

**PERIOPERATIVE NURSING CARE OF PATIENTS  
UNDERGOING JOINT REPLACEMENT SURGERY IN  
SELECTED HOSPITALS, COIMBATORE.**

**REG. NO. 30091402**

A Dissertation submitted to  
**The Tamilnadu Dr. M.G.R. Medical University,**  
Chennai.

In partial fulfillment of the requirement for the  
Award of the Degree of

**MASTER OF SCIENCE IN NURSING**

**2010**

# **PERIOPERATIVE NURSING CARE OF PATIENTS UNDERGOING JOINT REPLACEMENT SURGERY IN SELECTED HOSPITALS, COIMBATORE.**

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PERIOPERATIVE NURSING CARE

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### **Abstract**

A study was conducted on peri-operative nursing care to patients undergoing joint replacement surgery in Rex Orthopedic Hospital, Coimbatore. Objectives considered for the study were to assess the condition of the patient preoperatively, to render peri-operative nursing care and to evaluate the nursing care of the patient underwent joint replacement surgery. A descriptive case study design was adopted to conduct the study. The data was collected using nursing assessment tool and rendered holistic nursing care based on needs and problems identified. A convenient sample of 4 samples were selected and rendered peri-operative nursing care. The study reveals that holistic nursing care is effective in promotion of early well being and get discharged earlier without any complications.

## **Perioperative Nursing Care Of Patients Undergoing Joint Replacement Surgery in Selected Hospitals, Coimbatore.**

Age is a date in time and is influenced by many factors including emotional and physical health, developmental stage and socio economic status. Age related changes affect every body system. This forces the aged people at the midst of developing various diseases like congestive cardiac failure, musculoskeletal abnormalities which includes osteoarthritis, osteoporosis, fractures and other systemic illness.

It is estimated that around 70 million older adults represents 20% of the population by the year 2010. Among the age related musculoskeletal diseases osteoarthritis is the most common form of arthritis which affects 10 -25% of the older adults and every third individual above 60 will suffer from it. The various treatment modalities includes medical management with steroids, calcium replacements, non steroidal anti-inflammatory drugs and joint replacement surgery (Karan, 2006).

Joint replacement surgery is the reconstruction or replacement of a joint. The joint replacement aims to restore painless motion to the muscles and the other soft tissues that control the joint. It improves or maintains range of motion and correct deformity. Joint replacement surgeries are used for patients with osteoarthritis, rheumatoid arthritis, congenital deformities or dislocations etc. It is available for the elbow, shoulder, phalangeal joint of the fingers, wrist, hip, knee, ankle and foot (Phipps, 2009).

Joint replacement surgery originally developed in the 1970's , joint prostheses were expected to last about 10 years, then revision surgery was indicated. Today approximately 80% of hip joint implants will last 20 years, and nearly 98% of total knee replacement has a success rate for 10 years. Advances in prosthetic components, surgical techniques, bearing surfaces and method of fixation has resulted in increased implant survival rates (Phipps, 2009).

There are more replacement operations performed on the knee than any other joint in the body; more than 600000 total knee replacements are performed each year globally. The annual total global knee market is estimated to be worth \$2 billion (Advanced Ceramics Reports, 2005).

The average age for a total knee replacement is 70 years. Previously it was recommended for patients more than 60 years but now it is recommended for younger patients (Lewis, 2009).

Osteoarthritis is one of the foremost common problem linked to obesity. Overweight and obese people are 24% more likely to require knee surgery. (Blackmore, 2003). Accelerated perioperative interventions are effective and of advantage to both the hospital and the patient (Larson, 2008).

Nursing care on pain management, exercise, activity, wound care, pulmonary hygiene prior to operation assists patient's and family members to cope up mentally for the surgery (Ann, 2004).

Knowledge of national practice patterns and incorporation of the information into clinical practice can reduce the patient's risk of unsafe or ineffective care while promoting positive patient outcomes (Mauer, 2002).

Multidisciplinary rehabilitation comprising occupation therapy and education is desirable for the most fragile patients due to major disability, co-morbidity and social patterns. Preoperative assessment is important, it necessitates the collaboration of qualified health care professionals in the educational topic and home care (Coudeyre, 2007).

Infection is potentially a severe complication after joint replacement surgery. More than 50% of infections occur more than 3 months after surgery that develop within first three post operative months are usually superficial (Stage 1). Deep and superficial infections are commonly seen within 3-24 months after surgery (Stage 2). Infections occur later than 24 months after surgery are usually attributed to hematogenous spreading from other location in the body (Stage 3).

Persons with rheumatoid arthritis are more prone to develop major wound complications, as a result of immunosuppressive medications used to treat rheumatoid arthritis. Patients with diabetes are also at an increased risk for developing infections after total joint replacement (Phipps, 2009).

### **1.1. NEED FOR THE STUDY**

At present more than 600000 replacement surgeries are being performed each year. Joint replacement surgery is the reconstruction of the joint. Joint replacement surgeries are used for osteoarthritis, rheumatoid arthritis, congenital deformities or

dislocations. Replacement surgeries can be associated with complications such as infection, deep vein thrombosis, pulmonary embolism, and dislocation of prosthesis. Improper nursing care can lead to prolonged hospital stay and this affect the patient's physical, psychological, and social wellbeing.

An active home exercise program involves progressive range of motion exercises and exercises to strengthen the muscles that reduces the risk for thrombus formation.

A study conducted to determine the rapid recovery protocol for peri-operative care of total hip and total knee arthroplasty patients revealed that, a holistic peri-operative, rapid recovery program has lead to a significantly decrease hospital stay and recovery than other people (Berend, Lombardi, Mallory, 2004).

A prospective study conducted by Mizner, Petterson & Synder, in 2005 to find out the effect of quadriceps strengths and the time of course of functional recovery after total knee arthroplasty in USA States that, it improved postoperative quadriceps strengths.

The preoperative teaching and rehabilitation programmes are beneficial and positively affect the patient's outcomes. The objective of the programmes is to provide the necessary information regarding the perioperative experiences, decreases patient and family anxiety and also decrease hospitalization (Moran, 2003).

A study was conducted on preoperative teaching program among patients undergoing joint replacement, providing information to patients and family members



regarding all aspects of care and it revealed that it decreases the hospital stay and improved patient satisfaction (Janey, 1995).

The post operative nursing care for the patient recovering from total joint replacement surgery includes monitoring vital signs and level of consciousness, assisting with coughing and deep breathing ,monitoring intake and output, managing pain, assessing the surgical site for drain and signs of infection , maintaining the position of operated extremity to prevent dislocation of prosthesis, perform frequent neurovascular checks, progressive ambulation, preventing infection and monitoring signs of complications (Phipp's, 2009).

A study conducted by Lansen, Hansen, Thomsen, Christansen & Soballe (2004) on accelerated perioperative and rehabilitation care reveals that the length of hospital stay reduced.

A study conducted by Vanbarcht, Witte, Panella & Sermens (2008) on organization of physical needs, activities of daily living, pain management, wound care, education, psychological support and exercises reveals that using pathways decreased length of stay and elapsed time for discharge. Keeping this in mind the researcher was interested to provide peri-operative nursing care to patient's undergoing joint replacement surgery.

## **1.2. STATEMENT OF THE PROBLEM**

PERIOPERATIVE NURSING CARE OF PATIENTS UNDERGOING JOINT REPLACEMENT SURGERY IN SELECTED HOSPITALS, COIMBATORE.

### **1.3. OBJECTIVES**

- 1.3.1. To assess the condition of the patient preoperatively.
- 1.3.2. To render perioperative nursing care to patient undergoing joint replacement surgery.
- 1.3.3. To evaluate the nursing care of the patient who underwent joint replacement surgery.

### **1.4. OPERATIONAL DEFINITION**

#### **1.4.1. Nursing care**

Nursing care is the use of clinical judgement in the provision of holistic perioperative nursing care to enable people to improve, maintain health, to cope up with problems and to achieve the best possible quality of life after joint replacement surgery.

#### **1.4.2. Joint replacement surgery**

A damaged part of the joint is surgically removed or fixed with an artificial component.

### **1.5. CONCEPTUAL FRAME WORK**

In the present study the researcher has adopted Orlando's Nursing process model. This theory developed in the late 1950's by observation between a nurse and a patient shows "good" nursing and "bad" nursing. From her observations she learned, the patient must be the central character nursing care needs to be directed at improving outcomes for the patient, not about nursing goals. The nursing process is an essential part of the nursing care plan.

**1.5.1. Assessment**

This is the data collection step. It also entails analyzing the data and possibly making a more complex and in depth assessment based on the findings.

**1.5.2. Diagnosis**

Once the nurses identified the patient's problems related to his health status, the nurse formulate a nursing diagnosis for each of them. The nurse will prioritize the problems in formulating your plan and goals.

**1.5.3. Planning**

Setting goals to improve the outcomes for the patient is a primary focus of the nursing process. This is about improving the health status and quality of life for your patient. This is about what your patient needs to do to improve his health status and or better cope with his illness. It also involves making plans to carry out the necessary interventions to achieve those goals by the use of formal care plans.

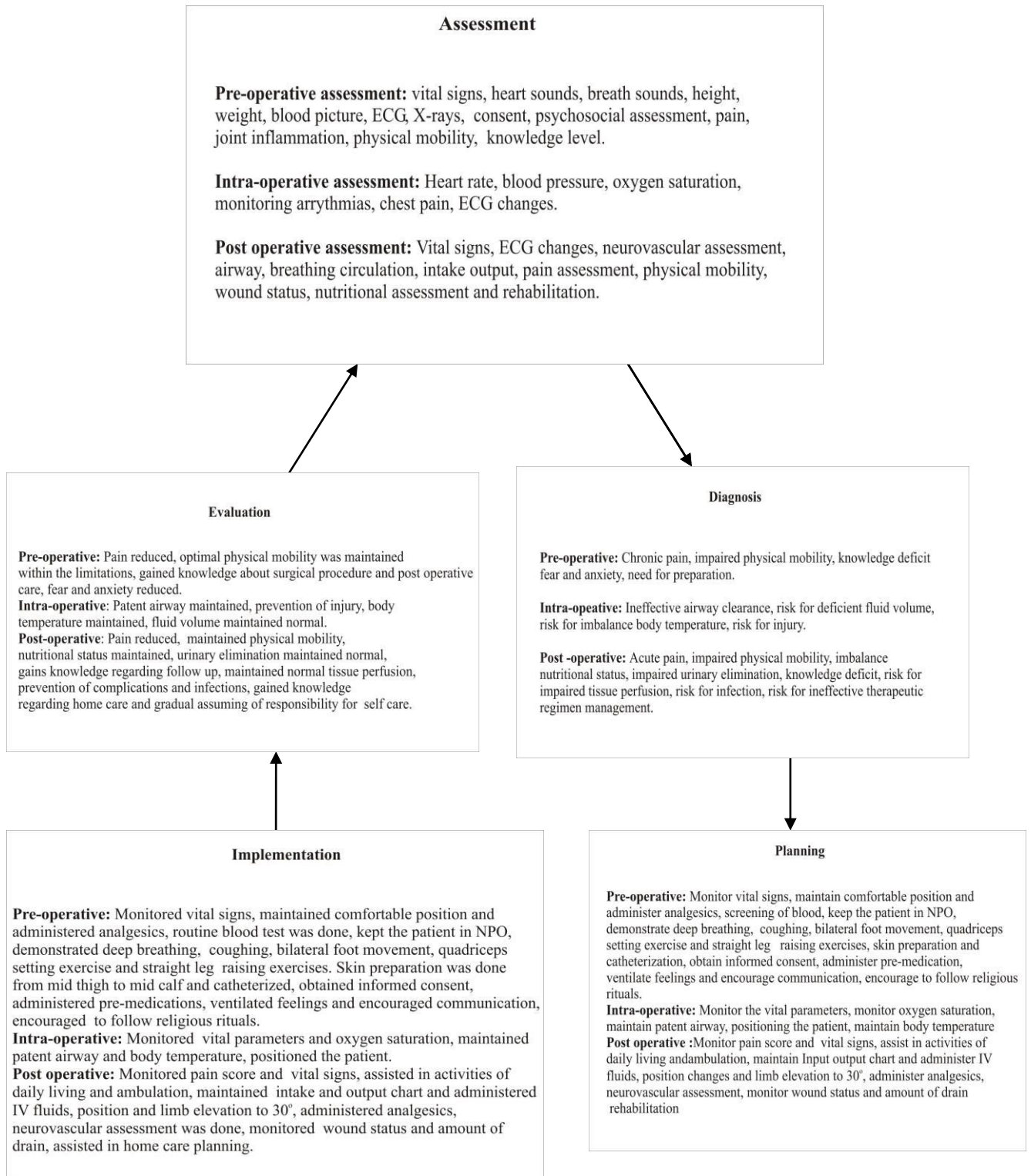
**1.5.4. Implementation**

Implementation is setting your plans in motion and delegating responsibilities for each step. Communication is essential for the nursing process. All members of the health care team should be informed of the patient's status and nursing diagnosis, the goals and the plans. They are also responsible to report back all significant findings and to document their observations and interventions as well as the patient's response and outcome.

### **1.5.5. Evaluation**

The nursing process is an ongoing process. Evaluation involves not only analyzing the success or failure of the current goals and interventions, but examining the need for adjustments and changes as well.

**FIG. 1.1.**  
**CONCEPTUAL FRAMEWORK BASED ON NURSING PROCESS MODEL**



### **1.6. PROJECTED OUTCOME**

The holistic peri operative nursing care interventions to patients undergoing joint replacement surgery and thus help the patient to get discharged earlier without any complications.

