

**LUSAKA APEX
MEDICAL UNIVERSITY**



FACULTY OF HEALTH SCIENCES

DEPARTMENT OF PHYSIOTHERAPY

**The knowledge and practices of immobilized patients in the
prevention of immobilization complications in the orthopaedic
wards (C21, G02, G12) at the University Teaching Hospital.**

Research report submitted to Lusaka Apex Medical University as a partial fulfilment for the Bachelor of Science degree in Physiotherapy.

Student name:

Lenganji Nakamba

Computer number:

18/02/008842

SUPERVISOR:

Mrs. Malimba (MSc PT, BScPT, Dip PT)

KEY WORDS

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ABSTRACT

Introduction: Immobilization is defined by the medical dictionary as the procedure of making a normally moveable part of the body immovable and this physical inactivity may occur, for example, through disease, injury or following major surgery, Immobilization is a most common treatment provided to injured patients admitted to the orthopedic ward. Immobilized patients have the highest risk of complications and death associated with it.

Objective: To determine the knowledge and practice of immobilised patients in the prevention of immobilization complications in the Orthopaedic ward at University Teaching Hospital.

Method: The study was carried out in the Orthopaedic Wards G02, G12 and C22 at University Teaching Hospital in Lusaka. The study was carried out using a quantitative method where data was collected using a structured researcher administered questionnaire to look at the knowledge of immobilization complications in trauma patients. Data was analysed and interpreted using descriptive statistics using Statistical Package for Social Sciences (SPSS) version 26.0.

Results: In this study, 75(83.3%) participants answered the questionnaire. Out of the 75 participants who returned the questionnaire, male participants were more 60.0% (n=48) than females 36.0% (n=27). As for the age range, 57.3% (n=43) were between the age of 18 to 40 years, the least were aged above 65 years 8.0% (n=6). The majority of the participants 33.3% (n=25) were married while 10.7% (n=8) were divorced. About 34.7% (n=26) of participants reached secondary level of education as opposed to 18.7% (n=14) who only reached primary school level. Those who did not attain any form of education were 22.7% (n=17) while 24% (n=18) had reached tertiary education. When participants were asked if they knew the complications of being in a non-movement state, the majority 42.7% (n=32) were not sure while 38.7% indicated that they knew and 18.7% (n=14) did not know.

Conclusion: More effort needs to be put into education of patients on the complications of prolonged immobilization. This might require the development of a consent form that would require to be filled for anyone who is immobilised for a certain duration.

DECLARATION

I Lenganji Nakamba hereby declare that the research proposal entitled “***Knowledge and practice of immobilized patients on the prevention of immobilization complications in the orthopaedic wards at the university teaching hospital,***” submitted to Lusaka Apex Medical University, in partial fulfillment of the requirements for the award of the Bachelor’s Degree in physiotherapy will be a record of original and independent research work to be done by me during the year of 2020-2021 under the supervision and guidance of Mrs. Malimba.

LENGANJI NAKAMBA


.....

22nd July 2021

Signature of the Candidate

Date

MRS R. MALIMBA



22nd July 2021

Signature of the supervisor

Date

ABBREVIATIONS

LAMU	Lusaka Apex Medical University
LAMUREC	Lusaka Apex Medical University Research Ethics Committee
LMUTH	Levy Mwanawasa University Teaching Hospital
MOH	Ministry of health
UTH	University Teaching Hospital
ZSP	Zambia Society of Physiotherapy

DEFINITION OF TERMS

Immobilization: Immobilization is defined by the medical dictionary as the procedure of making a normally moveable part of the body immovable and this physical inactivity may occur, for example, through disease, injury or following major surgery (Pierre et al., 2016).

Knowledge: Knowledge is an abstract concept without any reference to the tangible world (Bolisani & Bratianu, 2018).

Practice: To perform often, customarily or habitually (Cambridge, 2018).

Orthopaedic: a branch of medicine concerned with the correction or prevention of deformities, disorders, or injuries of the skeleton and associated structures such as tendons and ligaments (Zumwalt et al., 2020).

Patient: A person under health care, receiving medical treatment. A person under a physician's care for a particular disease or condition. A person who is waiting for or undergoing medical treatment and care (DeLaune et al., 2011).

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CHAPTER ONE

1.0 Background

Long immobilization periods lead to overall complications and have been associated with poor functional outcomes. Maintaining functional mobility and desired activity levels is important for both psychological and physiological reasons (Pashikanti & Von 2012).

This immobilization is specific in that the patient is unable to independently move or change positions. Immobility affects all systems of the body leading to complications such as pressure sore, deep vein thrombosis (DVT), hypostatic pneumonia, constipation, contracture, urinary infection, calculi and also psycho physiological problems (Mersal et al., 2017). Alteration in the level of physical mobility can result from prescribed restriction of movement in the form of bed rest, physical restriction of movement because of external device, voluntary restriction of movement or impairment of motor skeletal function (Parmar, 2017). Many studies have shown that complications of immobility could result in numerous deleterious consequences, including increased morbidity and mortality, prolonged length of hospital stay, increased hospital cost and contribution to global disease burden (Reeve et al., 2013). Internal degeneration of musculoskeletal tissue occurs, affecting movement, coordination and endurance (Zumwalt & Reddy, 2020).

The inactivity leads to the slowing down of major systems of the body (Pashikanti & Von, 2012). Musculoskeletal complications include loss of muscles strength and endurance, contractures and soft tissue changes, disuse osteoporosis and degenerative joint disease, respiratory complications include decreased ventilation, atelectasis and pneumonia, while the cardiovascular complications include an increased heart rate, decreased cardiac output, orthostatic hypotension and venous thromboembolism (Kalisch et al., 2014).

It is generally easier to prevent the complications than to treat or cure them. The orthopaedic patients have immobility imposed on them either due to their condition or indirectly due to treatment like cast, tractions, splints, implants and internal fixators (Mersal & Hussein, 2017).

Immobilized patients are most often found in intensive care units, trauma wards, orthopaedic ward, neurological ward and geriatric wards of a hospital. (Mersal, 2015). Orthopaedic patients will have impairment in mobility resulting from prescribed restriction of movement in the form of bed rest, physical restriction of movement or impairment of motor skeletal function (Brown & Radja, 2015). Immobility is widely documented in the literature as a cause of increased mortality and complications (Butcher, 2012). Immobilized patients are at

greater risk for skin breakdown and delayed wound healing. Furthermore, the musculoskeletal system is severely affected by immobility and prolonged bed rest (Vollman, 2010). Like muscle, bone is living tissue that responds to exercise by becoming stronger. Those who exercise regularly generally have greater bone mass, bone density and strength than those who do not (Iwaniec & Turner, 2016).

Although weight-bearing activities contribute to the development and maintenance of bone mass, weightlessness and immobility can result in bone loss. (Kanazawa, Hagiwara & Itoi, 2015). Some people can't perform weight-bearing activity. They include, for example, people who are on prolonged bed rest because of surgery, serious illness, or complications of pregnancy, and those who are experiencing immobilization of some part of the body because of stroke, fracture, spinal cord injury, or other chronic conditions (Brunner & Siddhartha 2012). These people often experience a significant bone loss and are at high risk for developing complications like deep vein thrombosis, constipation, osteoporosis. It is suggested that there is a good chance to fully recover the lost bone if the immobilization period is limited to 5 to 8 weeks (Samuel, Brown & Frank 2014).

Patients on the orthopaedic service are almost immobilized due to fractures or surgery either for short duration or for extended period of time which ultimately leads to complications like deep vein thrombosis, pneumonia, calculi, and pressure ulcer. These complications are preventable, it is easy to prevent rather than to treat these complications in terms of escalating cost, health status of the patient, and nursing facility (Maniere, 2012). The knowledge regarding prevention of complication of immobilization is on paper yet not effectively implemented in practice. Health is primarily focused on preventive, promotive, and maintaining aspect. As per the definition the first level of nursing care is prevention which can be entirely full filled and achieved by educating the patient.

