Student number-**860-597-1**

DECLARATION

I declare that "The perceptions of patients and nurses regarding preoperative education given to orthopaedic patients undergoing elective surgery" is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

_____ _____

SIGNATURE
(MS C CHETTY)

DATE

Dedication

This work is dedicated to my late sister Anita, my mother, Lily

and

niece Katarina Chetty as well as to all the patients undergoing surgery.

ABSTRACT

Objectives: to explore and describe the perceptions of patients and nurses regarding preoperative education given to orthopaedic patients undergoing elective surgery.

Research design: a non-experimental, descriptive and quantitative research design.

Sample: The study was conducted in three phases. In phase 1 of the study, a non-random convenience sampling technique was used to select orthopaedic patients. In phase 2 and in phase 3 of the study, a non-random purposive sampling technique was used to select operating room nurses and orthopaedic ward nurses.

Method: structured interviews were conducted with 50 orthopaedic patients undergoing elective surgery, 20 operating room nurses and 10 orthopaedic ward nurses from the two provincial hospitals in Kwazulu-Natal Province.

Findings: most patients found pre-operative information to be useful in preparation for surgery. However, information on some aspects of post-operative care was lacking. Operating room nurses and orthopaedic ward nurses were faced with challenges when conducting pre-operative visits and education but acknowledged the benefits of pre-operative visits and education to patients.

Keywords: patient , operating room nurse, ward nurse, perception, preoperative education, preoperative teaching, orthopaedics.

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List of abbreviations

RSA	**Republic of South Africa**
SANC	**South African Nursing Council**
UK	**United Kingdom**
Unisa	**University of South Africa**
USA	**United States of America**
WHO	**World Health Organization**

LIST OF ANNEXURES

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CHAPTER 1

Introduction and background information

1.1 INTRODUCTION

Surgery is a unique experience for each patient. Although some operations are considered to be minor procedures, surgery is always a major experience for the patient and family. Patients undergoing surgery experience some degree of fear and anxiety. Many patients are anxious because they simply do not know what to expect. Through pre-operative education, the patient becomes knowledgeable about his surgery and a willing member of the health care team.

Regardless of the type of surgery being performed, the nurse plays an important role in preparing the patient for surgery, caring for the patient during surgery and facilitating the patient's recovery following surgery. This care encompasses a personalised, patient oriented approach to care. This is achieved through applying the nursing process comprising assessing, planning, implementing, evaluating and recording nursing care, supplemented by judgement, skills and interpersonal competencies.

Pre-operative education provided through pre-operative teaching, is regarded as an important part of peri-operative nursing practice, including pre, intra and post-operative care that contributes to the continuity of total patient care. This provides the nurse with an opportunity to learn about the patient and to establish rapport before the patient is taken to the operating room (Phillips 2004:368).

Pre-operative education offers benefits because it:

- promotes continuity of care
- enables the nurse to develop an individualised care plan for the patient
- reduces patients' anxiety
- improves patients' understanding of their disease process and the operation thereby increasing patients' participation in their care
- prevents postoperative complications

- impacts positively on patients' post-operative recovery

In the light of the preceding statements, pre-operative education should offer advantages to both patients and nurses. However, pre-operative teaching and education are not being conducted by nurses on a regular basis in the hospitals where this research was conducted. As a nurse educator teaching Operating Theatre Nursing, it was noticed that those patients who did not receive pre-operative visits and education, appeared to be more anxious than those who had received such pre-operative education from nurses.

This has prompted the researcher to ask the following three questions:

- How do patients perceive pre-operative education prior to their scheduled surgery?
- How do operating room nurses experience conducting pre-operative teaching?
- How do ward nurses perceive pre-operative education?

1.2 BACKGROUND INFORMATION

Hospitalisation creates fear and anxiety in patients. According to Perry and Potter (2002:959), anxiety can interfere with the effectiveness of anaesthesia and the ability of patients to participate actively in their care. Pre-operative anxiety has an effect on the post-operative recovery of the patient causing stress, pain and increased anxiety levels (Clancy, McVicar & Baird 2002:219).

Pre-operative teaching is essential for patients undergoing any surgical procedure. The nurse's involvement in the pre, intra and postoperative periods of the patient's surgical experience allows her to coordinate the patient's nursing care. She assists the patient and family in the management of anxiety. The nurse instructs the patient and the family members about post-operative exercises and procedures such as checking dressings and obtaining vital signs. Pre-operative teaching reduces the patient's apprehension and fear, increases the patient's co-operation and participation in postoperative care and decreases the incidence and severity of postoperative complications (Ignatavicius,

Workman & Mishler 1999:321-322; Lee & Chien 2002:1). According to Ignatavicius et al (1999:314) patients have ranked psychosocial support as the most important component of pre-operative teaching. A patient who is well informed and educated is able to anticipate events, maintain self-control and is less anxious than those who received no pre-operative education.

Spalding (2004:152) mentions that the knowledge derived from pre-operative teaching enables patients to feel confident because they know what to expect. In this way, patients are able to take control of their health and well-being.

According to Smith, Duell and Martin (2004:219), nurses need to take an active part in the psychological and physiological preparation of surgical patients. This is when the nurse instructs the patient on pre-operative methods to reduce stress, explain the operating room experience, the use of special equipment and what to expect in the postoperative period. Operating and recovery room personnel could be better prepared for the patient and the surgery if the patient had received pre-operative education.

According to a study conducted by Mordiffi, Tan and Wong (2003:561), the patient is identified as the central focus. If it is known what is important to patients, this information will enhance communication between patients and nurses. Pre-operative education is a means of providing this information. Walsh (2003:168) mentions that giving information and explanations together with answering a patient's questions when engaging in pre-operative teaching reduces anxiety, postoperative pain and promotes recovery.

A study conducted by Mhango and Bruce (2002:33) on pre-operative information given to patients scheduled for elective surgery in Malawi indicated that as many as 51% of patients interviewed, preferred to be informed by the operating room nurse about their forthcoming surgical procedures and immediate post-operative expectations.

Majasaari, Sarajarvi, Koskinen, Autere and Paavilainen (2005:1030) confirm that patients and family members are likely to experience stress during a surgical procedure. However, family members have an impact on the well-being of a patient in hospital. Family members who receive pre-operative information, are more actively involved in

the surgical experience and express fewer negative feelings. The goals of the project undertaken by Majasaari et al (2005:1031), was to describe the information and emotional support provided to family members of patients who were to undergo surgery. Emotional support to family members can strengthen a family's integrity and functioning. The authors concluded by stating that nurses need to be sensitive, perceptive and present to listen to and assess the patient as a unique person in a family with unique needs (Majasaari et al 2005:1038).

The main objective of a pre-operative visit is to initiate and maintain communication between the nurse, patient and the family. The nurse is able to establish rapport, teach and reassure the patient and family. According to McGarvey, Chambers and Boore (2004:1110), most operating room nurses believed that pre-operative teaching done during pre-operative visits were important for surgical patients. However, several factors influenced them to conduct pre-operative visits. Sometimes, the heavy workload prevented the nurses from conducting these visits. At times there were only limited numbers of nurses on duty as the absenteeism rate was high. Some surgeons prevented nurses from visiting their patients. Nurses reported that conditions in the wards made it inappropriate for them to conduct pre-operative visits. Wards were busy and patients were sitting in the corridors because of bed shortages. At one site, however, pre-operative visits did occur frequently as a result of the support of a senior clinical nurse who had an influence in motivating operating room nurses (McGarvey et al 2004:1110-1111) to conduct pre-operative visits.

Studies conducted on pre-operative patient teaching and education, focussed on the benefits and effectiveness of pre-operative patient teaching and education (Spalding 2004:147), the effect of structured pre-operative educational programmes on patient outcomes (Prouty, Cooper, Thomas, Christensen, Strong, Bowie & Oermann 2006:257) and patient satisfaction with discharge planning (Fielden, Scott & Horne 2003:429). This study is unique in that it will explore the perceptions of patients and nurses regarding pre-operative education given to orthopaedic patients undergoing elective surgery.

1.3 RESEARCH PROBLEM

According to Castledine and Reed (2004:41), pre-operative patient education reduces postoperative anxiety and complications. This study was conducted at two provincial hospitals in the KwaZulu-Natal Province. This problem needed to be addressed, as patients who do not receive education pre-operatively are more likely to become confused, angry and depressed in the postoperative period. This will have an impact on patient care and costs. This study was conducted to ascertain the perceptions of patients and nurses regarding pre-operative education given to orthopaedic patients undergoing elective surgery.

1.4 PURPOSE OF THE RESEARCH

The main purpose of this study was to explore and describe the perceptions of patients and nurses regarding pre-operative education given to orthopaedic patients undergoing elective surgery.

1.5 RESEARCH QUESTIONS

In order to address the purpose of this study, the following research questions were identified:

- What pre-operative information do orthopaedic patients receive?
- Who provided information to orthopaedic patients?
- Did the information provided to orthopaedic patients help them with their post-operative adaptations?

1.5.1 Research objectives

In order to meet the purpose of this study, the following research objectives were identified:

- Describe what pre-operative information is given to orthopaedic patients

- Determine who provides pre-operative information to orthopaedic patients
- Determine the effect of pre-operative information on the postoperative adaptations of orthopaedic patients

1.6 SIGNIFICANCE OF THE STUDY

Patients with high levels of anxiety frequently experience difficulty in the post-operative period. They are more likely to be angry, confused and depressed (Uddin, Abdullah, Kurkuman, Jamil & Iftikhar 2002:4). It is hoped that the findings of this study will highlight the benefits of pre-operative education to both patients and nurses. This in turn will encourage nurses to come into contact with their patients by making the effort to conduct regular pre-operative education. This will enable patients to be better prepared for the surgical experience.

1.7 ETHICAL CONSIDERATIONS

Permission to conduct the study was obtained from the institutions where the data were collected and from the KwaZulu-Natal Provincial Department of Health. Written permission was obtained from each participant. Patients and nurses were given time to read the consent form and ask questions before consenting to participate. A thorough explanation of the study was provided. To ensure anonymity and confidentiality, numbers were used instead of names and all data were secured under lock and key.

1.8 SCOPE AND LIMITATIONS OF THE STUDY

The findings of this study will not be generalisable to all patients undergoing elective surgery as this study did not include pre-operative patient education in all fields of nursing. This study dealt with patient education given to orthopaedic patients undergoing elective surgery. Secondly, non-English speaking participants were excluded from the study. Therefore the results cannot be generalised to all groups of people. Only two race groups were included, namely Blacks and Indians because these were the only population groups using the services offered by the two hospitals that participated in this research. Consequently the results obtained from this study will not be generalisable to all population groups of the KwaZulu-Natal Province. Only provincial

hospitals participated in this study. Therefore the results cannot be generalised to private hospitals.

1.9 DEFINITIONS OF KEY TERMS USED IN THE RESEARCH REPORT

Nurse. Refers to a person who is qualified in the art and science of nursing who meets certain prescribed standards of education and clinical competence (Weller 2005:274) and is registered with the South African Nursing Council (SANC). In this study, a nurse refers to an operating room nurse and a ward nurse who provides pre-operative information to the patient.

Operating room nurse. Refers to any full or part-time registered nurse assigned to work in the operating room. For the purpose of this study, an operating room nurse refers to a scrub nurse or recovery room nurse assigned to work in the operating room.

Ward nurse. In this study, a ward nurse refers to a registered nurse working in the orthopaedic ward.

Patient. A "patient" will refer to a recipient of care in a hospital (Smeltzer & Bare 2004:5) but in this study only patients undergoing elective orthopaedic surgery will be included.

Perception. Refers to an ability to become aware of something. In this study, "perceptions" will refer to awareness and understanding of an idea that has been presented to the senses (Weller 2005:297).

Pre-operative education. Is the process of informing patients about their condition, surgery and postoperative care and instructing them on adherence to a treatment regimen (Spalding 2004:147).

Pre-operative teaching. Involves assisting a patient with understanding and mentally preparing the patient for the surgical experience (Elkin, Perry & Potter 2004:496).

Orthopaedics. Refers to deformities, injuries and diseases of the bones and joints and also involves muscles, tendons, ligaments, bursae, nerves and blood vessels (Adams & Hamblen 2001:1). This branch of surgery may involve operation, manipulation, traction or prostheses (Martin 2003:492). In this study, orthopaedic surgery refers to surgery pertaining to the bones, joints, muscles, tendons and ligaments.

Pre-operative visit. Refers to a pre-operative assessment of the patient undertaken by the operating room nurse (Phillips 2004:368). For the purpose of this study, it refers to the period of not less than one day preceding the performance of a surgical procedure.

Peri-operative period. Refers to the period of time that constitutes the surgical experience. It includes the pre-operative, intra-operative and post-operative phases of patient care (Phillips 2004:17).

Pre-operative period. Is the period of time when the decision to proceed with the surgical intervention is made and ends with the transfer of the patient onto the operating room table (Smeltzer & Bare 2004:399).

Intra-operative period. Refers to the time when the patient is transferred onto the operating room table and ends when the patient is taken to the recovery room (Smeltzer & Bare 2004:399).

Post-operative period. Is the period of time that begins with the admission of the patient to the recovery room and ends after a follow up evaluation in the ward (Smeltzer & Bare 2004:399).

1.10 ORGANISATION OF THE RESEARCH REPORT

The report of the study has been outlined in the following manner:

Chapter 1 introduced the study and provided background information on pre-operative education. It also included the statement of the problem, the purpose of the study as well as the research questions and objectives. Significance of the study, ethical considerations and limitations of the study have also been highlighted. Definition of terms used in the research report have been provided.

Chapter 2 discusses the literature review on pre-operative education and teaching, the pre-operative information that orthopaedic patients receive, who provided information to orthopaedic patients and the effect of pre-operative information provided to orthopaedic patients on their post-operative adaptations.

Chapter 3 outlines the research methods that were adopted by the researcher for this study.

Chapter 4 presents the data analysis and a discussion based on structured interviews conducted with patients.

Chapter 5 presents the data analysis and a discussion based on structured interviews conducted with operating room nurses and orthopaedic ward nurses.

Chapter 6 provides conclusions, limitations and recommendations for pre-operative education to be conducted on a regular basis and to identify areas that may need further research.

1.11 SUMMARY

This chapter presented a background on the need for a patient oriented approach to care which could be accomplished through pre-operative education and teaching. In the next chapter, a literature review will be presented.

CHAPTER 2

Literature review

2.1 INTRODUCTION

This chapter deals with a literature review on studies pertaining to pre-operative teaching and pre-operative education. Polit and Beck (2004:88) state that a literature review offers an orientation into what is known and not known about an area of inquiry and determines what research can contribute to the existing knowledge base. Burns and Grove (2005:93) further mention that a literature review conveys what is currently known regarding the topic of interest. This, according to Gerrish and Lacey (2006:19), involves systematically searching out and evaluating all research that has been published on a particular topic.

In this study, the purpose of the literature review was to obtain information on pre-operative teaching and education conducted prior to a patient undergoing elective surgery. The literature was reviewed to locate and analyse relevant information that could assist in answering the research questions that guided this study, namely:

- What pre-operative information do orthopaedic patients receive?
- Who provided information to orthopaedic patients?
- Did the information provided to orthopaedic patients help them with their post-operative adaptations?

The literature review will be discussed under the following headings:

- Firstly, literature on pre-operative teaching and education will focus on information given to the patient before surgery and the effects of pre-operative education on patients' post-operative recovery.
- Secondly, literature on pre-operative information given to orthopaedic patients will focus on pre-operative information received by orthopaedic patients, persons who provided information to orthopaedic patients and the effect of pre-operative information on the post-operative adaptations of orthopaedic patients.

2.2 LITERATURE ON PRE-OPERATIVE EDUCATION AND TEACHING

Pre-operative information is necessary to ensure the active participation of the patient in his care. This section deals with the information given to the patient before surgery, the format used to convey this information to the patient and the effects of pre-operative education on patients' post-operative recovery.

2.2.1 The importance of pre-operative information given to patients

Information provided during pre-operative teaching addresses the individual learning needs of the patient, promotes safety and psychological comfort and promotes patient and family involvement in care (Phipps, Monahan & Sands 2003:380). Information that seems helpful to most patients relate to information on pre-operative tests and activities, events pertaining to surgery and expectations of what will happen post-operatively. Phipps et al (2003:380) further add that information specific to procedures, activities promoting physiological healing and the prevention of post-operative complications, help decrease anxiety.

Ideally, patient teaching should be carried out over a period of time to allow the patient to grasp the information and ask questions as they arise. Teaching should include descriptions of the procedure as well as the sensations the patient will experience. For example, the nurse should inform the patient that premedication will not only relax her before the operation but may also cause some light-headedness and drowsiness. An important goal of pre-operative teaching involves teaching the patient how to promote optimal lung expansion through deep breathing and coughing exercises. This is

necessary to prevent complications such as atelectasis and pneumonia in the post-operative period (Smeltzer & Bare 2004:409).

According to Lewis, Heitkemper and Dirksen (2004:369), pre-operative teaching encompasses three types of information: sensory, process and procedural. Sensory information relates to what patients want to see, hear, smell and feel. For example, the nurse can inform the patient that the recovery room will be cold but warm blankets will be available on request. Process information relates to information concerning the general flow of events. For example, the patient may be told that he will be taken to the holding area first, then to the operating room. Following surgery he will be taken to the recovery room. Procedural information includes details that are more specific such as fluid and food restrictions, time of surgery and pain control.

The aim of pre-operative education (Fitzpatrick & Hyde 2005:254) is to ensure that patients know what to expect during the peri-operative period. However, findings of this study revealed that information, rather than education was what patients received prior to surgery. Procedural information included information on fasting times, hospital attire, identification bands and visits relating to members of the health care team. Some staff relied entirely on the structured pre-operative checklists to convey this information. The pre-operative checklist consisted of a list of items to be checked and the items were ticked off accordingly. These items included the presence of jewellery, blood results and fasting times. Its aim was to enhance safety and efficiency in transferring patients to theatre.

According to Whyte and Grant (2005:195), pre-operative education given to patients undergoing thoracic surgery, involves the coordinated activity of the health care team. Through pre-operative teaching, the patient learns how to deal with the pre-operative and post-operative periods. In this study, pre-operative teaching was separated into general information given to the patient and procedural specific information. General information involved reinforcing the surgeon’s explanation of the proposed procedure, information on respiratory hygiene, pain control, smoking cessation, diet and nutrition, care of wound and drains and social issues such as job related concerns and physical limitations. Procedural specific teaching encompassed information such as the general outline of the operation, the size and location of the incision and complications of surgery. Whyte and Grant (2005:195) further state that the aim of pre-operative

teaching is to engage the active participation of the patient in his care through the peri-operative period.

Patient education in cardiac surgery is complicated because information is provided by different health care providers. Patient-centred information according to Tromp, Van Dulmen and Van Weert (2004:221), is tailored to the individual patient and therefore promotes cardiac and psychosocial recovery. An information protocol was used during pre-operative education. It consisted of a list of issues which different health care providers discussed with the patient. A copy of the information protocol was located at the patient's bedside. Each health care provider ticked off the information that was given to the patient.

Tromp et al (2004:221) also mention that the information protocol yielded positive results because in addition to providing information, it also addressed psychosocial issues. Information specific to cardiac surgery included instructions about the use of medicines before surgery, information about the preparation for surgery such as the removal of jewellery, shaving, pre-medication, information about the intensive care unit and the perceptions of patients and their relatives about surgery, recovery and rehabilitation.

The main objective of a pre-operative assessment is to prepare the patient and family physically and psychologically for surgery. Margereson and Riley (2003:65-70) maintain that the physical trauma of surgery results in a massive physiological stress response. Both the patient and family need to understand the nature of impending surgery and develop effective coping strategies. This can be achieved by providing manageable portions of information rather than providing it all at once. It is also important to identify the type of information that may lead to a positive outcome. Topics for patient education addressed three main areas including procedural information, sensory information and post-operative issues and lifestyle changes. Procedural information included a description of the operation, the post-operative course, exercises, eating and drinking, a description of catheters, intravenous lines, medications and side-effects. Sensory information referred to the discomfort associated with pain, nausea, thirst, pain control and complications. Post-operative issues and lifestyle changes included social and employment activities and self-management.

According to a study by Van Weert, Van Dulmen, Bar and Venus (2003:112), patients directed most of their questions to nurses. Nurses allowed the patients more room to talk than other members of the health care team. The study showed that 29,8% of the time was spent on medical topics while psychosocial issues like empathising with the patient covered only a small part of the conversation. A suggestion offered by Van Weert et al (2003:112) was that the teaching of communication skills to staff was essential to deal with the emotional distress of patients.
Following an assessment of surgical patients' satisfaction in Singapore, Mordiffi et al (2003:553-554) revealed that 75% of patients were satisfied with the amount of information received and with the manner in which it was communicated. Some patients found information provided by the nurse to be lacking such as information on details of anaesthesia, details of the surgical procedure and the operating room environment.

Pre-operative education may take many forms and is presented to patients in many formats. This enables the patient to understand the disease process and their impending surgery. Audiovisual materials such as pamphlets, photographs, slides, filmstrips and videotapes can be used to explain pre-operative and post-operative routines. According to Phipps et al (2003:380), some patients learn more readily by using a combined approach. Patients who are illiterate might not benefit from printed materials. The nurse therefore needs to assess the appropriateness of printed materials when using them for patient education.

Whyte and Grant (2005:200) mention various pre-operative teaching tools which included verbal instruction, written materials, web-based materials and audiovisual materials. Verbal instruction involved conveying information verbally but due to factors such as language barriers, learning disabilities and cultural barriers, this information may have to be supplemented with written material or drawings. A variety of written materials are available for patient education. These may include books and pamphlets on preparation for surgery, nutrition, exercise. Web-based materials refer to information that is available online. Information may be disease-specific and may include information on disease prevention, diagnosis, causes and treatment. Diagrams, models and videos are examples of audiovisual material used for patient teaching. An excellent teaching method is to use the patient's own X-rays.

Margereson and Riley (2003:72) believe that a variety of media are more effective for pre-operative teaching as verbal information alone is poorly retained. Verbal information may be supplemented with written leaflets or videos.

Hind and Wicker (2000:209) are of the opinion that conducting educational sessions improve patient outcomes. They recommend the following topics to be included in pre-operative teaching, namely the pain response, physiological effects of surgery, operative procedures, infection control and patient safety. Patients and family tend to focus on patient care and not only on the operation if they are provided with written information guides.

Gillies and Baldwin (2001:620) conducted a study whereby an audit was done on patient attitudes to an information leaflet given to patients at a pre-admission clinic. This booklet contained information for patients and relatives. As many as 99% of patients who were audited found the information booklets to be helpful. Findings of this study indicated that patient information booklets did not increase patients' pre-operative anxiety levels.

Lookinland (1998:7-8), in a study on pre-operative education among women, mentions that patient satisfaction with surgical preparation was greater in women receiving structured pre-operative education than unstructured pre-operative education. Patient satisfaction represents quality service and this reflects positively on the health care institution's reputation. Results of the study indicated that quality education preparation by nurses results in increased patient satisfaction and improved recovery. This, in turn, means cost-effective, earlier discharge.

Elkin et al (2004:496-497), mention that the best learning method should be selected for the patient. Videotapes and written materials are available to assist the nurse in pre-operative teaching. Extra time should be taken for teaching and reinforcing information. This will contribute to the success of surgery and the patient's post-operative recovery.

Yellen and Ricard (2005:831-839) explored the effect of a preadmission videotape on patient satisfaction. It is mentioned that receiving the videotape on pre-operative information before a hospital stay allows the patient to prepare for the hospital stay and

the patient is able to view the videotape at a convenient time. Patients admitted for surgery for the first time respond favourably to the videotape.

In an article on the effect of pre-operative information on patient satisfaction, Walker (2007:29) states that pre-operative information can be overwhelming for the patient. During the pre-operative assessment, the patient is provided with information by several health care professionals. This may result in the delivery of contrasting information. Providing patients with multidisciplinary written information serves as a point of reference, helps reduce confusion and reduces the time spent on routine repetitive information.

In a literature review on the effects of giving patients pre-operative education, Hughs (2002:37) points out that pre-operative visits help patients cope physiologically and psychologically with their theatre experience. Properly conducted pre-operative visits may boost the morale of the patient and of the operating room nurse because they become real persons to each other rather than the next patient on the operating list or the unknown nurse in the theatre.

Scott, Earl, Leaper, Massey, Mewburn and Williams (1999:49-50) state in an article on understanding peri-operative nursing, that all patients are unique in their perceptions of fears and anxieties. They should be assessed and full explanations should be given to them during the pre-operative visit. Patients' fears may be related to the surgery itself or to the anticipated outcomes or complications. Some patients might worry about the length of time that they will be unconscious while others have the fear of death. The operating theatre nurse provides additional information which supplement the information given by the ward nurse that can help to reassure the patient. All members of the peri-operative team play an equal role in preparing patients for the psychological and physiological consequences of surgery.

Phillips (2007:376) mentions that effective pre-operative teaching prepares patients both physically and emotionally for surgery. Discharge planning begins during pre-operative teaching. This enables the patient to know what to expect and where to go for help after discharge.

According to Wiens (1998:86), perioperative nurses need exquisite interview skills. Nurses should listen carefully and watch for clues of anxiety. They should ask patients about past hospital experiences that frightened them rather than focus on the patient's lack of knowledge as the cause for the pre-operative anxiety. It is therefore essential that pre-operative education is comprehensive and individualised.

Caress (2003:50-54) states that giving information to patients requires several skills. These include the understanding of educational principles, up to date subject-specific knowledge and good communication skills. The ideal environment for learning to occur is one that is free from noise and distractions, an environment that provides privacy and access to appropriate materials and aids. Busy wards where the noise levels are high and where there is a lack of privacy can impair learning. It discourages patients from asking questions and seeking clarifications. This author further adds that verbal information is important but should be supplemented with written materials because the patient might be unable to recall all the information that had been provided. Most patient education that takes place in the United Kingdom is given on a one to one and face to face basis. However, group teachings and telephone consultations can provide educational opportunities and can enhance information giving.

In a literature review on changing attitudes through persuasive communication, Clarke (1999:47) mentions that nurses with their unique position, have the greatest opportunity to initiate and reinforce patient education. To effectively communicate information, personal interaction is essential. Verbal information should be simple and clear but more complex information should be supported in a written format such as pamphlets.

2.2.2 Effects of pre-operative education on patients' post-operative recovery

Effective pre-operative information helps to reduce stress, anxiety and pain levels and contributes to better post-operative outcomes (Lewis, Gunta & Wong 2004:369; Shuldham, Flemming & Goodman 2002:666; Elkin et al 2004:496-497).

