%	8	8 %	3	3% 100 %
<b>Postoperative vital sign after 8 hours</b>						
▪ Pulse rate	87	87 %	9	9 %	4	4 % 100 %
▪ Respiratory rate	72	72%	28	28 %	0	0 % 100 %
▪ Blood pressure	69	69 %	27	27 %	4	4 % 100 %
▪ Temperature	91	91 %	6	6%	3	3 % 100 %

The above table showed that (56%, 29%) of study group had high respiratory rate and blood pressure respectively in the immediate postoperative phase, while normal parameter was reported in next eight hours in most of the patients.

**Table NO (12): Distribution of study group according to the length of postoperative hospital stay:**

**N=100**

<b>Length of postoperative stay</b>	<b>Frequency</b>	<b>Percent</b>	<b>Total</b>	<b>Mean</b>	<b>SD</b>
▪ 1 – 3 days	54	54%	100 100%	1.48	0.54086
▪ 4 – 7 days	44	44%			
▪ More than 7 days	2	2%			

The above table showed that more than half (54%) of the study group were discharged within three days.

**Table NO (13): Distribution of study group according to the satisfaction level regarding preoperative preparation and outcomes:**

**N=100**

<b>Level of satisfaction</b>	<b>Frequency</b>	<b>Percent</b>	<b>Total</b>	<b>Mean</b>	<b>SD</b>
▪ Full	50	50%	100 100%	4.47	0.55877
▪ Good	47	47%			
▪ Moderate	3	3%			

The above table showed that half (50%) of study group had full satisfactory level. less than half (47%) had a good satisfactory level and few (3%) had a moderate level of satisfaction.

#### **Section four (IV)**

**Table (14): Correlation between postoperative anxiety and postoperative pain, vital signs, age, level of education, and preoperative anxiety.**

<b>Variables</b>	<b>postoperative anxiety</b>		<b>r. value</b>	<b>Sig.</b>
	<b>Mean</b>	<b>Std. Deviation</b>		
▪ Pain after (4hrs)	2.93	0.85582	-0.153	0.12
▪ Pain after (12hr)	1.98	0.61922	0.007	0.94
▪ Vitals after (8 hours)	1.34	0.55450	0.006	0.95
▪ Age	3.11	1.54450	0.108	0.10
▪ Level of education	2.15	0.97830	<b>-0.209*</b>	0.03
▪ Preoperative anxiety	2.86	0.88785	-0.033	0.74

\*. Correlation is significant at the 0.05 level.

\*\*. Correlation is highly significant at the 0.01 level.

The above table showed that negative statistically significant relation between postoperative anxiety and level of education at(0.03),While not a correlation with other variables.

**Table NO (15): Correlation between level of postoperative exercise benefits gained and "level of preoperative instructions benefits, Knowledge regarding the importance of exercise " :**

<b>Variables</b>	<b>Level of benefits gained from postoperative exercise</b>		<b>r. value</b>	<b>sig</b>
	<b>Mean</b>	<b>Std. Deviation</b>		
▪ Level of benefits gained from preoperative instructions	1.28	0.47312	-.454**	0.000
▪ Knowledge regarding importance of postoperative exercise	2.80	0.35836	-0.238*	0.017

\*\*Correlation is highly significant at the 0.01 level.

\*. Correlation is significant at the 0.05 level.

The above table showed that negative significant moderate correlation between level of benefits gained from postoperative exercise and level of benefits gained from preoperative instructions at (0.000), also found a negative significant poor correlation with knowledge regarding the importance of the postoperative exercise at (0.017)

**Table (16) Correlation between level of satisfaction and preoperative instructions benefits degree gained from preoperative instructions:**

<b>Variables</b>	<b>Mean</b>	<b>Std. Deviation</b>	<b>r</b>	<b>Sig.</b>
▪ Level of satisfaction	4.47	0.55877	-.121	0.231
▪ Level of benefits gained from preoperative instructions	1.28	0.47312		

\*\*. Correlation is highly significant at the 0.01 level, \* significant at 0.05

The above table showed that no significant statistical relationship between the level of satisfaction and level of benefits gained from the preoperative instructions at (0.23).

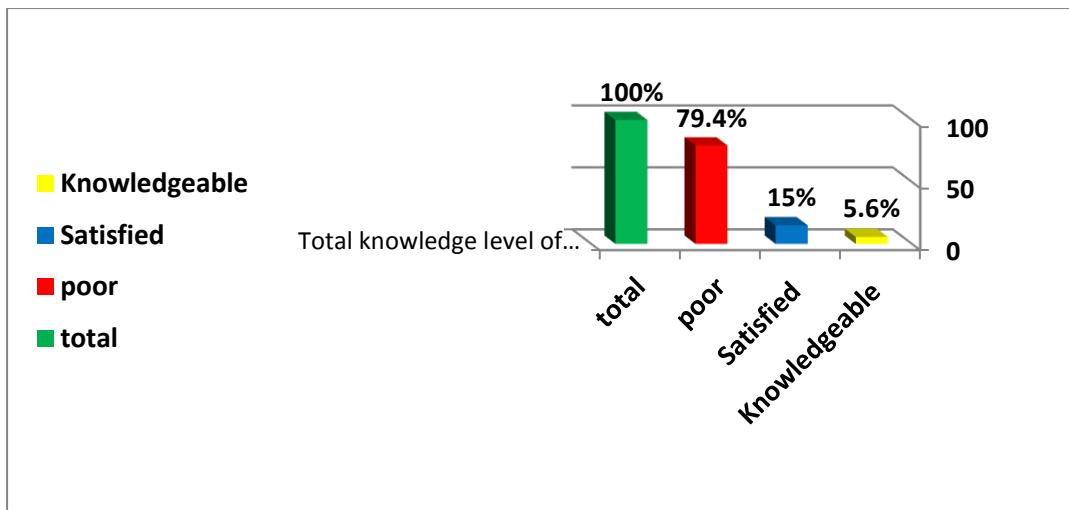
**Table NO (17) Cross tabulation between mobility after surgery and level of education.**

Level of Education	Mobility after surgery			Total	r. value	Sig.
	Early	Lately	Immobile			
▪ Illiterate	16	11	5	32	<b>18.84*</b>	<b>0.02</b>
▪ Primary	14	14	1	29		
▪ Secondary	9	23	0	32		
▪ Graduate	5	1	0	6		
▪ Postgraduate	0	1	0	1		
Total	44	50	6	100		

\*\*. Correlation is highly significant at the 0.01 level.

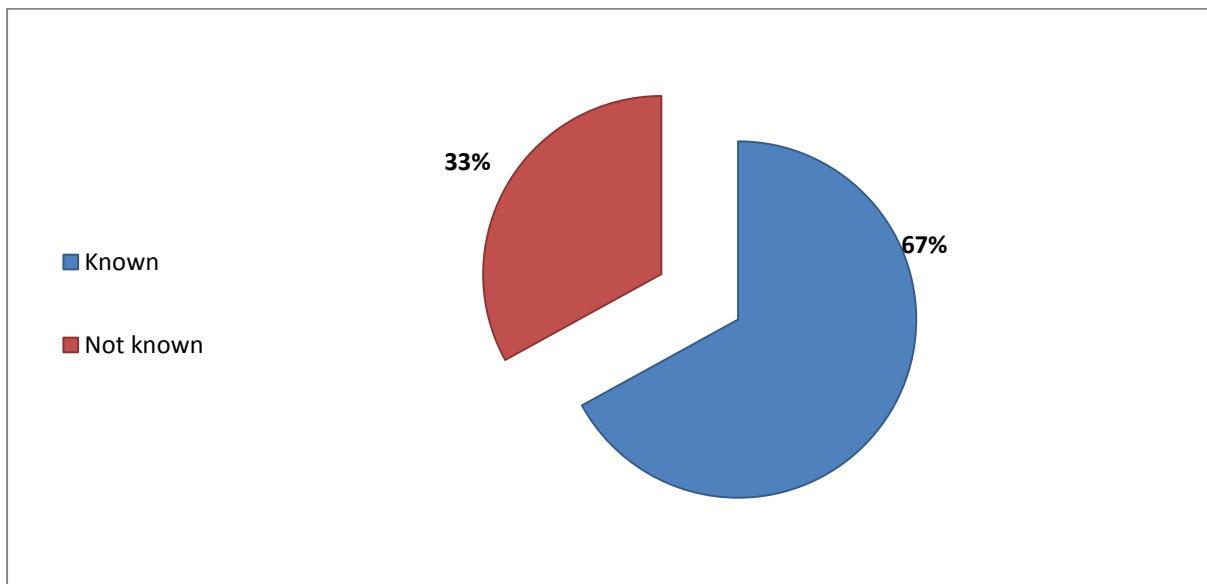
\* significant at 0.05.