1.1 Statement of the problem

Immobilization is a commonly used practice in orthopaedic department as a method of treatment (Samuel et al., 2014). Approximately 50% of hospitalized individuals have impaired mobility and are at greater risk of developing complications (Brunner & Siddhartha, 2012). Immobilization is frequently present in patients with involvement of musculoskeletal and neurological systems and also among critically ill patients (Vollman, 2010).

Orthopaedic patients have immobility imposed on them either due to their condition or indirectly due to treatment like cast, tractions, splints, implants and internal fixators. (Hussein

et al., 2017). They require treatment for fractures, deformities, and diseases or injuries of some part of the musculoskeletal system. Some patients will require surgery, immobilization, or both to correct their condition. The majority of patients not requiring surgical intervention will be managed by bed rest, immobilization, and rehabilitation (Wood et al., 2015).

Prolonged bed rest and immobilization inevitably lead to complications and has multiple effects on the major systems of the body which can result in a negative physiological response in hospitalized patients on bed rest (Pashikanti & Von, 2012). Complications due to immobilization can often present more of a challenge in the rehabilitation of a patient than the initial injury. Therefore, it's much easier to prevent a complication than to treat it (Saroja, 2011). Therefore, patients play a vital role in preventing the complications of immobilization (Brunner & Siddhartha, 2012). If the Patients are knowledgeable about the potential changes of immobility and diligent in implementing preventive interventions, they will avoid lots of discomfort for them (Malarvizhi & Hemavathy, 2015).

The complications arising out of immobilization in orthopedic patients are loss of muscle strength and endurance, contractures and soft tissue changes, disuse osteoporosis, deep vein thrombosis, pulmonary embolism, increased heart rate, decreased cardiac reserve, orthostatic hypotension, pressure ulcer, calculi, urinary tract infection, constipation, depression and psychosis (kalisch et al., 2014). Therefore, it is also important to note that, mobilizing the un immobilized parts of the immobilized limb will maintain function in those areas and encourage blood circulation, prevent muscle weakness and wasting, prevent bed sores and other complications (Kuo et al., 2013)

During work experience and clinical practice, the researcher noticed that some immobilized patients never did any type of exercises on their own. Research studies in relation to complication of immobilization are conducted more often in Western countries compared to other countries and information on such a study in Zambia is scarce hence the reason why the researcher decided to conduct this study.

1.2 Significance of the study

It is hoped that the study will be of value to the orthopaedic surgeon, physiotherapist and other medical personnel managing the immobilised patients in hospitals, as it will emphasize the need for educating patients on the possible complications of management methods used on them. This study will also help physiotherapists to develop ways of improving awareness to patients and the community at large, efforts to increase the compliance to prescribed

exercises. It is hoped that, awareness on the benefits of prescribed exercises will lessen the complications and risks of having immobilization complications, as education plays a significant role in providing care to prevent complications related to immobility.

1.3 Research Question

What is the knowledge and practice of immobilised patients in the prevention of immobilization complications in orthopaedic wards at University Teaching Hospital?

1.4 General objectives

- To determine the knowledge and practice of immobilised patients in the prevention of immobilization complications in the Orthopaedic ward at UTH.

1.5 Specific objectives

1. To determine the knowledge of immobilization complications among
Immobilized patients at the UTH orthopaedic ward.
2. To assess the practices of immobilised patients in the prevention of
immobilization complications.
3. To investigate the variables influencing the prevention of immobilization
complications.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The literature review will focus on various aspects pertaining to the topic at hand. This chapter presents an overview on the complications of immobilization. This chapter will also explain the patient's knowledge and practices concerning immobilization complications. The researcher has gathered information on what other similar studies have highlighted.

2.1 Complications of immobilization

2.1.1 Musculoskeletal Complications

The musculoskeletal system is severely affected by immobility and prolonged bed rest (Vollman, 2010).

2.1.1.1 Loss of Muscle Strength and Endurance

Muscle strength and endurance tends to decrease with prolonged immobilization. The loss of muscle strength is not uniform and is differential. In a study conducted at The Johnson space centre by NASA there was differential muscle atrophy and a larger loss in strength relative muscle area (Steinberg 2012). The loss of muscle strength, in addition, is not limited to the period of immobilization, but persists well beyond the time when mobilization is commenced. Hortobagyi and Dohm (2011), found that two weeks after spontaneous recovery, there still was an average strength deficit of 11%, in previously normal subjects. This complication is reduced both in magnitude and extent by shortening the period during which the patient is immobilized, as well as instituting exercises even when the patient is immobilized. This complication is related to the patient knowledge of the complications in that a patient with information on this complication is more likely to engage in isometric exercises while immobilised (karanu, 2019)

2.1.1.2 Contractures

Immobilized joints undergo several changes that result in decreased joint movement, stiffening and deformity. Prominent among the changes that result is proliferation of fibro-fatty connective tissue to cartilage surfaces, atrophy of cartilage, ulceration at points of cartilage contact, disorganization of cellular and fibrillar ligament alignment, weakening of ligament insertion sites owing to osteoclastic resorption of bone and fibres, regional osteoporosis of the involved extremity, increased force requirement for joint cycling and

increased ligament compliance. Joint mobilization tends to counter these effects and hence immobilized patients are encouraged to move their joints despite the immobilization and immobilization itself is designed not to immobilize the joints as much as possible (Maniere, 2012).

2.1.1.3 Disuse Osteoporosis

Insufficient physical activity as encountered in immobilized patients is one of the most important overall risk factors for osteoporosis (Bartl & Bartl, C 2017). Bone integrity is maintained by the mechanical loads imposed by weight bearing in an upright position and the contraction of skeletal muscle (Iwaniec & Turner, 2016). Detectable demineralisation results from substantial losses of calcium which is accompanied by sizeable losses of nitrogen reflective of muscle atrophy (Kambli, 2014) This therefore implies that the bone loss may be due to multiple factors including diminished direct physical forces on bone, decreased muscle pull on the periosteum as well as circulatory and other changes. A study of patients confined to bed has shown that, on average, trabecular bone decreases by about 1% a week, yet, when physical activity is resumed, bone density increases by 1% a month, considerably slower than its loss (Morin, Lix, Majumdar et al, 2013)

2.1.1.4 Soft Tissue Changes

Maintenance of normal muscle structure and composition requires repetitive use, and the changes in the patterns of tissue loading can strengthen or weaken normal tissues (Iwaniec & Turner, 2016).

2.1.2 Cardiovascular Complications

2.1.2.1 Increased heart rate and Decreased Cardiac Reserve

The increase in resting heart rate may be due to a decrease in vagal tone and the increase in maximum heart rate may be due to an increased release of norepinephrine and an increased sensitivity of cardiac beta-adrenergic receptors (Bringard et al.,2010). These immobilised patients develop a paradoxical increase in heart rate at rest and therefore their capacity to moderate cardiac activity with increased physical activity is inhibited

2.1.2.2 Orthostatic Hypotension

Stroke volume decreases due to a decrease in preload, which in turn is decreased because of a corresponding reduction in plasma volume (Linnarsson et al., 2015). Rapid diuresis occurs within the initial 24-48hrs of bed rest resulting in decreased plasma volume and the venous

compliance increases by 20-25% with bed rest resulting in venous pooling in the lower extremities when an upright posture is resumed (Bringard et al.,2010).