## **LITERATURE REVIEW**

Review of literature is a key in research process. The researcher has selected the review of literature related to knee replacement surgery and nursing care of patients undergoing knee replacement surgery.

### **2.1. LITERATURES RELATED TO JOINT REPLACEMENT SURGERY**

‘Framingham Osteoarthritis’ study to determine the incidence of radiographic knee osteoarthritis and symptomatic osteoarthritis as well as the rate of progression of pre-existing radiographic osteoarthritis in a population based sample of elderly persons. The study reveals that rate of incident disease were 1.7 times higher in women than in men and progressive disease occurred slightly more often in women (Felson, et al., 2005).

Persons with rheumatoid arthritis are more prone to develop major wound complications, as a result of immunosuppressive medications, used to treat arthritis. Patients with diabetes are also at an increased risk in developing infections after total joint replacement (Phipps, 2009).

A study conducted on identification and treatment of anemia in patients awaiting replacement surgery reveals that early identification of anemia allows for the utilization of the waiting list time of investigate and treat the patients and it shows significant reduction in the need for blood transfusion (Rogers, Cowie, Alcock, Rosson, 2008).

A multicenter, prospective, observational study on venous thromboembolism prophylaxis in major orthopedic surgery reveals that risk for venous thromboembolism were seen in 73.2% of the patients, in that obesity contributes to 72% of the patients and prolonged immobilization with 36.3% and treated it with low molecular weight heparin used for short term prophylaxis where as mechanical prophylaxis, were implemented for longer term. During a three months follow up symptomatic deep vein thrombosis and pulmonary embolism were seen in 0.9% and 0.4% respectively. It shows that effective prophylaxis was associated with low risk of clinically apparent deep vein thrombosis and pulmonary embolism in major orthopedic surgery (Altintas, et al., 2001)

A study was conducted on post operative lumbar epidural analgesia was compared to other methods of pain relief and it reveals that the benefits of epidural analgesia limited to the early 4-6 hours of post operative period (Choi, 2003).

## **2.2. LITERATURES RELATED TO PERIOPERATIVE NURSING CARE TO PATIENTS UNDERGOING JOINT REPLACEMENT**

Clinical pathways are used world wide to reorganize care process. They are used by multidisciplinary team in their search towards excellence.

A study conducted to determine the rapid recovery protocol for peri operative nursing care of total knee arthroplasty patients revealed that, a holistic peri-operative, rapid recovery program, has lead to a significantly decreased hospital stay and recovery was even faster than other people (Berend, Lombardi & Mallory, 2004).



A meta analysis was performed to evaluate the use of clinical pathways for joint replacement when compared to standard medical care and revealed a significant improvement in quality of care (Barbieri, et al., 2003).

A cross sectional study was conducted on impact of relational co-ordination on quality of care, post operative pain, functioning and length of stay by Gittell, et al (2004) and it reveals that, quality of care was significantly improved ( $p < 0.001$ ). Relational co-ordination across health care provides is associated with improved quality of care, reduced post-operative pain, decreased length of hospital stay for patients undergoing total joint arthroplasty.

A study was conducted on the use of guided imagery to manage pain in an elderly orthopedic population. The control group received usual post operative care including pain management and relaxing music where as experimental group received the usual care and guided imagery audiotape. The experimental group demonstrated decreased length of stay, anxiety, opioid use and lower pain scores (Antall, Kresevic, 2004).

A randomized controlled trail of continuous passive motion following total knee arthroplasty in people with arthritis. The experimental group received continuous passive motion and both the experimental and control group received similar post operative care and therapy following total knee arthroplasty and it reveals that it increases passive knee flexion range of motion and lead to better functioning in activities of daily living (Harvey, Brosseau & Herbert, 2003)

A prospective study on quadriceps strengths and the time course of functional recovery after total knee arthroplasty shows a high correlation between quadriceps strength and functional performance. It also suggested that improved post operative quadriceps strengthening could be important to enhance the potential benefits of total knee replacement (Mizner, Petterson & Snyder, 2004).

Thomas, et al (2004) conducted a study to assess the impact of preoperative education program via interactive telehealth network for rural patients undergoing joint replacement. They proved that, the satisfaction of patients was improved and decreased hospital stay.

Lucas (2004), Whipps Cross University Hospital NHS Trust, London published an article on total knee replacement. Pre-operative nursing management shows that, the organization of services along with patient pathway to ensure comprehensive preparation is considered and the nurses play a major role.

A randomized control trial was conducted on accelerated perioperative care and rehabilitation intervention for joint replacement by Lansen, Hansen, Thomsen, Christiansen and Soballe (2004). In the study 87 patients were randomized to either a control group receiving current perioperative procedure or an intervention group receiving a new accelerated perioperative care and rehabilitation care and it reveals that the length of stay was reduced from 8 days to 5 days in intervention group.

A randomized trial of preoperative education delivered by a health professional with 6 weeks of surgery to patients undergoing hip or knee replacement, shows that it significantly reduces, the anxiety of the patients preoperatively (McDonald, Hetrick & Green, 2010).

Vanbarcht, Witte, Panella & Sermens (2008) conducted a study at Centre for Health Services and Nursing Research in Belgium. The study was based on organization of care processes, it affect outcomes in patients undergoing joint replacements. They organized physical needs, activities of daily living, pain management, wound care, education, psychological, support and exercises reveals that using pathways decreased length of stay ( $P=0.014$ ) pain ( $P=0.052$ ) and elapsed time for discharge ( $P=0.003$ ). To conclude the physical, psychological, social and spiritual needs of the clients should be met and it helped to solve the problems of the client more efficiently and effectively.

## **METHODOLOGY**

The present chapter deals with the research methodology adopted and applied to carryout the present study. The study was designed for peri-operative nursing care to patients undergoing joint replacement surgery. The methodology of the present study includes research design, setting, population, sampling, materials for data collection, validity of the tool, pilot study, main study reports, technique of data analysis and interpretation.

### **3.1. RESEARCH DESIGN**

The research design adopted for the study was descriptive case study design.

### **3.2. SETTING**

The setting selected for the study was Rex Orthopedic Hospital, Coimbatore. It is a 75 bedded hospital, exclusively for orthopedical problems such as fractures, arthritis, subluxation of joint, joint replacement surgeries and other kind of surgeries.

### **3.3. POPULATION**

The accessible population for this study is patients who are admitted to Rex Orthopedic Hospital, Coimbatore for joint replacement surgery.

### **3.4. SAMPLING**

Convenient sampling technique was used to select patients undergoing joint replacement surgery. Four patients were selected for this study. Four samples were selected for this study among which three were females and one male.

### **3.5. MATERIALS**

#### **Section 1: Baseline Assessment**

Assessment form consists of baseline assessment data includes: sample number, age, sex, diagnosis, name of surgery and date of surgery etc. Medical history includes: present health history, past health history, family, history, personal history, vital signs, investigations and medications.

#### **Section 2: Physical Assessment**

Physical assessment was done to check the height, weight, body mass index and body built. Musculoskeletal assessment of upper and lower extremity assessment was done. Special attention was given to joint examination and neurovascular assessment.

#### **Section 3: Nursing care plan**

Structured nursing care plan was prepared based on the expected peri-operative needs and problems of subjects undergoing joint replacement surgery.

### **3.6. VALIDITY OF THE TOOL**

The validity of the tool was obtained with the guidance of experts in the specialized area.

### **3.7. PILOT STUDY**

Prior to the main study, a pilot study was conducted to check the feasibility and practicability of the study. The study was conducted in Rex Orthopedic Hospital, Coimbatore for 10 days.

A convenient sample of one subject was selected for the pilot study. Initial assessment was done preoperatively and peri-operative nursing care was rendered to the subjects based on the problems identified. Daily monitoring of vital signs, pain assessment, neurovascular assessment, nutritional status, elimination pattern, wound status, wound drains, physical mobility, intake and output status, early ambulation and rehabilitation was done. The results revealed that the individualized holistic peri operative nursing care promoted early wellbeing of subjects, reduced fear and anxiety, subjects did not develop any post operative complications and decreased the length of hospitalization.

### **3.8. MAIN STUDY**

The main study was conducted for a period of one month from June 10<sup>th</sup> to July 10<sup>th</sup> to meet the objectives formulated. A convenient sample of four subjects were selected for the study. The baseline data collected on the time of admission, systematic physical assessment was done for each subject. Peri-operative nursing interventions were planned based on the needs and problems identified and care was rendered from the time of admission till discharge.

### **3.9. TECHNIQUES OF DATA ANALYSIS AND INTERPRETATION**

Descriptive statistics was applied to analyse the data.

## **DATA ANALYSIS AND INTERPRETATION**

The study was conducted in Rex Orthopedic Hospital, Coimbatore. Individualized holistic peri-operative nursing care was rendered to four subjects who are admitted for total knee replacement surgery. Physical and Musculoskeletal assessment was done by using assessment form. On going assessment was done till discharge. Nursing care was rendered to the subject before, during and after surgery till discharge based on assessment findings. Evaluation of nursing care was rendered in relation to condition of subject at the time of discharge.

### **SECTION 1**

#### **4.1. ANALYSIS OF THE BASELINE DATA**

The baseline data is analysed in terms of age, sex, occupation, family history of arthritis, past medical history, diagnosis of subject and present medical history.

**TABLE 4.1.**  
**DISTRIBUTION OF SUBJECTS BY BASELINE DATA**

(N=4)

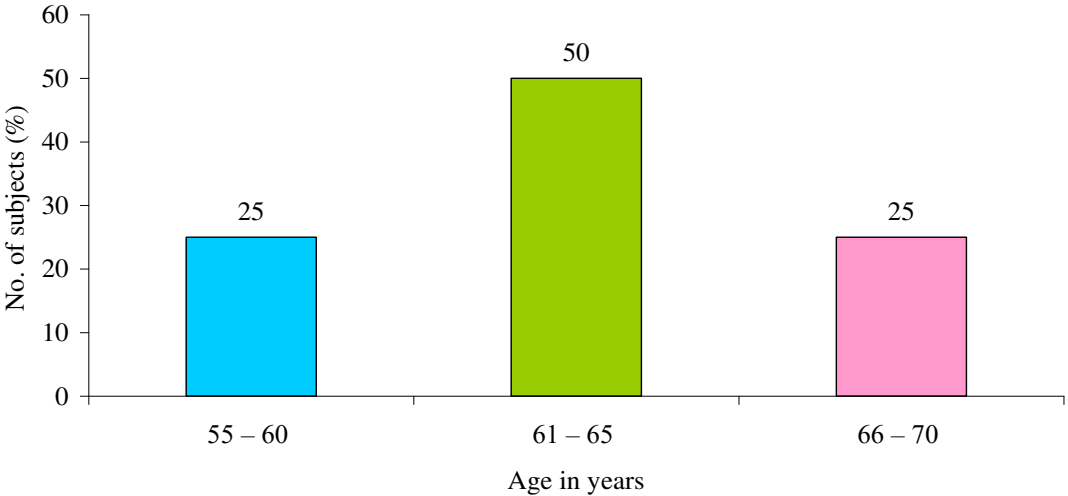
Baseline Data	No. of subjects	Percentage (%)
Age in years		
55 – 60	1	25
61 – 65	2	50
66 – 70	1	25
Sex		
Male	1	25
Female	3	75
Occupation		
Business	1	25
Housewife	3	75

Age distribution table shows that 50% of subjects admitted for knee replacement surgery in the age group of 61-65 years, 25% in 55-60 years and 66-70 years of age respectively.

Distribution of subjects by sex and occupation shows 75% of subjects were females and that too housewives and 25% of them were males and were engaged in business.



**FIG. 4.1.**  
**DISTRIBUTION OF SUBJECTS BY AGE**



**TABLE 4.2.**  
**DISTRIBUTION OF SUBJECTS BY MEDICAL HISTORY**

(N=4)

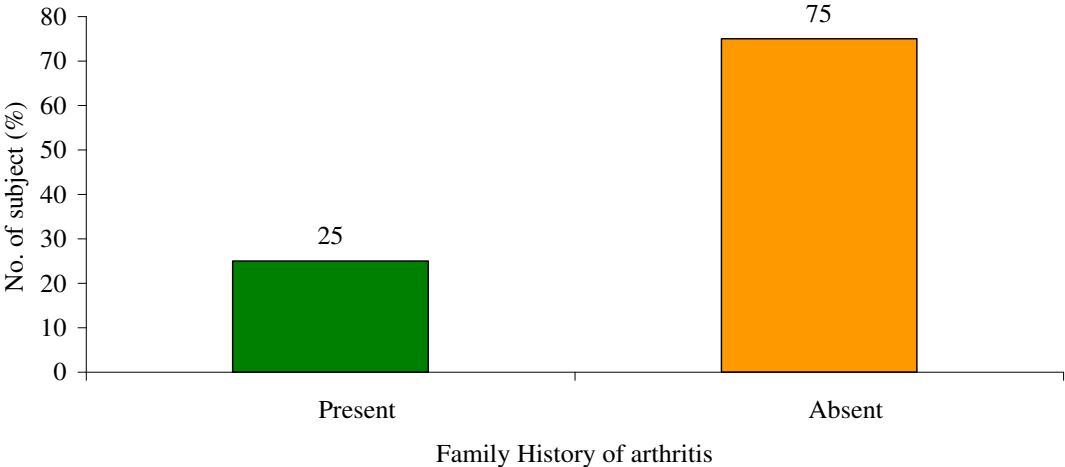
Medical History	No. of Subjects	Percentage (%)
Family History of arthritis		
Present	1	25
Absent	3	75
Past medical History		
Diabetes Mellitus	2	50
Hypertension	2	50
Diagnosis		
Rheumatoid arthritis	2	50
Osteoarthritis	2	50

Distribution of subjects by family history of arthritis shows that 25% of them had family history of arthritis whereas 75% had no history of arthritis.