Asilioglu and Celik (2004:68-69) believe that pre-operative information is necessary to ensure the active participation of the patient in his care. In evaluating the effect of a pre-

operative teaching method on anxiety levels of patients, it was found that the anxiety levels of patients who received planned education prior to the surgery in the intervention group were less than those who received routine pre and post-operative information in the control group. All patients in the intervention group were satisfied with the educational booklet and with the pre-operative education received.

A study conducted to evaluate the effect of pre-operative visits by theatre nurses on pre- and post-operative levels of anxiety, showed a decrease in anxiety 24-72 hours post-operatively (Martin 1996:33). This author recommends that every patient should receive a pre-operative visit from a theatre nurse.

According to a study conducted by Guruge and Sidani (2002:25) on pre-operative teaching outcomes, positive effects on patient outcomes were obtained. Outcomes assessed included the length of hospital stay and pain control.

McDonald, Hetrick and Green (2006) are of the opinion that education and information that is individually geared to a person and is given pre-operatively may improve recovery in patients who need support or assistance to move. Patients who need support are those who are disabled or who have limited social support structures. This study also provided evidence that pre-operative education has a beneficial effect on pre-operative anxiety.

Ashhurst (2005:1-6) views pre-operative teaching as a means of decreasing post-operative complications and promoting recovery of the patient. He further adds that patients who are prepared for surgery are less fearful and often cope better with post-operative pain and decreased mobility. As patients differ in their ability to interpret information and their preferences for oral or printed information, it is necessary that pre-operative teaching be individualised for each patient.

A study conducted by Pager (2005:6) demonstrated that showing videotapes to patients explaining either what to expect from cataract surgery or the anatomy of the cataract, yielded positive results. A simple, inexpensive videotape showing patients what to

expect from surgery resulted in increased patient understanding and satisfaction as well as a decrease in levels of anxiety.

In a study on reducing patients' pre-operative stress levels (Kulik 1999:3), patients were given videotapes to watch prior to cardiac bypass surgery. Video tapes included interviews with patients before and after surgery as well as possible complications. The findings revealed that patients who saw the video tapes spent less time in the intensive care unit and in the hospital. Patients felt more confident as they would be able to perform various actions after surgery such as deep breathing exercises and ambulation.

Shuldham et al (2002:666) conducted a study on the impact of pre-operative education on recovery following coronary artery bypass surgery. The education programme provided information on pre-operative events and likely progress. Factors such as recovery, pain and analgesia were also discussed. The atmosphere was informal which promoted questions and discussions. Videos as well as written information was given to all patients. Study results indicated that there were no significant differences between the patients who received the pre-operative education programme and those who did not. These findings suggest that education before admission may have a negative impact on certain measures such as the length of hospital stay (Shuldham et al 2002:668-673).

The finding of a study conducted by Lookinland (1998:7), showed that women who received structured pre-operative education were more satisfied with their surgical experience and had shorter recovery periods than those who did not receive such pre-operative education. Most women were discharged on the second day following a total abdominal hysterectomy.

Royan and Timmins (2004:37) express the need for the development of a therapeutic relationship between nurse and patient in day surgery settings. Enhancing skills such as listening, empowerment and caring increases patient satisfaction and results in essential physical preparation for the operating theatre and a safe recovery. Good listening skills together with questioning and observation of non-verbal cues allow the nurse to assess the patient's information needs. This will promote the patient's

recovery. Nurses are responsible to give the patient vital information to aid their recovery. By simplifying the information, using repetition to reinforce the message and being specific, can improve the effectiveness of the message (Royan & Timmins 2004:37-41).

A major finding of a study conducted by Oetker-Black, Jones, Estok, Ryan, Gale and Parker (2003:1226), is that increasing self-efficacy pre-operatively, increases post-operative ambulation, which is the key to post-operative recovery in abdominal surgery. Patients who feel that they can exert control over threats are not as stressed as those who feel helpless. Lithner and Zilling (2000:29) investigated patients' needs for pre and post-operative information prior to undergoing elective surgery for cholecystectomies. As many as 30% of these patients wanted both written and verbal information. Pain and post-operative symptoms were the major issues to be addressed during such information sessions.

A study conducted by McGarvey, et al (2004:1110) revealed that nurses were aware of the benefits of pre-operative visits. Nurses viewed pre-operative visits as an important link between pre-operative information and post-operative recovery and pain relief. The purpose of the visit was seen as a means of building a relationship with the patient, offering reassurance and comfort and giving the patient information he or she required about the impending surgery.

However, the findings of the study revealed that fewer than 25% of patients received pre-operative visits in Northern Ireland. McGarvey et al (2004:1110-1111) mention that this could be attributed to heavy workloads and exhaustion and low motivation among operating room nurses. At times nurses reportedly had time limits, about 20 minutes to visit all the patients on the next morning's schedule.

In an article on the impact of pre-operative education on post-operative pain, Oshodi (2007:797) explored the concept of pre-operative education. The author states that pre-operative education is best provided by nurses as they spend more time with patients than do surgeons and anaesthetists. However, nurses need to be well equipped with the appropriate knowledge and skills.

2.3 LITERATURE ON PRE-OPERATIVE INFORMATION GIVEN TO ORTHOPAEDIC PATIENTS

This section deals with the information that assisted in answering the three research questions that guided this study, namely:

- What pre-operative information do orthopaedic patients receive?
- Who provided information to orthopaedic patients?
- Did the information provided to orthopaedic patients help them with their post-operative adaptations?

2.3.1 Pre-operative information received by orthopaedic patients

Pre-operative education supports patients by way of clear instructions provided by members of the multidisciplinary health care team, preparing them for their surgical procedure and post-operative care. Information that is provided must meet the health needs of the patient. Prouty et al (2006:257) describe a pre-operative education programme offered to patients undergoing total joint replacement surgery at a hospital in Michigan (USA). The programme covered pre-operative preparation and included aspects such as preparation for surgery and medications, a review of the anatomy of the knee or hip, medical devices patients will encounter in the hospital such as drains and catheters and information on how to prevent complications. Patients and families reported that pre-operative teaching was effective and patients reported that they were less anxious about their surgery.

Lewis, Gunta and Wong (2004:369) maintain that patients should be taught coughing and deep breathing exercises pre-operatively so that they will perform them easily post-operatively. Both patients and family should be informed if there will be tubes, drains, monitoring devices and special equipment after surgery. Individualised teaching may include how to use the incentive spirometer, getting up with an epidural catheter which will be used for post-operative pain control or waking up in the intensive care unit. The nurse should also inform the patient about the type of immobilisation device that will be

used and the limitations to activity that he may expect. Included also in the pre-operative teaching is the assurance that pain medication will be available (Lewis et al 2004:1668).

A study conducted by Fitzpatrick and Hyde (2005:254-255) on nurses working in a surgical setting in Ireland, revealed that verbal skills were used to convey pre-operative information to the patient rather than teaching tools or aids. The staff, however, recognised the benefits of visual materials by stating that the patient might not remember the amount of verbal information provided. Patient information leaflets were available but were specific to the post-operative period. Several nurses found the use of diagrams to be of benefit to the patients. Some nurses used diagrams of bones to illustrate an operative procedure such as the insertion of pins.

A study on pre-operative education for orthopaedic patients by Johansson, Nuutila, Virtanen and Salantera (2005:220), revealed that booklets were often used in pre-operative patient education. Booklets offered an advantage whereby patients could always return to them for information. However, it was found that written information alone was inadequate to provide effective pre-operative education. Information should also be provided orally.

Thomas, Burton, Withrow and Adkisson (2004:39) maintain that pre-operative education programmes have always benefited orthopaedic patients. However, patients experiencing pre-operative pain found it difficult to travel long distances to the pre-operative classes in Kentucky in the USA. This prompted a multidisciplinary team from the medical centre in Kentucky, to create a pre-operative educational programme for their total joint replacement patients via an interactive telehealth network. With this form of teaching, patient consultation and education takes place using a two-way closed circuit television and video system. More pictures are added to improve the presentation for the telehealth patients. Presenters use an overhead camera to show examples of total joint implants, epidural catheters and syringes. Results of this study showed that most patients found this method to be an acceptable method of pre-operative patient education. The average length of hospital stay for these patients decreased since implementing the interactive telehealth education classes (Thomas et al 2004:42).

In order for pre-operative education to be effective, nurses need to change their teaching strategies to be in line with the learning needs and preferences of the patient. Lewis et al (2002: 41) describe the effectiveness of a videotape using digital video disc (DVD) technology for pre-operative patient education. The goal of the project was to compare the effectiveness of non-interactive videotape and interactive DVD approaches to education. These approaches were used to provide pre-operative education to patients undergoing a total knee or total hip joint replacement. Findings of the project revealed higher knowledge scores and greater physical therapy participation for the interactive DVD group. This could be attributed to the fact that the interactive aspect of the DVD allowed patients to repeat information and verify if answers were correct.

Most orthopaedic patients have a planned admission to hospital and there is considerable time for patient teaching. The patient may be taught pre-operatively about the events that may occur before and after surgery. Davis (2000:40) informs us that a patient undergoing a hip replacement post-operatively, will immediately be at risk from breathing limitations, skin damage, pain and changes in self -concept due to the effects of surgery and anaesthesia. When conducting pre-operative teaching, the nurse explains the operation, the immediate post-operative recovery period and the expected mobilisation plan. The nurse shows the patient the proposed plan for pain control, mobilisation, post-operative breathing and wound care and at the same time allows the patient to ask questions and practise the breathing programme, post-operative turning in bed, getting in and out of a chair and limitations of movement due to surgery. The nurse also gives the patient information leaflets on the breathing programme, the pre and post-operative periods, mobilisation and wound care (Davis 2000:40).

Kneale and Davis (2005:231,241) adds that information given to the orthopaedic patient includes information on admission, education on what to expect pre and post-operatively and advice on pain management including the use of epidural and patient-controlled analgesia. Booklets and handouts benefit the patient as the patient can refer to the information later. Group education sessions may include a video of the pre, intra and post surgery care.

Schoen (2000:290) reminds us that teaching the patient should be a well planned activity. Teaching sessions should be scheduled when there is less activity in the ward and the time is right for the patient to learn. Evaluating how well the patient understands the procedure is important. For example, asking the patient to demonstrate understanding of actually putting on elastic stockings with an assistive device indicates that the patient understands what has been taught (Schoen 2000:290-292).

A knowledgeable patient is a more cooperative patient. Discharge planning and patient education should involve a multidisciplinary approach. It should begin when the patient is admitted and is done by all members of the health team which consists of the physician, nurse, physical therapist, social worker, the patient's family and significant others. A patient who is to undergo orthopaedic surgery should receive education about wound care and dressing changes, pain control, wound assessment, physical and occupational therapy, mobility, nutrition and follow up with the physician.

Operating room nurses should ensure that the patient and family understand the pre-operative education given, by asking the patient and family to demonstrate a requisite skill and by allowing time for them to ask questions and/or raise concerns (Rothrock 2003:845-847).

2.3.2 Persons who provided information to orthopaedic patients

Prouty et al (2006:257) describe a pre-operative education programme offered to patients undergoing total joint replacement surgery at a hospital in Michigan (USA). This programme is offered by a multidisciplinary team consisting of an orthopaedic clinical nurse specialist, a physical therapist, an occupational therapist and a care coordinator. The clinical nurse specialist covered pre-operative preparation of the patient and this included preparation for surgery, medications to be taken and avoided and where to report on the day of surgery. A review was done of the anatomy of the knee or hip as well as indications and contraindications for total joint replacement surgery. Medical devices such as urinary catheters, drains and abductor pillows were discussed and were made available for viewing. The physical therapist focused on patient recovery and therapy and a return to normal activity. Physical therapy included instructions on

the proper methods for getting in and out of bed, the use of an assistive device such as a walker and instructions on exercises to be done at least twice daily. The goal of the occupational therapist was to ensure that the patients functioned independently and safely in their homes by discussing how to get dressed while maintaining surgical precautions. The care coordinator is a registered nurse who assisted patients with their medical equipment, discharge planning and medical insurance.

Altizer (2004:283) maintains that an organised programme taught by the orthopaedic surgeon or orthopaedic nurse provides the patient with the necessary information to make an informed decision regarding total hip or knee replacement surgery. Pre-operative teaching should begin with normal anatomy and an explanation of how joints work. Anatomic models showing a normal hip or knee and a model showing an arthritic joint should be used to help the patient understand the physiology. The patient's own X-rays could be used to show the involved joint with narrowing or complete loss of joint space. The patient should also be shown a post-operative film of a joint implant in place.

Fielden et al (2003:429-431) state that although patients who have undergone total hip replacement surgery experienced less pain and improved mobility post-operatively, despite restrictions on physical functions requiring mobility aids, patients require education and support, which are provided by the multidisciplinary health care team members, namely nurses, doctors, physiotherapists and occupational therapists. Information was provided one to three weeks prior to surgery. This promoted patients' satisfaction with their discharge planning.

2.3.3 The effect of pre-operative information on the post-operative adaptations of orthopaedic patients

Pre-operative teaching improves post-operative compliance (Whyte et al 2005:201, Walker 2007:27; Pellini, Tluczek, Collins, Trimborn, Norwich, Engelike & Broad 1998:48). Coughing, deep breathing exercises and the use of the incentive spirometer are taught by the nurse and practised by the patient pre-operatively for improved respiratory function during the post-operative period. In addition the patient is encouraged to stop smoking during the pre-operative period to assist in optimal respiratory function. Pre-operative teaching also involves discussions with the patient

and family about the need for assistance with activities of daily living and the need for support once the patient is discharged. This may involve informing the patient and family on ways to modify the home environment in order to accommodate the altered mobility of the patient after surgery as well as referral to the social worker (Smeltzer & Bare 2004: 2041).

In a research study conducted on how pre-operative education benefited health and wellbeing outcomes, Spalding (2004:152) states that pre-operative education has the potential to increase patients' confidence which resulted in them taking control of their health and well-being. The content of the pre-operative education programme provided patients with knowledge of what they might expect of having a total knee replacement. Patients trusted the content of the video and found it reassuring hearing patients talk about their real life experiences. This improved their understanding, reduced their uncertainty and in turn increased their power. The author concludes by stating that patients empowered by pre-operative education can take control of some of their post-operative needs during recuperation.

A study conducted by Fielden et al (2003:429-431) reveals that pre-operative information received by patients undergoing total hip replacement surgery was highly valued. Patients were given written material to which they referred throughout their hospital stay and recovery period. This information was provided to them one to three weeks prior to surgery. This afforded them the opportunity to digest the information and to prepare themselves emotionally and practically for their impending surgery and recuperation.

Pre-operative teaching improves post-operative compliance. Coughing, deep breathing exercises and the use of the incentive spirometer are taught by the nurse and practised by the patient pre-operatively for improved post-operative respiratory functioning. In addition the patient is encouraged to stop smoking during the pre-operative period to assist in optimal respiratory functions. Pre-operative teaching also involves discussions with the patient and family about the need for assistance with activities of daily living and the need for support once the patient is discharged. This may involve informing the patient and family on ways to modify the home environment in order to accommodate

the altered mobility of the patient after surgery as well as referral to the social worker (Smeltzer & Bare 2004: 2041).

In an article on orthopaedic surgery: a brave new world, Gausewitz (2007:1) states that comprehensive education given to the patient pre-operatively helps both the family and the patient understand the procedure and what to expect post-operatively. Pre-operative education also assists the patient to set realistic expectations on how soon life will return to normal.

A study conducted by Pellini, Tluczek, Collins, Trimborn, Norwich, Engelike and Broad (1998:48) revealed that patients who received an empowerment model of education for pre-operative orthopaedic teaching had improved outcomes, compared to patients who received traditional education. After a pre-operative teaching session was conducted, patients in both groups were given a questionnaire to complete. Patients had to measure their perceptions of the teaching and their ability to carry out peri-operative tasks. Findings indicated that patients who received the empowerment teaching method, reported greater confidence in performing peri-operative tasks than those who received the traditional teaching method. According to traditional teaching, the provider of the information decides what information and how much detail the patient needs to know about his condition and care. With the empowerment teaching method, the provider of information assists the patient in gaining knowledge, developing skills and identifying resources. The patients, therefore, take control of their lives (Pellini et al 1998:49).

2.4 CONCLUSION

This chapter discussed the literature review pertaining to information on pre-operative teaching and education conducted prior to a patient undergoing elective surgery. Literature on pre-operative education and teaching included information given to the patient before surgery and the effects of pre-operative education on patients' post-operative recovery. Topics for patient education addressed three main areas and these included procedural information, sensory information and post-operative issues and

lifestyle changes. The format that is used to convey the information to the patient included audiovisual materials such as pamphlets, information leaflets and booklets, games, drawings, computers, educational programmes, photographs, slides,filmstrips, videotapes and web based material. Literature on the effects of pre-operative education on patients' post-operative recovery showed that effective pre-operative information helped reduce stress, anxiety and pain levels and contributed to better post-operative outcomes.

The literature also assisted in answering the three research questions that guided this study, namely, pre-operative information received by orthopaedic patients, persons who provided information to orthopaedic patients and the effect of pre-operative information on the post-operative adaptations of orthopaedic patients.

A summary of the literature on pre-operative information given to orthopaedic patients are reflected in table 2.1.

Table 2.1 Summary of literature findings according to research questions

RESEARCH QUESTION	AUTHOR (S)	IMPORTANT FINDING (S)
1. Pre-operative information received by orthopaedic patients	1. Prouty, Cooper, Thomas, Christensen, Strong, Bowie and Oermann (2006:257) 2.Lewis, Gunta and Wong (2004:369)	1. A pre-operative education programme offered to patients undergoing total joint replacement surgery, revealed that pre-operative teaching, which covered pre-operative preparation, was effective as patients reported that they were less anxious about their surgery. 2. Patients should be taught coughing and deep breathing exercises pre-operatively so that they will perform them easily post-operatively. The nurse should also inform the patient about the type of immobilisation device that will be used and the limitations to activity that he may expect.
RESEARCH QUESTION	**AUTHOR (S)**	**IMPORTANT FINDING (S)**
1. Pre-operative information received by orthopaedic patients	3. Fitzpatrick and Hyde (2005:254-255)	3. Verbal skills were used to convey pre-operative information to the patient rather than teaching tools or aids. Staff

		recognised the benefits of visual materials by stating that the patient might not remember the amount of verbal information provided.
	4. Johansson, Nuutila, Virtanen and Salantera (2005:220)	4. It was found that written information alone was inadequate to provide effective pre-operative education. Information should also be provided orally.
	5. Thomas, Burton, Withrow and Adkisson (2004:39)	5. A pre-operative educational programme for total joint replacement patients was developed using an interactive telehealth network. Presenters showed examples of total joint implants, epidural catheters and syringes. Most patients found this method to be an acceptable method of pre-operative patient education.
	6. Davis (2000:40)	6. A videotape using digital video disc (DVD) technology was used for pre-operative patient education. The interactive aspect of the DVD allowed patients to repeat information and verify answers.
	7. Kneale (2005:231,241)	7. Findings reveal that booklets and handouts benefit the patient as the patient can refer to the information later. Group education sessions may include a video of the pre-, intra- and post-surgery care.
	8. Schoen (2000:290)	8. Teaching sessions should be scheduled when there is less activity in the ward and the time is right for the patient to learn. Evaluating how well the patient understands the procedure is important.
	9. Rothrock (2003:845-847)	9. Discharge planning and patient education should involve a

		multidisciplinary approach. It should begin when the patient is admitted and is done by all members of the health team which consists of the physician, nurse, physical therapist, social worker and the patient’s family.

RESEARCH QUESTION	AUTHOR (S)	IMPORTANT FINDING (S)
2. Those persons who provided information to orthopaedic patients	1. Prouty et al (2006:257)	1. A pre-operative education programme was offered by a multidisciplinary team consisting of an orthopaedic clinical nurse specialist, a physical therapist, an occupational therapist and a care coordinator. The clinical nurse specialist covered pre-operative preparation of the patient, the physical therapist focused on patient recovery and therapy and a return to normal activity, the occupational therapist ensured that patients functioned independently and safely in their homes and the care coordinator assisted patients with their medical equipment, discharge planning and medical insurance.
	2. Altizer (2004:283)	2. An organised programme taught by the orthopaedic surgeon or orthopaedic nurse provides the patient with the necessary information to make an informed decision. Anatomic models, the patient's own X-rays and a post-operative film of a joint implant in place could be used for patient teaching.
	3. Fielden, Scott and Horne (2003:429-431)	3. Patients require education and support, which are provided by the multidisciplinary health care team members, namely nurses,, doctors, physiotherapists and occupational therapists. This promoted patients' satisfaction with their discharge planning.

RESEARCH QUESTION	AUTHOR (S)	IMPORTANT FINDING (S)
3. The effect of pre-operative information on the post-operative adaptations of orthopaedic patients	1. Smeltzer and Bare 2004: 2041	1. Coughing, deep breathing exercises and the use of the incentive spirometer are taught by the nurse and practised by the patient pre-operatively for improved respiratory function during the post-operative period.

	2. Gausewitz (2007:1) 3. Pellini, Tluczek, Collins, Trimborn, Norwich, Engelike and Broad (1998:48)	Discussions are held with the patient and family about the need for assistance with activities of daily living and the need for support once the patient is discharged. 2. Comprehensive education given to the patient pre-operatively helps the family and the patient understand the procedure and what to expect post-operatively. Pre-operative education assists the patient to set realistic expectations on how soon life will return to normal. 3. Patients who received an empowerment model of education for pre-operative orthopaedic teaching had improved outcomes, compared to patients who received traditional education.

RESEARCH QUESTION	AUTHOR (S)	IMPORTANT FINDING (S)
3. The effect of pre-operative information on the post-operative adaptations of orthopaedic patients		Patients who received the empowerment teaching method, reported greater confidence in performing peri-operative tasks than those who received the traditional teaching method.

Chapter 3 discusses the research methodology that was used in this research including the research design, setting, sampling, data collection and data analysis process.

CHAPTER 3

Research methodology

3.1 INTRODUCTION

This chapter outlines the research methodology, which incorporates aspects such as the research design, setting, population, sample, research instrument, data collection procedures and data analysis.

3.2 RESEARCH DESIGN

The research design is a blue print for conducting the study in order to control factors that could interfere with the validity of the research results (Burns & Grove 2005:211). The overall purpose of the research design is to assist in finding the solution to research problems and to maintain control. Control is necessary to limit bias on the dependent variable or outcome (LoBiondo-Wood & Haber 2002:188). The purpose of this study was to explore and describe the perceptions of patients and nurses regarding pre-operative education given to orthopaedic patients undergoing elective surgery. This study therefore used a non-experimental, descriptive and quantitative research design.

3.2.1 Exploratory descriptive design

This study was exploratory and descriptive because it explored the perceptions of patients and nurses regarding pre-operative education. According to Burns and Grove (2005: 26), descriptive research provides an accurate account of the characteristics of an individual, situation or group.

The purpose of descriptive research is to explore and describe phenomena in real-life situations. This study is also descriptive because it entails observing, describing and

documenting aspects of a situation as it naturally occurs (Polit & Beck 2004:192). Orthopaedic patients, through structured interviews, will describe their perceptions of receiving pre-operative education before surgery. Operating room nurses, through structured interviews, will describe how they experience conducting pre-operative teaching and visits. Orthopaedic ward nurses through structured interviews, will describe their perceptions of pre-operative education.

A descriptive or exploratory research design is used to search for accurate information about the characteristics of particular subjects, groups, institutions or situations or about the frequency of a phenomenon's occurrence, especially when little is known about the phenomenon. The types of variables of interest can be classified as opinions, attitudes or facts (LoBiondo-Wood & Haber 2002:223). The descriptive design is appropriate for this study because it investigated factors that were not known. For more details on this topic to be collected, it required that there should be a thorough description and exploration of the perceptions of patients and nurses regarding pre-operative education.

Exploratory research begins with a phenomenon of interest just like descriptive research. However, in addition to observing and describing the phenomenon, exploratory research investigates the full nature of the phenomenon, the manner in which it is manifested and other factors to which it is related (Polit & Beck 2004: 20). This study met this criterion because it attempted to explore the full nature of orthopaedic patients' perceptions regarding pre-operative education which are conducted prior to their scheduled surgery, the perceptions of operating room nurses about conducting pre-operative teaching and visits and the perceptions of orthopaedic ward nurses regarding pre-operative education. This design was appropriate for this study because it led to a better understanding of why pre-operative visits are not being conducted regularly as well as the potential positive effects of pre-operative visits on patient's postoperative experiences.

Exploratory research is aimed at exploring the dimensions of the phenomenon, the manner in which it is manifested and the other factors with which it is related (Polit & Beck 2004:20). The goal of exploratory designs is to arrive at a description of an experience or its meaning (Brink & Wood1998:309). This design was used as

information on pre-operative education and teaching has been dealt with in previous studies. This data was adequate to formulate the questions for the interview schedules. Data was then analysed using SPSS (version 13) program.

3.2.2 Non-experimental research

A non experimental research design was used because it allowed the researcher to construct a picture of a phenomenon and to explore events, people and situations as they naturally occurred. The effects of human characteristics such as perceptions and beliefs cannot be studied experimentally. Events have occurred naturally and the researcher cannot directly control these events by manipulation (LoBiondo-Wood & Haber 2002:222).

An experimental design is not appropriate such as for descriptive studies, attempting to document the characteristics, prevalence, intensity or full nature of a phenomenon. Manipulation of variables is therefore not desirable (Polit & Beck 2004:188). The non experimental design was used because the study was descriptive. Since the intent of descriptive research is to observe, describe and document aspects of a situation as they naturally occur, experimental designs were not considered to be appropriate for this particular study (Polit & Beck 2004:192).

According to Polit and Beck (2004:188), a vast number of human characteristics are not subject to experimental manipulation. The variables of interest in this study concern human perceptions that would be difficult to collect using experimental research. A non experimental design was therefore appropriate to collect the required information in the natural settings of the participants.

3.2.3 Quantitative approach

Quantitative research is a formal, objective, systematic process in which numerical data are used to obtain information about the world (Burns & Grove 2005:23). Usually this is done under conditions of control and the information is analysed using statistical procedures (Polit & Beck 2004:15-16). In this study the researcher was measuring the perceptions of patients and nurses regarding pre-operative education. The approach used in this study involved the systematic collection of quantifiable information. The quantitative data collected was analysed using the Statistical Package for Social Sciences (SPSS) version 13. Data will be grouped, summarised, analysed and presented as tables and figures.The services of a statistician was employed to identify and calculate appropriate statistics. See annexure H to this effect.