2.1.2.3 Venous Thromboembolism

The venous pooling, decreased muscle activity and antecedent inactivity predispose these patients to venous thromboembolism. In addition to the immobilization, these patients are already risk candidates for venous thromboembolism by virtue of the trauma (Sherin, Mary, & Kurian 2013). A study was conducted to identify silent deep vein thrombosis in immobilized multiple trauma patients at Memphis in Tennessee, U.S.A. Thirty-eight of 39 immobilized trauma patients on bed rest for 10 days or longer had venographic study of their lower extremities to evaluate for the presence of silent deep vein thrombosis. Sixty percent of patients had silent deep vein thrombosis, with thrombi extending above the knee in half of the patients with clot. Deep vein thrombosis was documented in 67% of patients with major lower extremity fractures and 59% of patients without major fractures. Deep vein thrombosis increased with increasing age but not with injury severity score (Allen & sale, 2014).

2.1.2.4 Fat Embolism

Fat embolism indicates the often asymptomatic presence of fat globules in the lung parenchyma and peripheral circulation after long bone or other major trauma. Early immobilization of fractures reduces the incidence of fat embolism and the risk is further reduced by operative correction rather than conservative management, further, the patient with multiple fractures has higher risk of fat embolism than the one with single fracture (Ahsin, Bhatti, Sadia et al., 2012)

2.1.3 Respiratory

Immobility can also be devastating to lung function. Weakened respiratory muscles can affect chest wall expansion and impede adequate tidal volume for air. Prolonged bedrest is associated with several time-dependent effects on respiratory function (Harder-lauriden et al., 2017). In a supine person, the weight of the body restricts the free movement of the rib cage, reducing tidal volume. It has been estimated that, when a person is upright, 78% of tidal exchange is due to the motion of the rib cage but, in the supine position, restriction of rib cage movement reduces this to around 32%. During prolonged bedrest, patients may develop fixed contractures of the costovertebral joints, further reducing tidal exchange and potentially leading to permanent restrictive pulmonary disease (Keramidas et al., 2016). The residual volume of the lungs drops in bedridden patients, potentially increasing the risk of portions of

the lung collapsing. A shifting of the internal abdominal organs towards the thorax, which press on the diaphragm and compress the lungs (Poole, Wilkerson & James, 2016). Furthermore, when a patient is confined to bed there is a tendency for mucus to pool, under the influence of gravity, in the lower part of the airway (Stenger et al., 2012). These accumulated secretions can swamp the lower portion of the ciliary escalator, reducing its function. These effects are often compounded in bedridden patients by dehydration, leading to the pooled mucus becoming thick and difficult to expectorate (Gebhard et al., 2013). The diameter of the airways, particularly the bronchioles, decreases after a period of immobility. This reduction in airway size, together with pooled mucus and the extra weight the recumbent body places on the rib cage, combine to make breathing more laboured, and patients tend to take fewer deep breaths. The results can include the collapse of airways and small areas of lung tissue (atelectasis), which reduces the area available for gaseous exchange (Kenny et al., 2017). Many studies have shown that prolonged bedrest dramatically increases the risk of respiratory tract infections. People cannot cough as easily or as well, which allows pooled mucus to stagnate and reduces the clearance of potentially pathogenic material and irritants.

2.2 Patients knowledge

The knowledge, in addition to having the patient psychologically prepared in the event that the complications may occur, also aids in mitigating against some of the complications. Effects such as pressure sores and thrombo-embolism would be avoided by a patient who attempts to make movements despite being immobilized. Pressure between the bony prominences and external surface occludes the capillaries leading to ischemia and pressure sores where a knowledgeable patient attempts to diminish this pressure by periodic movements, then less probability of sores would occur (Alhosis, Qalawa, El-moneem 2012). Malarvizhi & Hemavathy (2015) conducted a study on knowledge of complications among immobilized patients in orthopaedic wards in India and they found that knowledge was poor.

There are certain actions that patients can take in order to avoid some of the complications associated with prolonged immobilization. Loss of muscle strength and joint contractures can be avoided by exercising the affected joints and muscles (Kanazawa, Hangiwar & Itoi 2015). Pressure sores can be alleviated by frequently relieving the pressure exerted onto precariously placed pressure points (Alhosis et al 2012). The knowledgeable patient would best be placed to undertake these complication evasive measures.

2.3 Patients practice

The WHO, (2018) defines exercise adherence as “the extent to which an individual corresponds with the quantity and quality of exercise, as prescribed by their healthcare

professional.” Those who perform their exercises to the required repetitions may not be deemed adherent should their technique be erroneous or incorrect, as these individuals will not be gaining maximum benefit from their exercise program (Peek et al., 2015).

After injury or surgery, many patients are given specific exercises to do unsupervised at home or in the ward to aid their recovery. These exercises are specifically targeted at certain muscle groups or joints, rather than global physical activity, for example a straight leg raise for quadriceps strength or a heel slide for knee range of movement (Caulfield & Donnelly, 2013). Evidence suggests that noncompliance to these exercises in musculoskeletal cohorts can be between 30% and 50%, making it a significant issue that places additional burden on patients and health care providers, and may be partially to blame for poor clinical outcomes (Holden et al., 2014). Adherence is currently defined by the World Health Organization (WHO) as “the extent to which a person’s behavior corresponds with agreed recommendations from a health care provider” (WHO, 2018). The majority of research into adherence relates to medication, and this definition has been developed to encompass a multitude of health-related behaviors, however, it does not yet include exercise prescription (Hay-Smith et al., 2015).

In an exercise rehabilitation context among the musculoskeletal population, strong adherence enhances the effectiveness of the intervention and is suggested to reduce persistent, disabling complaints (Bassett, 2015). Patients who fail to adhere to the prescribed exercise program may extend the duration of their treatment, negatively impact on the therapeutic relationship, and make treatment less effective (McLean et al., 2010).

A study about the incidence of complications among immobilized patients found that the main complications of immobility are joint stiffness 77.5%, muscle atrophy 30%, ulcer 25%, infection 22.5%, decrease sensation 20%, paralysis 2.5%, leg discrepancy 2.5%, cast syndrome 2.5%, malunited fraction 2.5%, and swelling 5% (Poudyal, Neupane & Lopchan, 2014).

CHAPTER THREE

Research Methodology

3.0 Introduction

Chapter three outlines the methods which were used in this study. It covers study design, target population, sample size, sampling procedures, data collection and data analysis, inclusion and exclusion criteria to be used as well as Ethical issue consideration.

3.1 Study Design

The study was a cross sectional descriptive quantitative study. It would enable the researcher to collect numerical data and perform quantitative analysis using statistical procedures, in order to determine the knowledge and practice of immobilised patients in the prevention of immobilization complications.

3.2 Study setting

The study was carried out in the Orthopaedic Wards G02, G12 and C22 at University Teaching Hospital in Lusaka which is the biggest public tertiary hospital in Zambia with a bed capacity of 1665, the bed capacity differs and depends on the available infrastructure (Ministry of health 2018). There were about 48 bedspaces in G02, 48 bedspaces in G12 and 23 bedspaces in C21. At that time these were the wards handling orthopaedic cases.

3.3 Study Population

Population refers to the entire group of people, events or things of interest that the researcher wishes to investigate (Sekaran, 2017). The target population of this study included all immobilized patients in the Orthopaedic wards (C21, G02, G12) at University Teaching Hospital, with a population of about 119 patients.

3.3.1 Sample size determination

The sample size was determined using a convenient sampling method, meaning, whoever was available on the day of data collection would be included (Ilker, Sulaiman & Rukayya 2016). The researcher calculated the sample size using the Yamane formula (Adam, 2020).

$$n = \frac{N}{1 + N(0.05)^2}$$

$$\text{Sample size} = 92$$

3.3.2 Inclusion criteria

- All immobilised patients

- Those who will consent
- Those who will be available at the time of data collection

3.3.3 Exclusion

- Below 18 years
- Spinal immobilisation
- Senile patients
- Those with dementia
- Those who withdrew from the study after initially consenting

3.4 Data collection tool

A structured researcher administered questionnaire was used to look at the knowledge of immobilization complications in trauma patients. This tool was adapted by Karanu (2019) and Dhar et al (2018) whose tool was prepared in consultation with faculties of Orthopaedics, Neurology at VIMSAR, Burla. The questionnaire consisted of three (3) sections. The first section captured the demographic data, such as age, gender, occupation, education level and marital status. The second section captured the patient's knowledge on immobilization complications, and lastly the third section would determine the practices of immobilized patients towards prescribed exercises.