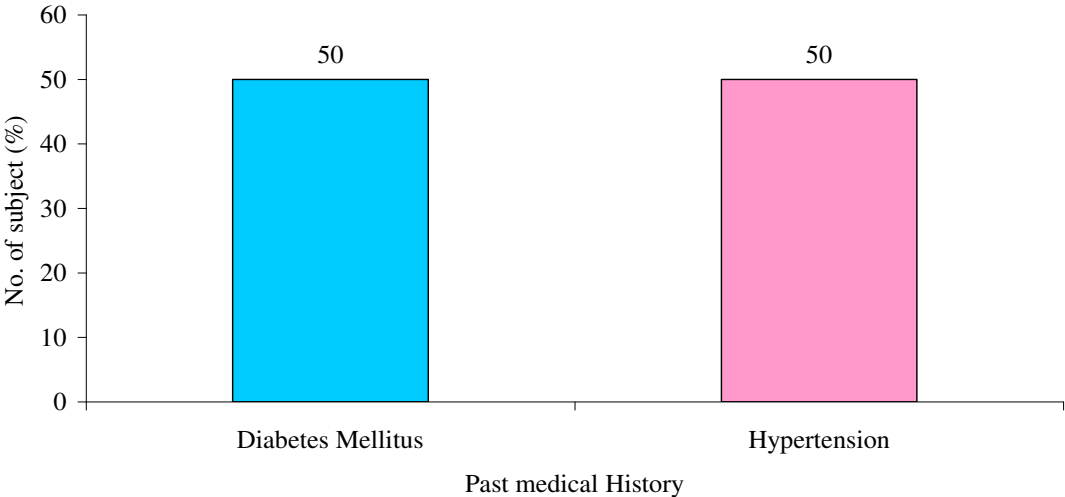
Distribution of subjects by past medical history shows 50% of subjects were hypertensive and 50% of were having diabetes mellitus.

Distribution of subjects by diagnosis shows 50% of subjects were diagnosed with rheumatoid as well as osteoarthritis.

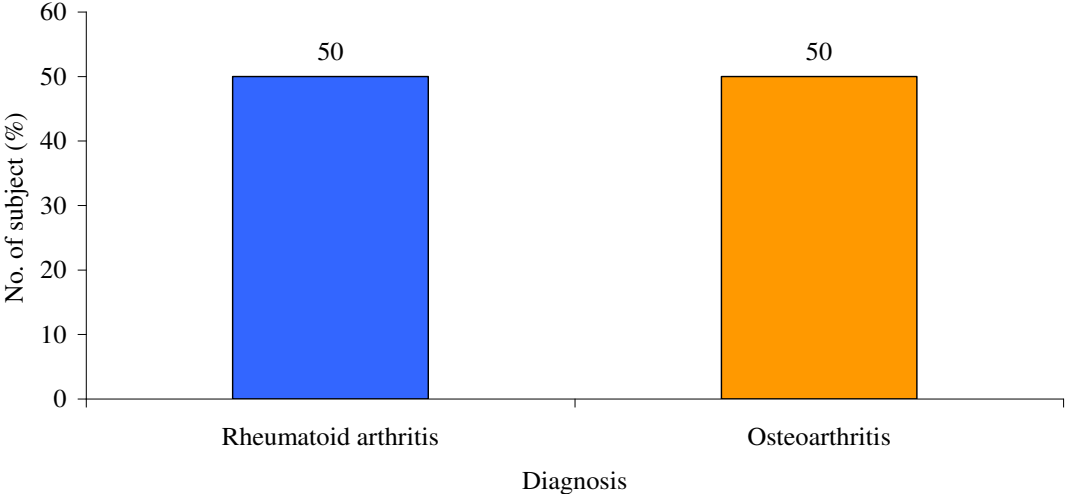
**FIG. 4.2.**  
**DISTRIBUTION OF SUBJECTS BY**  
**FAMILY HISTORY OF ARTHRITIS**



**FIG. 4.3.**  
**DISTRIBUTION OF SUBJECTS BY PAST MEDICAL HISTORY**



**FIG. 4.4.**  
**DISTRIBUTION OF SUBJECTS BY DIAGNOSIS**



## **SECTION – II ANALYSIS ON ASSESSMENT OF SUBJECT**

### **PRE-OPERATIVE PERIOD**

Physical assessment was done to ensure the condition of the subject pre operatively and thus it helps in proper planning of the care to be given to all the four subjects.

Among the four subjects, 2 subjects were diagnosed with heumatoid arthritis and two were diagnosed with osteoarthritis. Only one subject had contractures due to progression of disease whereas all others had problems like pain and difficulty in walking.

Pre-operative preparation was done for all the four subjects. It consists of psychological preparation, legal preparation, physical preparation and physiological preparation.

Psychosocial preparation includes communication adequacy of support system, concerns about body image, past experiences and knowledge. Legal preparation for surgery consists of checking that all required forms have been correctly signed and are present on the chart and that the patients the family clearly understands what is going to happen. Physical preparation includes checking height, weight, physical mobility and skin preparation. Physiological preparation includes checking of blood count, physical examination and administration of medication.

Assessment was done regarding the knowledge level of all the subjects regarding surgery and post operative care. Demonstrated deep breathing exercises, bilateral foot movement, quadriceps setting exercises and straight leg exercises to the subjects.

### **Analysis of subjects undergoing joint replacement surgeries**

Ongoing assessment was done daily till the termination of nursing care. It includes general assessment of the subject, skin condition, neurovascular status, and wound status.

Among four subjects, two subjects were hypertensive on treatment and the blood pressure was under control. The blood sugar of two samples were under control.

Temperature, pulse, and respiration was normal in all subjects.

Among four subjects all showed good neurovascular assessment.

Pain was assessed using numerical intensity pain scale. On first post operative day the pain was as high as 8 and on the day of discharge it was reduced to 2.

The suture line was healthy and showed no signs of infection. Daily dressings was applied to all the subjects the dressing was done with betadine ointment using aseptic technique.

The amount of drain was noted and measured. The drain of three subjects was removed on the second post operative day and in the case of the other one subject, the drain was removed on the third post operative day.

Intake and output chart was maintained for all the subjects, hydration was maintained.

Adequate rest and sleep was advised for all. A calm and quiet environment was provided. Visitors were limited to decrease the spread of infection.

Comfortable positions were given to the subjects. Limbs were elevated to 30°. Knee immobilizers were applied over the pressure dressing

All the subjects were assisted in activities of daily living.

Subjects had normal diet and were encouraged to include fruit juices in their diet.

Encouraged and assisted the subjects to do deep breathing exercises, bilateral foot movement and quadriceps setting exercise. On the fifth post operative day the subjects started to do straight leg raising exercises.

On the third post operative day the subjects mobilized in the room with the support of walker.

On fifth post operative day, the subjects walked with the help of cane. They were assisted in going up and down with the use of cane.

On the sixth post operative day the subject were discharged and advised them to come for review after one week in the outpatient department.

### **ANALYSIS ON EVALUATION OF SUBJECTS UNDERWENT KNEE REPLACEMENT SURGERY**

Nursing care was rendered to all samples in 1:1 ratio.

The vital signs were stable for all four subjects. The wound was healthy and showed no signs of infection. All four samples were discharged on the sixth post operative day.

The X-ray evaluation of prosthesis of all four subjects showed good prosthetic adhesion.

None of the subjects developed any complication like wound infection, and neurological complications. All four samples had good outcome by means of earlier discharge and showed no signs of complication. They were shown adaptation to change in the body image.



## **RESULTS AND DISCUSSION**

The study was conducted in Rex Orthopedic Hospital, Coimbatore. The main focus of the study was to render holistic perioperative nursing care to the patients under going Joint Replacement Surgery. Initial assessment of the subject was done at the time of admission, nursing care was rendered to the patient at the time of admission till discharge based on assessment findings.

A study conducted by Vanbarcht, Witte, Panella & Sermens (2008) on organization of physical needs, activities of daily living, pain management, wound care, education, psychological support and exercises reveals that using pathways decreased length of stay and elapsed time for discharge.

### **5.1. DEMOGRAPHIC CHARACTERISTICS**

#### **5.1.1. Age**

In relation to age distribution, majority of subjects (50%) who had under gone knee replacement surgery were in the age group of 61 – 65 years.

#### **5.1.2. Sex**

Among 4 subjects 75% were females and 25% were males. ‘Framingham osteoarthritis’ study to determine the incidence of radiographic knee osteoarthritis and symptomatic osteoarthritis as well as the rate of progression of preexisting radiographic osteoarthritis in a population based sample of elderly persons. The study reveals that rate of incident disease were 1.7 times higher in women than in men and progressive disease occurred slightly more often in women (Felson, et al., 2005).

### **5.1.3. Occupation**

Among 4 subjects, 3 (75%) were house wives and 1 (25%) was engaged in business.

## **5.2. FAMILY HISTORY OF ARTHRITIS**

Among 4 subjects, 3 (75%) had no family history of arthritis.

## **5.3. PAST MEDICAL HISTORY**

Among 4 subjects, 2 (50%) had hypertension and diabetes respectively.

## **5.4. DIAGNOSIS**

Among 4 subjects, (50%) of the subjects had rheumatoid as well as osteoarthritis.

### **5.5.1. Assessment of patient pre-operatively**

Physical assessment was done to ensure the condition of the subject pre-operatively and helped in proper planning of care to the patients. All the subjects were assessed to identify the needs and problems. On admission, the vital parameters were checked and recorded and were normal for all subjects. Base line data was obtained from the subjects with regard to the previous health records and physical examination.

Among 4 subjects 2 subjects were diagnosed with rheumatoid arthritis and 2 had osteoarthritis. Only 1 subject had contractures due to progression of disease whereas all others had complaints of pain and difficulty in walking.

Physical assessment for all the subjects were done. For one subject Body Mass Index was high(28.6) when compared to normal. The main focus was on musculo

skeletal assessment. Range of motion of all subjects were reduced. 3 subjects were dependent on others to perform daily activities. One subject had contracture, Genu valgum in the lower extremity and was dependent on others to carry out activities of daily living. Special attention was paid to knee joint, subjects had mild swelling over patella, three samples had tenderness over the medial aspect of the knee joint. All four had pain over knee joint and difficulty in walking.

#### **5.5.2. Peri-operative nursing care to patients undergoing knee replacement surgery**

After assessment, nursing care was rendered on 1:1 ratio according to needs and problems identified. Pre-operative preparation was done for all the four subjects. It consists of psychological preparation, legal preparation, physical preparation and physiological preparation.

Psychosocial preparation includes communication adequacy of support system, concerns about body image, past experiences and knowledge. Legal preparation for surgery consists of checking that all required forms have been correctly signed and are present on the chart and patient and family clearly understand what is going to happen. Physical preparation includes checking height, weight, physical mobility and skin preparation. Physiological preparation includes complete blood count, physical examination and administration of medication. Demonstrated and assisted the subjects in doing the deep breathing and coughing exercises, bilateral foot movements, quadriceps setting exercises and straight leg raising exercises.

Assessed the knowledge level of the subjects regarding surgery and post-operative care based on that the teaching was given. All 4 subjects were catheterized under aseptic techniques and provided hospital gown. Psychological support was given to all four samples to relieve fear and anxiety preoperatively.

All 4 subjects received Injection C. Bactum 1g IV, Injection Amikacin preoperatively. Injection TT and Xylocaine test dose.

Spinal anaesthesia was given to all the subjects and in between one subject blood pressure decreased and hence started Injection Mephertesmine 1 ml and 1 cc mixed in normal saline. The patient was positioned supine on the operating table. A lateral support was positioned against the flexed thigh to prevent external rotation of the leg. A sand bag is positioned under the foot when the knee is flexed to 90 degree. The midline incision was made, central on the patella for all the four samples. The drain was inserted into the suprapatellar pouch and closed with continuous suture. External knee immobilizer were applied to all the four samples.

On first post operative day, all four samples were in post operative intensive care unit for continuous monitoring and the condition was stable. Assisted the clients in deep breathing and coughing exercises, daily monitoring of wound status and dressing done under strict aseptic techniques .Assisted the client in activities of daily living, position changes, maintained intake and output chart, and administered pain medications.

All four subjects were mobilized in the room with the help of walker on second post operative day. Assisted in doing quadriceps setting exercise and the suture line was healthy. The drain was within normal limits for 3 subjects and the drain was removed by second post operative day except for one subject the drain removed by 3<sup>rd</sup> post operative day.

In all the 4 samples, the vital signs were normal. One sample had blood pressure of 160/100 mm of Hg on 3<sup>rd</sup> post operative day and Tablet Amlong 5 mg once in a day was administered as per order.

For all the 4 samples suture line was healthy. Swelling was present over the suture line and it reduced by the 3<sup>rd</sup> post operative day. Daily dressing was applied to all 4 subjects with betadine ointment under aseptic techniques. Neuro vascular assessment was normal to all 4 samples. Urinary catheter was removed on 3<sup>rd</sup> post operative day for 3 subjects and on 4<sup>th</sup> post operative day for 1 subject. Catheter care was rendered to all the 4 subjects. Assisted the subject in carrying out activities of daily living. Limb elevation to 30° given to all the subjects. Pain was assessed using numerical intensity pain scale. On first post operative day the pain score was as high as 8 for 3 subjects and 9 for 1 subject and on the day of discharge it was 2 for all the subjects.