The table above showed that significant negative weak relation between an education level of the study group and mobility after surgery at (0.02)



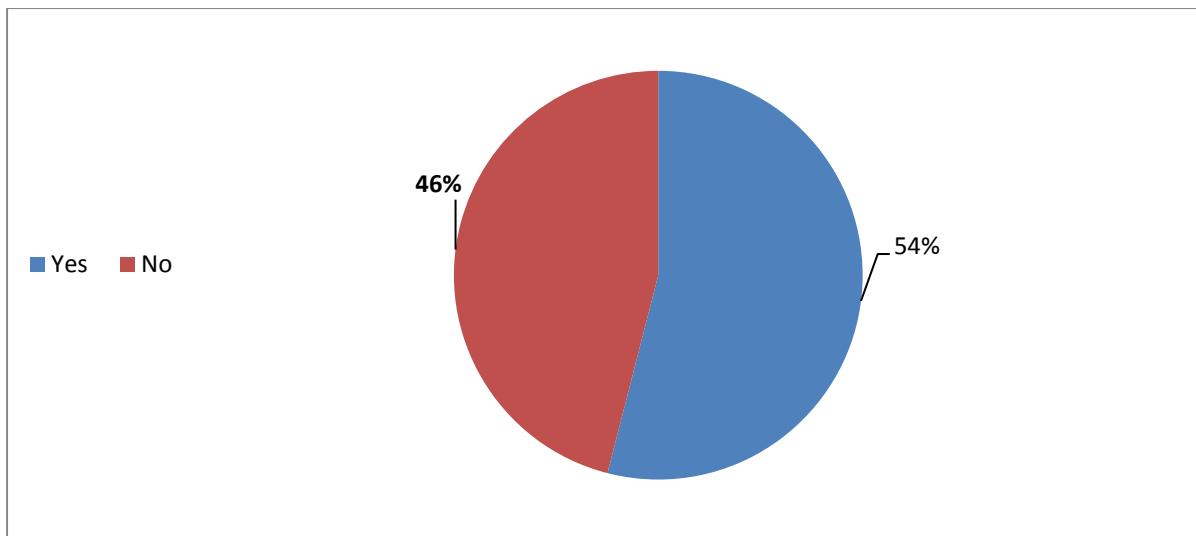
**Figure NO (1): Distribution of study group according to the knowledge regarding the importance of preoperative preparation. (N=100)**

The figure showed that (79.4) of study group had poor knowledge regarding the important of preoperative preparation.



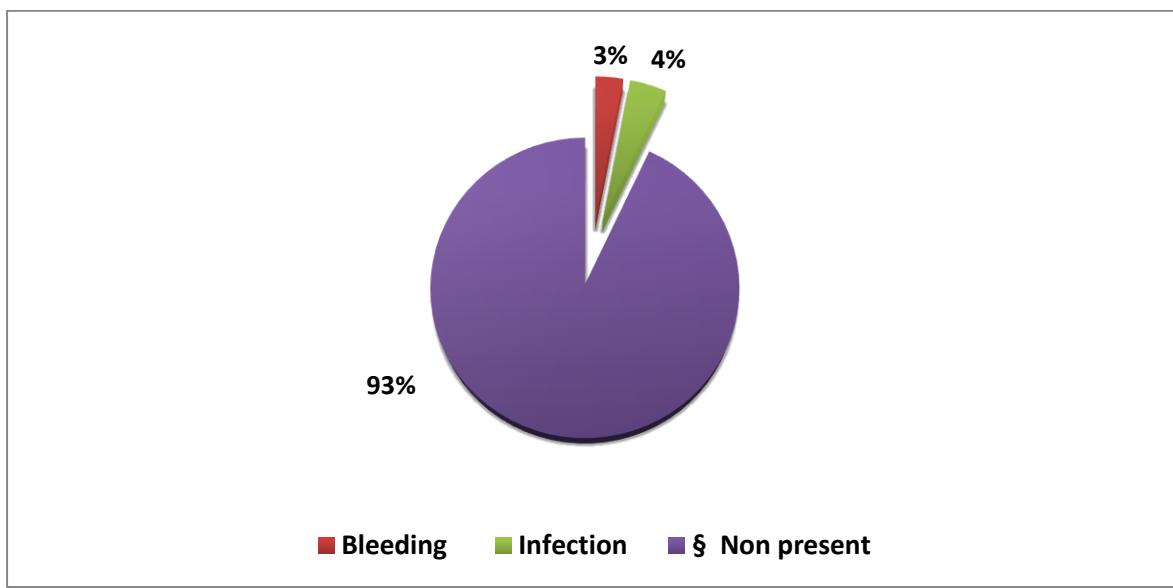
**Figure NO (2): Distribution of study group according to believe about preoperative fasting. (N=100)**

The figure showed that more than half (67%)of study group were believed that fasting before surgery is important, while (33%) had no known regarding the important of the fasting.



**Figure NO (3): Distribution of study group according to interesting compliance with preoperative fasting before the program. (N =100)**

The figure showed that (54%) of them had an interest to compliance for preoperative fasting. While (46%) of them had no interest in compliance regarding preoperative fasting.



**Figure NO (4) Distribution of study group according to their postoperative complication. (N=100)**

The figure showed that 93% of study group did not develop to postoperative complication.

## **5.1. Discussion**

Preoperative education empowers patients to decrease postoperative complication, increase patient satisfaction, reduce anxiety, and shorten the length of hospitalization. (**Adogwa et al,2017**).

The Study was included (100) patient, more than half (57%) of them were females and 43% were meals, more than half (57%) of the age above the fifty years, and less than half 43% below fifty years. Most of them were married (74 %). One third 32% of them were illiterate, a majority (77%) of them were prepared for major surgery.

The present study reflected that majority 79% of patients had no bad habits effect on anesthesia, more than half 65% of patients had no disease that needs special preparations. The evaluation of patient physiological status is essential to determine the need for special preparation mainly patient how to have the chronic disease.

The study reflected that varying anxiety level on preoperative phase which found that 69% of patient had reported moderate to high level of anxiety, and significant reduction on anxiety level was shown in postoperative phase, which found more than two-thirds 70% had reported no to mild anxiety. This reduction on anxiety level indicates that preoperative information provided had a significant impact to reassure and support patient psychologically. This finding is agreed with the line of conclusions of studies was conducted in Nigeria and India by (**Akinsulore et al, 2015;Lobo.2016**) concluded to the provision of adequately information help patient to reducing anxiety.

In addition to that, this study revealed that, significant negative correlation between postoperative anxiety and level of education,(sig = 0.03) the explanation, patients who receive little chance of education

confront difficulty for understanding and adherence with preoperative instruction and perform the exercise. the findings consistent of a study conducted by (**Nigussie et al 2014**). on other hand, our study finding contradicted with the result of the study in Pakistan by (**Jafar and Khan 2009**) "mentioned that positive correlation between anxiety and high level of education".