3.4.1 Validity and Reliability

A questionnaire used in previous similar studies was used. The supervisor of the principle researcher was consulted for content validity of the developed questionnaire. Clarity and understanding was checked while conducting a pilot study.

Reliability of a questionnaire refers to its ability to yield the same data when it is re administered under the same conditions. Hence the questionnaire was pretested on 10 participants who were not included in the main study. This would help to make necessary changes to the questionnaire should there be need.

3.4.2 Pilot Study

A pilot study was carried out at LMUTH. The purpose for this is to test the sensitivity of data collection tool (questionnaire). This helps to expose the strengths and weaknesses of the data collection process and enable the researcher to know how and where to make changes in the data collection process.

3.5 Data collection procedure

The data collection process began after permission and ethical clearance was obtained from relevant authorities as indicated in 3.8. The orthopaedic ward in-charge helped the researcher to identify the participants using the registers. The aim of the study was clearly explained to the participants using the information sheet and participants were informed that there will be no reward after participating in the study. Informed and written consent was sought from the participants before the researcher and assistants distribute questionnaires. Participants were assured of their freedom to withdraw from the study at any time without penalty. The researcher collected the completed questionnaires and kept them under lock and key.

3.6 Variables used in this study

In this research, the dependent variable is prevention of immobilization complications. The independent variables include: demographic characters (age, gender, occupation, educational status) knowledge and practices.

3.7 Data Analysis

Raw data was sorted out, analysed and interpreted using descriptive statistics meaning this information was displayed using tables (histograms), bar charts and pie charts to show the patterns of occurrence and how they relate to each other. Then, the results obtained were drawn and summarized for analysis using the multivariate multiple regression of the Statistical Package for Social Sciences Software (SPSS) version 27.0.

3.8 Ethical considerations

Permission was obtained from Lusaka Apex Medical University, faculty of Health Sciences to conduct this study. Ethical approval was obtained from LAMUREC to conduct this study. Furthermore, permission was obtained from the Director at the University Teaching Hospital to conduct the study. Written and informed consent was obtained from prospective participants before their participation. The consent form clearly stated the purpose, risks, benefits and rights of participants like the right to withdraw any time, in the whole study was used. The participants were assured that their participation will be totally voluntary and that if they chose not to participate in the study, it would not affect them, in any way. Information obtained was treated with utmost confidentiality. Filled questionnaires were kept under lock and key and only accessible to the researcher. Access to data entered on a computer file was through a password known to the researcher only.

3.9 Dissemination of findings

The findings of this study were made available to the Lusaka Apex Medical University faculty of physiotherapy, the University Teaching Hospital, the Zambia society of physiotherapy (ZSP) as well as any institutions that might need them Published in a local peer review journal.

CHAPTER FOUR

RESULTS

4.1 Introduction

This chapter presents results from a study that was conducted to determine the knowledge and practices of immobilized patients in the prevention of immobilization complications in the orthopedic wards (C21, G02, G12) at the University Teaching Hospital. The results are presented in graphical form and percentage under the following subsections; Socio-demographic characteristics of participants, perceptions/knowledge on immobilization complications, and the attitude towards practice of preventive measures of immobilization. Descriptive statistics were used to analyse and present the nominal data. Thereafter inferential statistical analyses were used to identify associations between selected nominal variables.

4.2 Response Rate

The sample of this study constituted of 75 participants of which 48 were males and 27 were females. Of the total 90 distributed questionnaires, 75 were adequately completed and returned, representing 83.3% return rate.

4.3 Demographic data and cause of non-movement of participants

4.3.1 Demographic data

The demographic profile of the participants is presented in **Table 4.1** below. Out of 75 participants who returned the questionnaires, male participants were more 60.0% (n=48) than females 36.0 % (n=27). As for the age range, 57.3% (n=43) were those between the age of 18 to 40 years, the least were those aged above 65 years 8.0% (n=6). The mean age was 38.0 years with a standard deviation of 15.459. The majority of the participants 33.3% (n=25) were married while 10.7% (n=8) were divorced. About 34.7% (n=26) of participants reached secondary level of education as opposed to 18.7% (n=14) who only reached primary school level. Those who did not attain any form of education were 22.7% (n=17) while 24% (n=18) had reached tertiary education.

A larger number of participants 65.3% (n=49) were in non-movement state for months while the least number 1.3% (n=1) were in non-movement for days. Of the 75 participants, 2.7% (n=2) did not indicate as to how long they stayed in non-movement state. The table below shows the demographic characteristic and how long each of the participants had stayed in non-movement state at a time of data collection.

Table 4.1 Demographic data

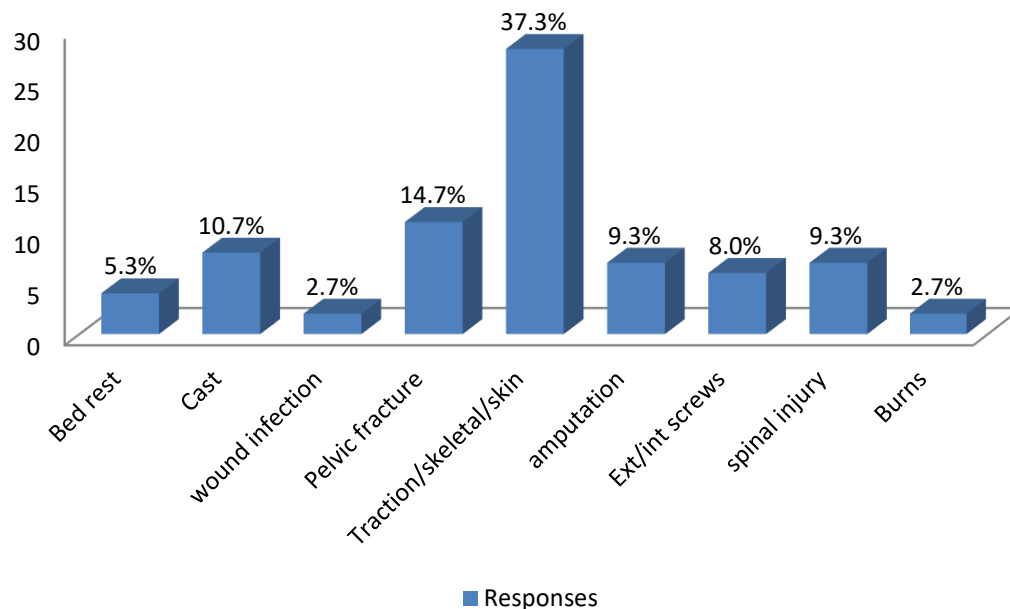
Variable	Characteristic	Number (%)
Gender	Male	48(64.0%)
	Female	27 (36.0%)
Age	18-40 years	43 (57.3%)
	41-55 years	17 (22.7%)
	56-65 years	9 (12.0%)
	>65 years	6 (8.0%)
Marital status	Married	25 (33.3%)
	Single	29 (38.7%)
	Divorced	8 (10.7%)
	Widow/widower	13(17.3%)
Education	Primary	14 (18.7%)
	Secondary	26 (34.6%)
	Tertiary	18 (24.0%)
	None	17 (22.7%)
Duration of being in non-movement state	Days	1 (1.3%)
	Weeks	19 (25.3%)
	Months	49(65.4%)
	Years	4 (5.3%)
	Missing	2 (2.7%)