Intake and output chart was maintained for all the four subjects. On the first post operative day, oral feeds were started with clear fluids and IV fluids were stopped for all the subjects. Among 4 subjects one had an episode of vomiting for three times and given Inj. Emeset IV and her hydration was maintained by IV fluids. Epidural line was removed for all the subjects on second post operative period. Three

subjects had normal bowel movements on second post operative day and one subject had on third post operative day. The wound was healthy and showed no signs of infection. Daily dressing was applied under aseptic technique.

Subjects were mobilized in the room with the support of walker on the second post operative day. On the 4<sup>th</sup> post operative day the subjects were able to walk with the help of cane, and started to do straight leg raising exercises.

On 4<sup>th</sup> post operative day, three subjects walked with the help of cane and were assisted in climbing the stairs up and down and other one subject, started to walk with the cane on 5<sup>th</sup> post operative day. On 6<sup>th</sup> post operative day, the three subjects were discharged from the hospital and advised to come for review after one week in the out patient department.

### **5.5.3. Evaluation of Patients under went Knee Replacement Surgery**

The nursing care was rendered to all subjects in 1:1 ratio based on their needs and problems. Vital signs were stable for all 4 subjects. The wound was healthy and no signs of infection was present. All 3 samples were discharged on 6<sup>th</sup> post operative day where as, 1 subject was discharged on the 7<sup>th</sup> post operative day. The X-ray evaluation of prosthesis of all 4 subjects shown good prosthetic adhesion.

None of the subjects developed any complications like wound infection and neurological complications. All the 4 samples had good outcomes by means of earlier discharge and showed no signs of complications. They showed adaptation to change in body image.

## SUMMARY AND CONCLUSION

The study was conducted on peri operative nursing care to patients undergoing joint replacement surgery. Physical assessment of patient was done at the time of admission and ongoing assessment was done until discharge.

Orlandos nursing process model was used to conceptualize the peri operative nursing care of patients undergoing joint replacement surgery. It focuses on making a plan to solve the problem, implementing the plan and evaluating the extent to which the plan was effective.

Literature was reviewed on the following aspects, such as joint replacement, progressive physical activity pre-operative teaching and clinical pathways in rendering nursing care to the samples. As per the literature appropriate nursing intervention were provided to prevent complications and promote faster recovery.

A descriptive case study method was adopted to render peri operative nursing care to patients under going joint replacement surgery. The study was conducted in Rex Orthopolic Hospital, Coimbatore. Convenient sample of four subjects were selected for the main study.

The content validity of the tool was tested by experts. The feasibility and practicability of the tool was conformed by pilot study. Nursing assessment tool consists of baseline assessment, present health history, past health history, family history, vital signs, investigations and medications. Physical assessment done for the sample based on musculo skeletal assessment from structured nursing care plan was

prepared based on expected needs and problems of the patients under going joint replacement surgery.

The prime focus of the present research is 1:1 holistic peri operative nursing care that has promoted comfort and safety to the samples.

### **6.1. FINDINGS OF THE STUDY**

1. Assessment of needs and problems of the patients before surgery revealed that they had pain and swelling in the knee joint and difficulty in walking.
2. None of the patients had knowledge regarding post-operative management.
3. All the samples had incisional pain for 3 days and analgesics were administered.
4. None of the samples developed post anaesthesia complications.
5. All samples were mobilized in the room with the support of walker on second postoperative day.
6. The highlight of the present study was 1:1 nursing care helped to manage the patients under going knee replacement surgery.

### **6.2. LIMITATIONS OF THE STUDY**

The case study design permits only four samples taken during the stipulated period.

### **6.3. SUGGESTIONS FOR FURTHER STUDY**

1. A study can be done to assess the quality of life among patients who have undergone joint replacement surgery.



2. A study can be done to assess the effectiveness of pre-operative education as it improves post operative outcomes.

#### **6.4. RECOMMENDATIONS**

Alternative and complementary therapies can be taught to the patients after joint replacement surgery.

#### **CONCLUSION**

The study has emphasized that planned holistic perioperative nursing interventions for patients undergoing joint replacement surgery will promote well being and prevent complications.

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Does the Organization of Care Processes Affect Outcomes in Patients

Undergoing Total Joint Replacement.

## APPENDIX - I

### LETTER SEEKING PERMISSION FOR CONDUCTION OF RESEARCH STUDY

**From,**  
Ms. Ann Bini Paul,  
MSc. Nursing 1<sup>st</sup> Year  
Sri Ramakrishna College of Nursing  
Coimbatore

**To**  
**The Dean,**  
Rex Hospital,  
Coimbatore.

**Through the Principal**  
Sri Ramakrishna College of Nursing  
Coimbatore

**Subject:** Letter Requesting Permission for Conduction the Research Study

**Respected Sir,**

I Ann Bini Paul doing my M.Sc. Nursing 1<sup>st</sup> Year in Sri Ramakrishna College of Nursing, as a part of my curriculum requirement under Dr. M.G.R. University to conduct Research, I have ~~selected~~ for the research study on "Nursing Care of patients on Joint Replacement in Selected Hospitals" Coimbatore.

I hereby request you to permit me for conducting the research among the patients undergone joint replacement during the month of April and June-2010 in your well established Ortho Care Centre. I assure you that, I will adhere to your rules and regulations. So, kindly do the needful for me. I am grateful to you, when I have been given an opportunity to do my research in your centre.


Thanking you

Coimbatore

Date: 9.12.09

Yours Sincerely

  
(ANN BINI PAUL)

FOR   
PRINCIPAL  
College of Nursing,  
Sri Ramakrishna Institute of Para-medical Sciences  
Coimbatore - 44 144.

Permitted  


**FORMAT FOR CONTENT VALIDITY**

Name of the expert : B. LAVANYA.


Address : P.P.G. COLLEGE OF NURSING,  
COIMBATORE.

Total content for the tool :  Adequate/ Inadequate

Kindly validate each tool and tick wherever applicable.

Sl. No.	No. of tool selection	Strongly agree	Agree	Need modification	Remarks
1.	Section - 1		<input checked="" type="checkbox"/>		
2.	Section - 2		<input checked="" type="checkbox"/>		
3.	Section - 3		<input checked="" type="checkbox"/>		

Date: 08.06.2010.

  
Signature of the Expert

**FORMAT FOR CONTENT VALIDITY**

Name of the expert : Prof. Sonia Das.

Address : Principal,  
K.G. College of Nursing,  
K.G. Hospital,  
Coimbatore.

Total content for the tool : Adequate / Inadequate

Kindly validate each tool and tick wherever applicable.

Sl. No.	No. of tool selection	Strongly agree	Agree	Need modification	Remarks
1.	Section - 1		✓		
2.	Section - 2		✓		
3.	Section - 3		✓		

Date: 7/06/10 .

  
Signature of the Expert

## APPENDIX - II

From  
**Ann Bini Paul**  
M.Sc Nursing II year,  
College of Nursing,  
Sri Ramakrishna Institute of Paramedical Sciences,  
Coimbatore -44.

Through  
**The Principal,**  
College of Nursing,  
Sri Ramakrishna Institute of Paramedical Sciences,  
Coimbatore -44.

To,  
*PROF. MRS. SONIA DAS,*  
*PRINCIPAL,*  
*K.G. COLLEGE OF NURSING,*  
*COIMBATORE,*

Sub: Requisition for tool Validation -reg.

Respected Sir,

I have selected a project work topic entitled, "**PERIOPERATIVE NURSING CARE OF PATIENTS UNDERGOING JOINT REPLACEMENT SURGERY IN SELECTED HOSPITALS, COIMBATORE**" for the requirement of M.Sc. Nsg Degree, the following tools are tend to be used. Hence, I request you to kindly give valuable suggestion and necessary modification in the same.

Thanking you,

  
PRINCIPAL  
College of Nursing,  
Sri Ramakrishna Institute of Paramedical Sciences,  
Coimbatore - 541 044.

Yours faithfully,

  
ANN BINI PAUL



## **APPENDIX - III**

### **SECTION - I**

#### **BASELINE ASSESSMENT**

Sample Number :  
Age :  
Sex :  
Marital Status :  
Education :  
Occupation :  
Diagnosis :  
Date of Admission :  
Name of surgery :  
Type of surgery :  
Date of surgery :  
Source of information : Patient Family others  
Supportive system  
Duration of hospitalization

#### **II. PRESENT HEALTH HISTORY**

#### **III. PAST HEALTH HISTORY**

#### **IV. FAMILY HISTORY**

## V. PERSONAL HISTORY

## VI. VITAL SIGNS

Date	Vital signs	Patient value
	Temperature	
	Pulse	
	Respiration	
	Blood pressure	

## VI. INVESTIGATIONS

Sl. No.	Date	Name of investigations	Patient value	Normal value	Remarks

## MEDICATIONS

<b>Sl. No.</b>	<b>Date</b>	<b>Name of drug</b>	<b>Dose</b>	<b>Route</b>	<b>Action</b>

## SECTION - 2

### PHYSICAL ASSESSMENT

Height : \_\_\_\_\_ cm  
Weight : \_\_\_\_\_ kg  
BMI :  
Body built : Thin, moderate, obese

### MUSCULOSKELETAL ASSESSMENT

#### Upper extremities

Symmetry : Symmetrical/Asymmetrical  
Range of motion : Possible if impossible specify  
Peripheral pulses : brachial, radial (rate, rhythm, volume)  
Reflexes : biceps, triceps, brachio radial  
Edema/swelling  
Deformity :  
Muscle strength :  
Muscle tone :  
Abduction :  
Adduction :  
Extension :  
Hyper extension :  
Rotation :  
Supination :

### **Lower extremities**

- Toe nails : capillary refill
- Peripheral pulses : Dorsalis pedis, posterior, tibial artery, popliteal
- Reflexes : Patellar, achilles tendon reflexes
- Cyanosis :
- Walking aid : No Yes If yes specify\_\_\_\_\_ -
- Prosthesis : No Yes If yes specify\_\_\_\_\_ -
- Muscle strength :
- Muscle tone :
- Abduction :
- Adduction :
- Extension :
- Hyper extension :
- Rotation :

### **Hip examination**

#### **Inspection**

- Skin - colour,  
Scar  
Rashes
- Shape - Swelling bony or soft tissues  
- Muscle wasting
- Position - Deformity
- Palpation

### **Soft tissues**

Swelling	:	hard/soft
Texture	:	indurated/tenderness
Skin	:	Temperature
Bones & Hips	:	Tenderness
Movement	:	Active/passive/abnormal movements

### **Neurovascular assessment**

Pulse

Paresthesia (numbness/tingling)

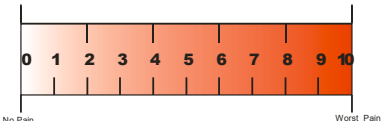
Paralysis/paresis

Pallor

Pain

Puffiness (edema)

**PRE-OPERATIVE NURSING CARE PLAN FOR PATIENT UNDERGOING HIP REPLACEMENT SURGERIES**

Assessment	Nursing diagnosis	Goal	Nursing intervention	Rationale
<p><b>Objective data</b></p> <ul style="list-style-type: none"> <li>- Redness</li> <li>- Warmth</li> <li>- Inflammation</li> <li>- Numerical intensity scale</li> </ul>  <ul style="list-style-type: none"> <li>0 -No pain</li> <li>1-3 - Mild Pain</li> <li>4-6 - Moderate pain</li> <li>7-9 - severe pain</li> <li>10 - Worst possible pain</li> </ul>	<p>Chronic pain related to hip inflammation</p>	<p>Patient will verbalizes the reduction of pain.</p>	<ul style="list-style-type: none"> <li>- Assess the location, characteristics, onset, duration, frequency, quality, intensity or severity of pain</li> <li>- Evaluate with patient and health care team, effectiveness of past pain, control measures that have been used.</li> <li>- Reduce or eliminate factors that participate or increase the pain experience.</li> <li>- Assist with the exercise program prescribed by the physical therapist, including proper body mechanics and use of walker or cane.</li> <li>- Maintain proper body alignment</li> <li>- Use hot packs and heat lamps</li> <li>- Assist and teach the patient to extend hips as possible.</li> <li>- Teach use of non pharmacologic techniques before pain occurs or increases or along with other pain relief measures</li> <li>- Provide the person with optimal pain relief with prescribed analgesics</li> </ul>	<ul style="list-style-type: none"> <li>- To establish a pattern and baseline assessment and to plan appropriate interventions.</li> <li>- To determine what is helped and not helped in the past.</li> <li>- To minimize negative stimuli that may increase pain.</li> <li>- To promote muscle relaxation and decrease tension.</li> <li>- Helps is decrease pain and inflammation</li> <li>- Helps in reducing pain perception</li> <li>- Heat is often used to relax and soothe muscles.</li> </ul>

Assessment	Nursing diagnosis	Goal	Nursing intervention	Rationale
<p><b>Objective data</b></p> <ul style="list-style-type: none"> <li>- Decreased range of motion</li> <li>- Poor self care activities</li> <li>- Elderly mobility scale</li> </ul> <p>14-20 – independent to perform ADL  10-13 – border line performance ADL  &lt;10 – dependent to perform ADL</p>	<p>Impaired physical mobility related to hip pain, stiffness and deformity</p>	<p>Patient maintains optimal mobility within the limitations</p>	<ul style="list-style-type: none"> <li>- Determine limitation of hip movement and effect on function</li> <li>- Explain to patient or family the purpose and plan for hip exercises.</li> <li>- Initiate pain-control measures before beginning hip exercise (eg: hot parts, warm shower)</li> <li>- Assist patient to optimal body position for passive/active hip movement</li> <li>- Teach proper use of walking aids.</li> <li>- Teach the patient to pace the activities with rest periods.</li> <li>- Encourage the patient to do simple activities</li> <li>- Incorporate safety measures</li> <li>- Teach the importance of good nutrition and avoid weight gain</li> <li>- Collaborate with physical therapy in developing and executing an exercise program</li> </ul>	<ul style="list-style-type: none"> <li>- To establish baseline for plan of care</li> <li>- To provide inflammation and support for the patient</li> <li>- To relieve stiffness and hip mobility</li> <li>- To prevent or limit hip deformity</li> <li>- Helps in reducing the strain on reducing fear.</li> <li>- Helps in preventing injury.</li> <li>- Weight gain impairs with mobility and increased risk of injury.</li> <li>- To maintain and improve hip function</li> </ul>