The study reflected that, more than two thirds (79.4%) of patients had poor knowledge about important of preoperative preparation such as fasting, bowel, bladder, skin, and exercise in the postoperative phase; this has a connection with the lake of experience of previous surgery and illiteracy state. In addition to that, the present study finding shown a significant negative weak association between benefited gained from postoperative exercise and patients knowledge; preoperative education content had improved patients awareness and skills on postoperative exercise; this finding agree with a line of result study by (**Priya, et al.2017**) reported; the preoperative instruction gains patient knowledge and improve the performance of the postoperative exercise.

The present study illustrate that, more than two-third 70% was experienced moderate to severe pain in first 4hours after surgery, after reassessment in next eight hours the pain level was reduction marked by most 82% of patients had reported no pain to mild level of pain and few 18% was reported moderate pain, moreover majority 87% of patients had pain medication one to two times during the first 24hours;the preoperative instruction provided on pain control and compliance of patients with exercise after surgery such as deep breathing help patients to be able to control pain, this finding was consistent with findings of studies by (**Oshodi,2007; O'donnell,2015;Chou et al,216;Tew,2018, Youssef and Hassan,2017**). "stated the provision information on preoperative exercise

and demonstrated patient about exercise effectiveness on reducing postoperative pain ".

Moreover, the recovery after surgery is the main nursing aspect, so the monitoring vital signs are most important during postoperative nursing care, the current study showed that increase in respiratory rate and blood pressure during the immediate postoperative phase. anesthesia and surgery may be responsible for this abnormality. After 8hure later the most of patients had been reported normal vital signs parameters. May due to pain controlled and the patient is full recovery from the effect of anesthesia. postoperative complication considered as an important change in the recovery of the patient, this study showed that most (93 %) of patients did not develop any postoperative complication. This finding is a good indicator for the effect of the preoperative information provided and demonstrating patient on postoperative exercise to reducing the potential complication. A similar finding was reported in the previous study, conducted by (**Lobo.2016**) to investigate the effectiveness of preoperative teaching in promoting postoperative outcome, which showed most 98.4% of patients did not develop to postoperative complication.

Furthermore, the current study found that more than half 54% of patients were discharged whiten 3days, and less than half 46% were discharged on 4 to7 days. This finding agree with line of studies by (**Shenson, et al,2017;Auer et al.201;Gustafsson et al,2018;Hussein and Taha,2018**) reported, preoperative instruction of patients had reduced the hospital stay after surgery. On another hand, our study results disagree with study finding by (**Kalogianni, et al,216**) indicated "the preoperative teaching minimize the postoperative complication but did not effectiveness on length" of hospital stay ".

Finally, the findings of our study had explained that half 50% of patients had full satisfaction, 47% had a good satisfactory level. in addition, most of the patients had gained a lot of benefits and rest reassured, this finding justifiable, enough information and explanations provided in the preoperative phase encouraged patient to be compliance with information. so, the patient has satisfaction and benefited after surgery. So is an important nursing responsibility to achievement optimal satisfaction level and benefits. This finding supported with previous studies (**Fasulo et al.2018;Best,etal,2018;White,2015**) suggest to, the provision preoperative education positively increase patient satisfaction and outcome. On the other hand, the study stated by (**Varghese,2009**) reported that "the poor satisfaction level can prompt poor adherence to treatment with therefore poor results. Which is not agree with our present study.

## **5.2. Conclusion**

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

- Majority of patients have poor knowledge about the importance of preoperative preparation and postoperative exercise. But most of them were gained a lot of benefit after the educational program.
- preoperative teaching program had a positive effect on reducing the severity of anxiety level.
- Preoperative instruction and demonstrating postoperative exercise effective on reduction postoperative pain
- Preoperative preparations effectiveness on patient satisfaction and length of hospital stay after surgery.
- Most 93% of patients did not develop to postoperative complication.
- A significant statistical negative relationship between postoperative anxiety and level of education.
- Significant negative weak relationship between postoperative mobilization and level of education.

### **5.3. Recommendations**

**Based on the conclusion, the following is recommended:**

1. Surgical nursing staff should provide proper explanation and counseling to be adherence with the care plan and promote outcome for elective surgical patient's
2. Hospital administrative should provide a facility for preoperative counseling and exercise demonstrating by simple methods to improve patient knowledge and behaviors.
3. The hospital should establish regular conference and training program about preoperative preparations for surgical nurses to improve quality of nursing care and patient satisfaction.
4. studies are needed to evaluate the effectiveness of preoperative education program on specific types of surgery .

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**University of shendi**

**Faculty of graduate studies and scientific research**

**Questionnaire for**

**Impact of The Preoperative Preparation on outcome among  
Patients Undergoing General Surgery in Elmal Nimer University  
hospital**

**Part e one: demographic and clinical Characteristics of patients.**

**(1) Age:**

- a. 18 - (      )
- b. 31 - (      )
- c. 41 - (      )
- d. 51 – 60 (      )
- e. Above 60 (      )

**(2) Gender:**

- a. Male (      )
- b. Female (      )

**(3) Educational level:**

- a. Illiterate (      )
- b. Primary school (      )
- c. Secondary school (      )
- d. Graduate (      )
- e. Post graduate (      )

**(4) Marital status**

- a. Single (      )
- b. Married (      )
- c. Divorced (      )
- d. Widow/widower (      )

**(5) Occupation:**

- a. Employee ( )
  - b. Free worker ( )
  - c. Retried ( )
  - d. House waif ( )
  - e. Jobless ( )

**(6) Place of Residence:**

- a. Suburban ( )
  - b. Rural ( )
  - c. Shendi City ( )

### **(7) Bad habits:**

- a. Smoking ( )
  - b. Tobacco ( )
  - c. Alcohol ( )
  - d. Never ( )

**(8) Have you any chronic disease:**

Disease	Mark
DM	
HIN	
Asthma	
Rheumatic disease	
Thyroid disease.	
Other	
<b>NO</b>	

**(9) Have you any previous surgery:**

<b>previous surgery</b>	<b>Once</b>	<b>Twice</b>	<b>Three</b>
Minor surgery			
Major surgery			
No			

**(10) Type of your present surgery:**

**1) What is type of anesthesia?**

**Part two: Patient knowledge about the important of the preoperative preparation.**

**(12) Do you think the preoperative fasting (NPO)is important?**

- a. Yes ( )
- b. Don't know ( )

**(13) What is the important of preoperative fasting?**

- a. Prevented Prolong recovery ( )
- b. Prevented Nausea postoperatively ( )
- c. Avoid vomiting during surgery. ( )
- d. Prevented Aspiration and postoperative complication ( )
- e. Don't know ( )

**(14) Are you compliant with preoperative fasting?**

- a. Yes ( )
- b. No ( )

**(15) Why the bowel preparation is important before surgery:**

- a. Prevent Infection ( )
- b. Prevent obstruction ( )
- c. Interrupt procedure ( )
- d. Prevent trauma to the intestine ( )
- e. I Don't know ( )

**(16) Why the bladder preparation (emptying \ catheterization) is important before surgery?**

- a. Prevent Infection ( )
- b. Interrupt procedure ( )
- c. Prevent trauma to the bladder ( )
- d. Promote comfort ( )
- e. I Don't know ( )

**(17) The skin preparations in the surgery day include:**

- a. Bathing ( )
- b. change into a hospital gown ( )
- c. Remove nail polish and make-up ( )
- d. Remove jewelry, dentures, glasses ( )
- e. I Don't know ( )

**(18) What is the importance of preoperative Instructions regarding exercise?**

Types of exercise	Benefits				
	Reduce pain	Reduce anxiety	Facilitate recovery and prevent complication	Providing comfort	I Don't know
Turning and lifting					
Massage					
Coughing and breathing					
Leg exercises					
Early Mobility					