4.3.1 Causes of state of non-movement

Majority of the participants 37.3% (n=28) had been found in a state that does not allow movement due to traction (skin and skeletal) while the least 2.7% (n=2) were due to burns and wound infection. The second leading cause of non-movement was pelvic fracture with 14.7% (n=11) of participants followed by cast with 10.7% (n=8). Other causes included

amputation and spinal injury with 9.3% (n=7) participants each. External/internal screw 8.0% (n=6) and bed rest 5.3% (n=4) where among causes of non-movement of participants. The bar chart below represents the causes of non-movement among participants from university teaching hospital

Fig 4.1 causes of non-movement



4.4 Awareness and knowledge of complications of being in a state of non-movement

4.4.1 Awareness

When the participants were asked if they knew the complications of being in a non-movement state, the majority 42.7% (n=32) were not sure while 38.7% indicated that they knew and 18.7% (n=14) did not know. Data is represented in **table 4.2** below

Table 4.2 Awareness of complications of being in a state of non-movement

Do you know about the complications of being in the state that does not allow movement?			
Responses	Options	Number	Percent
	Yes	29	38.7%
	No	14	18.7%
	Not sure	32	42.6%
	Total	75	100.0%
If yes where did you first hear about these complications?			

	Health worker	Family & friends	Teachers	None of the above	Missing	Total
Frequency	27	1	1	9	37	75
Percent	36.0%	1.3%	1.3%	12.1%	49.3%	100.0%

4.4.2 Knowledge on complications of being in a state of non-movement

When participants were asked whether non-movement caused bed sores, 62.7% (n=47) said yes while 4% (n=3) said no and 33.3% (n=25) were not sure. On bone problems the majority 56% (n=42) were not sure while 40% (n=30) said yes and 4% (n=3) said no. The majority of participants 53.3% (n=40) indicated that non-movement did not cause heart problems while only 10.7% (n=8) indicated that it caused heart problems and 36.0% (n=27) were not sure. On whether non-movement caused blood circulatory problems, 64% (n=48) said yes; 18.7% (n=14) said no; and 17.4% (n=13) were not sure.

On dyspnoea (difficulty in breathing) the majority 68% (n=51) indicated that it was not a complication of non-movement, only 8% (n=6) indicated that it was a complication of non-movement while 21.3% were not sure. Majority 60% (n=45) said dysuria (pain when passing urine) was not one of complications of non-movement while only 8% (n=6) indicated that it is one of the complications and 26.6% (n=20) were not sure. On dyschesia (painful and difficulty passing of stool), 60% (n=45) of participants indicated that it was one of the complications of non-movement while 26.7% (n=20) indicated that it was not one of the complications and 13.3% (n=10) were not sure.

When participants were asked if frequent turning and movement prevented complication of non-movement, 61.3% (n=46) said yes while 8% (n=6) said no and 30.7% (n=23) were not sure. The **table 4.3** below shows the knowledge of participants on complications of being in a state of non-movement.

4.3 Shows the level of knowledge on effects/complications of non-movement state

	Bed sores	Bone problems	Heart problem	Blood Circulatory problems	Dyspnea	Dysuria	Dyschesia	Frequent turning & movement prevent complications
Yes	47	30	8	48	6	7	45	46

	(62.7%)	(40.0%)	(10.7%)	(64.0%)	(8.0%)	(9.4%)	(60.0%)	(61.3%)
No	3 (4.0%)	3 (4.0%)	40 (53.3%)	14 (18.7%)	53 (70.7%)	48 (64.0%)	20 (26.7%)	6 (8.0%)
Not sure	25 (33.3%)	42 (56.0%)	27 (36.0%)	13 (17.3%)	16 (21.3%)	20 (26.6%)	10 (13.3%)	23 (30.7%)

4.4.3 Participants last discussion with the health care provider about their condition.

When the participants were asked when last they had discussed their condition with the health provider, the majority 52.0% had discussed in the last week while only 1.3% (n=1) had discussed more than a year ago. 10.6% (n=8) could not remember when they last discussed with their health provider. The **table 4.4** below summarises the participants' responses.

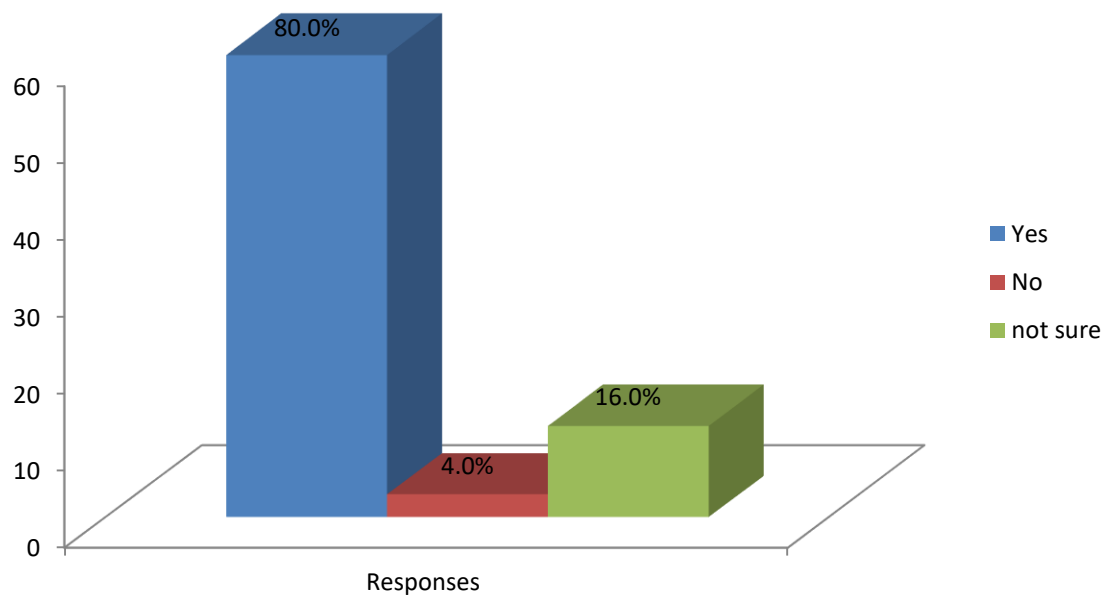
Table 4.4 shows when participants last talked to health provider about their condition

When last did you discuss with your health care provider about your condition?		
Variable	Number	Percentage
In the last week	39	52.0%
In the last 2-4 weeks	24	32.0%
More than a month ago	3	4.0%
More than 6months ago	1	1.3%
More than a year ago	1	1.3%
Can't remember	7	9.4%
Total	75	100%

4.4.4 Effects of immobilisation on the family

The majority of participants 80% (n=60) indicated that their families were affected by their condition. The **figure 4.3** below summarises the responses

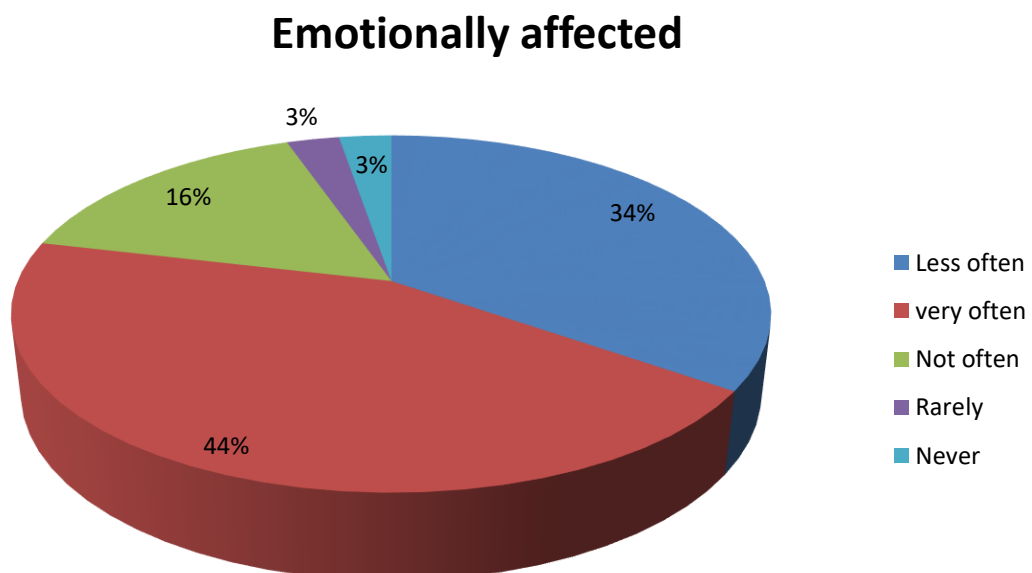
Fig 4.3 Has your family been affected by your present condition?