Assessment	Nursing diagnosis	Goal	Nursing intervention	Rationale
<b>Objective data</b> - Frequently asking doubts - Anxious face	Knowledge deficit regarding surgical procedures and post-operative care	Patient gets adequate knowledge regarding surgical procedure and post operative care	<ul style="list-style-type: none"> <li>- Assess the knowledge level of the patient and family</li> <li>- Encourage the patient to talk to the patient who undergone same surgery</li> <li>- Encourage the patient to talk to the anesthetist before the day of surgery</li> <li>- Teach the patient to prevent the displacement by should not cross the legs</li> <li>- Put the pillows between the legs when sleeping</li> <li>- Avoid bending forward when seated in a chair</li> <li>- Use a raised toilet seat</li> <li>- Drainage of 200-500ml in the first 24 hour is expected</li> </ul>	<ul style="list-style-type: none"> <li>- Helps in proper planning and education of patient regarding intra and post operative care</li> <li>- Helps in reducing fear and anxiety</li> <li>- Helps in identifying the problem of the patient as well as alleviating stress and anxiety</li> <li>- Helps to alleviate fear and anxiety</li> <li>- Prevents accumulation of fluid, and removal will decrease discomfort and chance of infection.</li> </ul>

Assessment	Nursing diagnosis	Goal	Nursing intervention	Rationale
<p><b>Objective data</b></p> <ul style="list-style-type: none"> <li>- Patient is tensed and worried</li> <li>- Increased sweating</li> <li>- Increased respiratory rate</li> </ul>	<p>Fear and anxiety related to hip replacement and its outcome</p>	<p>Patient describes a reduction in the level of fear and anxiety</p>	<ul style="list-style-type: none"> <li>- Explain to the patient regarding the need for hip replacement</li> <li>- Explain to the patient regarding the hip replacement procedure</li> <li>- Encourage the patient to talk about anxious feelings and examine the anxiety provoking situations.</li> <li>- Provide a calm and quite environment.</li> <li>- Encourage the patient to do deep breathing exercises</li> <li>- Clarify the doubts of the patient</li> <li>- Provide diversional therapy such as music therapy</li> </ul>	<ul style="list-style-type: none"> <li>- To clarify the doubts and the win the confidence of the patient.</li> <li>- Helps in reducing anxiety</li> <li>- Helps in relaxation and thus reduces fear</li> <li>- To win the confidence of the patient and aids fast recovery</li> <li>- To relax the mind.</li> </ul>

Assessment	Nursing diagnosis	Goal	Nursing intervention	Rationale
<b>Objective data</b> Patient is posted for hip replacement	Need for preparation of patient for hip replacement	Patient is ready for hip replacement	<ul style="list-style-type: none"> <li>- Explain the procedure and its purpose</li> <li>- Obtain consent</li> <li>- Prepare the skin</li> <li>- Collect all investigation reports</li> <li>- Keep the patient in NPO for 6 to 8 hours.</li> <li>- Check the vital sings</li> <li>- Start an IV line</li> <li>- Empty the bladder and catheterize the patient.</li> <li>- Provide hospital gown.</li> <li>- Administer premedications</li> <li>- Give psychological support</li> </ul>	<ul style="list-style-type: none"> <li>- To reduce fear and anxiety</li> <li>- Legal document</li> <li>- Reduces infection</li> <li>- To check the complete health status of the patient.</li> <li>- To prevent aspiration</li> <li>- Maintain fluid and electrolyte balance and maintain adequate hydration.</li> <li>- To identify the right patient</li> <li>- Antibiotics to reduce infection anxiolytics to reduce anxiety</li> <li>- To reduce fear and anxiety</li> </ul>

**INTRA- OPERATIVE NURSING CARE PLAN FOR PATIENT UNDERWENT JOINT REPLACEMENT SURGERIES**

Assessment	Nursing diagnosis	Goal	Nursing intervention	Rationale
<b>Objective data</b> Increased oronasal secretion Decreased SPO <sub>2</sub>	Ineffective airway clearance related to obstruction, anaesthesia medications and secretion	To maintain a patent airway	<ul style="list-style-type: none"> <li>- Monitor rate, rhythm, depth and efforts of respiration.</li> <li>- Monitor pulse oximetry</li>   <li>- Auscualte for any secretions</li>   <li>- Maintain the patent airway using artificial airway</li>   <li>- Apply tracheal suctioning</li>   <li>- Administer anti cholinergics as prescribed</li> </ul>	<ul style="list-style-type: none"> <li>- Helps in prompt intervention</li>   <li>- To detect the pooling secretions</li>   <li>- To prevent back fall of tongue</li>   <li>- To remove excessive secretions</li>   <li>- To reduce secretion</li> </ul>

Assessment	Nursing diagnosis	Goal	Nursing intervention	Rationale
	Risk for injury related to pre-operative positioning	Patient remains free from neuromuscular and neurovascular deficit	<ul style="list-style-type: none"> <li>- Assess the risk for injury</li> <li>- Maintain proper intra operative positioning.</li> <li>- The bony prominences such as heels, elbows and sacrum are well padded</li> <li>- Use anti embolic stockings or intermittent pneumatic compression devices.</li> <li>- Use positioning devices such as foam pads and mattress, face guards air mattress etc.</li> </ul>	<ul style="list-style-type: none"> <li>- Minimize the injury by redistributing the pressure</li> <li>- More risk for getting injury</li> <li>- Decrease venous pooling in the lower extremity</li> <li>- Minimize injury of redistributing the pressure</li> </ul>

Assessment	Nursing diagnosis	Goal	Nursing intervention	Rationale
<p><b>Objective data</b></p> <p>Decreased temperature</p> <p>Cold clammy skin shivering</p>	<p>Risk for imbalance body temperature related to anaesthetic effect</p>	<p>Maintain desired intra operative body temperature</p>	<ul style="list-style-type: none"> <li>- Assess the temperature of the patient</li> <li>- Apply warm blanket (105°F) and changed every 15 minutes</li> <li>- Apply thermal covering to head</li> <li>- Temperature and humidity of the OR should be controlled.</li> <li>- Should ensure that the patients skin is exposed as little as possible during positioning, preparation draping.</li> </ul>	<ul style="list-style-type: none"> <li>- Greatest heat loss occurs in the first hours of surgery</li> <li>- Patient remain covered as much as possible and decreased chance of heat loss</li> <li>- To maintain proper body temperature</li> <li>- To maintain proper body temperature</li> </ul>

Assessment	Nursing diagnosis	Goal	Nursing intervention	Rationale
<p><b>Objective data</b></p> <ul style="list-style-type: none"> <li>- Vital signs</li> <li>- Urine output</li> <li>- Blood pressure</li> <li>- Drainage</li> <li>- Central venous pressure</li> </ul>	<p>Risk for deficient fluid volume related to post operative hemorrhage or hematoma formation</p>	<p>Patient maintains adequate fluid volume</p>	<ul style="list-style-type: none"> <li>- Assess amount of any blood loss</li> <li>- Assess for signs of hypovolemia, weak, rapid pulse, decreased BP, rapid shallow respirations, cold, clammy skin, sluggish capillary refill, cyanosis, decreased urine output</li> <li>- Apply pressure to bleeding areas</li> <li>- Monitor vital signs</li> <li>- Monitor amount of drainage from wound</li> <li>- Elevate the limb or application of elastic wrap to the bleeding site as per order</li> <li>- Administer IV fluids and blood products or expanders as prescribed</li> <li>- Maintain intake and output chart</li> </ul>	<ul style="list-style-type: none"> <li>- Haemoglobin and hematocrit values are the best indicators of blood loss.</li> <li>- Early recognition of hypovolemia allows for promote initiation of fluid replacement therapy.</li> <li>- Direct pressure can be applied until surgical repair can be done to stabilize bleeding.</li> <li>- Promptly report to health care provider output from drainage system exceeds 50ml/hr.</li> <li>- These are required to replace lost circulating fluid volume.</li> <li>- To maintain the fluid and electrolyte status</li> <li>- To monitor the hydration the patient.</li> </ul>

**POST OPERATIVE NURSING CARE PLAN FOR PATIENT UNDERWENT HIP REPLACEMENT SURGERIES**

Assessment	Nursing diagnosis	Goal	Nursing intervention	Rationale
<p><b>Objective data</b></p> <ul style="list-style-type: none"> <li>- Heart rate</li> <li>- Respiratory rate</li> <li>- Facial expression of pain</li> </ul>	<p>Acute pain related to surgical incision</p>	<p>Patient gets relief from pain</p>	<ul style="list-style-type: none"> <li>- Assess the patients description of pain.</li> <li>- Change position every 2 hours or more often for comfort</li> <li>- Provide comfort measures (frequent repositioning back rubes, diversional activities). Encourage stress management techniques like progressive relaxation.</li> <li>- Maintain proper position of the operated extremity</li> <li>- Apply ice packs as ordered</li> <li>- Instruct the patient to request pain medication before pain becomes severe.</li> <li>- Encourage use of analgesics 30-45 mts before physical therapy.</li> <li>- Administer narcotic analgesics every 3-4 hours around the clock for the first 24 hours.</li> </ul>	<ul style="list-style-type: none"> <li>- Intense pain persists or pain that returns to previous levels of intensity may indicate a development of complications.</li> <li>- Patients inability to move freely and independently may result in pressure and pain or bony prominences.</li> <li>- Reduces muscle tension, reinforces attention, promote a sense of control, and may enhance coping abilities in relation to pain.</li> <li>- Reduces muscle spasm and undue tension on the new prosthesis and surrounding tissue.</li> <li>- Decreases edema and enhance comfort.</li> <li>- If pain is too severe before analgesics or therapy is instituted relief takes longer.</li> <li>- Unrelieved pain hinders the rehabilitative progress.</li> </ul>



Assessment	Nursing diagnosis	Goal	Nursing intervention	Rationale
<b>Objective data</b> - Decreased range of motion - Poor self care activities	Impaired physical mobility related to pain secondary to pain at surgical point	Patient maintains optimal mobility within limitations	<ul style="list-style-type: none"> <li>- Assess post operative range of motion; document improvement and failure to progress compared to pre-operative status.</li> <li>- Assess the level of understanding of post operative restrictions.</li> <li>- Encourage ROM in bed with all unaffected extremities.</li> <li>- Encourage exercise as prescribed to affected hip.</li> <li>- Encourage use of analgesic before position changes.</li> <li>- Use trapeze in bed to assist in mobility.</li> <li>- Instruct the patient on maintaining total hip arthroplasty precautions during position changes.</li> <li>- Maintain weight bearing status on the effected extremity as prescribed.</li> <li>- Assist and encourage the patient to perform quad sets, glacial sets and ROM to both legs.</li> </ul>	<ul style="list-style-type: none"> <li>- ROM exercises of unaffected hip must be maintained during period of decreased activity. Arthritic hips loss functions more rapidly when activity restricted.</li> <li>- Precautions must be maintained at all times to prevent dislocation.</li> <li>- Bed rest results in the loss of muscle tone in all muscle groups.</li> <li>- Such exercises aids in increasing muscle strength and tone in the affected extremity.</li> <li>- Decreased or controlled pain allows better performance during therapy.</li> <li>- This device facilitates movement in bed.</li> <li>- This prevents hip dislocation.</li> <li>- Excessive weight bearing on the new hip will be discouraged until he has healed. Patients therapy immediately after surgery.</li> <li>- These exercises increase muscle strength and tone.</li> </ul>

			<ul style="list-style-type: none"> <li>- Reinforce muscle strengthening exercises taught by the physical therapist.</li> <li>- Encourage and assist the patient to sit in a chair on first and second post-operative days. Instruct to sit with legs dependent several times a day. Initiate weight bearing as prescribed.</li> <li>- Encourage ambulation with walker or canes after initiated by the physical therapist.</li> <li>- Begin active or passive ROM exercises (extension, abduction, flexion) of all extremities.</li> <li>- Reinforce instructions for rehabilitative activities as prescribed.</li> <li>- Encouragement and assist the patient in performing activities of daily living. Provide extra time for the performance of these activities.</li> </ul>	<ul style="list-style-type: none"> <li>- These exercises optimize return of full knee extension.</li> <li>- Patients will progress from a walker to crutches and finally to a cane. Weight bearing progress with each advancement.</li> <li>- Progressive daily ambulation promotes the patients return to increased physical activity and self care.</li> <li>- Maintenance of optimal function in all unaffected hips is critical to overall recovery, because collateral extremities will be performing all activities of daily living until recovery is completed.</li> <li>- Achieving increasing mobility is one of the primary goals of surgery, along with elimination of pain.</li> <li>- The patient may be performing ADLS using the non-dominated arm, because the surgical site is most likely located in the dominant arm.</li> </ul>
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Assessment	Nursing diagnosis	Goal	Nursing intervention	Rationale
<b>Objective data</b>	Imbalanced nutritional status less than body requirement related to NPO	Patient maintains normal nutritional status	<ul style="list-style-type: none"> <li>- Assess the nutritional status of the patients</li> <li>- Weight changes</li> <li>- Anthropometric measures</li> <li>- Assess the dietary pattern</li> <li>- Administer IV fluids</li> <li>- Maintain intake and output chart</li> </ul>	<ul style="list-style-type: none"> <li>- Baseline data allow for monitoring of changes and evaluating intervention</li> <li>- Helps in planning meals</li> <li>- To maintain hydration of the patient</li> <li>- Helps in understanding the hydration of the patient</li> </ul>