3.3 RESEARCH METHOD

This section discusses the methodology, population and sample, including the study population, sampling procedure, number of participants, the setting and ethical considerations. Research method refers to the steps, procedures and strategies for gathering and analysing the data in a research investigation (Polit & Beck 2004:723). In this research, the methodology of quantitative research studies was used to guide the researcher in conducting this study.

This study was conducted in three phases. The research population, sample and the sampling process, data collection, the research instruments and validity and reliability will be discussed under the three phases.

3.3.1 Phase 1

The purpose of phase 1 of the study was to determine orthopaedic patients' perceptions regarding pre-operative education which are conducted prior to their scheduled surgery. Structured interviews were conducted with 50 patients who had undergone elective orthopaedic surgery.

3.3.1.1 Research population

Burns and Grove (2005:746) define a population as comprising all elements (individuals, objects, events or substances) that meet the sample criteria for inclusion in a study. It also comprises the "entire aggregation of cases in which a researcher is interested" (Polit & Beck 2004:289). The population for this study included all orthopaedic patients admitted for elective surgery at all the provincial hospitals in KwaZulu-Natal as well as all operating room nurses and orthopaedic ward nurses working at these hospitals. The population that a researcher has access to and studies is referred to as the accessible population or the study population (Brink 2006:123). The target population includes the "entire population in which the researcher is interested and to which he or she would like to generalize the results of a study" (Polit & Beck 2004:734).

The target population for phase 1 consisted of all orthopaedic patients admitted for elective surgery over a period of ten weeks at two provincial hospitals in KwaZulu-Natal Province.

3.3.1.2 Sample and the sampling technique

“A sample is a subset of the population that is selected for a study. Sampling includes selecting groups of people, events, behaviours or other elements with which to conduct a study“ (Burns & Grove 2005:746). The sample for this research study comprised 80 people consisting of 50 orthopaedic patients admitted for elective surgery, 20 operating room nurses working in the operating rooms and 10 ward nurses working in the orthopaedic wards to which the patients were admitted.

In phase 1, a non-probability convenience sampling design was used. According to Polit and Beck (2004:291), when using non-probability samples, elements are selected by non-random methods. It is difficult to estimate the probability that each element has of being included in the sample. Convenience sampling involves the selection of the most readily available persons as participants in a study (Polit & Beck 2004:715). This sampling technique was used as it was convenient and economical. As it could not be predetermined whether or not orthopaedic patients will be willing to be interviewed about their perceptions relating to pre-operative education, a random sample could not be drawn.

In phase 1 of the study, a non-random convenience sampling technique was used. Adult patients who were admitted to the orthopaedic ward for elective surgery were approached to participate in the study. Adult orthopaedic patients were chosen because they are usually not too ill post-operatively to be interviewed and because their operations often imply some type and period of rehabilitation requiring pre-operative education. To be eligible for this study, patients were required to meet the following inclusion criteria:

- Be 18 years of age or older
- Expected to remain in the hospital post surgery for at least 48 hours

- Medically fit to answer questions
- Both male and female patients
- Able to speak English
- Admitted for orthopaedic procedures
- Agree to participate in the study

The sample for phase 1 of this study comprised 50 orthopaedic patients who had undergone elective surgery.

3.3.1.3 Data collection

Polit and Beck (2004:716) state that data collection involves the gathering of information to address a research problem. Three types of approaches to data collection have been used frequently by nurse researchers, namely self-reports, observation and biophysiological measures. In this study the researcher used the self-report method of data collection. Self-reports are methods of data collection whereby a good deal of information can be gathered by questioning people (Polit & Beck 2004:319).

Structured interviews were used to collect the data from patients, operating room nurses and orthopaedic ward nurses. When structured interviews are used, subjects are asked to respond to the same questions in the same order and with the same set of response options (Polit & Beck 2004:349). With structured interviews, the researcher enjoys a degree of control over the content of the interview. The order of the questions is specified (Burns & Grove 2005:396). The researcher is not allowed to deviate from the order in which the questions appear on the interview schedule. This is done to minimise the role and influence of the researcher and to ensure an objective comparison of results (Brink 2006:151-152).

Data gathering took ten weeks to complete. This was longer than was originally planned due to the public servants strike which took place from the1 June 2007 to 27 June 2007. Most patients who were booked for elective orthopaedic surgery were either transferred to private hospitals or their procedures were cancelled. Data collection commenced on 10 May 2007 and was complete on 19 July 2007. In phase 1 of the study, structured interviews were conducted with 50 orthopaedic patients who underwent elective

surgery. On average, five patients were interviewed per week over a period of ten weeks. The interviews were conducted on the first or second post-operative day.

3.3.1.4 Research instrument

Interview schedules were used to collect the data from orthopaedic patients, operating room nurses and orthopaedic ward nurses. The interview schedules consisted of both open and closed-ended questions. The use of closed ended questions with a high degree of structure is used to ensure comparability of responses and to facilitate analysis. Open-ended questions allow the subjects to offer richer and fuller perspectives on the topic of interest (Polit & Beck 2004:349-350). This process took place in three phases. Knowledge from previous research, as discussed in the literature review, helped to formulate the questions for the interview schedules.

In phase 1, the interview schedules were used to conduct structured interviews with 50 orthopaedic patients who had undergone elective surgery (Annexure E). The interview schedules consisted of a combination of open and closed ended questions designed to assess how patients perceive pre-operative education received prior to their scheduled surgery.

The interview schedule comprised the following sections:

Section A was used to collect demographic data from orthopaedic patients, such as gender, age, marital status, educational qualifications and the number of admissions for elective orthopaedic surgery

Section B consisted of questions relating to what pre-operative information orthopaedic patients received.

Section C consisted of questions relating to the persons who provided information pre-operatively to orthopaedic patients.

Section D consisted of questions relating to whether the information provided to orthopaedic patients helped them with their post-operative adaptations, expectations and/or recuperation processes**.**

3.3.2 Phase 2

The purpose of phase 2 of the study was to determine how operating room nurses experience conducting pre-operative teaching and visits. Structured interviews were conducted with 20 operating room nurses.

3.3.2.1 Research population

The target population for phase 2 consisted of all operating room nurses working in the operating rooms of the two provincial hospitals in KwaZulu-Natal Province. The research population for phase 2 of the study comprised 43 operating room nurses working the day duty shift from the two provincial hospitals in KwaZulu-Natal Province.

3.3.2.2 Sample and the sampling technique

In phase 2 of the study, a non-random purposive sampling technique was used to select the operating room nurses. Purposive sampling is a method in which the researcher selects participants based on personal judgement about which ones will be most representative or informative (Polit & Beck 2004:729). Operating room nurses who are registered nurses working in the operating room were included in the sample. All operating room nurses from the two provincial hospitals under study were invited to participate. As it could not be predetermined whether or not operating room nurses will be free to be interviewed as they may be occupied with assisting with surgical procedures, a random sample could not be drawn.

The names of the operating room nurses were taken from the operating room departments' listing. The sample was chosen from the registered nurses who were on duty and available on the day the structured interviews were conducted. Those registered nurses who were scrubbed for cases were excluded from the sample. The proposed sample size for phase 2 of this study were 20 operating room nurses.

3.3.2.3 Data collection

Based on the results obtained in phase 1, structured interviews were then conducted with operating room nurses working in the operating rooms in the two provincial hospitals in KwaZulu-Natal Province. In phase 2 of the study, structured interviews were conducted with 20 operating room nurses. The interviews were conducted from 16 May 2007 to 9 June 2007. On average, six operating room nurses were interviewed per week over a period of three weeks.

3.3.2.4 Research instrument

In this phase, the interview schedules were used to conduct structured interviews with 20 operating room nurses working in the operating rooms (Annexure F). Based on the results obtained in phase 1, interview schedules for operating room nurses were designed. The interview schedules consisted of a combination of open and closed-ended questions designed to assess how operating room nurses experience conducting pre-operative teaching and visits.

The interview schedule comprised the following sections:

Section A was used to collect demographic data from operating room nurses, such as gender, age, academic qualification and years of experience as an operating room nurse.

Section B consisted of questions relating to how operating room nurses experience conducting pre-operative teaching and visits on orthopaedic patients.

3.3.3 Phase 3

The purpose of phase 3 of the study was to determine the perceptions of orthopaedic ward nurses regarding pre-operative education. Based on the results obtained in phase 1, interview schedules for operating room nurses and orthopaedic ward nurses were designed and structured interviews were then conducted with operating room nurses and orthopaedic ward nurses from the two provincial hospitals in KwaZulu-Natal Province.

3.3.3.1 Research population

The target population for phase 3 consisted of all orthopaedic ward nurses working in the orthopaedic wards of the two participating provincial hospitals in KwaZulu-Natal Province. The research population for phase 3 of the study were 18 orthopaedic ward nurses working the day duty shift from the two provincial hospitals in KwaZulu-Natal Province.

3.3.3.2 Sample and the sampling technique

In phase 3 of the study, a non-random purposive sampling technique was used to select ward nurses from the orthopaedic wards. Ward nurses who were either registered or enrolled nurses working in the orthopaedic wards to which the patients were admitted, were included in the sample. All orthopaedic ward nurses from the two provincial hospitals under study were invited to participate. These included both male and female ward nurses. As it could not be predetermined whether or not orthopaedic ward nurses will be willing to be interviewed about their perceptions relating to pre-operative education, a random sample could not be drawn.

The names of the orthopaedic ward nurses were taken from the wards' duty schedules. Registered or enrolled orthopaedic ward nurses who were on duty when the structured interviews were conducted, were included in the sample. The proposed sample size for phase 3 of this study were 10 orthopaedic ward nurses.

3.3.3.3 Data collection

Based on the results obtained in phase 1, structured interviews were also conducted with ward nurses working in the orthopaedic wards from the two provincial hospitals in KwaZulu-Natal Province. In phase 3 of the study, structured interviews were conducted with 10 orthopaedic ward nurses. The interviews were conducted from 16 May 2007 to 20 June 2007. On average, only two orthopaedic ward nurses were interviewed per week over a period of five weeks. This was due to the public servants' strike which took place from 1 June 2007 to 27 June 2007.

3.3.3.4 Research instrument

In this phase, interview schedules were used to conduct structured interviews with 10 ward nurses working in the orthopaedic wards (Annexure G). Based on the results obtained in phase 1, interview schedules for wardnurses were designed. The interview schedules consisted of a combination of open and closed ended questions designed to assess how orthopaedic ward nurses perceive pre-operative education.

The interview schedule comprised the following sections:

Section A was used to collect demographic data from ward nurses such as gender, age, marital status, academic qualification and years of experience as a ward nurse working in the orthopaedic ward.

Section B consisted of questions to determine how ward nurses perceive the conducting of pre-operative education.

3.4 VALIDITY OF THE RESEARCH INSTRUMENT

Validity of measuring instruments refers to the degree to which an instrument measures what it is supposed to be measuring (Polit & Beck 2004:422). The three methods used to validate the research instrument in this study were face validity, construct validity and content validity.

3.4.1 Face validity

Face validity refers to whether the instrument looks as though it is measuring the appropriate construct (Burns & Grove 2005:423). It appears to be an adequate means of obtaining the desired data (Brink 2006: 202).

The instrument was constructed so that it could measure the attributes to be studied which were the perceptions of patients and nurses regarding pre-operative education given to orthopaedic patients undergoing elective surgery. In ensuring face validity, the interview schedule was subjectively assessed for presentation and the relevance of the

questions. Nurse educators teaching orthopaedic and operating theatre nursing and who did not participate in the actual study, as well as two supervisors, reviewed the interview schedule items to ensure that the questions were relevant, unambiguous and clear.

3.4.2 Construct validity

Construct validity refers to the ability of an instrument to measure the construct that it is intended to measure. Construct validity is used mainly for measures of traits or feelings (Brink 2006:162, 200). The research instrument, namely the interview schedule was constructed so that it could measure the attributes to be studied which were the perceptions of patients and nurses regarding pre-operative education given to orthopaedic patients undergoing elective surgery. In ensuring face validity, the interview schedule was subjectively assessed for presentation and the relevance of the questions.

3.4.3 Content validity

Content validity is an assessment of how well the instrument represents all the components of the variable to be measured. It is the degree to which an instrument covers the scope and range of information that is required (Brink 2006:160, 200). In this study the content of the interview schedule was derived from literature on pre-operative teaching and education. Further information was gathered from discussions with operating room nurses, ward nurses from the orthopaedic wards and nurse educators involved with teaching orthopaedic nursing and operating theatre nursing. Nurse educators, who did not participate in the actual study, as well as my two supervisors, reviewed the interview schedule items. A revised version of the instruments were pre-tested.

A pre-test was conducted in one of the two provincial hospitals that formed part of the actual study. A pre-test of the interview schedule was carried out on six patients who

possessed similar characteristics to those used for the actual study. A pre-test with the formulated interview schedule was used to conduct structured interviews with six patients to ensure content validity.

A thorough literature review was done on pre-operative teaching and education conducted prior to a patient undergoing elective surgery. The literature was reviewed to locate and analyse relevant information that assisted in answering the research questions that guided this study, namely, what pre-operative information do orthopaedic patients receive? Who provided information to orthopaedic patients and did the information provided to orthopaedic patients help them with their post-operative adaptations?

The interview schedule had been designed to provide answers to these questions. The interview schedule's content had a section on demographic data from orthopaedic patients, questions on pre-operative information received by orthopaedic patient, information on who provided this information to orthopaedic patients and whether information provided to orthopaedic patients helped them with their post-operative adaptations. This section helped to include relevant content guiding the achievement of the objectives of the study.

3.5 RELIABILITY OF THE RESEARCH INSTRUMENT

Reliability of an instrument is the degree of consistency with which the instrument measures the attribute. The less variation an instrument produces in repeated measurements of an attribute, the higher is its reliability (Polit & Beck 2004:416).

There are different ways in which reliability of an instrument can be measured and the two ways applicable to this study were stability and internal consistency.

3.5.1 Stability of an instrument

Stability of a research instrument refers to its consistency over time. Stability is measured by giving the same participants an instrument on two occasions within a short

period of time and examining their responses for similarities. This method is termed test-retest (Brink 2006:164). This method was applied in this study by pre-testing the interview schedule and the results of the pre-tests were compared. Items in the interview schedule were revised after the pre-test.

3.5.2 Internal consistency

Internal consistency addresses the extent to which all items on an instrument measure the same variable. This type of reliability is appropriate only when the instrument is examining one concept or construct at a time (Brink 2006:164). This study examined one concept at a time, namely perceptions. The researcher pre-tested the interview schedule to ensure that the instrument measured what it was intended to measure. The first most efficient way to find out how good an interview schedule is, is to pre-test it with a group of participants who have the same characteristics as those involved in the study. Those who participated in the pre-test were excluded from participating in the actual research study. The pre-test enabled the researcher to change items and questions in the interview schedule. For example, educational qualifications contained in item 4 of the interview schedule pertaining to the patient (Annexure E), only included grades 1-10. This was changed to include grades 11 and 12 to accommodate those patients who had completed their matric examinations. Section C of the interview schedule only contained one question on “Who provided information to the patient before surgery?” In order to find out who provided the most useful information to the patient, item 27 was added asking who provided the most important information to patients before their operations.

3.6 VALIDITY OF A RESEARCH STUDY

Validity of a research study refers to the ability of a study to produce accurate results (Burns & Grove 2005:754). Validity is classified as internal and external validity.

3.6.1 Internal validity

Internal validity refers to the extent to which the effects detected in the study are a true reflection of reality rather than the result of extraneous variables (Burns & Grove

2005:215).This concept indicates the extent to which the factors identified in the study truly reflect the perceptions of patients and nurses' regarding pre-operative education rather than being attributable to extraneous or chance variables which does not necessarily indicate perceptions of patients and nurses' regarding pre-operative education given specifically to orthopaedic patients undergoing elective surgery.

3.6.1.1 Threats to internal validity

The occurrence of an event, which is unrelated to the study, but which can affect the result of a study, poses a possible threat to the internal validity of the data. The most important threats to the internal validity of the study were factors related to the history of the participants' perceptions regarding pre-operative education and the selection processes involved when interviewing patients**.** Several factors in this study have been identified such as lack of information received by orthopaedic patients and nurses and lack of knowledge on the part of nurses regarding pre-operative education and teaching. These factors are said to hinder the rendering of pre-operative education to orthopaedic patients.

3.6.2 External validity

External validity refers to the extent to which study findings can be generalised to other settings or samples (Burns & Grove 2005:217-218). A study is externally valid if the sample is representative of the broader population and the study setting is representative of other environments.

3.6.2.1 Threats to external validity

Several threats to external validity include the Hawthorne effect, researcher effects and the type of sampling method selected.

3.6.2.1.1 The Hawthorne effect

According to Brink (2006:101), the Hawthorne effect occurs when participants behave in a certain manner because they are aware that they are being observed. Being aware

that they are involved in a study relating to their perceptions pertaining to pre-operative education, the participants in this study might have provided information that pleased the researcher.

This type of threat to external validity was minimised because the researcher described fully the nature of the study, the participant's right to refuse participation and the researcher's responsibilities. No participant was coerced into participating in this research study. Each participant was requested to be as honest as possible.

3.6.2.1.2 Researcher effects

Researcher effects refer to a situation where the researcher's characteristics or behaviour influences the subject's behaviour (Brink 2006:101). Respondents may give socially desirable answers or mould their responses to fit the occasion (Parahoo 2006:320). In this study, the researcher may have unconsciously, through facial expressions, clothing, age or gender communicated expectations of the study to the participants.

3.6.2.1.3 Sampling method

Study findings can be safely generalised only to the population from which a sample has been selected at random. The type of sampling method used affects the ability to generalise the research results to the entire population, thereby threatening the external validity of the results. In this study, the researcher selected a convenient sample of 50 orthopaedic patients, 20 operating room nurses and 10 orthopaedic ward nurses using a non-probability sampling method. By using a convenience sample rather than using a random sample the researcher may have compromised external validity**.**

External validity was enhanced in this study by having both male and female participants from the two different provincial hospitals in KwaZulu-Natal province.

3.6 RESEARCH SETTING

The setting refers to the place where the research data were collected. This study was conducted at two provincial hospitals in KwaZulu-Natal Province, namely King Edward VIII hospital and RK Khan hospital respectively. The researcher planned to conduct this research at these hospitals because these two hospitals are two of the four major provincial hospitals in KwaZulu-Natal who admit orthopaedic patients for emergency and elective surgery. King Edward VIII hospital is the second largest hospital in South Africa. It has a bed status of 1300 and about 3000 outpatients are treated per day. The hospital provides a tertiary service for the entire province of KwaZulu-Natal with a population of approximately five million, part of Mpumalanga and Eastern Cape provinces. King Edward VIII hospital is also the main teaching hospital for the University of Natal's Nelson R Mandela Medical School. The hospital has an orthopaedic out-patient's department from where patients are booked for elective and emergency surgery.

RK Khan hospital is a regional and district hospital with 543 beds. It is one of the four major hospitals in the Durban region. The hospital is located in Chatsworth, a suburb in the eThekwini health district. RK Khan hospital serves the population of Chatsworth and the surrounding areas, Inner and Outer West, the boundaries commence from Yellowwood Park to Richmond. It is a referral hospital for St. Mary's hospital and KwaDabeka clinic. The hospital admits approximately 36 thousand patients a year and 600 thousand outpatients are treated annually. This hospital also has an orthopaedic outpatient department from where patients are booked for elective and emergency surgery.

3.8 ETHICAL CONSIDERATIONS

According to Burns and Grove (2005:181), the protection of human rights is necessary for the self-respect, dignity and health of an individual. In this research study, the researcher had an ethical responsibility to recognise and protect the rights of human participants. Human rights that were protected were:

- The right to self-determination
- The right to privacy

- The right to anonymity and confidentiality
- The right to fair treatment
- The right to protection from discomfort and harm

3.8.1 The right to self-determination

The right to self-determination is based on the ethical principle of respect for persons. According to this principle, humans are capable of controlling their own destiny and as such they should be free to conduct their lives as they choose (Burns & Grove 2005:181). The researcher ensured that the participants were treated as autonomous individuals by informing them about the process and the purpose of the research study and by allowing them to voluntarily choose to participate or not. Participants were not coerced into participating in this research study and they had the right to withdraw from the study at any time without a penalty being imposed on them.

3.8.2 The right to privacy

Burns and Grove (2005:186) state that the right to privacy involves the right of an individual to determine the time, extent and general circumstances under which personal information will be shared with or withheld from others. This information may include information concerning attitudes, beliefs, behaviours, opinions and records. In this study, participants' beliefs, habits, culture and lifestyle were respected. An opportunity was provided for each participant to ask questions and to clarify misunderstandings.

3.8.3 The right to anonymity and confidentiality

Participants have the right to anonymity and the right to assume that the data collected will be kept confidential. To ensure anonymity, all identifying information from each participant's hospital records such as name, address and in-patient numbers were removed. Numbers were used instead of names.

Polit and Beck (2004:150) state that a promise of confidentiality is a pledge that any information participants provide will not be publicly reported in a manner that identifies them and will not be made accessible to others. The researcher ensured that breaches of confidentiality did not occur by not sharing research information with strangers or with people known to the participants. During data collection, the participants' names were not recorded on the interview schedules.

Code numbers were used instead of the participants’ names. The research report only portrays figures, statistics and discussions but no names. All data were secured under lock and key.

3.8.4 The right to fair treatment

The right to fair treatment is based on the ethical principle of justice. According to this principle, a person should be treated fairly and should receive what he or she is due or owed (Burns & Grove 2005:189). During the sampling process, the researcher ensured that the study population included participants of various ages, ethnic backgrounds and socio-economic status. The participants were treated with respect and courtesy and were informed that they could contact the researcher at any point in the study to clarify information.

3.8.5 The right to protection from discomfort and harm

The right to protection from discomfort and harm is based on the ethical principle of beneficence, which holds that one should do good and above all do no harm. The researcher protected the participants from discomfort and harm by ensuring that no physical or psychological harm was inflicted on the participants. No participant was paid any remuneration.

Benefits of pre-operative education relating to this study included a reduction in patients' anxiety levels pre-operatively and an improved understanding of their disease process and surgical procedures thereby increasing patients' participation in their care.

3.9 CONSENT FOR CONDUCTING THE RESEARCH

Permission to conduct the study was obtained from:

- The KwaZulu-Natal Provincial Department of Health (see Annexure A).
- The chief executive officers from the institutions where the data were collected (see Annexure B).
- Written permission was obtained from all participants. Patients, operating theatre nurses and orthopaedic ward nurses were given time to read the consent form and ask questions before consenting to participate. A thorough explanation of the study was provided. The researcher constructed the informed consent form and

- emphasised voluntary participation and freedom to withdraw from participation at any stage and/or not to answer specific questions without suffering any ill effects whatsoever (see Annexure C).

3.10 METHOD OF DATA ANALYSIS

Data analysis involves categorising, ordering, manipulating and summarising the data and describing them in meaningful terms. A powerful tool available to the researcher in analysing quantitative data is statistics (Brink 2006:170-171).

The quantitative data collected were analysed using the Statistical Package for Social Sciences (SPSS) version 13. Data will be presented as tables and figures in chapter 4 of this dissertation. The services of a statistician were employed to identify and calculate appropriate statistics.

3.11 SUMMARY

This chapter discussed the research methodology that was used in this research study. This included research design, research method, population, the sampling method and sampling process, research setting, data collection and data analysis. Measures were adhered to in order to enhance the validity and reliability of the research results. Ethical concerns that could have impacted on the survey were addressed.

Chapter 4 presents the analysis and discussion of the data obtained from conducting 50 structured interviews with orthopaedic patients regarding their perceptions of pre-operative education. These orthopaedic patients underwent elective orthopaedic surgery during 1 May 2007 and 31 July 2007. Chapter 5 presents the analysis and discussion of the data obtained from conducting 20 structured interviews with operating room nurses regarding their perceptions of pre-operative teaching and visits and 10 structured interviews with orthopaedic ward nurses regarding their perceptions of pre-operative education.

CHAPTER 4

Data analysis and findings: orthopaedic patients

4.1 INTRODUCTION

This chapter deals with the analysis and discussion of data collected, as described in section 3.11 of this dissertation. According to Brink (2006:170), data analysis involves categorising, ordering, manipulating and summarising the data and describing them in meaningful terms. In this study, data were analysed statistically. This chapter deals with the analysis of data obtained from orthopaedic patients who have undergone elective surgery. Fifty-two orthopaedic patients were approached for interviews but only 50 were willing to participate. The response rate was therefore 96%. These 50 structured interviews were conducted with orthopaedic patients one and two days post-operatively following elective orthopaedic surgery. Findings of this study are presented according to the sections of the interview schedule.

Section A: Demographic data from orthopaedic patients.

Section B: Pre-operative information received by orthopaedic patients.

Section C: Persons who provided information pre-operatively to orthopaedic patients.

Section D: Information as to whether the information provided to orthopaedic patients helped them with their post-operative adaptations, expectations and/or recuperation processes.

4.2 DEMOGRAPHIC INFORMATION

This section will present and discuss demographic data obtained from orthopaedic patients including gender, age, marital status, educational qualifications and number of admissions for orthopaedic surgery. The purpose of providing demographic information is so that the rest of the information can be contextualised against the background knowledge of who the participants in this study were. Demographic descriptions of the sample are presented in tables 4.1- 4.5.

Table 4.1 Gender distribution of orthopaedic patients undergoing elective surgery (n=50)

PARTICIPANTS	FREQUENCY	%	CUMULATIVE %
Female	16	32	32
Male	34	68	100
TOTAL	**50**	**100**	

The study comprised 50 participants, of whom 34 (68%) were males and 16 (32%) were females. The high number of male patients admitted to the orthopaedic ward can be attributed to the fact that most injuries were sustained on the sports field or as a result of motor vehicle collisions.

Table 4.2 Age distribution of orthopaedic patients undergoing elective surgery (n=50)

AGE	FREQUENCY	%	CUMULATIVE %
18-28	15	30	30
29-38	13	26	56
39-48	10	20	76
49-58	3	6	82
59-68	3	6	88
69-78	6	12	100

TOTAL	**50**	**100**	

As many as 50% of participants were between 18 and 38 years of age. Most of these patients were actively involved in sports such as soccer. Those who were involved in motor vehicle collisions, were licensed drivers who were involved in accidents whilst travelling to and from their places of work.

Only 6 (12%) participants were between 49 and 68 years of age. Most of these patients had sustained falls in their homes.

Table 4.3 Marital status of orthopaedic patients undergoing elective surgery (n=50)

PARTICIPANTS	FREQUENCY	%	CUMULATIVE %
Divorced	1	2	2
Widow/Widower	7	14	16
Married	10	20	36
Single	32	64	100
TOTAL	**50**	**100**	

Table 4.3 indicates that 32 (64%) participants were single. Only 10 (20%) participants were married. Those who were single verbalised the need to receive information on lifestyle changes as they required to know how they would be assisted to function independently and safely within their homes, following discharge from hospital.