4.4.5 Emotional effect

The **figure 4.4** below summarises how participants get affected emotionally by the state of immobility were 44% said they are often affected and 3% said rarely affected.

Fig. 4.4 shows how participants are emotionally affected

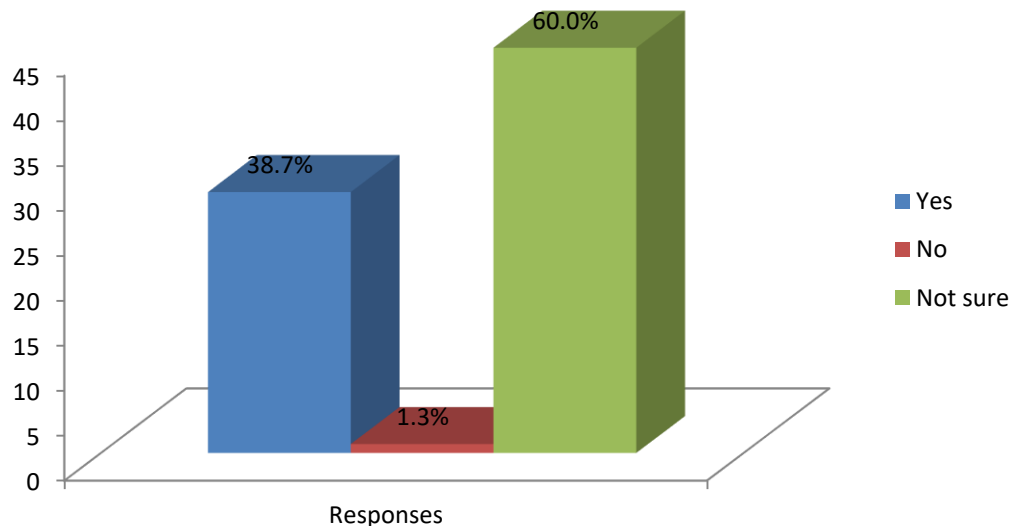


4.5 Practice

4.5.1 Knowledge on practice and prevention of immobilisation

When asked if practicing preventive measures the majority 60% (n=45) were not sure while 38.7% (n=29) indicated that it was beneficial and only 1.3% (n=1) said it was not beneficial. Data is as shown in the **figure 4.5** below

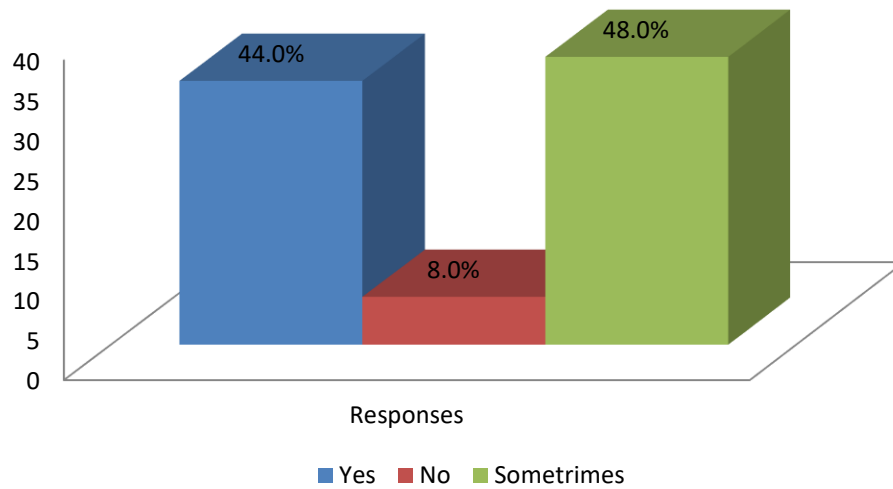
Fig.4.5 Practice and prevention of immobilisation is beneficial



4.5.2 Adherence to instructions

The majority of the participants 48% (n=36) only follow stipulated instructions at times while 44.0% (n=33) indicated that they followed as stipulated and 5.3% (n=4) indicate that they did not follow stipulated instructions at all. 2.7% (n=2) were missing entries. **Figure 4.6** below shows this.

Fig. 4.6 following of stipulated time to turn or move as instructed



4.5.3 Change of linen

The majority of participants 82.7% (n=62) had their bed sheets change once a week while the least 1.3% (n=1) indicated that their bed sheets had never been changed. 4.0% (n=3). 4% (n=3) of participants could not remember when their bed sheets were changed. **Table 4.5** below summarises everything.

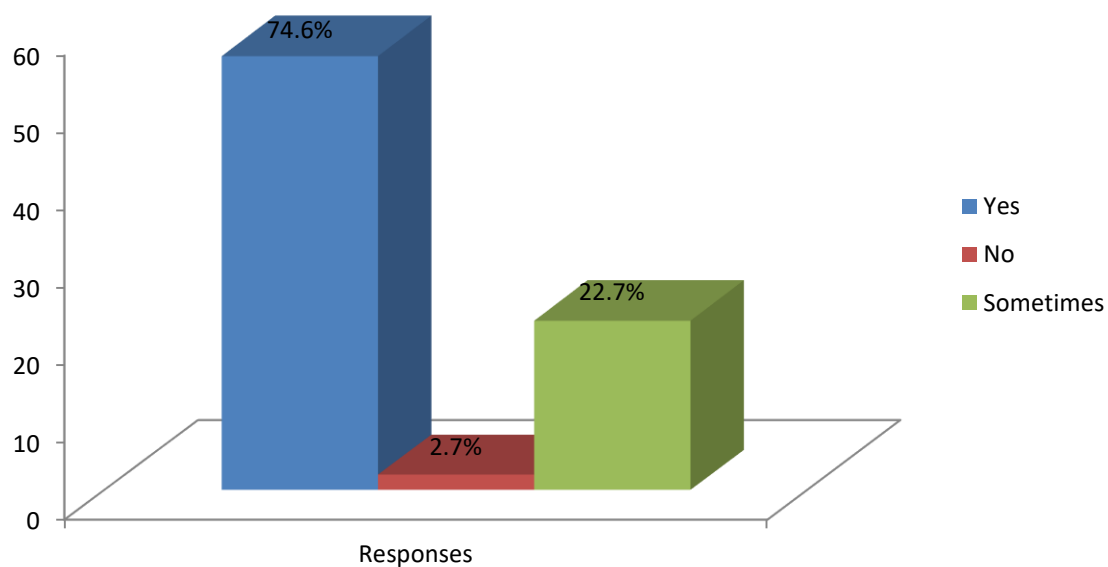
Table 4.5 shows how often participants bed sheets were changed

How often is your bed sheets changed?		
Variables	Number	Percent
Every day	6	8.0%
Once a week	62	82.7%
Once a month	3	4.0%
Never changed	1	1.3%
Can't remember	3	4.0%
Total	75	100.0%

4.5.4 Following of instructions given by the medical personnel e.g exercises given by the physiotherapist.

When asked if the participants followed instruction to do exercise, the majority 74.7% (n=56) indicated that they followed the instructions while 22.7% (n=17) indicated that they only followed at times. Only 1.3% (n=1) did not follow instructions for exercise. This is summarised as shown in **figure 4.6** below.