**(19) What is the importance of the pain control after surgery?**

- a. Recover faster. ( )
- b. Reduce anxiety ( )
- c. Promote sleeping and comfort. ( )
- d. Eat batter ( )
- e. I Don't know ( )

### **Part three: postoperative assessment and follow up.**

**(20) Do the instructions you received:**

- a. Reassuring are enough ( )
- b. reassuring not enough ( )
- c. It has no significance ( )

**(21 A) level of your benefits gained from preoperative instructions?**

- a. I have benefited a lot ( )
- b. I have benefited a little ( )
- c. No benefit ( )

**(21 B) What are the reasons for the not benefiting?**

- a. I have no interest ( )
- b. Unclear instructions ( )
- c. Discomfort ( )

**(22) Benefits you gained from exercise?**

Types of exercise	Benefits				No benefits
	Reducing pain	Reducing anxiety	Facilitate recovery and prevent complication3	Providing comfort	
Turning and lifting					
Massage					
Coughing and breathing					
Leg exercises					
Early Mobility					

**(23) Vital signs postoperatively:**

Time	BP	RR	Temp	Pulse
Immediately P/O				
After 8h				

**(24) postoperative mobilization:**

Early (1 -6 h postoperatively)	Lately (more than 6hr postoperatively)	Immobile

**(25) Complication after surgery:**

Presence \types	Not presence

**(26) Length of hospital stay:**

1-3 days	4-7dayes	More than 7dayes

**(27) How many Times of o analgesics or painkiller been given after surgery:**

- a. Once ( )
- b. Twice ( )
- c. Three ( )
- d. More than three ( )
- e. not received ( )

**Appendix (B)**  
**State inventory anxiety form (SIA)**

<b>NO</b>	<b>Items</b>	<b>Not at al</b>	<b>A little</b>	<b>Somewhat</b>	<b>Very Much So</b>
1	I feel calm				
2	I feel secure				
3	I feel tense				
4	I feel strained				
5	I feel at ease				
6	I feel upset				
7	I am presently worrying over possible misfortunes				
8	I feel satisfied				
9	I feel frightened				
10	I feel uncomfortable				
11	I feel self-confident				
12	I feel nervous				
13	I feel jittery				
14	I feel indecisive				
15	I am relaxed				
16	I feel content				
17	I am worried				
18	I feel confused				
19	I feel steady				
20	I feel pleasant				

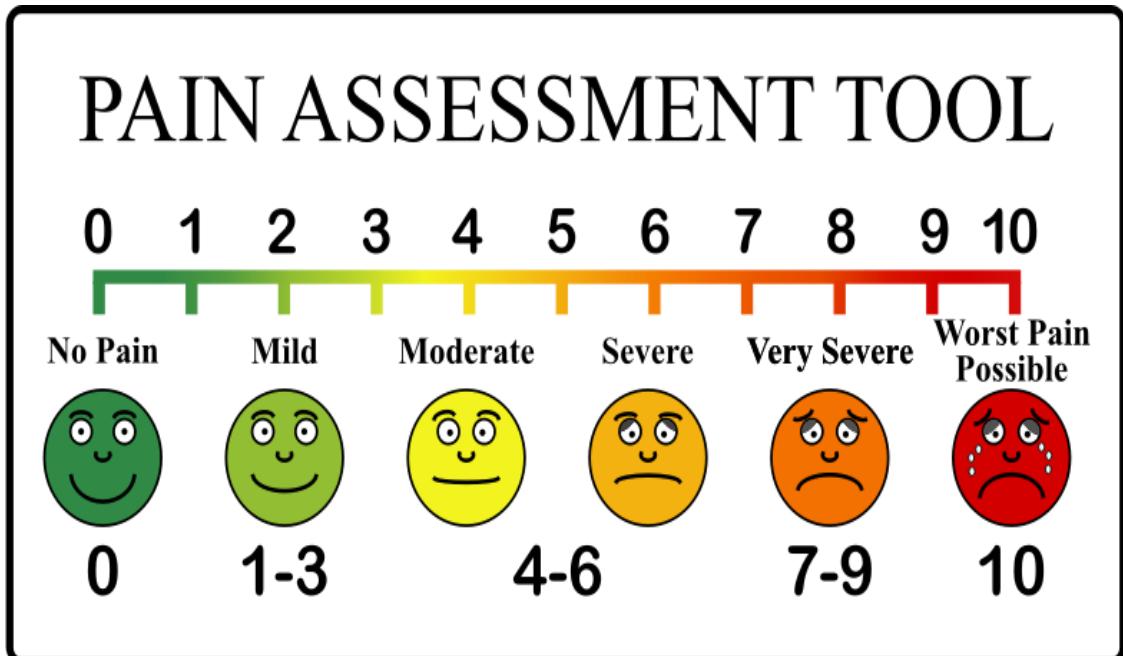
## Appendix (C )

### مقياس القلق الحالي للمرضى

الرقم	المقياس	على الاطلاق 1	قليلًا 2	بعض الشئ 3	كثيراً 4
1	أشعر بالهدوء				
2	أشعر بالأمان				
3	أشعر بالاستقرار والانتظام				
4	أشعر بالقناعة والاطمئنان				
5	أشعر بالراحة				
6	أشعر بالثقة				
7	انا مستريح				
8	أشعر بالرضي				
9	أشعر بالمتعة				
10	انا منزعج ومتضايق				
11	أشعر بالضيق				
12	انا منفعل وعصبي المزاج				
13	أشعر بالغضب				
14	انا متrepid وغامض				
15	انا قلق حالياً اكثر من اللازم على المصائب المحتملة				
16	أشعر بالإلارهاف				
17	انا مهموم				
18	انا في حيرة				
19	أشعر بالخوف				
20	أشعر بالتوتر				

**Appendix (D)**  
**Universal pain assessment tool (UPAT)**

NO ( )



Pain level	No pain	mild	Moderate	Sever	Very sever	Worst pain possible
4hr						
12hr						

**Appendix (E)**  
**(Karen instrument)**  
**For patient satisfaction**  
**NO ( )**

رقم	رضا المريض	لا أوافق بشدة	متردد	أوافق	أوافق بشدة
1	تلقيت شرح كافي عن العملية والتخدير				
2	تلقيت معلومات كافية عن أهمية الصيام قبل العملية				
3	تم تثقيفي عن كيفية تحضير الجلد قبل العملية				
4	تم تثقيفي عن كيفية التكيف مع الألم بعد العملية				
5	تلقيت نصائح كافية عن أهمية التمارين بعد العملية				
6	تم اخباري بمعلومات كافية عن المرض وعلاجه				
7	وجدت العلاج الكافي للألم بعد العملية من دون تأخير				
8	شعرت بالارتياح والعافية بسرعة من معاناة المرض بعد العملية				
9	أنا سعيد بالرعاية / العلاج هنا				
10	اتلقى الرعاية والمساعدة الازمة بدون تأخير				
11	كل شيء توقعته / تمنيته من رعاية وخدمة بهذه المستشفى وجدته				
12	الآن يمكنني العودة إلى البيت وأن أعتني بنفسي وأحافظ على مكان العملية				
13	الآن يمكنني العودة إلى البيت وأن أواصل حياتي ونشاطاتي السابقة				

## **Appendix (F)**

### **Guidance chick list for postoperative exercises**

#### **Coughing and breathing exercise**

**No ( )**

<b>Patient have to state that</b>	<b>Done</b>	<b>Not Done</b>
Ask the patient to sit up (semi-Fowler's position) and apply a folded bath blanket or pillow against the part of the body where the incision will be (e.g., abdomen or chest).		
Instruct the patient to inhale and exhale through the nose three times.		
Ask the patient to take a deep breath and hold it for 3 seconds and then cough out three short breaths.		
Ask the patient to take a breath through the mouth and strongly cough again two times.		
Instruct the patient that he or she should perform these actions every 2 hours when awake after surgery.		