Table 4.4 Educational qualifications of orthopaedic patients undergoing elective surgery (n=50)

EDUCATIONAL QUALIFICATIONS	FREQUENCY	%	CUMULATIVE %
Grade 3-10	25	50	50
Grade 11	15	30	80
Grade 12	10	20	100
TOTAL	**50**	**100**	

Although 25 (50%) of the educational qualifications of participants were between grades 3-10, none had tertiary education qualifications. It is interesting to note that 25 (50%) participants preferred pre-operative information to be presented in the oral format as this was simpler and easier to understand than reading and understanding pamphlets with lower education levels.

Table 4.5 Number of admissions for elective orthopaedic surgery (n=50)

NUMBER ADMISSIONS	FREQUENCY	%	CUMULATIVE %
First	32	64	64
Second	8	16	80
Third	8	16	96
Fourth	2	4	100
TOTAL	**50**	**100**	

Table 4.5 indicates that 32 (64%) participants were admitted for elective orthopaedic surgery for the first time. This means that slightly more than half of the patients had no previous experience with orthopaedic surgery. Of the participants, 16 (32%) were admitted for surgery for the second or third time.

Table 4.6 Types of elective surgery orthopaedic patients underwent (n=50)

TYPES OF SURGERY	FREQUENCY	%	CUMULATIVE %
Thompson's prosthesis	2	4	4
Arthrodesis ankle (open reduction internal fixation)	5	10	14
Femoral nail insertion (AO nail)	7	14	28
Pin and plate-femur	9	18	46
Open reduction	12	24	70

and internal fixation tibial plateau			
Open reduction and internal fixation-radius/ulna	15	30	100
TOTAL	**50**	**100**	

Table 4.6 indicates that 15 (30%) participants underwent surgery for open reduction and internal fixation of the radius/ulna, followed by 12 (24%) for open reduction and internal fixation of the tibial plateau and 9 (18%) for pin and plate of the femur. The above findings reveal that 35 (70%) participants sustained injuries to the lower limbs as compared to 15 (30%) who sustained injuries to the upper limbs.

4.3 PRE-OPERATIVE INFORMATION RECEIVED BY ORTHOPAEDIC PATIENTS

Davis (2000:40) maintained that most orthopaedic patients have planned hospital admissions allowing time for patient teaching. The patient may be taught pre-operatively about the events that may occur before and after surgery. Patients were at risk from breathing limitations, skin damage, pain and changes in self concept due to the effects of surgery and anaesthesia. When conducting pre-operative teaching, it was important that the nurse explained the operation, the immediate post-operative recovery period and the expected mobilisation plan.

4.3.1 The importance of pre-operative information in preparing patients for surgery

Table 4.7 indicates that 33 (66%) participants found pre-operative information to be useful in preparation for surgery and 32 (64%) participants found pre-operative information useful for their post-operative recovery.

Table 4.7 Usefulness of pre-operative information in preparation for surgery and in post-operative recovery (n=50)

USEFULNESS OF INFORMATION IN	USELESS	SLIGHTLY USEFUL	USEFUL	EXTREMELY USEFUL	TOTAL
Preparing for	0	11	33	6	50

surgery					
Post-operative recovery	1	32	14	3	50

The median scores for the importance of pre-operative education shows pre-operative education to be useful in preparation for surgery and slightly useful in post-operative recovery. McDonald et al (2006) maintain that education and information that was individually geared to a person and given pre-operatively improved recovery in surgical patients.

Walker (2007:29) stated that pre-operative information can be overwhelming for patients as they are provided with information by several health care professionals. This resulted in the delivery of contrasting information. Providing patients with multidisciplinary written information served as a point of reference and helped reduce this confusion. Pellino et al (1998:48) revealed that patients who received an empowerment model of education for pre-operative orthopaedic teaching had improved outcomes. Patients participated actively in their care and had the ability to carry out peri-operative tasks with confidence.

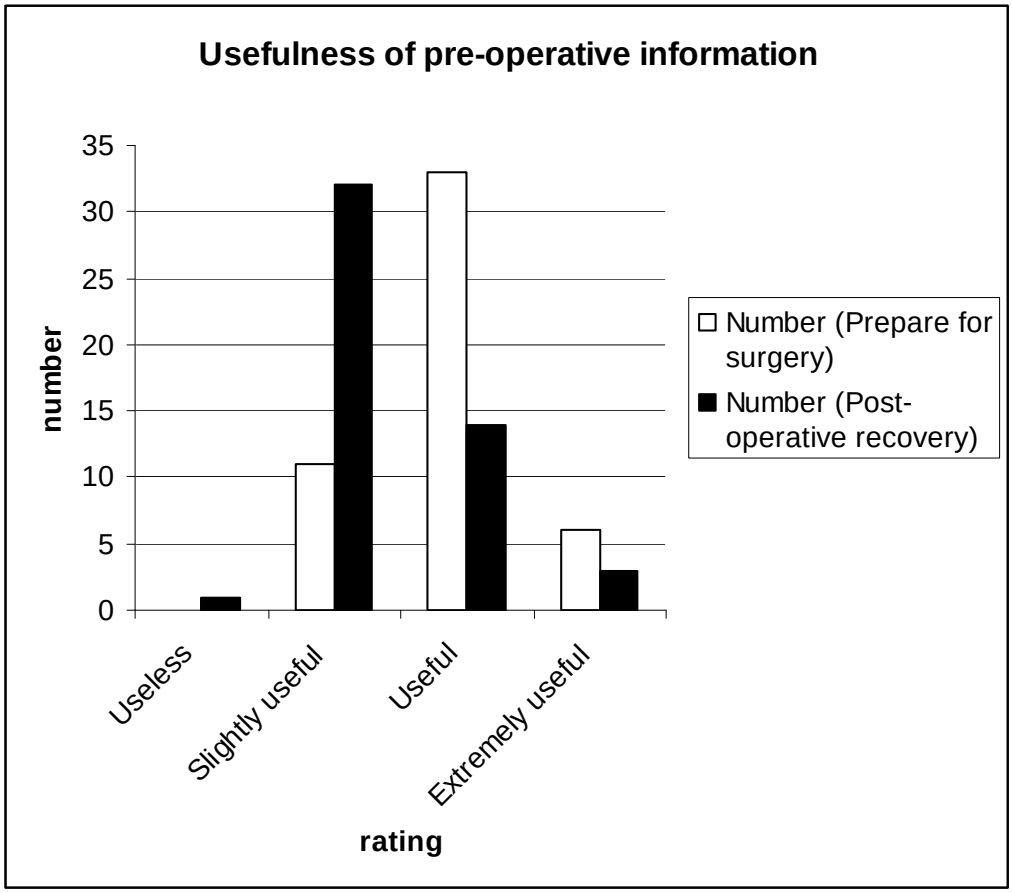

Figure 4.1

Patients' feedback on the usefulness of pre-operative information

According to Figure 4.1, participants were of the opinion that pre-operative information was useful when preparing themselves for surgery and slightly useful in the post-operative recovery period. Most participants preferred to receive more information on post-operative recovery such as information on wound care, exercises, ambulation, nutrition and pain medication. This would have helped them to cope better with their recovery. This information is in line with the findings made by Lewis et al (2004:369), Shuldham et al (2002:666) as well as Elkin et al (2004:496-497) who stated that effective pre-operative information helped to reduce stress, anxiety and pain levels and contributed to better post-operative outcomes. Kneale and Davis (2005:231,241) added that information given to orthopaedic patients included information on admission, education on what to expect pre- and post-operatively and advice on pain management including the use of epidural and patient-controlled analgesia.

Spalding (2004:152) maintained that pre-operative education has the potential to increase patients' confidence which resulted in enhanced control of their health and well-being. This improved their understanding, reduced their uncertainty and increased their power. The conclusion was reached that patients empowered by pre-operative education can take better control of some of their post-operative needs.

4.3.2 Information provided on the night preceding the surgery

The type of information provided to patients on the night before surgery is reflected in table 4.8.

Table 4.8 Types of pre-operative information provided the night before surgery (n=50)

INFORMATION PROVIDED THE NIGHT BEFORE SURGERY	YES	NO	% (YES)
No eating/drinking	49	0	98
Shower	50	0	100
Shampoo hair	2	48	4

Remove finger and toenail polish	20	30	40
Shave operative site	8	42	16
Light supper	1	49	2
Remove jewellery	40	10	80

On the night before surgery, 49 (98%) participants were informed not to eat or drink anything from 24h00, 50 (100%) were asked to take a shower and 40 (80%) were reminded to remove all jewellery. Only 20 (40%) participants were asked to remove finger and toenail polish.

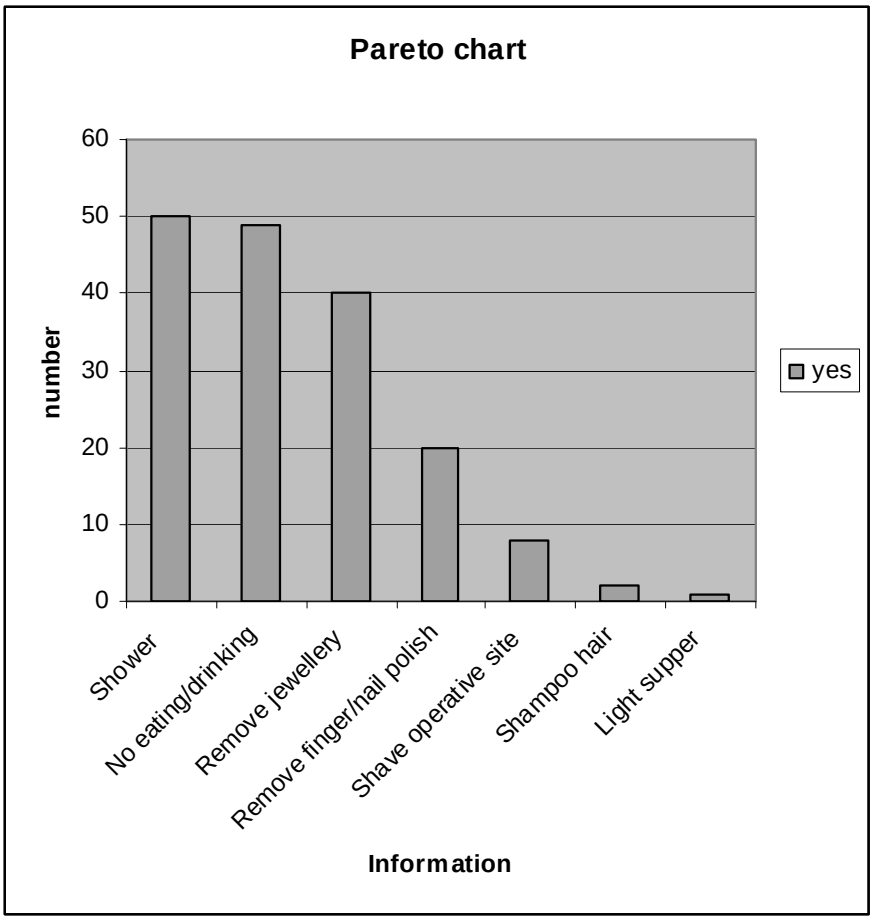

Figure 4.2

Information provided the night before surgery (n=50)

A pareto chart is a series of graphs whose height reflects the frequency or impact of

problems. The bars are arranged in descending order of height from left to right (Levin, Ramsey & Smidt 2001:74-76). The above pareto chart arranges aspects of information that patients received the most, to aspects of information that was provided the least.

Figure 4.2 indicates the following information provided the night before surgery to be lacking as only 20 participants were asked to remove finger and toenail polish, 8 were asked to shave the operative site, 2 were asked to shampoo their hair and only 1 participant was asked to have a light supper. It can therefore be concluded that patients were not provided with adequate information on activities on the night before surgery.

4.3.3 Information on how to prepare oneself on the morning of surgery

The type of information provided to patients on the morning of surgery is reflected in table 4.9.

Table 4.9 Type of pre-operative information provided on the morning of surgery (n=50)

INFORMATION PROVIDED THE MORNING OF SURGERY	YES	NO	% (YES)
No eating/drinking	50	0	100
Shower	50	0	100
Remove jewellery	50	0	100
Remove underwear	50	0	100
Remove make-up	1	49	2
Shave operative site	8	42	16
Pre-medication	1	49	2
Empty bladder	0	50	0
Wear theatre clothes	50	0	100

Table 4.9 indicates that 50 (100%) participants received information on remaining nil per mouth, taking a shower, removing jewellery and underwear and donning theatre attire before going for surgery.

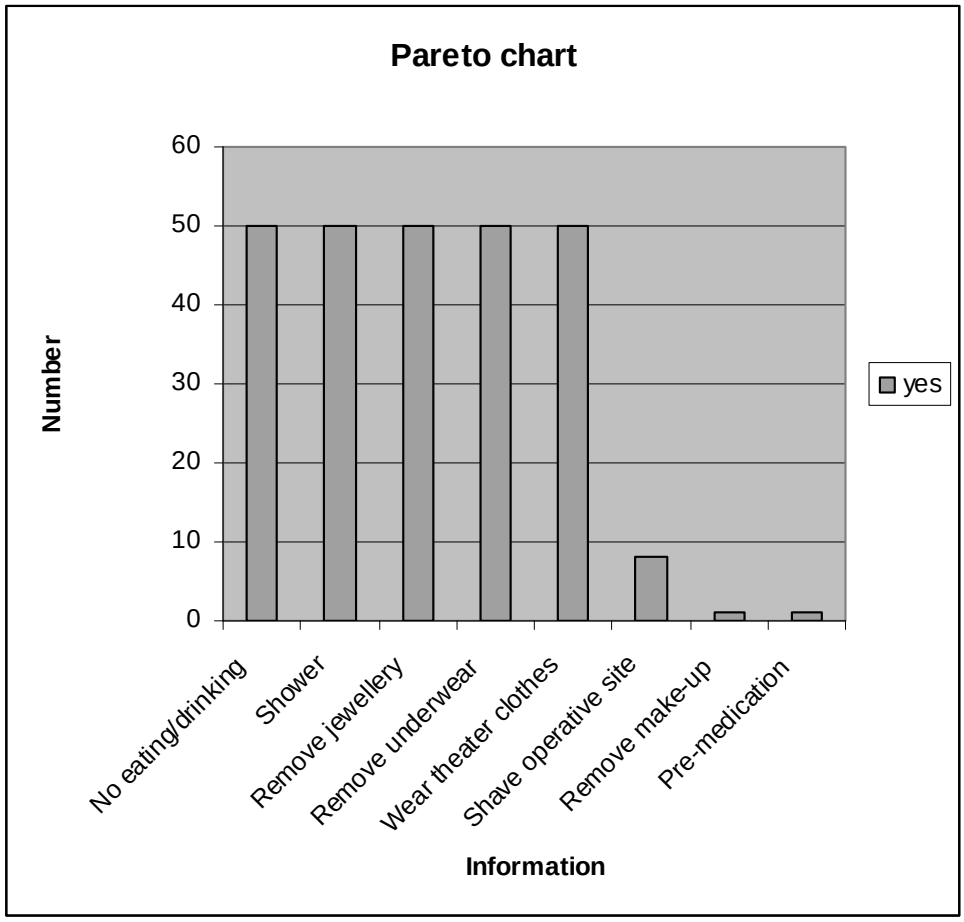

Figure 4.3

Information provided on the morning of surgery (n=50)

According to figure 4.3, information provided on the morning of surgery lacked information on shaving of the operative site (16%), removing make-up (2%) and pre-medication (2%). It can therefore be concluded that not all patients were provided with adequate information on activities prior to going to the operating theatre. A pre-operative checklist was used to check and tick off the items that were covered. The aim was to enhance safety and efficiency in transferring patients to theatre. This finding, that information rather than education was what patients received before surgery, is supported by Fitzpatrick and Hyde (2005:254). Tromp et al (2004:221) described an information protocol which was used during pre-operative education. It consisted of a list of issues which different health care providers discussed with the patient. A copy of the information protocol was located at the patient's bedside. Each health care provider ticked off the information that was given to the patient. It was found that the information protocol was tailored to the individual patient and therefore promoted recovery.

4.3.4 Format in which the information was presented

Table 4.10 The form in which pre-operative information was presented (n=50)

FORM INFORMATION WAS PRESENTED	YES	NO	% (YES)
Oral explanation	50	0	100
Oral explanation with pictures	0	50	0
Videotapes	0	50	0
Pamphlets	0	50	0
Books	0	50	0
X-rays	44	6	88

Only two formats are used to present pre-operative information to patients. The above table shows that 100% of the patients received pre-operative information in the oral format whereas 88% of patients received pre-operative education in the form of X-rays.

This corresponds with the view of Clarke (1999:47) who maintained that nurses with their unique position, have the greatest opportunity to initiate and reinforce patient education. To effectively communicate information, personal interaction was essential.

4.3.5 The preferred format in which the information should be presented

The format in which patients would like information to be presented is reflected in table 4.11.

Table 4.11 Form in which patients would like information to be presented (n=50)

PREFERRED FORMAT	FREQUENCY	%	CUMULATIVE %
Books	1	2	2
Pamphlets	1	2	4
Prosthesis	3	6	10
X-rays	5	10	20
Videotapes	15	30	50
Oral explanation	25	50	100
TOTAL	**50**	**100**	

Patients prefer information in the oral form and in the form of videotapes, which is not currently practised, to X-ray information. Only 25 (50%) patients preferred information to be given orally.

This view is supported by Johansson et al (2005:220) who stated that giving patients written information in the form of booklets was inadequate to provide effective pre-operative education. Information should also be provided orally.

Thomas et al (2004:40) described the use of an interactive telehealth network. This was a form of teaching, patient consultation and education which took place using a two-way closed circuit television and video system.

Presenters used an overhead camera to show examples of total joint implants, epidural catheters and syringes. Results of this study showed that most patients found this method to be an acceptable method of pre-operative patient education.

The findings of a study conducted by Kulik (1999:3) revealed that patients who saw videotapes about their surgical procedures, spent less time in the intensive care unit and in the hospital after surgery. Patients felt more confident as they were able to perform various activities after surgery such as deep breathing exercises and ambulation.

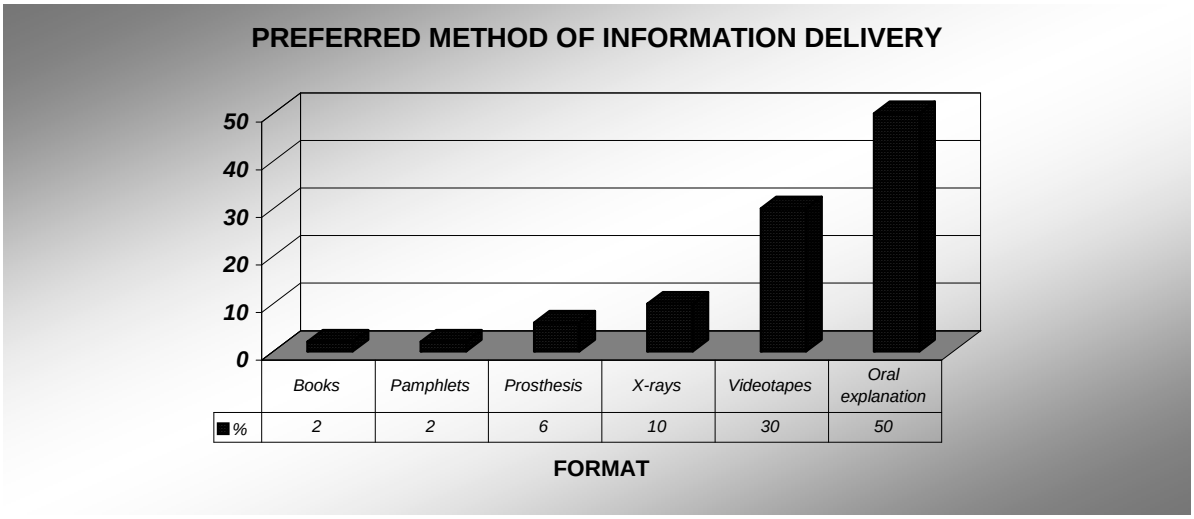

Figure 4.4

Preferred method of pre-operative information delivery

The format in which information was presented to the patients enabled them to understand the disease process and their impending surgical procedures.

Figure 4.4 indicates that 50% of the patients preferred information to be presented in the oral format, while 30% preferred videotapes, 10% preferred X-rays and only 2% preferred pamphlets and books. Most patients preferred the oral format because it was simple and easy to understand, enabling them to ask questions. Patients preferred the videotapes because it was less stressful, a pleasure to watch, it was not boring and more information could be given using this format. Being shown the X-rays enabled the patients to see where the actual fracture was and how the operation was going to be performed.

Audiovisual materials such as pamphlets, photographs, slides, filmstrips and videotapes can be used to explain pre-operative and post-operative routines. Phipps et al (2003:380) stated that some patients learn more readily by using a combined approach. However, the nurse needs to assess the appropriateness of printed materials when using them for patient education in cases where patients might have attained limited educational levels.

Spalding (2004:152) showed support for the use of videotapes in pre-operative education. He stated that the content of the pre-operative education programme provided patients with knowledge of what they might expect when undergoing a surgical procedure. Patients trusted the content of the video and found it reassuring to hear other patients talk about their real life experiences. This improved their understanding, reduced their uncertainty and increased their power.

Pager (2005:6) demonstrated that showing videotapes to patients explaining what to expect from surgery, yielded positive results. A simple, inexpensive videotape showed patients what to expect from surgery. This resulted in increased patient understanding and satisfaction as well as decreased levels of anxiety.

4.3.6 Awareness of the operating room environment

Information on the awareness of the operating room environment is reflected in table 4.12.

Table 4.12 Information on the awareness of the operating room environment (n=50)

AWARENESS OF THE OPERATING ROOM ENVIRONMENT	FREQUENCY	%	CUMULATIVE %
Yes	15	30	30
No	35	70	100
TOTAL	**50**	**100**	

The above table indicates that 35 (70%) patients did not receive information on the awareness of the operating room environment.

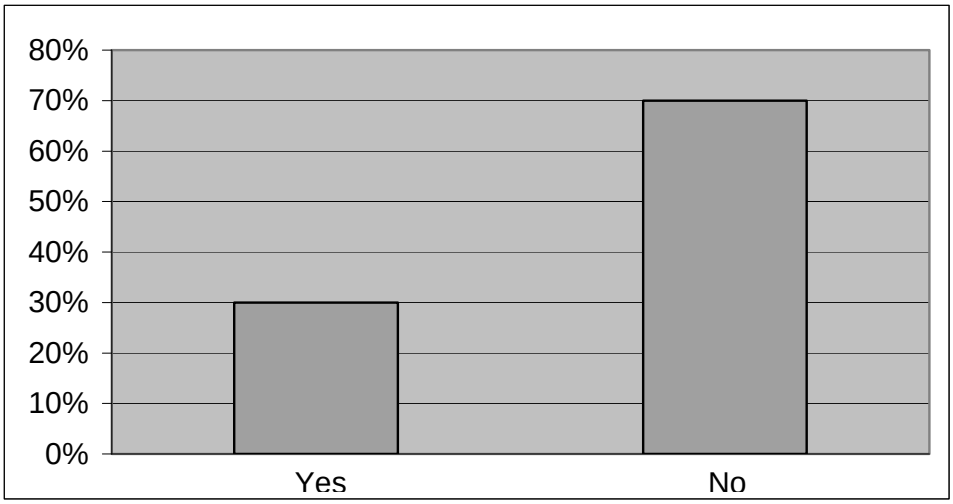

Figure 4.5

Patients' awareness of the operating room environment

Table 12 and figure 4.5 indicate that 35 (70%) patients were not made aware of the operating room environment. Only 15 (30%) patients received information on the operating room environment. This is due to the fact that most patients did not receive pre-operative visits since 55% of the time pre-operative visits were only conducted once a week by the operating room nurse as reflected in table 5.5 in Chapter 5 of this dissertation.

4.3.7 Pre-operative information's reported effect on patients' perceived nervousness about their surgery

According to the findings, 39 (78%) patients agreed that pre-operative education decreased nervousness about surgery, 39 (78%) patients disagreed that pre-operative education had no effect on nervousness about surgery and 39 (78%) patients strongly disagreed that pre-operative education increased nervousness about surgery.

Table 4.13 Pre-operative information's reported effect on patients' perceived nervousness about their surgery (n=50)

RATING	DECREASED NERVOUNESS ABOUT SURGERY	NO EFFECT ON NERVUSNESS ABOUT SURGERY	INCREASED NERVOUSNESS ABOUT SURGERY
Strongly disagree	0	5	39
Disagree	6	39	11
Agree	39	6	0
Strongly agree	5	0	0

Median scores indicate that 39 patients agreed that pre-operative information decreased nervousness about surgery, 39 patients disagreed that pre-operative information had no effect on nervousness about surgery and 39 patients strongly disagreed that pre-operative education increased nervousness about surgery.

4.3.8 Satisfaction with information provided

Median scores indicate that 33 (66%) patients agreed that they were satisfied with pre-operative information, 37 (74%) disagreed being slightly dissatisfied with pre-operative information and 36 (72%) strongly disagreed being extremely dissatisfied with pre-operative education.

Table 4.14 Patients' reports on the information provided to them (n=50)

RATING	SATISFACTIONWITH PRE-OPERATIVE INFORMATION PROVIDED	SLIGHT DISSATISFACTION WITH PRE-OPERATIVE INFORMATION PROVIDED	EXTREME DISSATISFACTION WITH PRE-OPERATIVE INFORMATION PROVIDED
Strongly disagree	0	0	36
Disagree	13	37	13
Agree	33	12	1
Strongly agree	4	1	0

4.3.9 Information considered to be extremely important by patients (information about pre-operative preparation/details of anaesthesia/details of surgery/operating room environment/post-operative expectations)

Table 4.15 indicates that 29 (58%) patients considered information about pre-operative preparation to be important, 29 (58%) considered information about details of anaesthesia to be important, 44 (88%) considered information about details of surgery to be extremely important, 47 (94%) considered information about the operating room environment to be important and 44 (88%) patients considered information about post-operative expectations to be important.