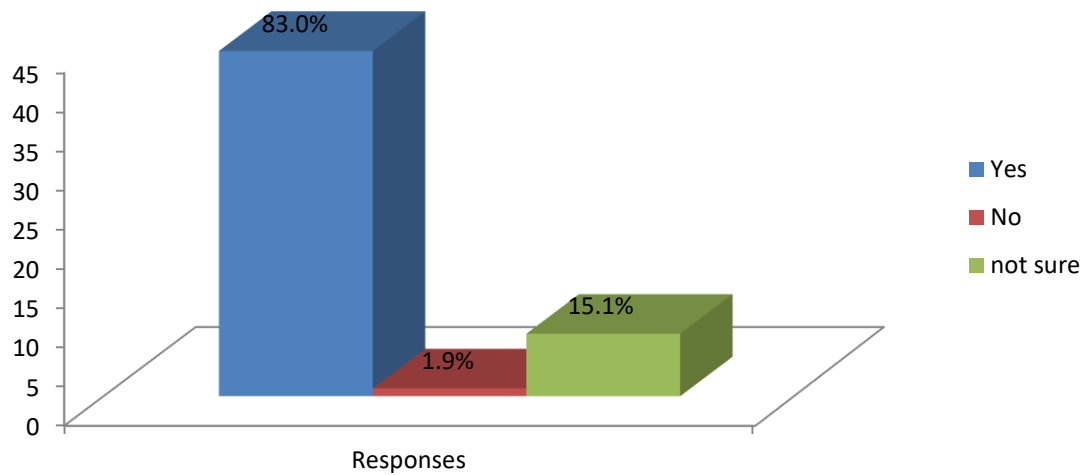
Fig.4.6 shows if participants follow instructions



4.5.5 Importance of doing exercises as recommended by the health personnel.

When participants were asked if it was important to do exercise as recommended, 80% (n=60) indicated that it was important while only 2.7% (n=2) indicated that it was not important and 17.4% (n=13) were not sure. This is as shown in **figure 4.7** below

Fig. 4.7 Importance of exercise



4.5.6 Frequency of exercises done as recommended

The majority of the participants 74.7% (n=56) indicated that they did their recommended exercise on a daily basis while 21.3% (n=16) indicated that they did more than once a day. Only 1.3% (n=1) indicated that he/she did more than twice a week. 2.7% (n=2) of participants could not remember how often they did exercises as recommended. **Table 4.6** below summarises everything.

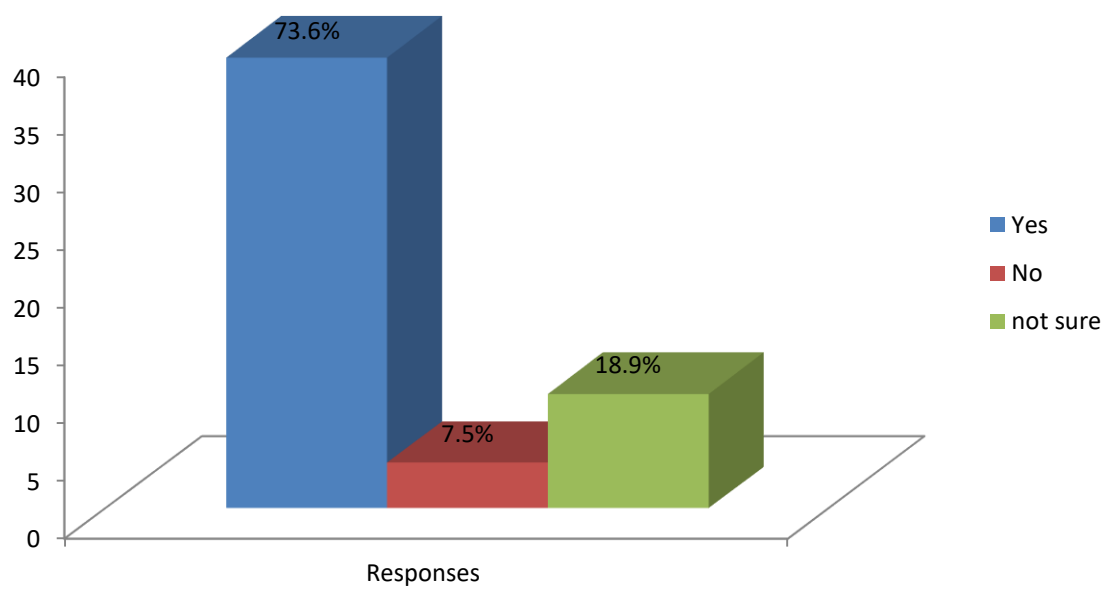
Table 4.6 Number of time on doing recommended exercise

How many times do you do your exercises as recommended by your health personnel		
Variables	Number	Percent
Once a day	56	74.7%
More than once a day	16	21.3%
More than twice a week	1	1.3%
I can't remember	2	2.7%
Total	75	100.0%

4.5.7 Exercise helping to feel better or worsening the problem.

When participants were asked if doing exercise helped them feel better, 76.0% (n=57) said yes while 5.3% (n=4) indicated that it was worsening their condition. 18.7% (n=14) were not sure whether it improved their condition or worsen it. **Figure 4.8** below summarises this.

Fig.4.8 Exercise helping or worsening the condition



4.6 ASSOCIATIONS

4.6.1 Association between cause of non-movement and age of participants

Since the p value =0.007 is less than the level of significance $p=0.05$, we conclude that there is a strong association between the cause of immobilisation and the age. **Table 4.7** gives a summary.

Table 4.7 Association between cause of non-movement and age of participants

		What condition led you in to a state of non-movement									Total
		Bed rest	cast	Wound infection	Pelvic fracture	Traction	Amputation	Ex/Int screws	Spinal injury	Burns	
Age	18-40	1	5	0	2	23	3	3	5	1	43
	41-55	0	2	0	4	2	3	3	3	0	17
	56-65	1	1	2	2	2	1	0	0	0	9
	>65	2	0	3	1	0	0	0	0	0	6
	Total	4	8	2	11	28	7	6	8	1	75

P value=0.007

4.6.2 Association between period of the condition and knowledge on complication of being in a state of non-movement

Since the p value=0.065 is greater than our significance level $p=0.05$ we conclude that there is no association between the period of being in the non-movement state and knowledge of the complications of being in a non-movement state. **Table 4.8** below shows the statistics

Table 4.8 Association between period of the condition and knowledge on complication of being in a state of non-movement

how long have you been in this state /do you know about the complications of being in the state that does not allow movement					
		do you know the about the complications of being in the state that does not allow movement			Total
how long have you		yes	no	not sure	

been in this state	Days	1	0	0	1
	weeks	5	2	12	19
	months	18	11	20	49
	years	4	0	0	4
Total		28	13	32	73

P value=0.065

4.6.3 Association between level of education and how frequent participants followed the exercise as recommended by health personnel.