Assessment	Nursing diagnosis	Goal	Nursing intervention	Rationale
<b>Objective data</b>	Impaired urinary elimination related to post anesthesia effect	Patient maintains normal urinary elimination pattern	<ul style="list-style-type: none"> <li>- Assess the urinary elimination pattern of the patient.</li> <li>- Assess the signs of hypovolemia such as sunken eyes, dry skin, dry oral mucus membrane</li> <li>- Maintain intake/output chart</li> <li>- Administer IV fluids as per order</li> <li>- Give hot application</li> <li>- Open the tap and wait for some to void</li> <li>- Catheterize the patients</li> <li>- Administer diuretics as per order</li> </ul>	<ul style="list-style-type: none"> <li>- Assessment helps in proper planning.</li> <li>- To correct dehydration</li> <li>- To relieve the congestion</li> <li>- To empty the bladder</li> <li>- Helps in emptying the bladder</li> <li>- Enhances the urine output</li> </ul>

Assessment	Nursing diagnosis	Goal	Nursing intervention	Rationale
<p><b>Objective data</b></p> <ul style="list-style-type: none"> <li>- Frequently asking questions.</li> <li>- Anxious face</li> </ul>	<p>Knowledge deficit related to follow-up</p>	<p>Patient gets adequate knowledge regarding follow up</p>	<ul style="list-style-type: none"> <li>- Assess about the understand of discharge instructions and follow-up regimen.</li> <li>- Assess home and support systems.</li> <li>- Review knee arthroplasty precaution: Use walker or crutcher to ambulate with prescribed weight bearing on the operative knee</li> <li>- Maintain proper body weight</li> <li>- Do not participate in sports until the physician indicates that it is permissible.</li> <li>- Notify the physician of knee pain that return to a previous level of discomfort excessive swelling, leaking of fluid from incision, chest pain, shortness of breath or pain and swelling in the calf of either leg.</li> </ul>	<ul style="list-style-type: none"> <li>- An individualized teaching plan is based on the patient's understanding of the treatment plan.</li> <li>- These assessment ensure that the environment is safe and supportive to the recovering patient.</li> <li>- On this affected joint during the healing process</li> <li>- Weight gain increases stress on the prosthesis.</li> <li>- The patient needs to limit activities that put stress on the affected joint during healing.</li> <li>- These symptoms indicate complications of joint replacement and require immediate attention.</li> </ul>

			<ul style="list-style-type: none"> <li>- Reinforce the need to continue prescribed ROM exercises. May require home physical therapy.</li>   <li>- Emphasize importance of removing environment hazards (throw rugs, low tubler)</li> </ul>	<ul style="list-style-type: none"> <li>- Helps to gain strength in muscles groups to support the integrity of prosthetic joint.</li>   <li>- The patient need to understand how to maintain a safe home environment to promote progressive ambulation and prevent falls.</li> </ul>
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Assessment	Nursing diagnosis	Goal	Nursing intervention	Rationale
<b>Objective data</b> - Redness - Pain - Edema - Drainage - Incomplete closure of skin flap	Impaired skin integrity related to restricted movement	Patient manifests signs of optimal wound healing, as evidenced by intact skin, absence of skin breakdown.	<ul style="list-style-type: none"> <li>- Assess skin for color, texture, moisture, redness or breakdown.</li> <li>- Turn and position the patient every 2 hours if not contra indicated.</li> <li>- Apply pressure relief device or bed (air mattress) as appropriate.</li> <li>- Keep area as clean and dry as possible if patient is unable to control bowel or bladder function</li> <li>- Keep bed times free of wrinkles and foreign matter.</li> <li>- Lift patient as necessary do not allow friction of skin when placing or removing bed an. Do not drag or pull patient to position.</li> <li>- Apply overhead frame and trapeze. Keep heels of bed at al times. Apply heel and elbow protectors as needed.</li> <li>- Maintain adequate nutritional status</li> </ul>	<ul style="list-style-type: none"> <li>- Early recognition of areas of skin breakdown allows for prompt interventions to restore skin integrity.</li> <li>- Shifting body weight off bony prominences is necessary to prevent pressure areas from developing and to prevent tissue from breaking down.</li> <li>- Such devices assist in prevention development of pressure areas</li> <li>- Moisture, urine, or fecal material contributes to skin breakdown.</li> <li>- To prevent pressure areas, which may progress to ulcerations.</li> <li>- Friction may traumatize tissues.</li> <li>- A trapeze enables the patient to move in bed more feely. Foot care is needed to prevent the development of pressure areas</li> <li>- Ischemia and progressive tissue deterioration are more likely to appear in malnourished persons who are in negative nitrogen balance.</li> </ul>

Assessment	Nursing diagnosis	Goal	Nursing intervention	Rationale
<b>Objective data</b> <ul style="list-style-type: none"> <li>- Temperature</li> <li>- Capillary refill</li> <li>- Edema</li> <li>- Pain</li> </ul>	Risk for impaired tissue perfusion related to surgical procedures	Patient maintains proper tissue perfusion	<ul style="list-style-type: none"> <li>- Assess and compare neuro vascular status of affected limb preoperatively</li>   <li>- Assess affected as ordered using the 8 point check for signs of neuro vascular compromises and damage</li>   <li>- Capillary refill of nail beds</li>   <li>- Edema</li>   <li>- Color of surgical site and surrounding tissues</li> </ul>	<ul style="list-style-type: none"> <li>- Assessment must include unaffected extremities to establish baseline and monitor for change in neuro vascular status</li>   <li>- Infected tissues are normally cooler than or the non operative side. Normal temperature indicates adequate perfusion</li> <li>- Normal refill is 2-4 sec. in the first hour after surgery, capillary refill may be sluggish but the refill that exceeds 4-6 seconds should be reported to the physician</li> <li>- Severe swelling may indicates venous stasis. Preventing complications related to DVT and PE. Prophylactic anticoagulants reduce the risk of thrombo phelitis or thrombo embolism. The patient must be monitored closely because these medications amy cause bleeding.</li> <li>- Color should be pink not pale or white. The affected extremicity may</li> </ul>



			<p>be paler than the unaffected extremity</p>
		<ul style="list-style-type: none"> <li>- Sensory function</li> <li>- ROM</li> <li>- Pain</li> <li>- Evaluation of tissues comparing affected and unaffected tissues</li> <li>- Encourage leg exercise including quad sets, gluteal sets, and active ankle ROM</li> <li>- Encourage incentive spirometry every hour while the patient is awake</li> <li>- Encourage the patient to be out of bed as soon as possible</li> <li>- Administer thrombolytic and anticoagulant as prescribed</li> </ul>	<ul style="list-style-type: none"> <li>- Complaints of numbness tingling or pins and needles feeling may indicate pressure on nerves</li> <li>- This indicates the amount and degree of limitations. Injured tissues will have decreased ROM</li> <li>- Indicates injury, trauma, pressure. Surgical site will normally be painful. Monitor and report excessive complaints of pain as a possible harbinger of compartment syndrome.</li> <li>- This allows comparison and perception of patient's own normal presurgical status</li> <li>- Venous stasis may predispose the patient to circulatory compromise</li> <li>- Deep breathing exercises increase lung expansion and prevent atelectasis. Hypoxemia and pneumonia</li> <li>- Mobility restores normal circulatory function and decreases the risk of venous stasis</li> <li>- Thrombolytic dissolve blood clots rapidly thus preventing complications related to DVT and</li> </ul>

		PE. Prophylactic anticoagulant reduce the risk of thrombophelebitis or thromboembolism. The patient must be monitored closely because these medications may cause bleeding.
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Assessment	Nursing diagnosis	Goal	Nursing intervention	Rationale
	Risk for infection related to invasive procedures	Patients will remain free from infections	<ul style="list-style-type: none"> <li>- Monitor of vital parameters</li> <li>- Frequent changing of dressing</li> <li>- Assess the patients knowledge of signs and symptoms of infection</li>   <li>- Monitor complete blood count</li> <li>- Teach the patients to report signs of infection</li>   <li>- Teach the patient appropriate wound care</li>   <li>- Wash hands before touching the wounds</li> <li>- Apply antibiotic ointment as reduced and a clean dressing</li> </ul>	<ul style="list-style-type: none"> <li>- Patients will assure responsibility for monitoring the affected hip for signs infection</li>   <li>- Easy understanding of infection</li> <li>- The patient should be alert for fever, hip swelling, redness, warmth, swelling at the incision site and increased hip pain should be reported to the physician as soon as possible.</li> <li>- Adhesive bandages may be used to cover wounds and prevent irritation from hip immobilizes. Skin sutures are usually removed in 7 days</li> </ul>

	<p>Risk for ineffective therapeutic regimen management related to perceived barriers to self care at home</p>	<p>Patient will assume gradual responsibility for self care</p>	<ul style="list-style-type: none"> <li>- Assess patients and caregivers perception of problems that may occur with management of self care at home</li>   <li>- Determine the type of equipment needed (eg: crutches, walker, elevated toilet seat) and obtain any needed equipment</li> <li>- Assess the home environment for needed changes (arranging for first floor sleeping arrangements)</li>   <li>- Encourage patient to participate in decision about rehabilitation and self care at home</li> </ul>	<ul style="list-style-type: none"> <li>- To identify actual or perceived needs and obstacles to the patients caring for himself at home</li>   <li>- To enhance patients and caregivers ability to successfully care for this patient at home</li> <li>- To facilitate the patients recovery at home and the patients caregivers ability is provide that care</li> <li>- Involving the patient in decision making increases the likelihood of compliance with the prescribed treatment and rehabilitation plan</li> </ul>
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## **SAMPLE 1**

Patient was a 62 years old female who is a known case of rheumatoid arthritis for 16 years. She came with complaints of pain over the knee joint and difficulty in walking. Physical assessment revealed tenderness was present over the medial aspect of the knee joint and had joint stiffness. Pain was assessed using the numerical intensity scale and it showed 7 point and was having severe pain. Vital signs were temperature- 98.6 F ,pulse -70 beats/minute, respiration- 24 breathe/minute, blood pressure-130/80mmHg.

### **NURSING CARE ON DAY 1**

Cold compress was given for 20 minutes over knee joint, patient got reduction in pain for half an hour and Injection Voveran 75mg IM two times a day was administered as per order.

On the day of admission, taught the importance of pacing the activities and encouraged the patient to take calcium rich diet like milk and milk products.

Taught regarding post operative events that occur throughout the period. Immediately after surgery the patient will be in ICU, connected to monitors and blood transfusion will be given if indicated. If pain is unable to tolerate both the epidural as well as intravenous analgesic injections will be given. Encouraged the patient to use walker it will help in partial weight bearing and also helps in mobilizing the patient in the room. Demonstrated deep breathing exercises which helps in preventing the pulmonary complications. Encouraged the patient to follow straight leg raising exercises and quadriceps setting exercises by 4<sup>th</sup> day. The drain will be kept in place for 24-48 hours, depending upon the amount of drain from the wound it should

be removed. Patient's foot end will be elevated to 20-30° in post operative period in order to reduce swelling around the suture line. A bulky compression will be kept in place, and the knee is immobilized with the help of knee immobilizer. Encouraged the patient to have cold compress over the knee joint for 20-30 minutes before and after flexion exercises. Advised the patient not to take anything by the mouth 6 hours prior to surgery. Obtained informed consent from the patient. Skin prepared from mid thigh to below the knee.

Injection C Bactum 1gm IV was administered after test dose., Injection xylocaine 0.1ml subcutaneous, injection Voveran 75 mg Intramuscular BD was also administered.

## **Day 2**

Patients vital signs were stable . Explained about the surgical procedure and physical set up of the operation theatre. Encouraged the patient to talk to other patient who underwent the same surgical procedure. Nil per oral was maintained from 9 AM. Foley's catheter was inserted under aseptic technique. Established an intravenous line. Tourniquette was applied before the surgery over mid thigh.

Antibiotics were administered as per order. Injection C. Bactum 1 gm IV and Injection Amikacin were administered. Supine position with leg flexed to 90 degree was maintained using straps.

Combined epidural and spinal anaesthesia was given. Injection Xylocaine 2% plain 2 ml and Injection Xyclocaïne 2% adrenaline 10 ml were given through epidural catheter. Spinal anaesthesia was given with Injection Sensorcaine 9 mg mixed with sterile water. Injection Lox 100mg were also administered.

A midline incision was made around 11cm passing over the patella. Hydration was maintained with IV fluids through out the surgery. Hemodynamic monitoring was done through out the intra operative period.

The patients blood pressure dropped to 80/60 mmHg and Injection Mephestesmine 15 mg mixed in 5ml of sterile water 1ml IV bolus and 4 ml in IV infusion was administered.

The patella and the tibial condyle was removed and the prosthesis was kept, and cemented using antibiotic simplex which contain 0.5g erythromycin, 3000000 IU colistin sulphomathap sodium. 1 ampule,20 ml sterile liquid consists of 19.5 ml methyl methacrylate which is to be mixed fastly and fix to the prosthesis.

After that the incision was closed in layers with Os 2421 No.1 vicryl and hemovac drain was connected. Skin staples were used to suture the skin and knee brace was applied to immobilize the knee after dressing.