Table 4.15 Patients' reports on the information considered to be extremely important to them (n=50)

RATING INFORMATION CONCERNING	PRE-OPERATIVE PREPARATION	DETAILS OF ANAESTHESIA	DETAILS OF SURGERY	THE OR ENVIRON-MENT	POST-OPERATIVE EXPECTATIONS
Strongly disagree	0	0	0	0	0
Disagree	0	1	0	3	0
Agree	29	29	6	47	44
Strongly agree	21	20	44	0	6

Median scores on information considered to be extremely important indicate an agreement on information about pre-operative preparation, details of anaesthesia, the operating room environment and post-operative expectations and a strong agreement about details of surgery.

4.3.10 Forms of digital technology that patients have at home

Table 4.16 Digital technology that patients have at home (n=50)

FORMS OF DIGITAL TECHNOLOGY	FREQUENCY
Computers with CD	3
Video machines	26
DVD players	33
Televisions	39

Table 4.16 indicates that most patients had televisions, DVD players and video machines at home. This finding was related to their educational qualifications, as can be seen in table 4.17.

Table 4.17 Percentage of patients who have 2 or more forms of digital technology at home

EDUCATIONAL QUALIFICATIONSY	%
Grades 3-10	56
Grade 11	80
Grade 12	100

According to the above table, the higher the educational qualifications of the patients, the more digital technology was available at home. With the high number of patients who had digital technology available in their homes, the possibility of issuing patients with videotapes on pre-operative information prior to admission to hospital, could be a feasible option for providing additional pre-operative information.

Yellen and Ricard (2005:831-839) mentioned that receiving the videotape before a hospital stay allowed the patient to prepare for the hospital stay and the patient was able to view the videotape at a convenient time. Patients admitted for surgery for the first time responded favourably to the videotape.

4.4 PERSONS WHO PROVIDED PRE-OPERATIVE INFORMATION TO ORTHOPAEDIC PATIENTS

Rothrock et al (2003:845-847) stated that discharge planning and patient education should involve a multidisciplinary approach. It should begin when the patient is admitted and should be done by all members of the health care team including the physician, nurse, physical therapist, social worker, the patients' family members and significant others.

4.4.1 Providers of pre-operative information (operating room nurse/ward nurse/surgeon/anaesthetist/physiotherapist/occupational therapist)

Fielden et al (2003:429-431) stated that patients require education and support, which are provided by the multidisciplinary health care team, namely nurses, doctors, physiotherapists and occupational therapists. This promoted patients' satisfaction with their discharge planning.

Prouty et al (2006:257) described a pre-operative education programme offered by a multidisciplinary team in Michigan (USA), consisting of an orthopaedic clinical nurse specialist, a physical therapist, an occupational therapist and a care coordinator. The clinical nurse specialist covered pre-operative preparation of the patient, the physical therapist focused on patient recovery and therapy and a return to normal activity, the occupational therapist ensured that patients functioned independently and safely in their homes and the care coordinator assisted patients with their medical equipment, discharge planning and medical insurance.

Providers of pre-operative information is reflected in tables 4.18 and 4.19.

Table 4.18 Providers of the most important information (n=50)

PROVIDERS OF THE MOST IMPORTANT INFORMATION	NUMBER
Surgeon	19
Surgeon and ward nurse	11
Ward nurse	8
Surgeon and anesthetist	5
Surgeon, ward and operating room nurses	3
Surgeon and operating room nurse	2
Anesthetist	1
Surgeon, anesthetist and operating room nurse	1

These findings reveal that the surgeon, followed by the ward nurse were regarded as the most important providers of information.

Table 4.19 Providers of the most important information individually (n=50)

PROVIDERS OF THE MOST IMPORTANT IMFORMATION INDIVIDUALLY	NUMBER	RANK
Surgeon	41	1
Ward nurse	22	2
Anesthetist	7	3
Operating room nurse	6	4
Physiotherapist	0	5
Occupational therapist	0	6

Table 4.19 demonstrates that patients agree that the surgeon was the most appropriate person to provide pre-operative education. The patients agreed that the surgeon, ward nurse, anaesthetist and operating room nurse, in this order of importance, were the most appropriate people to provide pre-operative education. The patients, however,

acknowledged the importance of all health care providers in providing information to them.

This view is supported by Smeltzer and Bare (2004:2041) who mentioned that pre-operative teaching also involved discussions with the patients and family about the need for assistance with activities of daily living and the need for support once the patient is discharged. This involved the occupational therapist who informed the patients and family on ways to modify the home environment in order to accommodate the altered mobility of the patient after surgery as well as referral to the social worker.

4.4.2 Understanding of information provided

According to table 4.20, 47 (94%) patients clearly understood the language that was used to convey the information to them, 34 (68%) patients clearly understood the medical terminology that was explained whereas 16 (32%) patients had a slight understanding of medical terminology that was used.

The findings reveal that 46 (92%) patients clearly understood the information provided as it was provided at a reasonable pace.

Table 4.20 Patients reports on the understanding of information provided to them (n=50)

RATING	LANGUAGE USED TO CONVEY THE INFORMATION	EXPLANATION OF MEDICAL TECHNOLOGY	PROVISION OF INFORMATION AT A REASONABLE PACE
Extremely difficult to understand	0	0	0
Difficult to understand	0	0	0
Slight understanding	3	16	4
Clearly understood	47	34	46

Patients reported a clear understanding of the language used to convey the information and that information was provided at a reasonable pace. However, slight understanding of medical terminology was reported. In order for verbal information to be effective, Clarke (1999:47) mentioned that verbal information should be simple and clear.

Royan and Timmins (2004:37-41) maintained that nurses are responsible to give the patients vital information to aid their recovery. By simplifying the information, using repetitions, reinforcing the message and being specific, nurses can improve the effectiveness of the message.

4.4.3 Opportunity to ask questions or clarify information provided

The opportunity given to ask questions or clarify information is reflected in tables 4.21 and 4.22

Table 4.21 Opportunity given to ask questions (n=50)

OPPORTUNITY TO ASK QUESTIONS	FREQUENCY	%	CUMULATIVE %
Never 1	27	54	54
Sometimes 2	9	18	72
Less often 3	14	28	100
Frequently 4	0	0	100
TOTAL	**50**	**100**	

According to table 4.21, 27 (54%) patients reported either never having been given the opportunity to ask questions or they were given the opportunity to ask questions less often, usually at the end of the pre-operative information section.

Table 4.22 Opportunity given to clarify information (n=50)

OPPORTUNITY TO CLARIFY INFORMATION	FREQUENCY	%	CUMULATIVE %
Unimportant 1	0	0	0
Slightly important 2	0	0	0
Important 3	29	58	58
Extremely important4	21	42	100
TOTAL	**50**	**100**	

The findings reflected in table 4.42 indicate that 29 (58%) patients regarded the opportunity to clarify information as being important. This finding indicates a need for patients to be provided with opportunities to ask questions and to clarify information. This finding is supported by Rothrock et al (2003:845-847) who stated that nurses should ensure that the patient and his/her family members understand the pre-operative education given, by asking the patient and family to demonstrate a requisite skill and by allowing time for asking questions and raising concerns.

4.5 INFORMATION AS TO WHETHER THE INFORMATION PROVIDED TO ORTHOPAEDIC PATIENTS HELPED THEM WITH THEIR POST-OPERATIVE ADAPTATIONS, EXPECTATIONS AND/OR RECUPERATION PROCESSES

Spalding (2004:152) stated that pre-operative education increased patients' confidence, improved their understanding, reduced their uncertainty and increased their power. Patients empowered by pre-operative education can take control of some of their post-operative needs during recuperation.

4.5.1 Information on post-operative care

Table 4.23 Aspects on post-operative care provided (n=50)

POST-OPERATIVE CARE	FREQUENCY	%
Nutrition	6	12
Early ambulation	15	30
Wound care	18	36

Exercises	27	54
Pain medication	29	58

The above table indicates that 54% of the patients received information on exercises from the physiotherapist and 58% received information on pain medication from the surgeon. However, information on aspects of post-operative care that was lacking included information on wound care, early ambulation and nutrition. Patients felt that information on these aspects pre-operatively would have prepared themselves adequately for post-operative recovery. Demonstrations on the performance of active and passive exercises were done but patients were not shown deep breathing and coughing exercises.

Oetker-Black et al (2003:1226) revealed that increasing self-efficacy pre-operatively, increased post-operative ambulation, which is the key to post-operative recovery from surgery.

Smeltzer and Bare (2004: 409) stated that teaching the patient deep breathing and coughing exercises is an important goal of pre-operative teaching as it involved teaching the patient how to promote optimal lung expansion. This was necessary to prevent complications such as atelectasis and pneumonia in the post-operative period.

Information on post-operative issues and lifestyle changes such as social and employment activities and self-management were only touched on in the post-operative period. Patients felt that this aspect needed to be dealt with pre-operatively so that they would be able to cope better post-operatively. This is supported by Margereson and Riley (2003:65-70) who maintained that patients need to understand the nature of impending surgery and develop effective coping strategies. This was achieved by the provision of manageable portions of procedural and sensory information as well as information on post-operative issues and lifestyle changes.

Lithner and Zilling (2000:29) investigated patients' needs for pre and post- operative information prior to undergoing elective surgery. As many as 30% of patients wanted

both written and verbal information. Pain and post-operative symptoms were the major issues to be addressed during such information sessions.

4.6 SUMMARY

Patients agreed that pre-operative information decreased nervousness about surgery. This is in keeping with the view of Ashhurst (2005:1-6) who stated that patients who have received pre-operative teaching and are prepared for surgery, are less fearful and often cope better with post-operative pain and decreased mobility.

Patients reported being satisfied with pre-operative information provided. This finding is supported by a study conducted by Mordiffi et al (2003:553-554) which revealed that 75% of patients were satisfied with the amount of information received and with the manner in which it had been communicated to them.

Lookinland (1998:7-8) further stated that patient satisfaction represented quality service and this reflected positively on the health care institution's reputation. Results of the study indicated that quality education preparation by nurses resulted in increased patient satisfaction and improved recovery rates of patients. This in turn meant cost-effective, earlier discharges from hospital for the patients concerned. Patients also reported information about details of surgery to be extremely important to them.

This chapter sums up data analysis and findings relating to the data collected from orthopaedic patients who underwent elective surgery. Strategies, methods and techniques of data analysis were discussed. In the following chapter, data analysis and findings relating to operating room nurses and orthopaedic ward nurses will be discussed.

CHAPTER 5

Data analysis and findings: operating theatre and orthopaedic ward nurses

5.1 INTRODUCTION

This chapter deals with the statistical analysis and discussion of data concerning the perceptions of nurses regarding pre-operative education given to orthopaedic patients undergoing elective surgery. This chapter deals with the analysis of data obtained from operating room nurses and orthopaedic ward nurses.

Findings of this study are presented in three parts. Part 1 and part 2 are presented according to the sections of the interview schedules pertaining to operating room nurses and orthopaedic ward nurses.

Part 3 compares the perceptions of the three groups of participants (patients, operating room nurses and orthopaedic ward nurses) on pre-operative education.

Part 1. Analysed data obtained from operating room nurses consisting of two sections.

- *Section A*. Demographic data from operating room nurses.
- *Section B*. Perceptions of operating room nurses regarding the conducting of pre-operative teaching and visits to orthopaedic patients.

Part 2. Orthopaedic ward nurses' data consisting of two sections.

- *Section A.* Demographic data from orthopaedic ward nurses
- *Section B*. Perceptions of orthopaedic ward nurses regarding the conducting of pre-operative education.

5.2 PART 1: DEMOGRAPHIC INFORMATION: OPERATING ROOM NURSES

This section will present and discuss demographic data obtained from operating room nurses including gender, age, academic qualifications and the number of years and months of experience as an operating room nurse. Demographic descriptions of the sample are presented in tables 5.1-5.4.

Table 5.1 Gender distribution of operating room nurses (n=20)

PARTICIPANTS	FREQUENCY	%	CUMULATIVE %
Female	1	5	5
Male	19	95	100
TOTAL	**20**	**100**	

According to table 5.1, 19 (95%) participants were females. This shows an increased number of females working in the operating room and this is in keeping with a preponderance of females in the nursing profession in South Africa.

Table 5.2 Age distribution of operating room nurses (n=20)

AGE	FREQUENCY	%	CUMULATIVE %
29-38	10	50	50
39-48	8	40	90
49-58	0	0	90
59-68	2	10	100
TOTAL	**20**	**100**	

As many as 18 (90%) operating room nurses were in the 29-48 year age group. This

indicates that most of the nurses working in the operating theatre had a number of years of nursing experience.

Table 5.3 Academic qualifications of operating room nurses (n=20)

ACADEMIC QUALIFICATIONS	FREQUENCY	%	CUMULATIVE %
Post basic B degree, Diploma in operating theatre nursing science and R425 Diploma	1	5	5
Diploma in operating theatre nursing science and R425 Diploma	9	45	50
R425 Diploma	2	10	60
Diploma in operating theatre nursing science, Diploma in General nursing, Midwifery and Community nursing	1	5	65
Diploma in operating theatre nursing science, Diploma in General nursing and Community nursing	1	5	70
Diploma in operating theatre nursing science, Diploma in General nursing and Midwifery	2	10	80
Diploma in operating theatre nursing science and Diploma in General nursing	1	5	85
Diploma in General nursing, Midwifery and Community	2	10	95
Diploma in General nursing and Midwifery	1	5	100
TOTAL	**20**	**100**	

Table 5.3 indicates that 9 (45%) nurses working in the operating room were in possession of the diploma in operating theatre nursing science. This could enable them to render more effective pre-operative education in the form of pre-operative visits to the patients. However, 11 (55%) of the operating room nurses did not have this qualification.

Table 5.4 The number of years and months of experience as an operating room nurse (n=20)

NUMBER OF YEARS AND MONTHS OF EXPERIENCE	FREQUENCY	%	CUMULATIVE %
0-5 years	2	10	10
6-10 years	8	40	50
11-15 years	5	25	75
16-20 years	4	20	95
21-30 years	1	5	100
TOTAL	**20**	**100**	

Table 5.4 demonstrates that 8 (40%) operating room nurses had between 8-10 years of experience as an operating room nurse. This knowledge can be utilised to render effective pre-operative education to patients. This view is mirrored by Phillips (2004:368) who stated that pre-operative education provided through pre-operative teaching is regarded as an important part of peri-operative nursing practice, including pre, intra and post-operative care that contributes to the continuity of total patient care.

5.3 PERCEPTIONS OF OPERATING ROOM NURSES REGARDING THE CONDUCTING OF PRE-OPERATIVE TEACHING AND VISITS ON ORTHOPAEDIC PATIENTS

Ashhurst (2005:1-6) views pre-operative teaching as a means of decreasing post-operative complications and promoting recovery of the patient. He stated that patients

who are prepared for surgery are less fearful and often cope better with post-operative pain and decreased mobility than patients who did not receive such pre-operative education.

5.3.1 Frequency of conducting pre-operative visits

The frequency and adequacy of conducting pre-operative visits is reflected in tables 5.5 and 5.6.

Table 5.5 Frequency of conducting pre-operative visits (n=20)

FREQUENCY OF CONDUCTING VISITS	FREQUENCY	%	CUMULATIVE %
Less than once a week	6	30	30
Once a week	11	55	85
More than once a week	3	15	100
TOTAL	**20**	**100**	

Findings reveal that 55% of the time pre-operative visits are conducted once a week. This indicates that most of the time patients undergoing elective surgery do not receive a pre-operative visit by the operating room nurse. In a literature review on the effects of giving patients pre-operative education, Hughs (2002:37) pointed out that pre-operative visits helped patients cope physiologically and psychologically with their theatre experience. Properly conducted pre-operative visits boosted the morale of the patient and the operating room nurse because they became real persons to each other rather than the next patient on the operating list.

Table 5.6 Adequacy of pre-operative education (n=20)

ADEQUACY OF PRE-OPERATIVE EDUCATION	FREQUENCY	%	CUMULATIVE %
Yes	1	5	5
No	19	95	100
TOTAL	**20**	**100**	

The above table indicates that 95% of operating room nurses considered pre-operative education provided by operating room nurses in the theatre to be inadequate. Pre-operative visits are usually conducted by operating room nurses during night duty and over week-ends. Those visits conducted from 16h00-18h00 daily do not include visits to all patients due to time constraints.

5.3.2 Types of surgery performed on orthopaedic patients who received a pre-operative visit

The types of surgery patients underwent is reflected in table 5.7.

Table 5.7 Types of surgery orthopaedic patients underwent

TYPE OF SURGERY	FREQUENCY
Thompson's prosthesis	14
Arthrodesis ankle (open reduction internal fixation)	14
Open reduction (internal fixation tibial plateau)	14
Open reduction and internal fixation-radius/ulna	15
Femoral nail	17
Pin and plate-femur	18

Table 5.7 indicates that 18 patients who received a pre-operative visit underwent a pin and plate of the femur followed by 17 patients who had an insertion of a femoral nail and 15 patients who had surgery for an open reduction and internal fixation of the radius and ulna.

5.3.3 Teaching about expectations during recovery

Table 5.8 Expectations during recovery (n=20)

EXPECTATIONS DURING RECOVERY	FREQUENCY	%	CUMULATIVE %
No	1	5	5
Yes	19	95	100
TOTAL	**20**	**100**	

According to table 5.8, 19 (95%) operating room nurses taught patients about expectations during recovery. This teaching encompassed aspects on limitation of movement, pain management, presence of intravenous therapy, drains, catheters and observations in the recovery period such as routine checks for circulation, bleeding, wound drainage and vital signs.

5.3.4 Benefits of a pre-operative visit

Table 5.9 Benefits of a pre-operative visit to the patient (n=20)

BENEFITS OF A PRE-OPERATIVE VISIT	FREQUENCY	%	CUMULATIVE %
No	0	0	0
Yes	20	100	100
TOTAL	**20**	**100**	

Table 5.9 indicates that all operating room nurses were of the opinion that pre-operative visits are beneficial to patients. Operating room nurses felt that the pre-operative visits allayed the patients' anxiety as a result the patient is much more cooperative in his care.

This finding is supported by a study conducted by McGarvey et al (2004) which indicated that nurses were aware of the benefits of pre-operative visits. Nurses viewed pre-operative visits as an important link between pre-operative information and post-operative recovery and pain relief. The purpose of the visit was seen as a means of building a relationship with the patient, offering reassurance and comfort and giving the patient information he or she required about the impending surgery.

This finding is also supported by Martin's (1996:33) explanation of the benefits of pre-operative visits. A study conducted to evaluate the effect of pre-operative visits by theatre nurses on pre- and post-operative levels of anxiety, showed a decrease in anxiety levels 24-72 hours post-operatively. This author therefore recommends that every patient should receive a pre-operative visit from a theatre nurse.

5.3.5 Conducting of pre-operative visits to every patient

Table 5.10 Operating room nurses' opinions on conducting pre-operative visits (n=20)

CONDUCTING OF PRE-OPERATIVE VISITS	FREQUENCY	%	CUMULATIVE %
No	0	0	0
Yes	20	100	100
TOTAL	**20**	**100**	

All operating room nurses included in the study were of the opinion that pre-operative visits should be conducted to every patient. Nurses felt that the pre-operative visits helped establish a rapport with patients so that patients were familiar with the nurse when they arrived in theatre. It also enabled abnormalities to be detected and this enabled the nurse to prepare the theatre adequately to receive the patient. The operating room nurse was also knowledgeable about pre, intra and post-operative care therefore patients benefited from her visit and teaching. It also offered a chance to answer questions of concern and to check completion of documents such as consent forms.

5.3.6 Challenges encountered when conducting pre-operative visits

Table 5.11 Challenges concerning pre-operative visits

CHALLENGES CONCERNING PRE-OPERATIVE VISITS	NUMBER
Staff shortages and lack of time	7
No time	5
Staff shortage	2
Staff not sufficiently trained	3
Problems with patients (not there, communication)	3
Noise	1
Teaching aids limited	1
No assistance from ward staff	1

The above table indicates that the five most important challenges encountered when conducting pre-operative visits in order of importance were: insufficient time; staff shortages; problems with patients including communication (language) barrier and patients not turning up on time; lack of training of staff and inadequate or no equipment or teaching aids. Operating room nurses found it difficult to conduct pre-operative visits because:

- There was no specific time allocated to conduct pre-operative visits and therefore it was not conducted regularly.
- There was an increased turnover of surgical cases and as a result staff were occupied in the operating rooms.
- Elective slates were completed at 16:00. Some staff went off duty at this time therefore time was limited to conduct visits.
- Even when visits were planned, they took place between 16:00 and 18:00.The time was limited and not all the patients on the slate could be visited.
- Shortages of nurses due to increased rates of absenteeism made it difficult to allocate staff to conduct pre-operative visits.
- There were also problems experienced with patients. There were communication barriers as some of the patients were Zulu speaking and some nurses could only converse in English. Therefore the nurses could not communicate effectively with all patients. Patients were not admitted timeously and as a result they were not present when pre-operative visits had been conducted.
- An increased number of nurses left the operating rooms posing a problem as newly employed nurses required training, further limiting the time available for conducting pre-operative visits.
- The equipment and teaching aids for pre-operative teaching were unavailable or inadequate. Only one ward had a video machine, even though this was the form in which patients preferred pre-operative information to be presented.
- There were no teaching aids such as prostheses, models, booklets or pamphlets on pre-operative information.

Findings of a study conducted by McGarvey et al (2004:1110-1111) revealed that fewer than 25% of patients received pre-operative visits. This author mentioned that this could

be attributed to heavy workloads and exhaustion and low motivation among operating room nurses. At times nurses reportedly had time limits, about 20 minutes to visit all the patients on the next morning's schedule.

Schoen (2000:290) stated that in order to overcome this problem, teaching the patient should be a well- planned activity. Teaching sessions should be scheduled when there is less activity in the ward and the time is right for the patient to learn.

Due to new nurses being allocated to work in the operating room, there was a need to train staff on how to conduct pre-operative visits. Oshodi (2007:797) stated that pre-operative education is best provided by nurses as they spend more time with patients than do surgeons and anaesthetists. However, nurses need to be well equipped with the appropriate knowledge and skills.

A suggestion offered by Van Weert et al (2003:112), is that the teaching of communication skills to staff was essential to deal with the emotional distress of patients. Good listening skills together with questioning and observation of non-verbal cues might enable the nurse to assess the patient's information needs. This would promote the patient's recovery.

5.3.7 Effects of pre-operative visits

Table 5.12 Effect of pre-operative visits (n=20)

EFFECT OF PRE-OPERATIVE VISITS	FREQUENCY	%	CUMULATIVE %
No	0	0	0
Yes	20	100	100
TOTAL	**20**	**100**	

All participants interviewed were of the opinion that pre-operative visits had a positive effect on patient outcomes. Patients felt empowered after receiving the information. Operating room nurses felt that patients appeared to be calm, more relaxed and

cooperative after they had received a pre-operative visit. Patients understood what was expected of them and they tended to ask questions freely.

These findings are in line with the findings of a study conducted by Spalding (2004:152) revealing that the knowledge derived from pre-operative teaching enabled patients to feel confident because they knew what to expect. In this way, patients were able to take control of their health and well-being.

Guruge and Sidani (2002:25) stated that following pre-operative teaching, positive effects on patient outcomes were obtained. Outcomes assessed included the length of hospital stay and pain control.

A study conducted to evaluate the effect of pre-operative visits by theatre nurses on pre- and post-operative levels of anxiety, showed a decrease in anxiety 24-72 hours post-operatively (Martin 1996:33). This author recommends that every patient should receive a pre-operative visit from a theatre nurse.

5.3.8 Format in which the information was presented

Table 5.13 Format in which information was presented to patients

FORMAT IN WHICH THE INFORMATION WAS PRESENTED	YES	NO	(%) YES
Oral	20	0	100
Oral with pictures	0	20	0
Video	0	20	0
Pamphlets	0	20	0
Models/Prosthesis	0	20	0
X-rays	6	14	30

The responses from operating room nurses suggest that the information is mostly in oral form and sometimes patients' X-rays were used to explain the patient's condition and surgical procedures.

Whyte and Grant (2005:200) suggested that factors such as language barriers, learning disabilities and cultural barriers might necessitate supplementing information with written materials or drawings. These may include books and pamphlets on preparation for surgery, nutrition, exercises and treatment. Diagrams, models and videos are examples of audiovisual materials that may be used. An excellent teaching method is to use the patient's own X-rays.

Gillies and Baldwin (2001:620) suggested issuing patients with information leaflets on pre-operative information. This study indicated that as many as 99% of patients found the information booklets to be helpful in their post-operative recovery.

Caress (2003:50-54) also stated that verbal information is important but should be supplemented with written materials because the patient might not be able to recall all the information that had been provided. Group teachings and telephone consultations can provide educational opportunities and can enhance information giving.

5.3.9 Information provided to patients before surgery

Table 5.14 Information given to patients before surgery

INFORMATION	YES	NO	(%) YES
Procedure details	16	4	80
Pre-operative preparation	20	0	100
Operating room environment	20	0	100
Post-operative expectations	19	1	95
Anaesthesia details	12	8	60

Findings from table 5.14 indicate that most of the information given to patients before surgery included information on pre-operative preparation, the operating room environment and post-operative expectations.

Asilioglu and Celik (2004:68-69) stated that pre-operative information is necessary to ensure the active participation of the patient in his care. Patients who received planned

education prior to their surgical procedures were satisfied with the educational booklet and with the pre-operative education received.

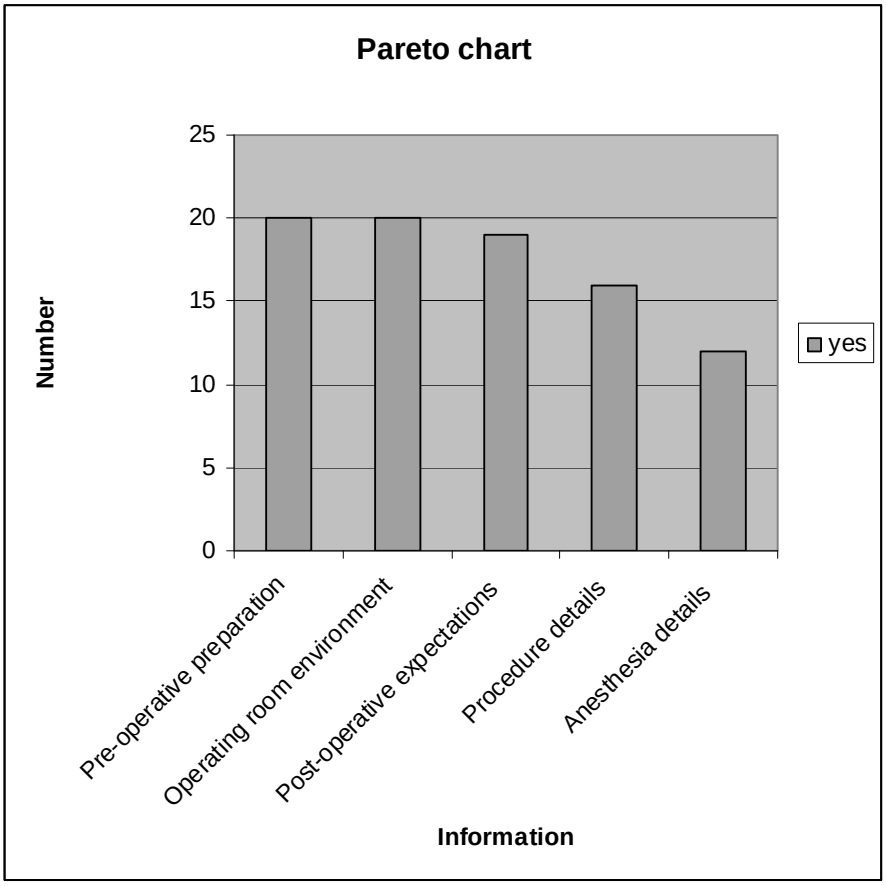

Figure 5.1

Pareto chart on operating room nurses' information

Figure 5.1 demonstrates that information on the surgical procedure and anaesthesia was not covered in detail. Operating room nurses gave an overview of the surgical procedure and anaesthesia leaving these topics to be covered in detail by the surgeon and anaesthetist respectively.