**Guidance chick list for postoperative exercises**  
**postoperative leg exercise**

**No ( )**

Patient have to state that	Don	Not Done
<b>A. Ankle Pump</b>		
Put patient supine position.		
Bend your foot up towards your head.		
Bend your foot down towards the foot of the bed.		
<i>Repeat 5 times</i>		
<b>B. Ankle Circle:</b>		
Start with one foot in the dorsiflexed position.		
Slowly rotate the ankle clockwise.		
After three rotations, repeat the procedure in a counter clockwise direction.		
Repeat this exercise at least three times in each direction, then switch and exercise the other ankle.		
<b>C. Hip Flexion</b>		
Bend your knee by sliding your heel up toward your body.		
Slide your heel back down.		
<i>Repeat 5 times.</i>		
<b>D. Thigh Muscle Contraction</b>		
With your leg straight, tighten the muscles on the top of your thigh.		
Press the back of your knee down.		
Hold for 5 seconds and Relax.		
Repeat 5 times then repeat this exercise with the other leg.		

## اقرار الموافقة على المشاركة في البحث

إثر التحضير قبل العملية في نتائج العملية لدى مرضى الجراحة في مستشفى المك نمر الجامعي

**The Impact of The Preoperative Preparation on patients outcome among Patients Undergoing General Surgery in Elmal Nimer University hospital**

اسم الباحث: عيد صبر الامين

..... اسم المشارك ..... العمر ..... نوع العملية .....

## ▪ طبيعة واهداف البحث:

1. لتنفيذ برنامج تعليمي وتدريبى لمرضى الجراحة العامة
2. لتقدير مستوى معرفة المريض حول التحضيرات قبل العملية الجراحية
3. لتقدير إثر التحضيرات في نتائج العملية (القلق، الألم، المضاعفات، مدة الاقامة في المستشفى بعد العملية، رضا المريض).

## ▪ المدة التي يشارك فيها المريض:

سيشارك المريض ابتداءً من اليوم قبل العملية وحتى يوم الخروج من المستشفى بعد اجراء العملية.

## ▪ احتمالات الخطورة:

لا يتعرض المريض لأى تدخلات يؤدي الى حدوث ضرر او خطورة للمريض.

## ▪ الفوائد:

سيقوم الممرض بتعليم المريض كل التحضيرات الازمة وتدريبه على تمارين رياضية يساعد في تقليل المضاعفات والآلام بعد العملية.

## ▪ حق المشارك في التوقف عن المشاركة

للمريض الحق في التوقف عن المشاركة في أي وقت يراه مناسباً. مع حفظ حقه في الاستفادة الكاملة.

## ▪ سيتم تمهيل المريض أي معلومة او اجراء جديد عن البحث.

انا ..... بكامل وعي وبعد فهمي لطبيعة البحث واهدافه وكل الموجهات سالفة الذكر اوافق على المشاركة في هذا البحث، مع الاحتفاظ بحقي في التوقف في أي وقت .

..... اسم المشارك ..... التوقيع .....

..... اسم الباحث ..... التوقيع .....



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Shendi University  
Faculty of Graduate Studies & Scientific Research



النمر: ج/ش/ك دع/١٥/١

التاريخ: 18/10/2017 م

الأخ/..... سيد شنقريه بن نمير كي صحي

الموقر،

السلام عليكم ورحمة الله وبركاته

### الموضوع: تسهيل إجراءات دراسة دكتوراه

إشارة للموضوع أعلاه نفيدكم بأن الطالب/ عبد صبر الأمين علي من ضمن الطلاب المسجلين لنيل درجة الدكتوراه في علوم التمريض (تخصص تمريض باطنی جراحي).  
ونأمل في حسن تعاونكم مع كلية الدراسات العليا والبحث العلمي جامعة شندي، نرجو شاكرين تسهيل مهمته بغرض إجراءات البحث لتنفيذ الجانب العملي من رسالة الدكتوراه بعنوان:

The Impact of The Preoperative Preparation on Postoperative outcome  
on The Patient Undergoing General Surgery

ولكم فائق شكرنا وتقديرنا،،،

د. هويدا الهايدي أحمد الشفيع

مسجل كلية الدراسات العليا والبحث العلمي



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برنامج تعليمي تدريبي لمرضى الجراحة العامة  
إعداد| عيد صبر الامين  
طالب دكتوراه في تخصص التمريض الباطني الجراحي  
2017

**المقدمة:**

العملية الجراحية هي واحدة من اكتر الخيارات العلاجية التي تسبب القلق لدى المريض وايضا لا فراد الاسرة.

"دائما" معظم المرضى قد يخضعون للجراحة لأول مرة مما يؤدي الى الخوف الزائد وقلة المعرفة عن التحضيرات الازمة قبل العملية وكيفية التعامل بعد العملية مع التغيرات الفسيولوجية والنفسية.

التمريض الجراحي يلعب دورا "مهما" في تحضير المريض نفسيا" وفسيولوجيا" وذلك بتقديم الإرشادات والمعلومات الكافية عن العملية، دور المريض قبل العملية، الصيام، تحضير الامعاء والجلد وغيرها من التحضيرات الازمة بناءا" على حوجة المريض.

اثبت دراسات كثيرة على عدم الوعي الكافي بكل مراحل العملية قد تؤدي الى اضطرابات نفسية يؤثر سلبا" على وظائف الجسم الفسيولوجية مما يؤدي الى حدوث مضاعفات بعد العملية.

لذا قمنا بتصميم هذا البرنامج لتزويد المريض بكل المعلومات وتدريبه على التمارين الرياضية الازمة بعد العملية التي تساعد المريض في تقليل الالم والقلق ومن ثم الحصول على نتائج ايجابية ومرضية بعد العملية.

## اهداف البرنامج:

- يهدف هذا البرنامج الى تزويد مرضى الجراحة العامة بالتحضيرات الازمة قبل العملية الجراحية وتدريبه على كيفية عمل التمارين بعد العملية.

**الاهداف الخاصة:** ان يكون المريض قادر على فهم اهمية كل من التحضيرات ادناه ومن ثم الالتزام بها.

- لتزويد المريض بأهمية الصيام قبل العملية.
- لتنقيف المريض حول اهمية تحضير الامعاء والجلد.
- لتتوير المريض بأهمية التقييم الفسيولوجي (تقييم العوامل المؤثرة على التخدير، التحاليل، الاشعة، رسم قلب وغيرها من الاجراءات الازمة)
- لتعليم المريض بمعلومات عن بيئه العملية الجراحية (الأجهزة الطبية، التعقيم، الاصطاف وغيرها من المعلومات ذات الصلة بغرفة العملية).
- المريض يكون قادر على عمل التمارين ( التنفس العميق، المشي بعد العملية، تغير الوضعية في السرير) بنفسه بصورة صحيحة. وكيفية التأقلم مع الالم العملية.
- المحافظة على مكان جرح العملية.

## Content of preoperative educational program

<b>Section</b>	<b>Information included</b>	<b>Method</b>
<b>No 1</b>	- Welcome the patients - distribution the booklet and start to explain about sections of booklet.	
<b>No2</b>	Introduce about the preoperative phase and explain about:  Preoperative physiological assessment by evaluating General condition, history and examination, goal of anesthetist round.	Booklet,
<b>No 3</b>	Preparations: a. preoperative fasting, bowel preparations b. skin preparations (removing jewelry or prostheses, having shower and mouth care, donning a hospital gown), restrict shaving.	Booklet, photo, and videos
<b>No 4</b>	Introduce operation room environment and explain about a. Devise and equipment such as monitoring machine, anesthesia machine, Sterilization kits. b. Anesthesia and recovery c. Catheters, and tube according to needing.	Booklets, photos.
<b>No 5</b>	a. Advising about postoperative pain and important of pain control. b. Perform the deep breathing, cough, early mobilization, leg exercise turning and lifting. c. Advising regarding Operation wound, discharging.	Booklet, demonstrating and remonstrating, stand poster.
<b>No 6</b>	<ul style="list-style-type: none"> <li>○ Answer any question about information provided.</li> <li>○ Encourage patient to read booklet and adherent with instructions provided.</li> <li>○ Explain the follow up will be taken several days postoperatively.</li> <li>○ Thank patient.</li> </ul>	

**برنامج تعليمي تدريبي كامل حول التحضيرات الازمة قبل العملية.**

إعداد: عيد صبر الأمين.