Post operative orders : NPO for 4 hours

- RL/DNS 75 ml/hr.
- Injection Fortwin 30 mg IM HS
- Injection Phenergan 12.5mg IM HS
- Injection Morphine 5mg IM with emeset 4 mg IV SOS
- Injection Tremadol 50 mg IV Q<sub>12</sub>H

Patient was shifted to the ICU at 5.30 pm and at 5.45 pm Injection Emeset 4 mg IV given. Vital signs was temperature 98° F,pulse 70beats/minute, respiration 24 breaths/minute,blood pressure 110/70mmHg.The intake and output was1600/1250ml.

The patient's condition was stable.

### **Day 3**

Patient's vital signs were stable. Patient was cooperative and healthy.

Comfortable supine position with limb elevation to 30° was given. Pressure dressing with the drain was given over the joint. The amount of drain was 60ml. The intake and output was 2200/1950ml. The knee joint was immobilized with knee immobilizer.

Assisted the patient in activities of daily living like bed bath, mouth care and given catheter care. Encouraged the patient to do deep breathing exercises. Assisted the patient in doing bilateral foot movement and quadriceps setting exercises.

Patient had normal diet and encouraged to include fruit juices in her diet.

Patient was mobilized with walker in the room.

Cold compress was given to the patient 6 times/day for 30 minutes. Advised the patient to avoid the suture line irritants.

Encouraged the patient to apply knee immobilizer.

The suture line was healthy and no signs of infection were noted. Swelling was present which is normal after surgery.

### **Day 4**

Patient's vital signs were stable, temperature 98 F, pulse 72 beat/minute, respiration 24 breaths/minute, blood pressure 120/80 mmHg. The amount of drain was 30ml and the drain was removed. The intake and output was 2380/2000ml. The wound was healthy and no signs of infection and the dressing done with betadine ointment.

The Foley's catheter was removed. Patient had normal bowel movement. Assisted the patient in activities of daily living. Medications were administered as per order..



Assisted the patient in doing exercise patient mobilized in the room with the help of walker.

Cold compress was given to the patient for 6 times for 20 minutes.

The knee immobilizer was applied to avoid the unwanted flexion of the knee joint.

### **Day 5**

Vital signs were stable. The dressing was applied to the site. The wound was healthy and no signs of infection

Assisted the patient in carrying out the activities of daily living. The bulk of the dressing was reduced. Knee immobilizer was applied. Cold compress was given to the patient for 30 minutes 5 times a day.

Patient had normal diet and encouraged to take more fluids around 1500 ml. Patient had normal bladder and bowel movements.

Assisted the patient in knee flexion to 20° and the patient was walked with the help of cane.

Assisted the patient in doing exercises and assisted the patient to walk outside the room.

The neurovascular status of the lower limbs were normal.

X-ray was taken and it showed normal prosthesis adhesion.

### **Day 6**

Patient's vital signs were stable.

Suture line was healthy and no signs of infection was present. Chlorherdine gauze dressing was applied as per order.

Assisted the patient in activities of daily living. Patient had normal diet and had normal bladder and bowel movements.

Patient verbalized reduced pain as evidenced by decreased the interval of asking pain medication.

Assisted the patient in knee flexion to 20° and the patient was walked with the help of cane. Assisted in going up and down with the use of a cane. Assisted the patient in sitting in a chair and the patient was comfortable.

### **Day 7**

Patient's vital signs were normal. Dressing was done using chlorhexidine gauze and the suture line was healthy and no signs of infection were present and swelling was reduced.

Patient was discharged from the hospital.

The discharge medications were,

Tablet Pyralgin 1-0-1

Tablet Omez 10mg 1-0-1

Tablet Amlong 5 mg 1-0-1 for 1 month

Tablet Cefuroxime 500 mg 1-0-1 for 1 week.

Advised the patient to come after 1 week in the OPD for review. In case of increased pain or fever, advised the patient to report to the hospital immediately.

Taught about the signs of infection- increasing pain at rest and with activity, increasing swelling, redness, tenderness in the area of incision. persistent fever with chills and drainage from the incision. Taught to the patient not to wet the incision.

Encouraged the patient to continue the active flexion and extension of foot and ankles. Encouraged the patient to do quadriceps setting and straight leg raising exercises, encouraged the patient to continue the cold compress at home. Taught the patient to take nutritious diet especially calcium rich diet like milk and milk products.

## **SAMPLE 2**

Patient was a 64 years old male who is a known case of osteo arthritis for 10 years. He came with complaints of pain over the knee joint and difficulty in walking. Physical assessment revealed tenderness was present over the medial aspect of the knee joint and had joint stiffness. Pain was assessed using the numerical intensity scale and it showed 6 point and was having severe pain. Vital signs were temperature- 98.6 F ,pulse -74 beats/minute, respiration- 22 breathe/minute, blood pressure- 120/80mmHg.

### **NURSING CARE ON DAY 1**

Cold compress was given for 20 minutes over knee joint, patient got reduction in pain for half an hour and Injection Voveran 75mg IM two times a day was administered as per order.

On the day of admission, taught the importance of pacing the activities and encouraged the patient to take calcium rich diet like milk and milk products.

Taught regarding post operative events that occur throughout the period. Immediately after surgery the patient will be in ICU, connected to monitors and blood transfusion will be given if indicated. If pain is unable to tolerate both the epidural as well as intravenous analgesic injections will be given. Encouraged the patient to use walker it will help in partial weight bearing and also helps in mobilizing the patient in the room. Demonstrated deep breathing exercises which helps in preventing the pulmonary complications. Encouraged the patient to follow straight leg raising exercises and quadriceps setting exercises by 4<sup>th</sup> day. The drain will be kept in place for 24-48 hours, depending upon the amount of drain from the wound it should be removed. Patient's foot end will be elevated to 20-30° in post operative period in order to reduce swelling around the suture line. A bulky compression will be kept in

place, and the knee is immobilized with the help of knee immobilizer. Encouraged the patient to have cold compress over the knee joint for 20-30 minutes before and after flexion exercises. Advised the patient not to take anything by the mouth 6 hours prior to surgery. Obtained informed consent from the patient. Skin prepared from mid thigh to below the knee.

Injection C Bactum 1gm IV was administered after test dose., Injection xylocaine 0.1ml subcutaneous, injection Voveran 75 mg Intramuscular OD was also administered.

## **Day 2**

Patients vital signs were stable . Explained about the surgical procedure and physical set up of the operation theatre. Encouraged the patient to talk to other patient who underwent the same surgical procedure. Nil per oral was maintained from 9 AM. Foley's catheter was inserted under aseptic technique. Established an intravenous line. Tourniquette was applied before the surgery over mid thigh. Antibiotics were administered as per order. Injection C. Bactum 1 gm IV and Injection Amikacin were administered. Supine position with leg flexed to 90 degree was maintained using straps.

Combined epidural and spinal anaesthesia was given. Injection Xylocaine 2% plain 2 ml and Injection Xyclocaïne 2% adrenaline 10 ml were given through epidural catheter. Spinal anaesthesia was given with Injection Sensorcaine .5% mixed with sterile water. Injection Lox 100mg were also administered.

A midline incision was made around 10 cm passing over the patella. Hydration was maintained with IV fluids through out the surgery. Hemodynamic monitoring was done through out the intra operative period.

The patella and the tibial condyle was removed and the prosthesis was kept, and cemented using antibiotic simplex which contain 0.5g erythromycin, 3000000 IU colistin sulphomathap sodium. 1 ampule,20 ml sterile liquid consists of 19.5 ml methyl methacrylate which is to be mixed fastly and fix to the prosthesis.

After that the incision was closed in layers with Os 2421 No.1 vicryl and hemovac drain was connected. Skin staples were used to suture the skin and knee brace was applied to immobilize the knee after dressing.

Post operative orders : NPO for 4 hours

- RL/DNS 75 ml/hr.
- Injection Fortwin 30 mg IM HS
- Injection Phenergan 12.5mg IM HS
- Injection Morphine 5mg IM with emeset 4 mg IV SOS
- Injection Tremadol 50 mg IV Q<sub>12</sub>H

Patient was shifted to the ICU at 5pm and at 5.30 pm Injection Emeset 4 mg IV given.Vital signs was temperature 98° F,pulse 72 beats/minute, respiration 22 breaths/minute,blood pressure 115/80mmHg.The intake and output was100/1250ml.

The patient's condition was stable.

### **Day 3**

Patient's vital signs were stable. Patient was cooperative and healthy.

Comfortable supine position with limb elevation to 30° was given. Pressure dressing with the drain was given over the joint. The amount of drain was 80ml.The intake and output was2000/1900ml.The knee joint was immobilized with knee immobilizer.

Assisted the patient in activities of daily living like bed bath, mouth care and given catheter care. Encouraged the patient to do deep breathing exercises. Assisted the patient in doing bilateral foot movement and quadriceps setting exercises.

Patient had normal diet and encouraged to include fruit juices in her diet.

Patient was mobilized with walker in the room.

Cold compress was given to the patient 5 times/day for 30 minutes. Advised the patient to avoid the suture line irritants.

Encouraged the patient to apply knee immobilizer.

The suture line was healthy and no signs of infection were noted. Swelling was present which is normal after surgery.

#### **Day 4**

Patient's vital signs were stable, temperature 98.6 F, pulse 74beat/minute, respiration 24breaths/minute, blood pressure 120/80mmHg. The amount of drain was 50ml.. The intake and output was 2180/2000ml. The wound was healthy and no signs of infection and the dressing done with betadine ointment.

The Foley's catheter was removed. Patient had normal bowel movement Assisted the patient in activities of daily living. Medications were administered as per order..

Assisted the patient in doing exercise patient mobilized in the room with the help of walker.

Cold compress was given to the patient for 6 times for 20 minutes.

The knee immobilizer was applied to avoid the unwanted flexion of the knee joint.

## **Day 5**

Vital signs were stable. The dressing was applied to the site. The wound was healthy and no signs of infection. The amount of drain was 20ml and was removed as per order.

Assisted the patient in carrying out the activities of daily living. The bulk of the dressing was reduced. Knee immobilizer was applied. Cold compress was given to the patient for 30 minutes 5 times a day.

Patient had normal diet and encouraged to take more fluids around 1500 ml. Patient had normal bladder and bowel movements.

Assisted the patient in knee flexion to 20° and the patient was walked with the help of cane.

Assisted the patient in doing exercises and assisted the patient to walk outside the room.

The neurovascular status of the lower limbs were normal.

X-ray was taken and it showed normal prosthesis adhesion.

## **Day 6**

Patient's vital signs were stable.

Suture line was healthy and no signs of infection was present. Chlorherdine gauze dressing was applied as per order.

Assisted the patient in activities of daily living. Patient had normal diet and had normal bladder and bowel movements.

Patient verbalized reduced pain as evidenced by decreased the interval of asking pain medication.

Assisted the patient in knee flexion to 20° and the patient was walked with the help of cane. Assisted in going up and down with the use of a cane. Assisted the patient in sitting in a chair and the patient was comfortable.

### **Day 7**

Patient's vital signs were normal. Dressing was done using chlorhexidine gauze and the suture line was healthy and no signs of infection were present and swelling was reduced.

Patient was discharged from the hospital.

The discharge medications were,

Tablet Pyralgin 1-0-1

Tablet Omez 10mg 1-0-1

Tablet Amlong 5 mg 1-0-1 for 1 month

Tablet Cefuroxime 500 mg 1-0-1 for 1 week.

Advised the patient to come after 1 week in the OPD for review. In case of increased pain or fever, advised the patient to report to the hospital immediately.

Taught about the signs of infection- increasing pain at rest and with activity, increasing swelling, redness, tenderness in the area of incision. persistent fever with chills and drainage from the incision. Taught to the patient not to wet the incision.

Encouraged the patient to continue the active flexion and extension of foot and ankles. Encouraged the patient to do quadriceps setting and straight leg raising exercises, encouraged the patient to continue the cold compress at home. Taught the patient to take nutritious diet especially calcium rich diet like milk and milk products.



### **SAMPLE 3**

Patient was a 58 years old female who is a known case of rheumatoid arthritis for 18 years. She came with complaints of pain over the knee joint and difficulty in walking. Physical assessment revealed tenderness was present over the medial aspect of the knee joint and had joint stiffness. Pain was assessed using the numerical intensity scale and it showed 7 point and was having severe pain. Vital signs were temperature- 98.6 F ,pulse -78 beats/minute, respiration- 24 breathe/minute, blood pressure- 120/80mmHg.

### **NURSING CARE ON DAY 1**

Cold compress was given for 20 minutes over knee joint, patient got reduction in pain for an hour and Injection Voveran 75mg IM two times a day was administered as per order.

On the day of admission, taught the importance of pacing the activities and encouraged the patient to take calcium rich diet like milk and milk products.

Taught regarding post operative events that occur throughout the period. Immediately after surgery the patient will be in ICU, connected to monitors and blood transfusion will be given if indicated. If pain is unable to tolerate both the epidural as well as intravenous analgesic injections will be given. Encouraged the patient to use walker it will help in partial weight bearing and also helps in mobilizing the patient in the room. Demonstrated deep breathing exercises which helps in preventing the pulmonary complications. Encouraged the patient to follow straight leg raising exercises and quadriceps setting exercises by 4<sup>th</sup> day. The drain will be kept in place for 24-48 hours, depending upon the amount of drain from the wound it should be removed. Patient's foot end will be elevated to 20-30° in post operative period in order to reduce swelling around the suture line. A bulky compression will be kept in

place, and the knee is immobilized with the help of knee immobilizer. Encouraged the patient to have cold compress over the knee joint for 20-30 minutes before and after flexion exercises. Advised the patient not to take anything by the mouth 6 hours prior to surgery. Obtained informed consent from the patient. Skin prepared from mid thigh to below the knee.