A similar finding was made by Mordiffi et al (2003:553-554) who revealed that 75% of patients were satisfied with the amount of information received and with the manner in which it was communicated. Some patients found information provided by the nurse to be lacking such as information on details of anaesthesia, details of the surgical procedure and the operating room environment.

Wiens (1998:86) mentioned that perioperative nurses need exquisite interview skills. Nurses should listen carefully and watch for clues of anxiety. It is essential that pre-operative education is comprehensive and individualised.

5.3.10 Appropriate person to provide pre-operative education

Table 5.15 Most appropriate person to provide pre-operative education

MOST APPROPRIATE PERSON TO PROVIDE PRE-OPERATIVE EDUCATION	MEAN RANK	RANK
Surgeon	1.8	1
Anaesthetist	2.25	2
Operating room nurse	2.4	3
Ward nurse	3.7	4
Physiotherapist	4.9	5
Occupational therapist	5.95	6
Social worker	7.0	7

The operating room nurses regard the surgeon as the most appropriate person to provide pre-operative education followed by the anaesthetist and operating room nurse. They considered the anaesthetist and operating room nurse more appropriate than the ward nurse. However, they do acknowledge the contribution made by every member of the health care team towards pre-operative education.

This finding is supported by Scott et al (1999:49-50) who stated that the operating theatre nurse should provide additional information supplementing the information given by the ward nurse that can help to reassure the patient. All members of the peri-operative team played important roles in preparing patients for the psychological and physiological consequences of surgery.

5.4 PART 2: DEMOGRAPHIC INFORMATION OF NURSES WORKING IN THE ORTHOPAEDIC WARDS

This section will present and discuss demographic data obtained from orthopaedic ward nurses including gender, age, academic qualifications and the number of years and months of experience as a nurse in the orthopaedic wards. Demographic descriptions of the sample are presented in tables 5.16-5.19.

Table 5.16 Gender distribution of orthopaedic ward nurses (n=10)

PARTICIPANTS	FREQUENCY	%	CUMULATIVE %
Male	2	20	20
Female	8	100	100
TOTAL	**10**	**100**	

According to table 5.16, 8 (80%) participants were females. This shows an increased number of females working in the orthopaedic wards and is in keeping with a preponderance of females in the nursing profession in South Africa.

Table 5.17 Age distribution of orthopaedic ward nurses (n=10)

AGE	FREQUENCY	%	CUMULATIVE %
29-38	7	70	70
39-48	3	30	100
TOTAL	**10**	**100**	

As many as 70% of the orthopaedic ward nurses were in the 29-38 year age group. This indicates that most of the nurses had several years of nursing experience.

Table 5.18 Academic qualifications of orthopaedic ward nurses (n=10)

ACADEMIC QUALIFICATIONS	FREQUENCY	%	CUMULATIVE %
Diploma in orthopaedic nursing science and R425 Diploma	2	20	20
Diploma in orthopaedic nursing science, Diploma in General nursing and Midwifery	1	10	30
Diploma in orthopaedic nursing science	1	10	40
R425 Diploma	1	10	50
Diploma in General nursing and Midwifery	1	10	60
Diploma in General nursing and Community nursing	1	10	70
Diploma in General nursing	1	10	80
Diploma in enrolled nursing	2	20	100
TOTAL	**10**	**100**	

Table 5.18 indicates that 4 (40%) nurses working in the orthopaedic wards were in possession of the diploma in orthopaedic nursing science, 3 (30%) had completed the R425 diploma and 2 (20%) had diplomas as enrolled nurses. This indicates that the majority of the nurses working in the orthopaedic wards did not possess the diploma in orthopaedic nursing science.

Table 5.19 The number of years and months of experience as an orthopaedic ward nurse (n=10)

NUMBER OF YEARS AND MONTHS OF EXPERIENCE	FREQUENCY	%	CUMULATIVE %
0-9 years	8	80	80
10-19 years	1	10	90
20-29 years	1	10	100
TOTAL	**10**	**100**	

Table 5.19 demonstrates that 8 (80%) participants had between 0-9 years of experience of working in the orthopaedic wards. As reflected in table 5.18, most of the nurses in the orthopaedic wards did not possess the diploma in orthopaedic nursing science and the finding as reflected in table 5.19, that most nurses had 0-9 years experience of working in the orthopaedic wards suggested a need for training with regards to the conducting of pre-operative patient education.

5.5 PERCEPTIONS OF ORTHOPAEDIC WARD NURSES REGARDING THE CONDUCTING OF PRE-OPERATIVE EDUCATION

Davis (2000:40) maintained that most orthopaedic patients have planned hospital admissions, allowing time for patient teaching. The patient should be taught pre-operatively about the events that might occur before and after surgery. A patient undergoing surgery post-operatively, could be at risk from breathing limitations, skin damage, pain and changes in self concept due to the effects of surgery and anaesthesia. When conducting pre-operative teaching, the nurse should explain the operation, the immediate post-operative recovery period and the expected mobilisation plan.

5.5.1 Frequency and adequacy of conducting pre-operative education

The frequencies of conducting pre-operative education are reflected in table 5.20.

Table 5.20 Frequency of conducting pre-operative education (n=10)

FREQUENCY OF PRE-OPERATIVE EDUCATION		FREQUENCY	%	CUMULATIVE %
Never	1	0	0	0
Sometimes	2	4	40	40
Routinely	3	3	30	70
Frequently	4	3	30	100
TOTAL		**10**	**100**	

Table 5.20 indicates that pre-operative education was sometimes conducted in the wards, taking place from the patient's admission and continuing in the post-operative period.

Table 5.21 Adequacy of pre-operative education (n=10)

ADEQUACY OF PRE-OPERATIVE EDUCATION	FREQUENCY	%	CUMULATIVE %
Yes	1	10	10
No	9	90	100
TOTAL	**10**	**100**	

According to table 5.21, 9 (90%) orthopaedic ward nurses were of the opinion that pre-operative education was insufficient. This is due to ward nurses' lack of time to spend with patients due to the shortages of nurses and increased patient admissions.

5.5.2 Involvement in pre-operative education

Table 5.22 Conducting of pre-operative education (n=10)

CONDUCTING PRE-OPERATIVE EDUCATION	FREQUENCY	%	CUMULATIVE %
No	0	0	5
Yes	20	100	100
TOTAL	**20**	**100**	

Findings indicate that most of the nurses (90%) had been involved in pre-operative education.

5.5.3 Types of surgery performed on orthopaedic patients who received pre-operative education

Table 5.23 Types of surgery performed on orthopaedic patients

TYPE OF SURGERY	FREQUENCY
Arthrodesis ankle (open reduction internal fixation)	5
Open reduction and internal fixation-radius/ulna	6
Thompson's prosthesis	7
Open reduction (internal fixation tibial plateau)	7
Femoral nail	7
Pin and plate-femur	9

As many as nine patients who received pre-operative education underwent an insertion of a pin and plate in the femur. Seven patients underwent an insertion of a Thompson's prosthesis, insertion of a femoral nail and an open reduction and internal fixation of the tibial plateau.

5.5.4 Benefits of pre-operative education

Table 5.24 Benefits of pre-operative education (n=10)

BENEFITS OF A PRE-OPERATIVE EDUCATION	FREQUENCY	%	CUMULATIVE %
No	0	0	0
Yes	10	100	100
TOTAL	**10**	**100**	

All orthopaedic ward nurses were of the opinion that pre-operative education was beneficial to patients. Nurses felt that pre-operative education made the patient more

cooperative with his care, speeding up the recovery process and facilitating patients' rehabilitation. Surgery is a stressful experience for the patient.

Proper communication and reassurance during pre-operative education decreases this stress as patients are prepared psychologically and emotionally for surgery. This view is supported by Prouty et al (2006:258) who described a pre-operative education programme offered to orthopaedic patients at a hospital in Michigan (USA). The programme covered pre-operative preparation and included aspects such as preparation for surgery and medications, a review of the anatomy of the knee or hip, medical devices patients encountered in the hospital such as drains and catheters and information on how to prevent complications. Patients and families reported that pre-operative teaching was effective and patients reported that they were less anxious about their surgery.

5.5.5 Conducting of pre-operative education to every patient

Table 5.25 Orthopaedic ward nurses' opinions on conducting pre-operative education (n=10)

BENEFITS OF A PRE-OPERATIVE VISIT	FREQUENCY	%	CUMULATIVE %
No	0	0	0
Yes	10	100	100
TOTAL	**10**	**100**	

According to table 5.25, all orthopaedic ward nurses were of the opinion that ward nurses should conduct pre-operative education to every patient. They felt that the ward nurse was in contact with the patient most of the time and therefore she was the best person to conduct pre-operative education. Moreover, the patient should be empowered through the education received and become involved in his care or management.

Gausewitz (2007) stated that comprehensive education given to the patient pre-operatively helped both the family and the patient understand the surgical procedure and what to expect post-operatively. Pre-operative education also assisted the patient to set realistic expectations on how soon life will return to normal.

5.5.6 Challenges encountered when conducting pre-operative education

Table 5.26 Challenges concerning pre-operative education

CHALLENGES CONCERNING PRE-OPERATIVE EDUCATION	NUMBER
Staff shortage and no time	4
Problems with patients (language barrier, resistance from patients)	4
Equipment	2
No time	1
No privacy	2
Not sufficient knowledge	1
Cancellation/postponement of surgery	1

Table 5.26 indicates that the five most important challenges encountered when conducting pre-operative education in the ward in order of importance were: insufficient time; staff shortages; problems with patients such as communication (language) barriers and resistance from patients; lack of privacy; inadequate or no equipment or teaching aids.

- Ward nurses did not have time to spend with patients because of the shortage of staff and increased patient admissions. Even when pre-operative education had been conducted, there was insufficient time to reinforce information due to the shortages of nurses.
- Problems were also experienced with patients. There was a communication barrier as some of the patients could only speak Zulu and nurses could only communicate in English. It was therefore difficult to communicate effectively with some of the patients. Some patients were uncooperative and did not understand why they needed to remove their jewellery or avoid eating prior to their surgery.
- Patients were admitted to general wards (with other patients) and as a result there was no privacy to discuss sensitive issues such as lifestyle changes.
- There was inadequate or no equipment or teaching aids to facilitate pre-operative education therefore the oral format was mainly used to convey pre-operative information.

This finding opposes the view of Hind and Wicker (2000:209). This study revealed that patients and family members focused on patient care and not only on the operation when they were provided with written information guides.

5.5.7 Format in which the information was presented

Table 5.27 Format in which information was presented to patients by orthopaedic ward nurses

FORMAT IN WHICH INFORMATION WAS PRESENTED	YES	NO	(%) YES
Oral	10	0	100
Oral with pictures	0	10	0
Video	0	10	0
Pamphlets	0	10	0
Models/prostheses	1	9	10
X-rays	5	5	50

Information presented to patients by orthopaedic ward nurses is mostly in oral form and sometimes in X-ray form.

These findings support the findings of a study conducted by Fitzpatrick and Hyde (2005:254-255). This study revealed that verbal skills were used to convey pre-operative information to the patient rather than teaching tools or aids. The staff, however, recognised the benefits of visual materials by stating that the patient might not remember the amount of verbal information provided. Several nurses found the use of diagrams to be of benefit to the patients. Some nurses used diagrams of bones to illustrate an operative procedure such as the insertion of pins.

5.5.8 Most appropriate person to provide pre-operative education

Table 5.28 Most appropriate person to provide pre-operative education

MOST APPROPRIATE PERSON TO PROVIDE PRE-OPERATIVE EDUCATION	MEAN RANK	RANK
Surgeon	1.3	1
Ward nurse	2.3	2
Anaesthetist	3.2	3
Operating room nurse	3.5	4
Physiotherapist	5.0	5
Occupational therapist	5.8	6
Social worker	7.0	7

The ward nurses agreed that the surgeon, ward nurse, anaesthetist and operating room nurse, in this order of importance, are the most appropriate people to provide pre-operative education. The ward nurses also acknowledged the importance of other health care team members as contributing to pre-operative education.

This view is supported by Altizer (2004:283) who maintained that an organised programme taught by the orthopaedic surgeon or orthopaedic nurse provided the patient with the necessary information to make an informed decision regarding their surgical procedures.

Fielden et al (2003:429-431) stated that patients require education and support provided by the multidisciplinary team. Information was provided one to three weeks prior to surgery. This promoted patients' satisfaction with their discharge planning.

5.5.9 Information provided to patients before surgery

Table 5.29 Information given to patients

INFORMATION	YES	NO	(%) YES
Surgical procedure	9	1	90
Early ambulation	8	2	80
Care of wound, drains, dressings	8	2	80
Exercises	7	3	70
Diet and nutrition	8	2	80
Pre-medication	9	1	90
Pain medication	10	0	100
Post-operative issues	7	3	70

Table 5.29 indicates that patients were informed mostly about pain medication (100%), pre-medication (90%) and the surgical procedure (90%). A brief overview of the surgical procedure was given but the exact details of the surgical procedure was left to the surgeon to explain. Information provided to patients before surgery commenced from the time the patient was admitted for the surgical procedure and continuing in the post-operative period.

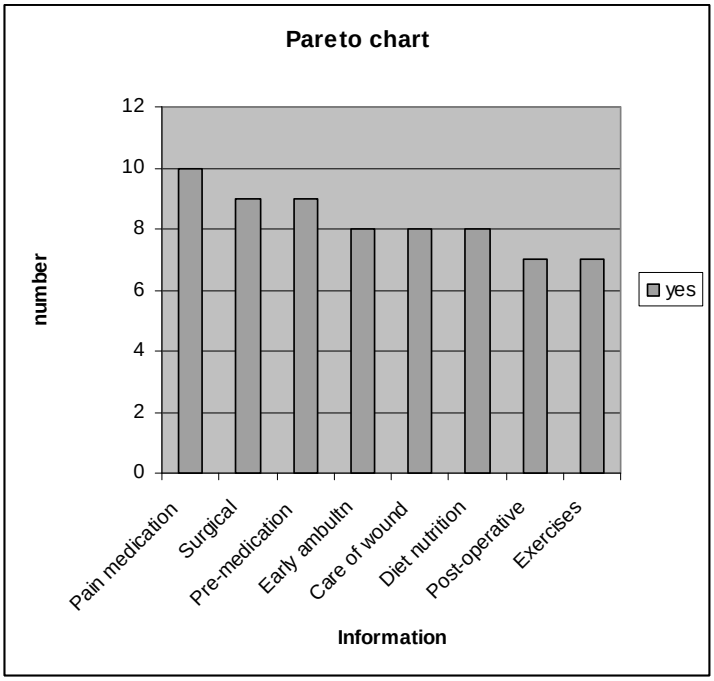

Figure 5.2

Pareto chart (ward nurses' information)

Figure 5.2 indicates that the least information patients received before surgery was on post-operative issues and exercises. Information on post-operative issues pertained to active and passive exercises as well as coughing and deep breathing exercises.

Patients did not receive information on lifestyle changes. Margereson and Riley (2003:65-70) maintained that patients should receive information on post-operative issues and lifestyle changes including information on social and employment activities and self-management.

5.5.10 Forms of digital technology present in the ward

Table 5.30 Digital technology available in the ward

FORM OF TECHNOLOGY	WARD NURSES
Videos	0
Computers	1
DVD players	0
TVs	0

Table 5.30 indicates that there was virtually no digital technology available in the ward. Table 4.11 in chapter 4 indicates that 30% of patients preferred information to be presented in the form of videotapes. This finding indicates a need to motivate for this form of digital technology in the ward.

5.6 PART 3: COMPARISON OF THE PERCEPTIONS OF PATIENTS, ORTHOPAEDIC WARD NURSES AND OPERATING ROOM NURSES REGARDING PRE-OPERATIVE EDUCATION

5.6.1 Introduction

Structured interviews were conducted with 50 patients who underwent orthopaedic surgery, 10 orthopaedic ward nurses and 20 operating room nurses from two provincial hospitals, which were RK Khan and King Edward VIII hospital. The interview schedules

given to orthopaedic patients were subdivided into four sections (demographic data from orthopaedic patients, pre-operative information orthopaedic patients received, persons who provided information pre-operatively to orthopaedic patients, information as to whether the information provided to orthopaedic patients helped them with their post-operative adaptations, expectations and/or recuperation processes)**.**

The interview schedules given to the orthopaedic ward nurses and operating room nurses were subdivided into 2 sections (demographic data and perceptions on conducting pre-operative education). The purpose of part 3 of the analysis is to compare the perceptions of the three groups of participants-patients, orthopaedic ward nurses and operating room nurses on pre-operative education.

5.6.2 Benefits of pre-operative education for orthopaedic patients

The benefits of pre-operative education for orthopaedic patients as reported by patients, orthopaedic ward nurses and operating room nurses is reflected in tables 5.31 and 5.32.

Table 5.31 Usefulness of pre-operative information for patients (n=50)

RATING	NUMBER (PREPARATION FOR SURGERY)	NUMBER (POST-OPERATIVE RECOVERY)
Useless	0	1
Slightly useful	11	32
Useful	33	14
Extremely useful	6	3
TOTAL	**50**	**50**

Median scores in table 5.31 indicate that most patients found pre-operative information useful in preparing themselves for surgery but slightly useful in their post-operative recovery. This was reflected in table 4.7 and figure 4.1 in chapter 4.

Table 5.32 Benefits of pre-operative education by orthopaedic ward nurses (n=10) and operating room nurses (n=20)

BENEFITS OF PRE-OPERATIVE EDUCATION BY	YES	NO	FREQUENCY	%
Orthopaedic ward nurses (n=10)	10	0	10	100
Operating room nurses (n=20)	20	0	20	100

Table 5.32 indicates that all 10 orthopaedic ward nurses were of the opinion that pre-operative education was beneficial to patients. This was reflected in table 5.24 which also indicates that all operating room nurses were of the opinion that pre-operative visits were beneficial to patients. This was reflected in table 5.9.

5.6.3 Form in which pre-operative information was presented

The format in which pre-operative information was presented to patients, by orthopaedic ward nurses and operating room nurses is reflected in table 5.33.

Table 5.33 The form in which pre-operative information was presented

YES RESPONSES OBTAINED FROM:	ORAL EXPLANATION	MODELS/ PROSTHESES	X-RAYS
Patients (n=50)	50 (100%)	-	44 (88%)
Orthopaedic ward nurses (n=10)	10 (100%)	1 (10%)	5 (50%)
Operating room nurses (n=20)	20 (100%)	-	6 (30%)

Table 5.33 indicates that 50 (100%) patients received pre-operative information in the oral format whereas 44 (88%) patients received pre-operative education in the form of X-rays. Patients prefer information in oral form as well as in the form of videotapes, which is not currently practised, to X-ray information. This was reflected in table 4.10 in chapter 4.

The oral format was used by all 10 (100%) orthopaedic ward nurses to present pre-operative education to patients while 5 (50%) orthopaedic ward nurses used X-rays and only 1(10%) used the model of the bone in pre-operative teaching. This was reflected in table 5.27.

The oral format was used by all 20 (100%) operating room nurses to convey pre-operative education to patients while only 6 (30%) used the patients' own x-rays as a teaching aid. This was reflected in table 5.13. The responses from patients and nurses are similar. Both suggest that the information presented is mostly in oral form and sometimes in X-ray form.

5.6.4 Most appropriate person to provide pre-operative education

The most appropriate persons to provide pre-operative education as indicated by the patients, orthopaedic ward nurses and operating room nurses is reflected in tables 5.34 and 5.35.

Table 5.34 Patients' opinions on the providers of the most important information individually (n=50)

PROVIDERS OF THE MOST IMPORTANT INFORMATION INDIVIDUALLY	NUMBER	*RANK*
Surgeon	41	1
Ward nurse	22	2
Anaesthetist	7	3
Operating room nurse	6	4
Physiotherapist	0	5
Occupational therapist	0	6

Table 5.34 indicates that the surgeon, followed by the ward nurse, anaesthetist and operating room nurse are the most appropriate people to provide pre-operative education. This was reflected in table 4.18 in chapter 4.

Table 5.35 Orthopaedic ward nurses' and operating room nurses' opinions on the most appropriate person to provide pre-operative education

MOST APPROPRIATE PERSON TO PROVIDE PRE-OPERATIVE EDUCATION - ORTHOPAEDIC WARD NURSES	MEAN RANK	RANK	MOST APPROPRIATE PERSON TO PROVIDE PRE-OPERATIVE EDUCATION- OPERATING ROOM NURSES	MEAN RANK	RANK
Surgeon	1.3	1	Surgeon	1.8	1
Ward nurse	2.3	2	Anaesthetist	2.25	2
Anaesthetist	3.2	3	Operating room nurse	2.4	3
Operating room nurse	3.5	4	Ward nurse	3.7	4
Physiotherapist	5.0	5	Physiotherapist	4.9	5
Occupational therapist	5.8	6	Occupational therapist	5.95	6
Social worker	7.0	7	Social worker	7.0	7

Table 5.35 indicates that orthopaedic ward nurses were of the opinion that the surgeon, followed by the ward nurse, anaesthetist and operating room nurse are the most appropriate people to provide pre-operative education. This is also reflected in table 5.38.

Operating room nurses are of the opinion that the surgeon followed by the anaesthetist, operating room nurse and ward nurse are the most appropriate people to provide pre-operative education. This is also reflected in table 5.15.

5.6.5 Types of surgery

Types of surgery patients underwent is reflected in table 5.36.

Table 5.36 Types of elective surgery orthopaedic patients underwent

TYPES OF SURGERY	FREQUENCY-ORTHOPAEDIC PATIENTS	FREQUENCY-ORTHOPAEDIC WARD NURSES	FREQUENCY-OPERATING ROOM NURSES
Thompson's prosthesis	2	5	14
Arthrodesis ankle (open reduction internal fixation)	5	6	14
Femoral nail insertion (AO nail)	7	7	14
Pin and plate-femur	9	7	15
Open reduction and internal fixation tibial plateau	12	7	17
Open reduction and internal fixation-radius/ulna	15	9	18

Table 5.36 indicates that 15 participants underwent surgery for open reduction and internal fixation-radius/ulna, followed by 12 for open reduction and internal fixation tibial plateau and 9 for pin and plate of the femur. This was reflected in table 4.6.

The above table also indicates that 9 patients who received pre-operative education from the orthopaedic ward nurse underwent an insertion of a pin and plate of the femur, 7 patients underwent an insertion of a Thompson's prosthesis, insertion of a femoral nail and an open reduction and internal fixation of the tibial plateau. This was reflected in table 5.23.

As many as 18 patients who received a pre-operative visit underwent a pin and plate of the femur followed by 17 patients who had an insertion of a femoral nail and 15 patients who had surgery for an open reduction and internal fixation of the radius and ulna. This was reflected in table 5.7.

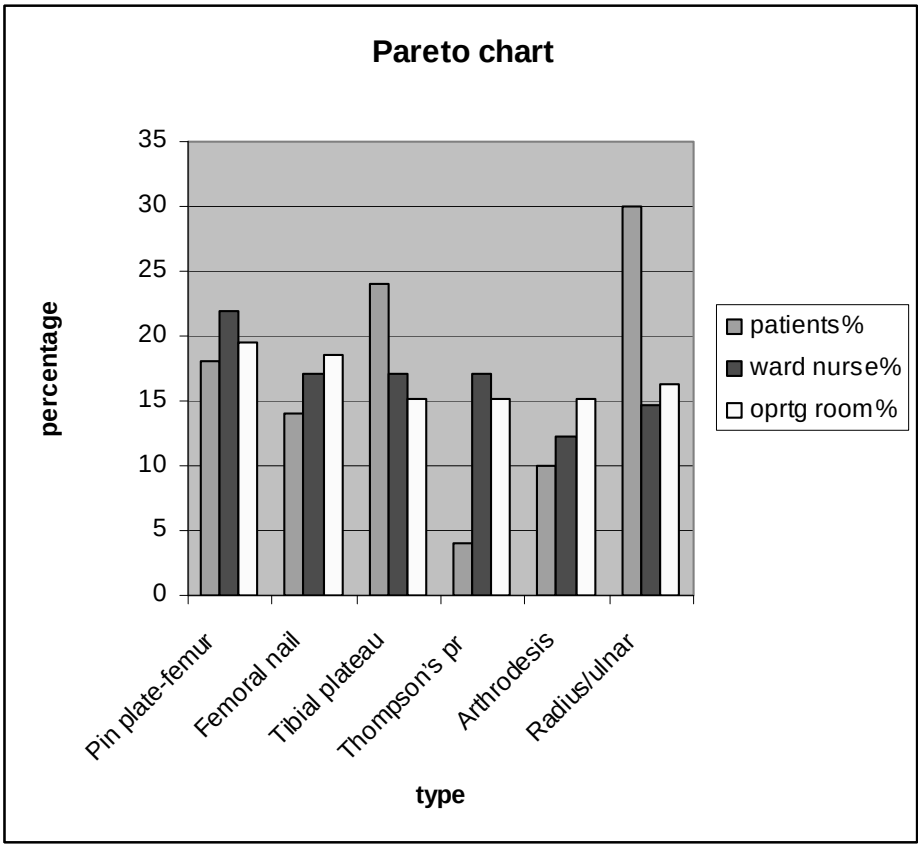

Figure 5.3

Types of surgery

The above figure indicates that:

- The percentages overall (profiles) given by the ward and operating room nurses are very similar (Chi-square = 0.734 with p-value = 0.981).
- The percentages overall (profile) given by the patients differ considerably from those given by the nurses (Chi-square = 19.395 with p-value = 0.036). The patient profile reflects the surgery for patients at the time of the study, while the nurses' profiles are determined on the basis of observations over a longer period of time.