طالب دكتوراه في تخصص التمريض الباطني الجراحي. جامعة شندي.

## **التحضيرات الازمة قبل العملية الجراحية**

من أهم العوامل التي تساهم على نجاح العملية والوقاية من المضاعفات بعد العملية هو الالتزام بالإرشادات قبل العملية ومن ثم القيام بكل التعليمات والتمارين الرياضية بعد العملية.

**التحضير للعملية يشمل الآتي:**

**اليوم قبل العملية:**

- أخذ التاريخ المرضي واجراء الكشف السريري بواسطة الطبيب والممرض كل حسب اختصاصه.
- اخصائي التخدير يقوم بمعاينة وسؤال المريض عن التاريخ المرضي، التدخين، الكحول وغيرها من الأسئلة التي تساعده في تقييم الحالة الصحية قبل العملية.
- توقيع اقرار بالموافقة على العملية من قبل المريض أو ولی أمره بعد اخذ شرح مفصل عن العملية.
- يتم تعليم المريض بعض تمارين الاسترخاء وكيفية التأقلم مع الألم بعد العملية الجراحية.
- مراجعة العلاجات التي يستخدمها المريض سابقاً ومن خلالها سوف يتم الأم بإيقافها أو الاستمرار فيها (يجب الالتزام بالإرشادات).
- إجراء فحوصات معملية مثل (البول / البراز / الدم) حسب الحالة الصحية للمريض وذلك لضمان السلامة الصحية.
- عمل أشعة وموجات صوتية (إذا لزم الأمر) وعمل رسم قلب.
- قياس العلامات الحيوية (مثل الحرارة والتنفس والنبض ومستوى ضغط الدم).
- قياس الوزن والطول (إذا لزم).

## 1. الصيام قبل العملية



### لماذا الصيام قبل العملية:

حين يخضع الإنسان للتخدير فإن الأدوية التي يتناولها قد تؤدي إلى تقلص المعدة وحدوث الغثيان والاستفراغ. ونظراً لأن الإنسان يفقد القدرة على إبقاء الطرق التنفسية مغلقة تحت التخدير العام فإن حدوث الاستفراغ سيؤدي إلى دخول محتويات المعدة إلى القصبات الهوائية وجري التنفس والرئة، مما يؤدي إلى حالة خطيرة تعرف باسم ذات الرئة الاستنشاقية، وهي حالة قد تكون قاتلة. ولذلك، وللحماية من حدوث هذا الاختلاط الخطير، يجب عليك أن تتوقف عن تناول الطعام قبل 8 ساعات من إجراء العملية أو حسب الإرشادات المقدمة من الممرض أو الطبيب.

### أهمية الصيام يتلخص في الآتي:

1. الوقاية من عملية الاسترجاع (دخول محتويات المعدة إلى جري التنفس).
2. الوقاية من حدوث الغثيان والاستفراغ بعد العملية.
3. الوقاية من حدوث أي مشكلات أثناء التخدير.
4. يساعد في سرعة الاستشفاء بعد العملية.

## 2. تحضير الجلد



1. قبل الذهاب لفراشك ليلة العملية يجب الاستحمام جيداً
2. لبس ملابس نظيفة (معسولة حديثاً).
3. التخلص من المكياج (للنساء) وعدم استخدام أي نوع من الكريمات والمرادهم.
4. ازالة المجوهرات والحلي (للنساء)، والعدسات اللاصقة (إذا وجد)
5. التخلص من الشعر مع مراعاة عدم حلق الشعر في مكان العملية (سوف يتم حلقها داخل غرفة العملية). وذلك للوقاية من حدوث عدوى إذا حدث فيها أي جرح أو خدوش.
6. الاستحمام صباح يوم العملية مرة أخرى.

### ٣. تحضير الأمعاء والمثانة:



❖ الهدف من تحضير الأمعاء هو إفراغ وتنظيف الأمعاء وذلك يساعد في تجنب حدوث العدوى والمضاعفات.

#### قبل يوم العملية:

- تناول الأطعمة التي تحتوي على الخضروات.
- شرب كمية كافية من الماء.

#### يوم العملية:

- الذهاب إلى دورة المياه وتفریغ الأمعاء (التبرز).
- أحياناً يحتاج المريض إلى اخذ (حقنة شرجية) وذلك يكون في الصباح الباكر من يوم العملية (الساعة الرابعة صباحاً) ويشترط الاستحمام بعدها.

#### أهمية تنظيف وافراج الأمعاء قبل العملية

1. الوقاية من حدوث عدوى.
2. تقليل حدوث الاستقراغ والغثيان بعد العملية.
3. الوقاية من حدوث اضطرابات أثناء العملية الجراحية.
4. الوقاية من حدوث اصابة او تعطل في وظيفة الأمعاء

## غرفة العمليات



- بعد الانتهاء من التحضيرات سوف يتم اخذك الى غرفة الانتظار في قسم العمليات بواسطة الممرض.
- يتم تغيير ملابسك بملابس اخرى (معقمة) أشبه بما يلبسه الطاقم الطبي لسلامتك الصحية والوقاية من انتقال العدوى.
- في غرفة العمليات سوف يتم تنويمك في سرير خاص بالعملية.
- هناك العديد من الاجهزه الطبية والانوار المضيئة.
- سوف يتم تركيب (قسطرة وريدية، قسطرة بولية، جهاز لمتابعة العلامات الحيوية) داخل غرفة العمليه.

## بعد العملية



يشمل الاتي

- العناية التمريضية بعد العملية (داخل غرفة الانعاش او عنبر الجراحة)
- التمارين اللازمة بعد العملية
- التحكم في الألم الناتج من العملية
- المحافظة على مكان العملية الجراحية (الجرح)
- الخروج من المستشفى.

## الرعاية التمريضية في غرفة العناية بعد التخدير أو عنبر الجراحة (Post Anesthesia Care Unit)



- عند الانتهاء من اجراء العملية سيتم نقل المريض الى غرفة الانعاش او الى غرفة خاصة او عنبر الجراحة العام.
- قياس العلامات الحيوية (الحرارة، النبض، التنفس وضغط الدم) بواسطة ممرض مسؤول من متابعة الحالة.
- ربما توجد قسطرة بولية للمساعدة في التبول دون حاجة للذهاب الى دورة المياه (الحمام)، حتى تتمكن من الحركة والذهاب الى دورة المياه (الحمام) بنفسك.
- سيكون في احدى اليدين قسطرة وريدية (فراشة) يتم بواسطتها اعطاء المريض المحاليل الوريدية (الدربات) .
- يتم اعطاء المريض اوكسجين علي حسب الحاجة لذلك.
- عدم تناول أي شيء بالفم حتى يتم ابلاغ المريض بواسطة الطبيب او الممرض المسؤول من الحالة.
- سيتم مراجعة مكان العملية من قبل الممرض من أجل الاطمئنان على سلامة المريض.

## التمارين بعد العملية

1. تمارين التنفس
2. تمارين الكحة
3. تمارين الأرجل
4. تمارين المشي.