Injection C Bactum 1gm IV was administered after test dose., Injection xylocaine 0.1ml subcutaneous, injection Voveran 75 mg Intramuscular OD was also administered.

## **Day 2**

Patients vital signs were stable . Explained about the surgical procedure and physical set up of the operation theatre. Encouraged the patient to talk to other patient who underwent the same surgical procedure. Nil per oral was maintained from 8 AM. Foley's catheter was inserted under aseptic technique. Established an intravenous line. Tourniquette was applied before the surgery over mid thigh. Antibiotics were administered as per order. Injection C. Bactum 1 gm IV and Injection Amikacin were administered. Supine position with leg flexed to 90 degree was maintained using straps.

Combined epidural and spinal anaesthesia was given. Injection Xylocaine 2% plain 2 ml and Injection Xyclocaïne 2% adrenaline 10 ml were given through epidural catheter. Spinal anaesthesia was given with Injection Sensorcaine .5% mixed with sterile water. Injection Lox 100mg were also administered.

A midline incision was made around 10.5 cm passing over the patella. Hydration was maintained with IV fluids through out the surgery. Hemodynamic monitoring was done through out the intra operative period.

The patella and the tibial condyle was removed and the prosthesis was kept, and cemented using antibiotic simplex which contain 0.5g erythromycin, 3000000 IU colistin sulphomathap sodium. 1 ampule,20 ml sterile liquid consists of 19.5 ml methyl methacrylate which is to be mixed fastly and fix to the prosthesis.

After that the incision was closed in layers with Os 2421 No.1 vicryl and hemovac drain was connected. Skin staples were used to suture the skin and knee brace was applied to immobilize the knee after dressing.

Post operative orders : NPO for 4 hours

- RL/DNS 75 ml/hr.
- Injection Fortwin 30 mg IM HS
- Injection Phenergan 12.5mg IM HS
- Injection Morphine 5mg IM with emeset 4 mg IV SOS
- Injection Tremadol 50 mg IV Q<sub>12</sub>H

Patient was shifted to the ICU at 5pm and vital signs was temperature 98.4° F,pulse 82 beats/minute, respiration 24 breaths/minute, blood pressure 120/80mmHg. The intake and output was 1350/1200ml. The patient's condition was stable.

### **Day 3**

Patient's vital signs were stable. Patient was cooperative and healthy.

Comfortable supine position with limb elevation to 30° was given. Pressure dressing with the drain was given over the joint. The amount of drain was 80ml. The intake and output was 2120/1850ml. The knee joint was immobilized with knee immobilizer.

Assisted the patient in activities of daily living like bed bath, mouth care and given catheter care. Encouraged the patient to do deep breathing exercises. Assisted the patient in doing bilateral foot movement and quadriceps setting exercises.

Patient had normal diet and encouraged to include fruit juices in her diet.

Patient was mobilized with walker in the room.

Cold compress was given to the patient 5 times/day for 30 minutes. Advised the patient to avoid the suture line irritants.

Encouraged the patient to apply knee immobilizer.

The suture line was healthy and no signs of infection were noted. Swelling was present which is normal after surgery.

#### **Day 4**

Patient's vital signs were stable, temperature 98.6 F, pulse 74beat/minute, respiration 24breaths/minute, blood pressure 120/80mmHg. The amount of drain was 30ml and was removed.. The intake and output was 2360/2100ml. The wound was healthy and no signs of infection and the dressing done with betadine ointment.

The Foley's catheter was removed. Patient had normal bowel movement Assisted the patient in activities of daily living. Medications were administered as per order..

Assisted the patient in doing exercise patient mobilized in the room with the help of walker.

Cold compress was given to the patient for 6 times for 20 minutes.

The knee immobilizer was applied to avoid the unwanted flexion of the knee joint.

#### **Day 5**

Vital signs were stable. The dressing was applied to the site. The wound was healthy and no signs of infection

Assisted the patient in carrying out the activities of daily living. The bulk of the dressing was reduced. Knee immobilizer was applied. Cold compress was given to the patient for 30 minutes 5 times a day.

Patient had normal diet and encouraged to take more fluids around 1500 ml. Patient had normal bladder and bowel movements.

Assisted the patient in knee flexion to 20° and the patient was walked with the help of cane.

Assisted the patient in doing exercises and assisted the patient to walk outside the room.

The neurovascular status of the lower limbs were normal.

X-ray was taken and it showed normal prosthesis adhesion.

## **Day 6**

Patient's vital signs were stable.

Suture line was healthy and no signs of infection was present. Chlorherdine gauze dressing was applied as per order.

Assisted the patient in activities of daily living. Patient had normal diet and had normal bladder and bowel movements.

Patient verbalized reduced pain as evidenced by decreased the interval of asking pain medication.

Assisted the patient in knee flexion to 20° and the patient was walked with the help of cane. Assisted in going up and down with the use of a cane. Assisted the patient in sitting in a chair and the patient was comfortable.

## **Day 7**

Patient's vital signs were normal. Dressing was done using chlorhexidine gauze and the suture line was healthy and no signs of infection were present and swelling was reduced.

Patient was discharged from the hospital.

The discharge medications were,

Tablet Pyralgin 1-0-1

Tablet Omez 10mg 1-0-1

Tablet Amlong 5 mg 1-0-1 for 1 month

Tablet Cefuroxime 500 mg 1-0-1 for 1 week.

Advised the patient to come after 1 week in the OPD for review. In case of increased pain or fever, advised the patient to report to the hospital immediately.

Taught about the signs of infection- increasing pain at rest and with activity, increasing swelling, redness, tenderness in the area of incision. persistent fever with chills and drainage from the incision. Taught to the patient not to wet the incision.

Encouraged the patient to continue the active flexion and extension of foot and ankles. Encouraged the patient to do quadriceps setting and straight leg raising exercises, encouraged the patient to continue the cold compress at home. Taught the patient to take nutritious diet especially calcium rich diet like milk and milk

#### **SAMPLE- 4**

Patient was a 66 years old female who is a known case of rheumatoid arthritis for 14 years. She came with complaints of pain over the knee joint and difficulty in walking. Physical assessment revealed tenderness was present over the medial aspect of the knee joint and had joint stiffness. Pain was assessed using the numerical intensity scale and it showed 5 point and was having severe pain. Vital signs were temperature- 98.6 F ,pulse -82 beats/minute, respiration- 22 breathe/minute, blood pressure-120/80mmHg.

#### **NURSING CARE ON DAY 1**

Cold compress was given for 20 minutes over knee joint, patient got reduction in pain for an hour and Injection Voveran 75mg IM two times a day was administered as per order.

On the day of admission, taught the importance of pacing the activities and encouraged the patient to take calcium rich diet like milk and milk products.

Taught regarding post operative events that occur throughout the period. Immediately after surgery the patient will be in ICU, connected to monitors and blood transfusion will be given if indicated. If pain is unable to tolerate both the epidural as well as intravenous analgesic injections will be given. Encouraged the patient to use walker it will help in partial weight bearing and also helps in mobilizing the patient in the room. Demonstrated deep breathing exercises which helps in preventing the pulmonary complications. Encouraged the patient to follow straight leg raising exercises and quadriceps setting exercises by 4<sup>th</sup> day. The drain will be kept in place for 24-48 hours, depending upon the amount of drain from the wound it should be removed. Patient's foot end will be elevated to 20-30° in post operative period in order to reduce swelling around the suture line. A bulky compression will be kept in

place, and the knee is immobilized with the help of knee immobilizer. Encouraged the patient to have cold compress over the knee joint for 20-30 minutes before and after flexion exercises. Advised the patient not to take anything by the mouth 6 hours prior to surgery. Obtained informed consent from the patient. Skin prepared from mid thigh to below the knee.

Injection C Bactum 1gm IV was administered after test dose., Injection xylocaine 0.1ml subcutaneous, injection Voveran 75 mg Intramuscular OD was also administered.

## **Day 2**

Patients vital signs were stable . Explained about the surgical procedure and physical set up of the operation theatre. Encouraged the patient to talk to other patient who underwent the same surgical procedure. Nil per oral was maintained from 9 AM. Foley's catheter was inserted under aseptic technique. Established an intravenous line. Tourniquette was applied before the surgery over mid thigh. Antibiotics were administered as per order. Injection C. Bactum 1 gm IV and Injection Amikacin were administered. Supine position with leg flexed to 90 degree was maintained using straps.

Combined epidural and spinal anaesthesia was given. Injection Xylocaine 2% plain 2 ml and Injection Xyclocaïne 2% adrenaline 10 ml were given through epidural catheter. Spinal anaesthesia was given with Injection Sensorcaine .5% mixed with sterile water. Injection Lox 100mg were also administered.

A midline incision was made around 11 cm passing over the patella. Hydration was maintained with IV fluids through out the surgery. Hemodynamic monitoring was done through out the intra operative period.



The patella and the tibial condyle was removed and the prosthesis was kept, and cemented using antibiotic simplex which contain 0.5g erythromycin, 3000000 IU colistin sulphomathap sodium. 1 ampule,20 ml sterile liquid consists of 19.5 ml methyl methacrylate which is to be mixed fastly and fix to the prosthesis.

After that the incision was closed in layers with Os 2421 No.1 vicryl and hemovac drain was connected. Skin staples were used to suture the skin and knee brace was applied to immobilize the knee after dressing.

Post operative orders : NPO for 4 hours

- RL/DNS 75 ml/hr.
- Injection Fortwin 30 mg IM HS
- Injection Phenergan 12.5mg IM HS
- Injection Morphine 5mg IM with emeset 4 mg IV SOS
- Injection Tremadol 50 mg IV Q<sub>12</sub>H

Patient was shifted to the ICU at 5pm and vital signs was temperature 98.4° F,pulse 78 beatss/minute,respiration 24 breaths/minute,blood pressure 110/80mmHg.The intake and output was1250/1100ml.The patient's condition was stable.

### **DAY 3**

Patient's vital signs were stable. Patient was cooperative and healthy.

Comfortable supine position with limb elevation to 30° was given. Pressure dressing with the drain was given over the joint. The amount of drain was 80ml.The intake and output was2120/1850ml.The knee joint was immobilized with knee immobilizer.

Assisted the patient in activities of daily living like bed bath, mouth care and given catheter care. Encouraged the patient to do deep breathing exercises. Assisted the patient in doing bilateral foot movement and quadriceps setting exercises.

Patient had normal diet and encouraged to include fruit juices in her diet.

Patient was mobilized with walker in the room.

Cold compress was given to the patient 6 times/day for 30 minutes. Advised the patient to avoid the suture line irritants.

Encouraged the patient to apply knee immobilizer.

The suture line was healthy and no signs of infection were noted. Swelling was present which is normal after surgery.

#### **Day 4**

Patient's vital signs were stable, temperature 98.6 F, pulse 75beat/minute, respiration 22 breaths/minute, blood pressure 120/80mmHg. The amount of drain was 30ml and was removed.. The intake and output was 2260/2000ml. The wound was healthy and no signs of infection and the dressing done with betadine ointment.

The Foley's catheter was removed. Patient had normal bowel movement Assisted the patient in activities of daily living. Medications were administered as per order..

Assisted the patient in doing exercise patient mobilized in the room with the help of walker.

Cold compress was given to the patient for 6 times for 20 minutes.

The knee immobilizer was applied to avoid the unwanted flexion of the knee joint.

#### **Day 5**

Vital signs were stable. The dressing was applied to the site. The wound was healthy and no signs of infection

Assisted the patient in carrying out the activities of daily living. The bulk of the dressing was reduced. Knee immobilizer was applied. Cold compress was given to the patient for 30 minutes 4 times a day.

Patient had normal diet and encouraged to take more fluids around 1500 ml. Patient had normal bladder and bowel movements.

Assisted the patient in knee flexion to 20° and the patient was walked with the help of cane.

Assisted the patient in doing exercises and assisted the patient to walk outside the room.

The neurovascular status of the lower limbs were normal.

X-ray was taken and it showed normal prosthesis adhesion.

## **Day 6**

Patient's vital signs were stable.

Suture line was healthy and no signs of infection was present. Chlorherdine gauze dressing was applied as per order.

Assisted the patient in activities of daily living. Patient had normal diet and had normal bladder and bowel movements.

Patient verbalized reduced pain as evidenced by decreased the interval of asking pain medication.

Assisted the patient in knee flexion to 20° and the patient was walked with the help of cane. Assisted in going up and down with the use of a cane. Assisted the patient in sitting in a chair and the patient was comfortable.

## Day 7

Patient's vital signs were normal. Dressing was done using chlorhexidine gauze and the suture line was healthy and no signs of infection were present and swelling was reduced.

Patient was discharged from the hospital.

The discharge medications were,

Tablet Pyralgin 1-0-1

Tablet Omez 10mg 1-0-1

Tablet Amlong 5 mg 1-0-1 for 1 month

Tablet Cefuroxime 500 mg 1-0-1 for 1 week.

Advised the patient to come after 1 week in the OPD for review. In case of increased pain or fever, advised the patient to report to the hospital immediately.

Taught about the signs of infection- increasing pain at rest and with activity, increasing swelling, redness, tenderness in the area of incision. persistent fever with chills and drainage from the incision. Taught to the patient not to wet the incision.

Encouraged the patient to continue the active flexion and extension of foot and ankles. Encouraged the patient to do quadriceps setting and straight leg raising exercises, encouraged the patient to continue the cold compress at home. Taught the patient to take nutritious diet especially calcium rich diet like milk and milk products.