5.6.6 Pre-operative education by nurses

Pre-operative education to patients will be reflected in tables 5.37, 5.38 and 5.39.

Table 5.37 Information given to patients on the awareness of the operating room environment (n=50)

AWARENESS OF THE OPERATING ROOM ENVIRONMENT	FREQUENCY	%	CUMULATIVE %
Yes	15	30	30
No	35	70	100
TOTAL	**50**	**100**	

Table 5.37 indicates that 35 (70%) patients did not receive information on the awareness of the operating room environment. This was reflected in table 4.12 and figure 4.5 in chapter 4.

Table 5.38 Frequency of conducting pre-operative education by orthopaedic ward nurses (n=10)

FREQUENCY OF PRE-OPERTIVE EDUCATION		FREQUENCY	%	CUMULATIVE %
Never	1	0	0	0
Sometimes	2	4	40	40
Routinely	3	3	30	70
Frequently	4	3	30	100
TOTAL		**10**	**100**	

Table 5.38 indicates that pre-operative education was sometimes conducted in the wards. This was reflected in table 5.20.

Table 5.39 Frequency of conducting pre-operative visits by operating room nurses (n=20)

FREQUENCY OF CONDUCTING VISITS	FREQUENCY	%	CUMULATIVE %
Less than once a week	6	30	30
Once a week	11	55	85
More than once a week	3	15	100
TOTAL	**20**	**100**	

Table 5.39 indicates that 55% of the time pre-operative visits were conducted once a week. As many as 95% of operating room nurses considered pre-operative education provided by operating room nurses in the theatre to be inadequate. Pre-operative visits were usually conducted by operating room nurses during night duty and over week ends. Those visits conducted from 16h00-18h00 daily did not include visits to all patients due to time constraints. This was reflected in table 5.5.

5.6.7 Challenges concerning pre-operative education

The challenges encountered by operating room nurses and orthopaedic ward nurses when conducting pre-operative education will be reflected in tables 5.40.

Table 5.40 Challenges faced by operating room nurses and orthopaedic ward nurses

CHALLENGES CONCERNING PRE-OPERATIVE VISITS	NUMBER	CHALLENGES CONCERNING PRE-OPERATIVE EDUCATION	NUMBER
Staff shortage and no time	7	Staff shortage and no time	4
No time	5	Problems with patients (language, consent forms)	4
Staff shortage	2	Equipment	2
Staff not sufficiently trained	3	No time	1
Problems with patients (not there, communication)	3	No privacy	2
Noise	1	Not sufficient knowledge	1
Teaching aids limited	1	Cancellation/ postponement of surgery	1
No assistance from ward staff	1		

Table 5.40 indicates that the five most important challenges encountered when conducting pre-operative visits in order of importance were: insufficient time; staff shortages; problems with patients including communication (language) barriers and patients not turning up on time; lack of training of staff and inadequate or no equipment or teaching aids. This was reflected in table 5.11.

Table 5.40 also indicates that the five most important challenges encountered when conducting pre-operative education in the ward in order of importance were: insufficient time; staff shortages; problems with patients such as communication (language) barriers, resistance from patients; lack of privacy and inadequate or no equipment or teaching aids. This was reflected in table 5.26.

5.6.8 Digital technology

Forms of digital technology available are reflected in tables 5.41.

Table 5.41 Forms of digital technology available

DIGITAL TECHNOLOGY	COMPUTERS WITH CD	VIDEO MACHINES	DVD PLAYERS	TELEVISION
Patients have at home (n=50)	3	26	33	39
Available in the ward	1	0	0	0

Table 5.41 indicates that most patients have televisions, DVD players and video machines at home. The above table also indicates that there was virtually no digital technology available in the wards. This creates a problem as 15 (30%) patients preferred information to be presented in the form of videotapes. However, 26 out of the 50 patients interviewed had this form of digital technology available at home. This was reflected in tables 5.48 and 5.49.

6.7 SUMMARY

Many patients (n=35:70% with p-value =0.0033) were of the opinion that they were not made aware of the operating room environment. The frequency of pre-operative visits conducted by operating room nurses as well as the results of table 5.6 on the adequacy of pre-operative education, supported this view of the patients.

Patients were of the opinion that pre-operative information is useful when preparing for surgery and slightly useful in post-operative recovery. Ward and operating room nurses all agree that pre-operative education and pre-operative visits are beneficial to patients. The patients, orthopaedic ward nurses and operating room nurses agreed that the surgeon was the most appropriate person to provide pre-operative education. The patients and ward nurses agreed that the surgeon, ward nurse, anaesthetist and

operating room nurse, in this order of importance, were the most appropriate people to provide pre-operative education.

The operating room nurses also regarded the surgeon, ward nurse, anaesthetist and operating room nurse as the most important people to provide pre-operative education, but disagree with the order of importance after the surgeon. They considered the anaesthetist and operating room nurse more appropriate than the ward nurse. The patients, ward nurses and the operating room nurses felt that patient education should involve a multidisciplinary approach. It should begin when the patient is admitted and should be done by all members of the health team.

This chapter summarised the data analysis and discussions relating to the information obtained from operating room nurses and orthopaedic ward nurses. Strategies, methods and techniques of data analysis were discussed. The findings of this study were presented in three parts.

Part 1 and part 2 were presented according to the sections of the interview schedules pertaining to operating room nurses and orthopaedic ward nurses. Part 3 compared the perceptions of the three groups of participants (patients, operating room nurses and orthopaedic ward nurses) on pre-operative education. In the following chapter, the conclusions, limitations and recommendations regarding the perceptions of patients and nurses relating to pre-operative education given to orthopaedic patients undergoing elective surgery, will be presented.

CHAPTER 6

Conclusions, limitations and recommendations

6.1 INTRODUCTION

The purpose of this study was to explore and describe the perceptions of patients and nurses regarding pre-operative education given to orthopaedic patients undergoing elective surgery.

This chapter discusses the conclusions with reference to the findings and the research objectives that guided this study, namely to

- describe what pre-operative information is given to orthopaedic patients
- determine who provides pre-operative information to orthopaedic patients
- determine the effect of pre-operative information on the post-operative adaptations of orthopaedic patients
- describe the perceptions of operating room nurses regarding the conducting of pre-operative teaching of and visits to orthopaedic patients
- describe perceptions of orthopaedic ward nurses regarding the conducting of pre-operative education

The limitations of the study will be discussed and recommendations for practice and for further research will be provided based on the conclusions.

6.2 CONCLUSIONS

The conclusions are based on the analysis of the data obtained from 50 structured interviews conducted with patients undergoing elective orthopaedic surgery, 20 structured interviews conducted with operating room nurses and 10 structured

interviews conducted with nurses working in the orthopaedic wards at the two provincial hospitals in the KwaZulu-Natal Province, namely King Edward VIII hospital and RK Khan hospital respectively.
In this chapter the research objectives that guided this study will be evaluated to determine whether they have been achieved.

6.3 CONCLUSIONS IN RELATION TO THE OBJECTIVES GUIDING THE STUDY

Each objective and its associated conclusions will be discussed.

6.3.1 Pre-operative information received by orthopaedic patients

This study revealed that patients regarded pre-operative information to be useful when preparing themselves for surgery and slightly useful in their post-operative recovery. This was shown in figure 4.1 and table 4.7 which indicated that 66% of the patients found pre-operative information to be useful in preparation for surgery and 64% of the patients found pre-operative information to be useful in post-operative recovery.

As many as 33 (66%) patients preferred to receive more information on post-operative recovery such as information on wound care, exercises, ambulation, nutrition, pain medication and lifestyle changes. This would have helped them to feel confident and to cope better with their post-operative recovery.

It was found that patients were not provided with all the relevant information on the night before surgery. This is shown in figure 4.2 and table 4.8 which indicated that although all patients were asked to take a shower only 16% of patients were asked to shave the operative site, 4% were asked to shampoo their hair and only 2% of patients were asked to have a light supper.

The study also revealed that patients were not provided with all the relevant information on the morning of sugery. This is shown in figure 4.3 and table 4.9 which indicated that although 100% of the patients received information on remaining nil per mouth, taking a shower, removing jewellery and underwear and donning theatre attire before going for

surgery, only 16% of patients received information on shaving of the operative site and 2% of patients received information on pre-medication. A pre-operative checklist was used to check and tick off the items that were covered. This finding revealed that patients received information rather than education before surgery. Patients were provided with information but the reasons for these procedures were not given.
Findings of the study indicated that only two formats were used to present pre-operative information to patients. These findings are reflected in table 4.10, which showed that 100% of the patients received pre-operative information in the oral format whereas 88% of patients received pre-operative education in the form of X-rays.

Figure 4.4 indicated that 50% of the patients preferred information to be presented in the oral format, 30% of the patients preferred videotapes and 10% of patients preferred X-rays and only 2% of patients preferred pamphlets and books. Most patients preferred the oral format because it was simple and easy to understand, one could ask questions or clarify information immediately. Patients preferred the videotapes because it was less stressful, a pleasure to watch, it was not boring and more information could be given using this format. Being shown the X-rays enabled the patients to see where the actual fracture was and how the operation was going to be performed.

The results from table 4.12 and figure 4.5 , indicated that 70% of the patients were not made aware of the operating room environment. Only 30% of patients received information on the operating room environment. This was due to the fact that most patients did not receive any pre-operative visits from the operating room nurses. The nurses reported that these visits were conducted 55% of the time and were only conducted once a week, on night duty or on weekends by the operating room nurse as reflected in table 5.5.

Table 4.13 indicated that 78% of the patients agreed that pre-operative information decreased their nervousness about surgery.

According to the results in table 4.14, 66% of patients were satisfied with the pre-operative information provided. As many as 88% of patients reported information about details of surgery to be extremely important to them (see table 4.15).

Findings indicated that most of the patients had televisions, DVD players and video machines at home. The findings indicated that the higher the educational qualifications of the patients, the more digital technology was available at their homes, as reflected in table 4.16.

6.3.2 Persons who provided pre-operative information to orthopaedic patients

The patients viewed the surgeon as the most appropriate person to provide pre-operative education. The patients agreed that the surgeon, ward nurse, anaesthetist and operating room nurse, in this order of importance, were the most appropriate people to provide pre-operative education (see table 4.19).

Patients regarded the opportunity to clarify information as important. According to table 4.21, 54% of patients reported never having been given the opportunity to ask questions and 28% reported that they were given the opportunity to ask questions less often, usually at the end after pre-operative information had been provided.

6.3.3 The effect of pre-operative information on the post-operative adaptations of orthopaedic patients

Patients felt that information given on aspects of post-operative care, pre-operatively, would have assisted in preparing themselves more adequately for their post-operative recovery.

Table 4.23 indicated that 54% of patients received information on exercises from the physiotherapist and 58% on pain medication from the surgeon. Information on aspects of post-operative care that were lacking included information on wound care, early ambulation and nutrition.

6.3.4 The perceptions of operating room nurses regarding the conducting of pre-operative teaching and visits on orthopaedic patients

Findings revealed that 55% of the time pre-operative visits were conducted once a week (see table 5.5).

Table 5.6 reflected that 95% of operating room nurses considered pre-operative education provided by operating room nurses in the theatre to be inadequate.

Findings indicated that pre-operative visits were usually conducted by operating room nurses during night duty and over week-ends. Even though visits were conducted

during the week days from 16:00-18:00 daily, they did not include visits to all patients due to time constraints.

Patients reported that they were not made aware of the operating room environment. This coincides with the finding that pre-operative visits were not conducted regularly by operating room nurses and that operating room nurses agreed that pre-operative education was inadequate.

Findings indicated that 95% of operating room nurses taught patients about expectations during recovery (see table 5.8). This teaching encompassed aspects on limitation of movement, pain management, presence of intravenous therapy, drains, catheters and observations in the recovery period such as routine checks for circulation, bleeding, wound drainage and vital signs.

All operating room nurses reported that pre-operative visits were beneficial to patients (see table 5.9). Operating room nurses felt that pre-operative visits allayed the patients' anxiety as a result the patient was much more cooperative with his care.

Operating room nurses' opinions on conducting pre-operative visits revealed that pre-operative visits should be conducted to every patient (see table 5.10). Nurses felt that the pre-operative visit helped establish a rapport with the patient so that the patient was familiar with the nurse when he arrived in theatre. It also enabled abnormalities to be detected and this enabled the nurse to prepare the theatre adequately to receive the patient. The operating room nurse was also knowledgeable about pre, intra and post-operative care therefore patients would benefit from her visit and teaching. It also offered a chance to answer questions of concern and to check completion of documents such as consent forms.

Challenges concerning pre-operative visits as reported by operating room nurses when conducting pre-operative visits were insufficient time, staff shortage, problems with patients (communication- language barrier and patients not turning up on time), lack of training of staff and inadequate or no equipment or teaching aids (see table 5.11). Operating room nurses felt that it was difficult to conduct pre-operative visits because:

- There was no specific time allocated to conduct pre-operative visits and therefore it was not conducted regularly.
- There was an increased turnover of surgical cases and as a result staff were occupied in the operating rooms.
- Elective slates are completed at 16:00. Some staff go off duty at this time therefore time was limited to conduct visits.
- Even when visits were planned, they took place between 16:00 and 18:00. The time was limited and not all the patients on the slate were covered.
- Shortage of staff due to an increased rate of absenteeism made it difficult to allocate staff to conduct pre-operative visits.
- There were also problems experienced with patients. There was a communication barrier as some of the patients were Zulu speaking and staff were only English speaking. Therefore staff could not communicate with the patients effectively. Patients were not admitted timeously as a result they were not present when pre-operative visits were conducted.
- An increased number of staff leaving the operating rooms posed a problem as new staff employed, needed to be trained.
- There was inadequate equipment and teaching aids to facilitate pre-operative teaching. Some wards did not have video machines to allow patients to watch videotapes even though this was the form in which patients preferred pre-operative information to be presented.
- There were no teaching aids such as prostheses, models, booklets or pamphlets on pre-operative information.

All participants interviewed were of the opinion that pre-operative visits had a positive effect on patient outcomes (see table 5.12). Patients felt empowered after receiving the information. Operating room nurses felt that patients appeared to be calm, more relaxed and cooperative after they had received a pre-operative visit. Patients understood what was expected of them and they tended to ask questions freely.

The responses from operating room nurses suggest that pre-operative information was provided mostly in oral form and sometimes in X-ray form. When asked about the information provided to patients, operating room nurses indicated that most of the

information given to patients before surgery included information on pre-operative preparation, the operating room environment and post-operative expectations (see table 5.14).

Figure 5.1 demonstrates that information on the surgical procedure and anaesthesia were not covered in detail. Operating room nurses gave an overview of the surgical procedure and anaesthesia leaving these topics to be covered in detail by the surgeon and anaesthetist. Findings as indicated in table 5.15, showed that operating room nurses regarded the surgeon as the most appropriate person to provide pre-operative education followed by the anaesthetist and operating room nurse. They considered the anaesthetist and operating room nurse more appropriate than the ward nurse.

6.3.5 The perceptions of orthopaedic ward nurses regarding the conducting of pre-operative education

Table 5.20 indicates that pre-operative education was conducted sometimes in the ward. This took place from the time the patient was admitted and continued in the post-operative period.

According to table 5.21, 90% of orthopaedic ward nurses were of the opinion that pre-operative education was not sufficient. Table 5.6 reflected that 95% of operating room nurses considered pre-operative education provided by operating room nurses in the theatre to be inadequate.

A significant majority of the patients (35/50 = 70% with p-value = 0.0033) were of the opinion that they were not made aware of the operating room environment (see table 5.31.1). The frequencies of pre-operative education conducted by orthopaedic ward nurses and pre-operative visits conducted by operating room nurses support this view of the patients.

Approximately nine patients who received pre-operative education underwent an insertion of a pin and plate-femur. Seven patients underwent an insertion of a Thompson's prosthesis, insertion of a femoral nail and an open reduction and internal fixation of the tibial plateau (see table 5.23).

The patients' profile reflected the surgery for patients at the time of the study, while the nurses' profiles were determined on the basis of observations over a longer period of time. When asked about the benefits of pre-operative education, all orthopaedic ward nurses were of the opinion that pre-operative education was beneficial to patients (see table 5.24).

Nurses felt that pre-operative education made the patient more cooperative with his care, and this speeded up recovery therefore patients were rehabilitated easily. Moreover, surgery is a stressful experience for the patient. Proper communication and reassurance during pre-operative education decreased this stress as patients were prepared psychologically and emotionally for surgery.

Patients were of the opinion that pre-operative information was useful when preparing for surgery and slightly useful in post-operative recovery. It also decreased nervousness about surgery. Ward and operating room nurses agreed that pre-operative education and pre-operative visits were beneficial to patients.

According to table 5.25, all orthopaedic ward nurses were of the opinion that ward nurses should conduct pre-operative education to every patient. They felt that the ward nurse was in contact with the patient most of the time and therefore she was the best person to conduct pre-operative education. Moreover, the patient is empowered through the education received and becomes willing to be involved in his care or management.

Table 5.26 shows that the five most important challenges encountered when conducting pre-operative education in the ward were insufficient time, staff shortage, problems with patients(communication, resistance), no privacy and inadequate or no equipment or teaching aids.

Ward nurses did not have time to spend with patients because of the shortage of staff and increased patient admissions. Even when pre-operative education was conducted, there was insufficient time to reinforce information due to the shortage of staff.

There were also problems experienced with patients. There is a communication barrier as some of the patients are Zulu speaking and ward staff are only English speaking. It was therefore difficult to communicate with the patients effectively. Some patients were uncooperative and did not understand why they needed to remove jewellery or avoid eating before going to surgery.

Patients were admitted to a general ward with other patients as a result there was no privacy to discuss sensitive issues such as lifestyle changes. There was inadequate or no equipment or teaching aids to facilitate pre-operative education therefore the oral format was mainly used to convey pre-operative information.

Table 5.27 indicates that information presented to patients by orthopaedic ward nurses was mostly in oral form and sometimes in X-ray form. The responses from patients and nurses are similar. Both suggest that the information presented was mostly in oral form and sometimes in X-ray form. Table 5.28 reflected that the surgeon, ward nurse, anaesthetist and operating room nurse, in this order of importance, were the most appropriate people to provide pre-operative education.

The patients, orthopaedic ward nurses and operating room nurses agreed that the surgeon was the most appropriate person to provide pre-operative education. The patients and ward nurses agreed that the surgeon, ward nurse, anaesthetist and operating room nurse, in this order of importance, were the most appropriate people to provide pre-operative education.

The operating room nurses also regarded the surgeon, ward nurse, anaesthetist and operating room nurse as the most important people to provide pre-operative education, but disagreed with the order of importance after the surgeon. They considered the anaesthetist and operating room nurse more appropriate than the ward nurse.

The patients, ward nurses and the operating room nurses felt that patient education should involve a multidisciplinary approach. It should begin when the patient is admitted and should be done by all members of the health care team.

Table 5.29 indicated that patients were informed mostly about pain medication (100%), pre-medication (90%) and the surgical procedure (90%). A brief overview of the surgical procedure was given but the exact details of the surgical procedure was left to the surgeon to explain. Information provided to patients before surgery commenced from the time the patient was admitted for the surgical procedure and continued in the post-operative period.

Figure 5.2 indicated that the least information patients received before surgery were on post-operative issues and exercises. Information on post-operative issues that were covered were information on active and passive exercises and coughing and deep breathing exercises. Patients did not receive information on lifestyle changes.

Table 5.30 reflected that there was virtually no digital technology available in the ward. This created a problem as 30% of patients preferred information to be presented in the form of videotapes. However, 26 out of the 50 patients interviewed had this form of digital technology available at home.

6.4 CONCLUSIONS IN RELATION TO THE COMPARISONS OF THE PERCEPTIONS OF PATIENTS, ORTHOPAEDIC WARD NURSES AND OPERATING ROOM NURSES REGARDING PRE-OPERATIVE EDUCATION

Median scores in table 5.31 indicate that most patients found pre-operative information to be useful in preparing themselves for surgery but slightly useful in their post-operative recovery (see table 4.7 and figure 4.1).

Table 5.33 indicated that 50 (100%) patients received pre-operative information in the oral format whereas 44 (88%) patients received pre-operative education in the form of X-rays. Patients preferred information in oral form as well as in the form of videotapes, which is not currently practised, to X-ray information (see table 4.10).

The oral format was used by all 10 (100%) orthopaedic ward nurses to present pre-operative education to patients while 5 (50%) orthopaedic ward nurses used X-rays and only 1(10%) used the model of the bone in pre-operative teaching(see table 5.27). The

oral format was used by all 20 (100%) operating room nurses to convey pre-operative education to patients while only 6 (30%) used the patients' own x-rays as a teaching aid (see table 5.13).

The responses from patients and nurses were similar. Both suggest that the information presented is mostly in oral form and sometimes in X-ray form. Table 5.34 indicates that the surgeon, followed by the ward nurse, anaesthetist and operating room nurse are the most appropriate people to provide pre-operative education (see table 4.18). Table 5.35 indicated that orthopaedic ward nurses are of the opinion that the surgeon, followed by the ward nurse, anaesthetist and operating room nurse are the most appropriate people to provide pre-operative education (see table 5.38).

Operating room nurses are of the opinion that the surgeon followed by the anaesthetist, operating room nurse and ward nurse are the most appropriate people to provide pre-operative education (see table 5.15). Table 5.36 indicated that 15 participants underwent surgery for open reduction and internal fixation-radius/ulna, followed by 12 for open reduction and internal fixation tibial plateau and 9 for pin and plate of the femur (see table 4.6).

The above table also indicated that 9 patients who received pre-operative education from the orthopaedic ward nurse underwent an insertion of a pin and plate of the femur, 7 patients underwent an insertion of a Thompson's prosthesis, insertion of a femoral nail and an open reduction and internal fixation of the tibial plateau (see table 5.23).

As many as 18 patients who received a pre-operative visit underwent a pin and plate of the femur followed by 17 patients who had an insertion of a femoral nail and 15 patients who had surgery for an open reduction and internal fixation of the radius and ulna (see table 5.7).

The patients' profiles reflected the surgery for patients at the time of the study, while the nurses' profiles were determined on the basis of observations over a longer period of time (see figure 5.3). Table 5.37 indicates that 35 (70%) patients did not receive information on the awareness of the operating room environment. This was reflected in

table 4.12 and figure 4.5. Table 5.38 indicates that pre-operative education was sometimes conducted in the wards (see table 5.20).

Table 5.39 indicates that 55% of the time pre-operative visits were conducted once a week. 95% of operating room nurses considered pre-operative education provided by operating room nurses in the theatre to be inadequate. Pre-operative visits were usually conducted by operating room nurses during night duty and over weekends. Those visits were conducted from 16:00-18:00 daily did not include visits to all patients due to time constraints (see table 5.5).

Table 5.40 indicates that the five most important challenges encountered when conducting pre-operative visits, in order of importance were: insufficient time; staff shortages; problems with patients including communication (language) barriers and patients not turning up on time; lack of training of staff and inadequate or no equipment or teaching aids (see table 5.11).

The five most important challenges encountered when conducting pre-operative education in the ward were: insufficient time; staff shortages; problems with patients such as communication (language) barriers, resistance from patients; lack of privacy and inadequate or no equipment or teaching aids (see table 5.26).

Table 5.41 indicates that most patients have televisions, DVD players and video machines at home. The above table also indicated that there was virtually no digital technology available in the ward. This created a problem as 15 (30%) patients preferred information to be presented in the form of videotapes. However, 26 out of the 50 patients interviewed had this form of digital technology available at home (see tables 5.48 and 5.49).

6.5 LIMITATIONS OF THE RESEARCH

The period of data collection was extended to ten weeks due to the public servants' strike, which took place from the 1 June 2007 to 27 June 2007. Most patients who were booked for elective orthopaedic surgery were either transferred to private hospitals or their procedures were cancelled. Possible influences of these extended strikes on patients' and nurses' responses could not be determined.

The findings of this study are not generalisable to all patients undergoing elective surgery as this study dealt only with patient education given to orthopaedic patients undergoing elective surgery.

Non-English speaking participants were excluded from the study. Therefore the results cannot be generalised to all groups of orthopaedic patients.

Only two racial groups were included namely Blacks and Indians because these were the only population groups using the services offered by the two government hospitals that participated in this research. Consequently the results obtained from this study will not be generalisable to all population groups of the KwaZulu-Natal Province.

Only two provincial hospitals participated in this study. Therefore the results cannot be generalised to private hospitals.

Only structured interview schedules were used to obtain data from the patients. More in-depth and different data might have been obtained by conducting in-depth individual qualitative interviews.

6.6 RECOMMENDATIONS

The following recommendations based on the conclusions could assist in highlighting the benefits of pre-operative education to both patients and nurses. This in turn will encourage nurses to come into contact with their patients more often by making the effort to conduct regular pre-operative education and visits. This will enable patients to be better prepared for the surgical experience.

6.6.1 Patients felt that information given on aspects of post-operative care, pre-operatively, would have assisted in preparing themselves more adequately for their post-operative recovery

Pre-operative education should include information on post-operative care such as information on wound care, exercises, ambulation, nutrition, pain medication and

lifestyle changes. This will assist patients in feeling confident and will assist them to prepare themselves adequately for post-operative recovery.

6.6.2 Patients received information rather than education before surgery. When patients were provided with information, the reasons for these procedures were not given

Teach what is significant and appropriate to the patient's particular needs. Giving the reasons for and the benefits of specific procedures and activities, for example, the movement of legs and toes and early ambulation post-operatively, will aid circulation and prevent venous stasis. This will encourage active participation of the patient in his care.

6.6.3 There was inadequate or no equipment or teaching aids to facilitate pre-operative education therefore the oral format was mainly used to convey pre-operative information

Audiovisual aids and equipment such as prostheses of the bones and videotapes on orthopaedic procedures and experiences of patients following orthopaedic surgery, should be provided to supplement pre-operative teaching. Provide written instructions to explain procedures and equipment. It helps in reviewing verbal instructions. These can be presented in the form of a booklet or pamphlet, written in English and in Zulu which the patient can keep and refer back to when necessary and also share with family members.

6.6.4 Findings indicated that most of the patients preferred pre-operative information to be presented using videotapes

Most patients had televisions, DVD players and video machines at home.

Videotapes on pre-operative information could be given to patients to take home following their first visit at the orthopaedic clinic. This will help to reinforce pre-operative teaching.