## التنفس العميق

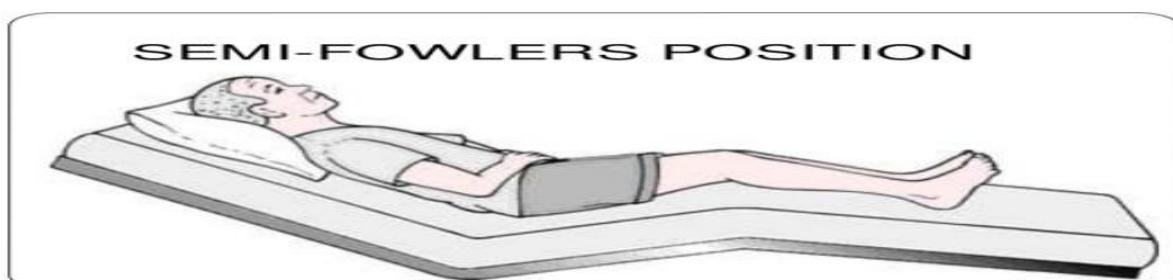
فوائد تمارين التنفس العميق بعد العملية :

- ينشط عمل الرئتين .
- يقلل من احتمالية حدوث مضاعفات متعلقة بالجهاز التنفسي مثل السعال
- يقلل من الألم .

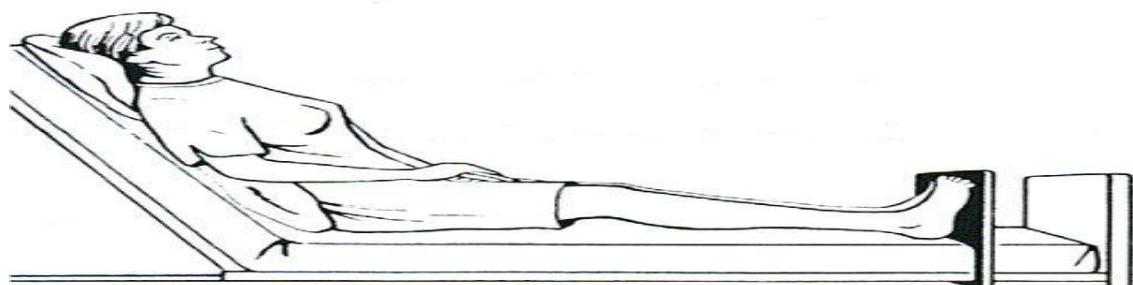
## الوضعية الصحيحة :

يفضل احدى الوضعيين ادناه : وضع شبه الجلوس أو الجلوس.

(1)



(2)



## الطريقة

- ضع يديك على بطنك واسترخي تماماً.
- استنشق بعمق عن طريق الانف واملاً بطنك ثم رئتيك بالهواء وعد الي (3 او 5) ثم الزفير ببطء عن طريق الفم وفرغ رئتيك تماماً" من الهواء.
- كرر الخطوات السابقة مرتين او تلات كل ساعة .



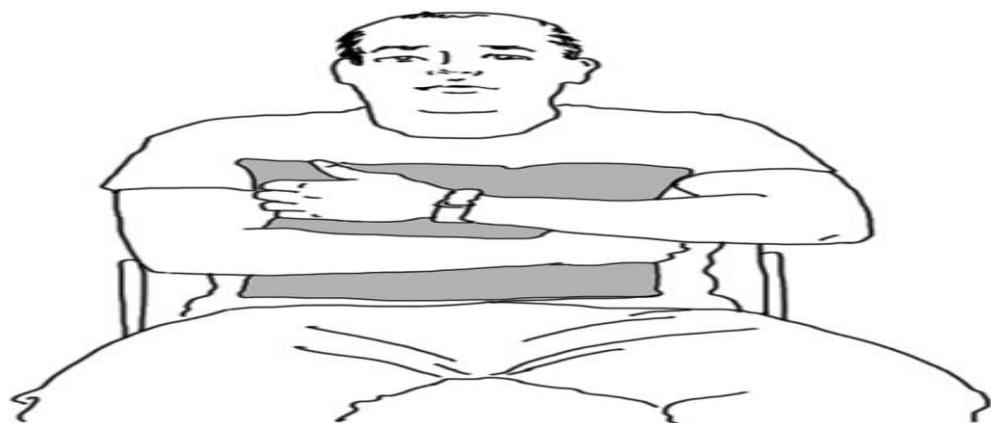
## تمارين الكحة

### فوائد تمارين الكحة:

- يقلل من مضاعفات الجهاز التنفسي
- يساعد في جعل الرئة نظيفة وخالية من البلغم.

### الطريقة :

- يجب أن تكون في وضعية شبه الجلوس او الجلوس
- ضع في مكان العملية (مذكرة) واضغط عليها برفق ثم استنشق بعمق لمدة 3 ثواني ثم كح بعمق مرتين أو ثلاث مرات
- كرر العملية مرتين أو ثلاث كل ساعة



## الحركة بعد العملية أو المشي

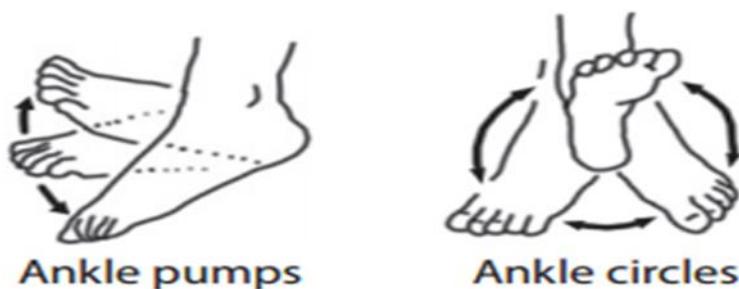


- الاهتمام بالحركة بعد العملية يساعد على سرعة الشفاء ويساعد في النتائج الإيجابية للعملية وذلك بتقليل المضاعفات التي تنتج من عدم الحركة مثل ضعف وضمور العضلات وتجلط الدم.
- في اليوم الأول للعملية يمكنك الحركة ان تطلب مساعدة الممرض او أحد اقرباءك حتى تستطيع أن تقوم بالحركة بنفسك.
- يجب أن تكون الحركة على مسافات قصيرة (حول العنبر او الغرفة) مع تكرار الحركة خلال اليوم معأخذ قسط من الراحة بين كل مرة.

## تمارين الارجل

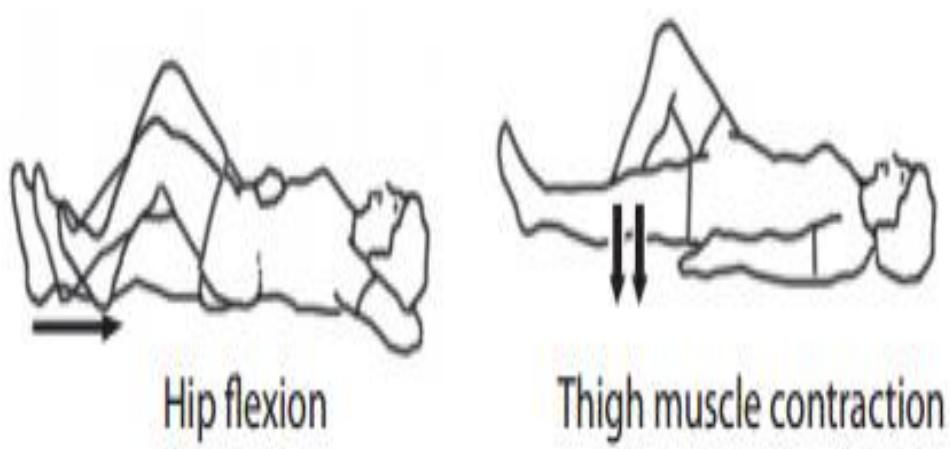
### ❖ فوائد تمارين الساق:

- تنشيط الدورة الدموية والوقاية من جلطات الدم .
- الحفاظ على عضلات قوية، وحماية المفاصل من التصلب.



تمارين الكاحل بالحركة الدائرية

تمارين الكاحل بالحركة يميناً ويساراً

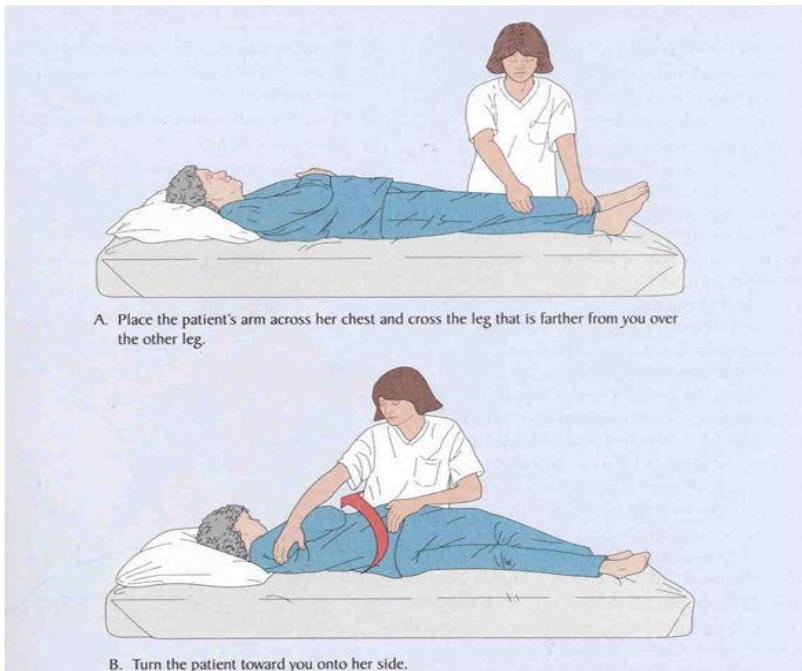


تمارين شد عضلات الفخذ

تمارين ثني الورك

## الحركة في السرير(تغير الوضعية)

# TURNING A PATIENT



### ❖ أهمية تغير الوضعية كل ساعتين:

- تنشيط الدورة الدموية في الاطراف (اليدين والأرجل ) وكل أجزاء الجسم .
- الوقاية من حدوث شد أو تصلب .
- تحفيز وظائف الجهاز التنفسى .
- الوقاية من قرح السرير .
- تحفيز عمل الجهاز الهضمي ويقلل من ركود الغازات .

## الألم بعد العملية



- أحياناً بعد العملية يشعر المريض بعدم راحة نسبة للألم الناتج من العملية.
- يجب التحكم في الألم للحصول على الراحة والمقدرة على مزاولة النشاطات وعمل التمارين .
- عند الشعور بالألم يجب تبليغ الممرض .  
سوف يقوم الممرض بإعطاء المريض مسكن للألم عن طريق الأبر أو إقراص من الحبوب يساعد في تخفيف الألم.

### ❖ طرق بديلة تساعدك على التحكم في الألم

- عمل الكمادات الباردة .
- عمل تمارين التنفس .(نفس الخطوات السابقة ) .
- المساج في الأطراف

### ❖ أهمية التكيف والتحكم في الألم بعد العملية

- يساعد في تناول الأكل بصورة أفضل.
- يساعد في النوم جيدا"
- التنفس بصورة أفضل مما يقلل من حدوث مضاعفات الجهاز التنفسي بعد العملية .
- الاستنشاء في زمن أسرع .
- يقلل من مستوى القلق.

## ❖ حدة الالم

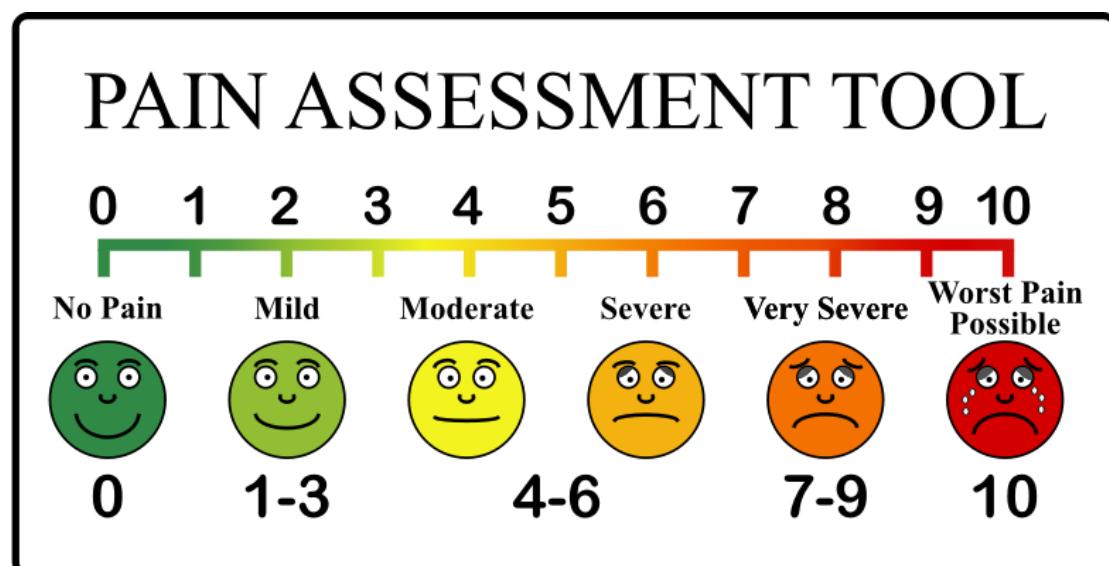
- اهم جزئية في معالجة الالم هي معرفة تحديد مستوى الالم ويتم ذلك عن طريق استخدام مقاييس معين يقيس مستوى الالم لدى المريض ويمكن استخدامه من قبل المريض نفسه لتقدير درجة الالم ، مما يساعد ذلك في اخذ العلاج المناسب.

## ❖ طريقة تحديد مستوى الالم

- يسأل المريض عن درجة الألم لديه بناء على مقاييس(1-10) (مقاييس درجة الالم)
- عند ما يسأل الممرض عن ماهي درجة الالم ، حدد مستوى الالم لديك باستخدام الارقام التالية .

كل رقم يدل على مستوى ألم ، كما مبين أدناه:

- 0 - لا يوجد ألم
- (3 1) الم بسيط
- (6 4) الم متوسط
- (9 7) الم حاد جدا
- ( 10 ) الالم شديد للغاية



## **ارشادات عامة حول التحكم في مستوى الالم:**

- يجب الحفاظ على مستوى اقل من (4). (مستوى الم بسيط او منعدم).
- متابعة مستوى الالم وابلاغ الممرض مع بداية الشعور به، يحسن من أداء النشاطات (المشي والجلوس وتناول الطعام) بصورة أفضل.
- يجب ابلاغ الممرض قبل ان يزيد الالم ويتحكم في أداء النشاطات.
- مسكنات الالم تعمل بفاعلية إذا تم أخذها قبل زيادة شدة الالم.

## **ارشادات مهمة للحفاظ على مكان العملية الجراحية بعد العملية (الجرح)**

- المحافظة على ابقاء الجرح جافاً " وعدم دخول الماء فيه عند الاستحمام.
- عدم لمس مكان الجرح باليد والاهمام بلبس الملابس النظيفة.
- عدم استخدام الأعشاب (العلاجات البلدية) في مكان الجرح.
- الاهتمام بمتابعة الطبيب واجراء العيارات في زمنه المحدد.
- عدم حمل الاشياء الثقيلة.

## **الخروج من المستشفى بعد إجراء العملية:**

- يتم اخراج المريض من المستشفى بواسطة الطبيب المسؤول من حالته وذلك اعتماداً على:
  - الحالة الصحية للمريض.
  - نوع العملية (يختلف على حسب نوع العملية).
- 

مع تمنياتي لك بالشفاء العاجل،

عبد صبر الامين،