6.6.5 Most of the nurses in the orthopaedic wards did not possess the diploma in orthopaedic nursing science

Most nurses had 0-9 years experience of working in the orthopaedic wards. This finding suggests a need for training with regards to the conducting of pre-operative patient education.

Incorporate in-service education on how to conduct pre-operative teaching and visits into the monthly in-service training programme in the orthopaedic wards and operating rooms. In-service education should include the teaching of interview skills which is a necessity when conducting a pre-operative assessment of the patient. Adding communication training courses to the performance development plan will teach health care providers how to deal with the emotional distress of patients.

6.6.6 Pre-operative visits were not conducted regularly by operating room nurses

Findings also indicated that pre-operative education was conducted sometimes in the ward.

Nurse managers in the wards and in the operating rooms should place more emphasis and recognition on pre-operative education and visits. Staff should be allocated on a daily basis to conduct pre-operative visits to patients undergoing elective surgery. Every staff member should be given an equal opportunity to conduct pre-operative teaching and visits. Newly appointed staff members should be mentored on how to conduct pre-operative education and visits.

6.6.7 Ward nurses did not have time to spend with patients because of the shortage of staff and increased patient admissions

Even when pre-operative education was conducted, there was insufficient time to reinforce information due to the shortage of staff.

Group teachings could be used to conduct pre-operative education on patients

undergoing similar orthopaedic procedures. This saves time as more patients can receive pre-operative education within a specified period of time. This educational opportunity can enhance information giving.

6.6.8 There is a communication barrier as some of the patients are Zulu speaking and ward staff are only English speaking

It was therefore difficult to communicate with the patients effectively. Language is the fundamental tool for education. Use clear, simple language when explaining medical terminology. Engage the services of an interpreter if language is a barrier in communication. Embark on or motivate staff to attend short courses in Zulu as part of skills development, in order to be able to communicate with patients who are only able to converse in Zulu.

6.6.9 Patients were admitted to a general ward with other patients as a result there was no privacy to discuss sensitive issues such as lifestyle changes

Provide an environment that is free from noise and distractions so that a teaching-learning exchange can take place. A quiet, undisturbed environment and proper timing is important. Avoid conducting pre-operative education during meal times or when doctors' rounds are taking place.

6.6.10 Findings indicated that only 54% of patients received information on exercises from the physiotherapist

The orthopaedic ward nurse should co-operate with the physiotherapist in compiling a written programme of exercises. Incorporate free active exercises, isometric exercises, assisted active exercises and resisted active exercises. These upper or lower limb exercises help prevent joint and muscle deterioration and circulatory stasis due to disuse of the affected limb and will enable the patient to continue rehabilitation once discharged from hospital.

6.6.11 The patients, ward nurses and the operating room nurses felt that patient education should involve a multidisciplinary approach. It should begin when the patient is admitted and should be done by all members of the health care team

Patient education should involve a multidisciplinary approach with all members of the health care team participating in pre-operative education. The surgeon discusses the operative procedure with the patient as he possesses expert knowledge about the surgical procedure. The anaesthetist assesses the patient fully and decides on the method of anaesthesia. The orthopaedic ward nurse works hand in hand with the physiotherapist and occupational therapist. She assists in carrying out the planned programme of exercises designed by the physiotherapist for the patient. She also assists the occupational therapist to help the patient use new aids or pieces of equipment that would help them function independently and safely within their homes and communities, as the patient may be disabled for an initial period at home. The operating room nurse possesses complete knowledge of surgical procedures, anaesthesia, the operating room environment and pre, intra and post-operative care. She is able to provide additional information which supplements the information given by the ward nurse, the surgeon and the anaesthetist that can help to reassure the patient. The ward manager can act as a coordinator to facilitate care. Consistent teamwork with good communication from all health care professionals is essential.

6.6.12 Patients regarded the opportunity to clarify information as important

Only 28% of patients reported that they were given the opportunity to ask questions less often, usually at the end, after pre-operative information had been provided.

The patient should be seen as the central focus. More active patient involvement should be encouraged and this can be achieved through more effective pre-operative education and preparation. Patients should be allowed to experience a sense of importance. When given the opportunity to ask questions and clarify information, the patient feels valued as a person and becomes an active participant in his care.

Further research should be conducted on how to implement a structured pre-operative teaching programme with the involvement of all health care professionals. This study

should be replicated in the private hospitals so that the findings can be generalised to a wider population.

6.7 FINAL CONCLUDING REMARKS

From the research it can be concluded that although most patients found pre-operative information to be useful in preparation for surgery, information on some aspects of post-operative care was lacking.

It was found that patients were provided with information but sometimes the reasons for these procedures were not given. Patients received pre-operative information in the oral format and in the form of X-rays. Patients preferred information in the oral form and in the form of a video, to X-ray information. Most patients did not receive a pre-operative visit since 55% of the time pre-operative visits were only conducted once a week, on night duty or on weekends.

Patients viewed the surgeon as the most appropriate person to provide pre-operative education. The patients agreed that the surgeon, ward nurse, anaesthetist and operating room nurse are the most appropriate people to provide pre-operative education.

Patients reported a clear understanding of the language used to convey pre-operative information and that the information was provided at a reasonable pace. However, slight understanding of medical terminology was reported.

Pre-operative information, provided by operating room nurses, was provided mostly in oral form and sometimes in X-ray form. Findings indicated that orthopaedic ward nurses conduct pre-operative education sometimes in the ward. Nineteen percent of orthopaedic ward nurses felt that pre-operative education was not sufficient.

All orthopaedic ward nurses were of the opinion that pre-operative education was beneficial to patients. Nurses felt that pre-operative education made the patient more cooperative with his care, and this speeded up recovery therefore patients were rehabilitated easily.

Information presented to patients by orthopaedic ward nurses was mostly in oral form and sometimes in X-ray form.

The patients, ward nurses and the operating room nurses felt that patient education should involve a multidisciplinary approach. It should begin when the patient is admitted and should be done by all members of the health team.

The least information patients received before surgery were on post-operative issues and exercises. Patients did not receive information on lifestyle changes. Findings indicated that there was no digital technology available in the ward. This created a problem as 30% of patients preferred information to be presented in the form of videotapes. However, 26 out of the 50 patients interviewed had televisions, DVD players and video machines at home.

The final conclusion reached is that more could be done to provide pre-operative education to orthopaedic patients in both participating hospitals, using pamphlets, video recordings or DVDs, bones, x-rays, the actual prostheses and verbal communications. Although the operating room nurses might not have the time to conduct pre-operative visits to every patient, the orthopaedic surgeons, ward nurses and physiotherapists should participate in such teaching to the ultimate benefit of the patient.

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ANNEXURE A

The University of South Africa
Nursing Science Department
Durban
4001

1 February 2007

The Director
The Department of health
Kwa-Zulu Natal Province
Private Bag 95051
3200

Dear Sir/ Madam

Application for permission to conduct research at two Provincial Hospitals in the KZN Province

I am a student from the Nursing Science Department at the University of South Africa in Durban, studying for the MACur degree in the health sciences. As a requirement for the degree, I have to conduct a research project, entitled 'The perceptions of patients and nurses regarding pre-operative education given to orthopaedic patients undergoing elective surgery' in two Provincial Hospitals.

I therefore request your permission to access and interview patients, orthopaedic ward nurses and operating room nurses as part of the data collection process at King Edward VIII Hospital and R.K.Khan Hospital.

I hope my application will receive your favourable consideration as information obtained will be of relevance to the Province.

Yours faithfully

Cynthia Chetty

ANNEXURE B

23 Glenardle Avenue
Sydenham
4091
1 May 2007

The Chief Executive Officer
Mr Beciswayo
King Edward viii Hospital
P.O.Box 30641
Mayville
4058

Dear Madam/Sir

Application for permission to conduct a research project from May - June 2007

I am a student from the Nursing Science Department at the University of South Africa in Durban, studying for the MACur degree in the health sciences. As a requirement for the degree, I have to conduct a research project, entitled 'The perceptions of patients and nurses regarding pre-operative education given to orthopaedic patients undergoing elective surgery 'at two Provincial Hospitals.

I therefore request your permission to access the orthopaedic wards and operating rooms at King Edward viii Hospital to interview patients, ward nurses and operating room nurses, as part of the data collection process.

Permission for voluntary participation will be requested from participants, and their rights to informed consent, confidentiality and anonymity will be ensured.

Attached is a copy of my research proposal and the instruments that will be utilized to gather data.

I hope my application will receive your favorable consideration as information obtained will be of relevance to your institution and to the nursing profession.

Yours faithfully

Cynthia Chetty
E-mail: CYNTHIA.CHETTY@kznhealth.gov.za
Cell: 0824022440

ANNEXURE C

23 Glenardle Avenue
Sydenham
4091
1 March 2007

The Medical Superintendant
Dr P. Subban
P.O.Box 30641
Chatsworth
4058

Dear Madam/Sir

Application for permission to conduct a research project from April-June 2007

I am a student from the Nursing Science Department at the University of South Africa in Durban, studying for the MACur degree in the health sciences. As a requirement for the degree, I have to conduct a research project, entitled 'The perceptions of patients and nurses regarding pre-operative education given to orthopaedic patients undergoing elective surgery ' at two Provincial Hospitals.

I therefore request your permission to access the orthopaedic wards and operating rooms at R.K.Khan Hospital to interview patients, ward nurses and operating room nurses, as part of the data collection process.

Permission for voluntary participation will be requested from participants, and their rights to informed consent, confidentiality and anonymity will be ensured.

Attached is a copy of my research proposal and the instruments that will be utilized to gather data.

I hope my application will receive your favorable consideration as information obtained will be of relevance to your institution and to the nursing profession.

Yours faithfully

Cynthia Chetty
E-mail: CYNTHIA.CHETTY@ kznhealth.gov.za
Cell: 0824022440

ANNEXURE D

23 Glenardle Avenue
Sydenham
4091
1 May 2007

Dear Participant

I am a student at the University of South Africa. I am at present doing research as part of my MA Cur degree. The aim of this study is to explore the perceptions of patients and nurses regarding pre-operative education given to orthopaedic patients undergoing elective surgery. This information will enable nurses to conduct preoperative education more frequently thus enabling patients to be better prepared for the surgical experience.

In signing this document, you will be giving consent to participate in the study. You will be interviewed by the researcher. The researcher will be present to interpret the questions posed to you.

As a participant, you are assured of confidentiality and anonymity. Your participation is also voluntary and you have a right to withdraw from this study any time you so wish. Findings of the study will also be made available to you on request.

Should you require any further information regarding the study please contact me at the following telephone numbers:

Work-(031)3603666 or (031)2082333 after hours or 0824022440

I wish to thank you kindly
Cynthia Chetty

E-mail: CYNTHIA.CHETTY@kznhealth.gov.za
Cell: 0824022440
Work: (031) 3603666

INFORMED CONSENT

I _____hereby consent to participate in the research study conducted by Cynthia Chetty. I have read the above information and clearly understand details of my participation in the study.

_____ _____

Signature of Participant Date

_____ _____

Signature of Researcher Date

_____ _____

Signature of Witness Date

ANNEXURE E

INTERVIEW SCHEDULE-PATIENT

Dear respondent

You are kindly requested to respond to the following questions. This information is required to complete a research study on “The Perceptions of patients and nurses regarding preoperative education given to orthopaedic patients undergoing elective surgery.’ Your participation will remain anonymous and your response will be kept confidential. Your co-operation is greatly appreciated.

SECTION A

DEMOGRAPHIC DATA

1. Gender

   Male ☐

   Female ☐

2. What is your age in years at your previous birthday? ☐

3. Marital status

   Single ☐

   Married ☐

   Divorced ☐

   Widow/Widower ☐

4. Educational qualifications: Please mark all relevant qualifications

   Grades 3-10 ☐

   Grade 11 ☐

   Grade 12 ☐

   Graduate degree/diploma ☐

   Post graduate degree/diploma ☐

5. Indicate the number of times you were admitted for Surgery

First	☐
Second	☐
Third	☐
Fourth or more	☐

6. Indicate the type of surgery you are undergoing

Pin and plate-femur	☐
Femoral nail insertion (AO nail)	☐
Open reduction and internal fixation tibial plateau	☐
Thompson’s prosthesis	☐
Arthrodesis ankle (open reduction internal fixation)	☐
Open reduction and internal fixation-radius/ulna	☐

SECTION B

WHAT PREOPERATIVE INFORMATION DO ORTHOPAEDIC PATIENTS RECEIVE?

7. Indicate by means of a cross(x) on the scale below, the extent to which pre-operative information was deemed important

STATEMENT 1	**Useless 1**	**Slightly useful 2**	**Useful 3**	**Extremely useful 4**	**Scores**
Pre-operative information proved useful in preparing yourself for surgery					
STATEMENT 2	**Useless 1**	**Slightly useful 2**	**Useful 3**	**Extremely useful 4**	
Pre-operative information proved useful in your post-operative recovery					
TOTAL					

8. Please comment on your response to question 7

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9. Indicate by means of a cross in the appropriate column/s below, the information you received on how to prepare yourself the night before surgery:

INFORMATION PROVIDED	YES	NO	Explain
Nil Per Mouth (nothing to eat or drink from midnight)			
Shower			
Shampoo hair			
Remove finger and toenail polish			
Shave the operative site			
Eat a light supper			
Other, please give details			

10. Please explain your answer to question 9

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11. Indicate by means of a cross in the appropriate column/s below, the information you received on how to prepare yourself on the morning of surgery:

INFORMATION PROVIDED	YES	NO	Explain
Remain Nil Per Mouth			
Take a shower			
Remove jewellery			
Remove underwear			
Remove makeup			
Shave the operative site			
Pre-medication			
Empty bladder before the administration of the pre-medication			
Other, please specify			

12. Please explain your answer to question 11

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……..……
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13. In what form was the information presented to you? Please tick in the appropriate column/s below

FORM INFORMATION PRESENTED	YES	NO	Explain
Oral explanation			
Oral explanation with pictures			
Videotapes			
Pamphlets			
Books			
Other, please specify			

14. Please explain your answer to question 13

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15. In what form would you prefer the information to be presented to you (Oral explanation, oral explanation with pictures, videotapes, pamphlets, models/prosthesis or X-rays)?

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16. Please give a reason for your answer to question 15

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17. Were you made aware of the operating room environment?

Yes ☐

No ☐

18. If yes, please explain your response to question 17

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……..……
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19. Indicate by means of a cross (x) on the scale below, the effect on your nervousness about your operation

STATEMENT 1	**Strongly disagree** **1**	**Disagree** **2**	**Agree** **3**	**Strongly agree** **4**	**Scores**

Pre-operative information decreased nervousness about surgery					
STATEMENT 2	**Strongly disagree 1**	**Disagree 2**	**Agree 3**	**Strongly agree 4**	
Pre-operative information had no effect on nervousness					
STATEMENT 3	**Strongly disagree 1**	**Disagree 2**	**Agree 3**	**Strongly agree 4**	
Pre-operative information increased nervousness about surgery					
TOTAL					

20. Please comment on your response to question 19

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21. Indicate by means of a cross (x) on the scale below, your satisfaction with information received by you before your operation

STATEMENT 1	**Strongly disagree 1**	**Disagree 2**	**Agree 3**	**Strongly agree 4**	**Scores**
I was satisfied with pre-operative information provided					
STATEMENT 2	**Strongly**	**Disagree**	**Agree**	**Strongly**	

	disagree **1**	**2**	**3**	**agree** **4**	
I was slightly dissatisfied with pre-operative information provided					
STATEMENT 3	**Strongly disagree** **1**	**Disagree** **2**	**Agree** **3**	**Strongly agree** **4**	
I was extremely dissatisfied with pre-operative information provided					
TOTAL					

22. Please comment on your response to question 21

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……..……
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23. Indicate by means of a cross (x) on the scale below, information considered to be extremely important

STATEMENT 1	**Unimportant** **1**	**Slightly important** **2**	**Important** **3**	**Extremely important** **4**	**Score**
Information about pre-operative preparation					
STATEMENT 2	**Unimportant** **1**	**Slightly important** **2**	**Important** **3**	**Extremely important** **4**	
Information about anaesthesia					
STATEMENT 3	**Unimportant** **1**	**Slightly important** **2**	**Important** **3**	**Extremely important** **4**	
Information about details of surgery					

STATEMENT 4	**Unimportant 1**	**Slightly important 2**	**Important 3**	**Extremely important 4**	
Information about the operating room environment					
STATEMENT 5	**Unimportant 1**	**Slightly important 2**	**Important 3**	**Extremely important 4**	
Information about post-operative expectations					
TOTAL					

24. Please comment on your response to question 23 on aspects that are considered to be extremely important

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……..……
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25. What form of digital technology do you have at home (video machines/computers with CD/DVD players/other). Please tick in the appropriate column/s below

FORM OF DIGITAL TECHNOLOGY	YES	NO	Explain
Video machines			
Computers with CD			
DVD players			
Other, please specify			

SECTION C

WHO PROVIDED THIS INFORMATION TO ORTHOPAEDIC PATIENTS?

26. Indicate by means of a cross in the appropriate column/s below, the person/s who provided information to you before surgery.

PROVIDER OF INFORMATION	YES	NO	Explain
Operating room nurse			
Ward nurse			
Surgeon			
Anaesthetist			
Physiotherapist			
Occupational therapist			
Other, please specify			

27. Who provided the most important information to you before your operation ?

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28. Please give reasons for your answers to question 27

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29. Who provided the least important information to you before your operation ?

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……..…….
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30. Please give reasons for your answers to question 29

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31. Indicate by means of a cross (x) on the scale below, if you understood the information that was provided to you

STATEMENT 1	Extremely difficult to understand **1**	**Difficult to understand 2**	Slight understanding **3**	**Clearly understood 4**	**Score**
The same language was used to convey information					
STATEMENT 2	**Extremely difficult to understand 1**	**Difficult to understand 2**	Slight understanding **3**	**Clearly understood 4**	
Medical terminology was explained					
STATEMENT 3	**Extremely difficult to understand 1**	**Difficult to understand 2**	Slight understanding **3**	**4 Clearly understood 4**	
Information was provided at a reasonable pace					
TOTAL					

32. Please comment on your response to question 31

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33. Indicate by means of a cross (x) on the scale below, whether information provided was clear or not

STATEMENT 1	**Never** **1**	**Sometimes** **2**	**Less often (at the end)** **3**	**Frequently** **4**	**Score**
An opportunity given to ask questions					
STATEMENT 2	**Unimportant** **1**	**Slightly important** **2**	**Important** **3**	**Extremely important** **4**	
An opportunity given to clarify information					
TOTAL					

34. Were you given an opportunity to ask questions or clarify information?

Yes ☐

No ☐

35. Please explain your answer to question 34

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SECTION D

DID PREOPERATIVE INFORMATION PROVIDED TO ORTHOPAEDIC PATIENTS HELP THEM WITH THEIR POST-OPERATIVE ADAPTATIONS?

36. Please tick in the appropriate column/s below, aspects on post-operative care that you received

POST-OPERATIVE CARE	YES	NO	Explain
Early ambulation			
Wound care			
Exercises			
Nutrition			
Pain medication			
Other, please specify			

37. Please explain your response to question 36

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38. What information could have made your recovery easier after your operation that YOU would share with other people before going for such operations ?

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ANNEXURE F

INTERVIEW SCHEDULE- OPERATING ROOM NURSE

Dear respondent

You are kindly requested to respond to the following questions. This information is required to complete a research study on "The perceptions of patients and nurses regarding preoperative education given to orthopaedic patients undergoing elective surgery.' Your participation will remain anonymous and your response will be kept confidential. Your co-operation is greatly appreciated. The research report will present the findings as statistics. Should you wish to obtain a research report, you can submit your contact details to the researcher at 031 360 3666 or 0824022440

SECTION A

DEMOGRAPHIC DATA

1. Gender

Male ☐

Female ☐

2. What is your age in years at your previous birthday? ☐

3. Academic qualifications-Please mark all relevant qualifications

Basic B degree ☐

Post basic B degree ☐

Diploma in Operating Theatre Nursing Science ☐

Diploma in General Nursing ☐

Diploma in Midwifery ☐

Diploma in Community Nursing ☐

R425 Diploma ☐

4. Indicate the number of years and months of experience

as an Operating Room Nurse

SECTION B

OPERATING ROOM NURSES' PERCEPTIONS ON CONDUCTING PRE-OPERATIVE TEACHING AND VISITS ON ORTHOPAEDIC PATIENTS

5. Have you conducted a pre-operative visit on orthopaedic patients before?

Yes ☐

No ☐

6. If yes, Please indicate by means of a tick in the column/s below, the type of surgery that these patients underwent

TYPE OF SURGERY	YES
Pin and plate-femur	
Femoral nail insertion (AO nail)	
Open reduction and internal fixation tibial plateau	
Thompson's prosthesis	
Arthrodesis ankle (open reduction internal fixation)	
Open reduction and internal fixation-radius/ulna	

7. How often do you visit patients in the wards prior to their operation to educate them about the nature of the operation?

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8. Do you also teach these pre-operative patients about the expectations during recovery?

Yes ☐

No ☐

9. Please comment on the answer given to question 8

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10. Do you regard the pre-operative visit as being of benefit to the patient?

Yes ☐

No ☐

11. Please give a reason for your answer to question 10

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12. Do you think operating room nurses should conduct a pre-operative visit to every patient?

Yes ☐

No ☐

13. Please give a reason for your answer to question 12

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14. What challenges do you encounter to conduct pre-operative visits in your hospital?

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15. If you have conducted pre-operative visits, did the patients appear to be more relaxed after these visits?

Yes ☐

No ☐

16. Please give reasons for your answer to question 15

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17. In what form did you present the information to the patient when conducting pre-operative education? Please tick in the appropriate column/s below :

FORM INFORMATION PRESENTED TO PATIENTS	YES
Oral explanation	
Oral explanation with pictures	
Videotapes	
Pamphlets	
Models/Prosthesis	
X-rays	

18. Please comment on the answer given to question 17

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……

19. Indicate by means of a cross in the appropriate column/s below the information you provided to patients before surgery:

INFORMATION PROVIDED	YES	NO
Details of the procedure		
Pre-operative preparation		
Operating room environment		
Post-operative expectations		
Details of anaesthesia		

20. Please comment on your answer to question 19

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21. Who do you consider to be the most appropriate person/s to provide the pre-operative education? Please rank your response in order of importance, where the most important =1 and least important=7.

PROVIDER OF INFORMATION	RANK

Operating room nurse	
Ward nurse	
Surgeon	
Anaesthetist	
Physiotherapist	
Occupational therapist	
Other	

22. Please give reasons for your answer to question 21

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23. Do you consider the pre-operative education provided by operating room nurses in your theatre to be sufficient?

Yes ☐

No ☐

21. Please explain your answer to question 20

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……..

22. In what way(s) could pre-operative education be improved by operating room nurses in your theatre ?

ANNEXURE G

INTERVIEW SCHEDULE- WARD NURSE

Dear respondent

You are kindly requested to respond to the following questions. This information is required to complete a research study on "The perceptions of patients and nurses regarding preoperative education given to orthopaedic patients undergoing elective surgery.' Your participation will remain anonymous and your response will be kept confidential. Your co-operation is greatly appreciated. The research report will present the findings as statistics. Should you wish to obtain a research report, you can submit your contact details to the researcher at 031 360 3666 or 0824022440

SECTION A
DEMOGRAPHIC DATA

1. Gender — Male ☐
   Female ☐

2. What is your age in years at your previous birthday? ☐

3. Academic qualifications
   - Basic B degree ☐
   - Post basic B degree ☐
   - Diploma in Orthopaedic Nursing Science ☐
   - Diploma in General Nursing ☐
   - Diploma in Midwifery ☐
   - Diploma in Community Nursing ☐
   - R425 Diploma ☐
   - Diploma in Enrolled Nursing ☐

4. Indicate the number of years and months of experience as a nurse in the orthopaedic ward

SECTION B

ORTHOPAEDIC WARD NURSES' PERCEPTIONS ON CONDUCTING PRE-OPERATIVE EDUCATION

5.Indicate by means of a tick in the appropriate column whether pre-operative

education is being conducted in your ward

STATEMENT 1	**Never 1**	**Sometimes 2**	**Routinely 3**	**Frequently 4**	**Score**
1. Pre-operative education is conducted in the ward					
TOTAL					

6. Have you been involved in pre-operative education before?

Yes ☐

No ☐

7. If yes, Please indicate by means of a tick in the column/s below, the type of surgery that these patients underwent

TYPE OF SURGERY	YES
Pin and plate-femur	
Femoral nail insertion (AO nail)	
Open reduction and internal fixation tibial plateau	
Thompson's prosthesis	
Arthrodesis ankle (open reduction internal fixation)	
Open reduction and internal fixation-radius/ulnar	

8. Do you regard pre-operative education as being of benefit to the patient?

Yes ☐

No ☐

9. Please explain your answer to question 8

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……..

10. Do you think ward nurses should conduct pre-operative education to every patient?

Yes ☐

No ☐

11. Please give a reason for your answer to question 10

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……..

12. What challenges do you encounter when conducting pre-operative education in your ward?

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……..

13. In what form did you present the information to the patient when conducting pre-operative education? Please tick in the appropriate column/s below

FORM INFORMATION PRESENTED	YES	NO
Oral explanation		
Oral explanation with pictures		
Videotapes		
Pamphlets		
Models/Prosthesis		
X-rays		

14. Who do you consider to be the most appropriate person/s to provide the pre-operative education? Please rank your response in order of importance, where the most important =1 and least important=7.

PROVIDER OF INFORMATION	RANK
Operating room nurse	
Ward nurse	
Surgeon	
Anaesthetist	
Physiotherapist	
Occupational therapist	
Social worker	

15. Please give reasons for your answer to question 14

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16. Indicate by means of a tick in the appropriate column/s below, about which aspects were patients informed

INFORMATION PROVIDED	YES	NO
Details of the surgical procedure		
Early ambulation		
Care of Wound, drains and dressings		
Exercises-Deep Breathing and Coughing		
Diet and Nutrition		
Pre-medication		
Pain medication		
Post-operative issues and lifestyle changes		

17. Please explain your answer to question 16

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18. Indicate by means of a tick in the appropriate column, the forms of digital technology present in your ward

FORM OF DIGITAL TECHNOLOGY	YES	NO
Video machines		
Computers with CD		
DVD players		
Other		

19. Please explain your answer to question 18

……..……
……..……
……..……
……..……
……..

20. Do you consider the pre-operative education provided in your ward to be sufficient?

Yes ☐

No ☐

21. Please explain your answer to question 20

……..……
……..……
……..……
……..……
……..

22. In what way(s) could pre-operative education be improved in your ward?

……..……
……..……
……..……
……..……