Since the p value=0.541 is greater than our level of significance $p=0.05$ we conclude that there is no association between the level of education and following exercise schedules as recommended by the health personnel. This is summarized in **Table 4.9** below

Table 4.9 Association between level of education and how frequent participants followed the exercise as recommended by health personnel.

level of education versus how many times do you do your exercise as recommended by your health personnel					
		how many times do you do your exercise as recommended by your health personnel			Total
		once a day	more than once a day	I can't remember	
level of education	primary	13	0	1	14
	secondary	16	8	0	24
	tertiary	12	6	0	18
	non	15	2	0	17
Total		56	16	1	73

P value=0.541

CHAPTER FIVE

DISCUSSION

5.1 Introduction

This Chapter presents a revealing discussion of research results in the preceeding chapter (Chapter Four). The results were discussed in light of other studies from available published literature. The outline started with demographic characteriatics.

5.2 Response rate

The results from this study yielded 83% (n=75) response rate out of 90. This response rate was much lower compared to 90% (n=146) found by Karanu (2019), the study composed of knowledge of immobilization complications in trauma patients which was carried out at an orthopaedic ward.

5.3 Demographic Characteristics

Participants age in this study ranged from 18-75 years, the majority being aged between 18 to 40 years old (n=43, 57.3%) similarly a study by Maniere, D. (2012), showed the majority of participants were 20 to 45 years of age. 75 participants who returned the questionnaires, male participants were 60.0% (n=48) than females 36.0 % (n=27). The mean age was 38.0 years with a standard deviation of 15.459. The majority of the participants 33.3% (n=25) were married while 10.7% (n=8) were divorced. About 34.7% (n=26) of participants reached secondary level of education as opposed to 18.7% (n=14) who only reached primary school level. Those who did not attain any form of education were 22.7% (n=17) while 24% (n=18) had reached tertiary education. Contrary to these findings, Dhar et al., (2018) found that most participants attained tertiary education (n=76, 83%) of the 146 participants.

5.4 Knowledge on complications of being in a state of non-movement

When participants were asked whether non-movement caused bed sores, 62.7% (n=47) said yes while 4% (n=3) said no and 33.3% (n=25) were not sure. This finding was similar to Malarvizhi and Hemavathy, (2015) in India, where patients had more knowledge on bed sores (65%) and muscle atrophy (47.5%). On bone problems the majority 56% (n=42) were not sure while 40% (n=30) said yes and 4% (n=3) said no. The majority of participants 53.3% (n=40) indicated that non-movement did not cause heart problems while only 10.7% (n=8) indicated that it caused heart problems and 36.0% (n=27) were not sure. On whether non-movement caused blood circulatory problems, 64% (n=48) said yes; 18.7% (n=14) said no; and 17.4% (n=13) were not sure. On dyspnoea (difficulty in breathing) the majority 68% (n=51) indicated that it was not a complication of non-movement, only 8% (n=6) indicated that it was a complication of non-movement while 21.3% were not sure. Majority 60% (n=45) said dysuria (pain when passing urine) was not one of complications of non-movement while only 8% (n=6) indicated that it is one of the complications and 26.6% (n=20) were not sure. On dyschesia (painful and difficulty passing of stool), 60% (n=45) of participants indicated that it was one of the complications of non-movement while 26.7%

(n=20) indicated that it was not one of the complications and 13.3% (n=10) were not sure. Similarly a study done at Kenyatta teaching hospital, (2010), knowledge level on all the complications of prolonged immobilization was quite low, ranging from an average of 12.8% for musculoskeletal complications, to 3.6 % for cardiovascular complications and 4.4% for other complications. Looking at the actual breakdown, knowledge on soft tissue changes was 24%, bed sores 19.2% as compared to 0% for decreased cardiac reserve and fat embolism.

When participants were asked if frequent turning and movement prevented complication of non-movement, 61.3% (n=46) said yes while 8% (n=6) said no and 30.7% (n=23) were not sure.

5.5 Knowledge on practice and prevention of immobilisation complications

The positive effects of physical activity are well known and help in the prevention of complications that come about as a result of immobilization which are for example; pressure ulcers, deep vein thrombosis, pneumonia which can also result into numerous deleterious consequences including increased morbidity and mortality. Therefore, in this study it was very important to find out if the immobilised patients knew the importance of practicing prevention of these complications which was however not the case. When asked if practicing preventive measures the majority 60% (n=45) were not sure while 38.7% (n=29) indicated that it was beneficial and only 1.3% (n=1) said it was not beneficial. A similar study was done by Copanitsanou, (2018), on exercise and prevention of complications due to immobility, and it was found that people had little knowledge on practicing prevention of immobilization complication.

CHAPTER SIX

CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter looked at the summary of the results, limitations, some recommendations and conclusions drawn after the analysis of the findings.

6.2 Summary

This study aimed to determine the knowledge and practices of immobilised patients in the prevention of immobilization complications in the orthopaedic wards at the University Teaching Hospital in Lusaka. The knowledge level on complications of prolonged immobilization was low among these patients and was not influenced by the patient's education level because most patients had at least primary school education, it was mostly attributed to lack of patient education about the condition by medical practitioners. The immobilization was mostly out of circumstance rather than choice. It was also discovered that in this study it was mostly males who were affected than females. Therefore there is need for physiotherapy practitioners and other medical practitioners to take keen interest in thoroughly educating patients about complications of immobilization and how they can be prevented.

6.3 Limitations

- Some participants left some spaces unfilled/blanks because they could not understand some questions and that the questionnaire was bulky.
- The literature pertaining to this topic is scarce hence proving to be difficult to discuss the literature provided.
- Due to Corona Virus pandemic, there were limitations on entering some of the wards due to concern of spreading the virus despite having followed the COVID-19 guidelines.

6.4 Recommendations

More effort needs to be put into education of patients on the complications of prolonged immobilization. This might require the development of a consent form that would require to be filled for anyone who is immobilised for a certain duration. Whereas the consent form does not influence the ultimate mode of management for the patient's injury, it provides the care giver an opportunity to educate the patient on the various complications he may get from the immobilisation. Where the patient declines the immobilisation then he or she would be at liberty to seek treatment elsewhere.

The study was conducted in one area. Therefore, it would be important to conduct a similar study in other areas across the country for establishing the generalizability of the findings. In addition further research can be conducted using a qualitative study or mixed methods in order to enrich these results.

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APPENDICES

Appendix I: Budget

	Service	Amount K
01	Stationary	250

02	LAMU Ethics Committee	250
03	Transport and other logistics	1500
04	Printing and binding proposal and final report	1500
05	Storage device	500
06	Contingency	400
07	TOTAL	4400

Appendix II: Workplan

Work plan

		January- April (2021)	July 2021	August- Sept 2021	October 2021
Task	Personnel				
Presentation of report topic	Researcher				
Research proposal writing	Researcher				
Research mobilization and proposal submission	Researcher				
Pilot study	Researcher				
Data collection	Researcher				

Data analysis	Researcher				
Final report writing	Researcher				
Submission of final report	Researcher				

Appendix III: INFORMATION SHEET

Reference Number.....

Dear Participant,

You are invited to participate in a study to determine the “knowledge and practice of immobilized patient on the prevention of immobilization complications in the orthopaedic

wards at UTH". This study is being done by Lenganji Nakamba a 5th year physiotherapy student at the Lusaka Apex Medical University being supervised by Mrs. Malimba.

What is this study all about?

This study is about determining the knowledge and practices of immobilized patients on the prevention of immobilization complications in the orthopaedic wards at the university teaching hospital. The aim of the study is to

You have been selected to participate in this study and I wish to inform you that your participation is purely voluntary in that there are no monetary benefits

What are the risks or inconveniences of this study?

There are no perceived risks.

What are the benefits?

Your participation in this study will enable the researcher to get relevant information with regard to the above topic.

For clarifications and access to results: kindly contact;

Lenganji Nakamba, Lusaka Apex Medical University, Email: lenganjinakamba4@ gmail.com

Tell: 0966594351

Appendix IV: CONSENT FORM

I _____ have read and understood the letter of invitation to take part in the research study on Knowledge and practice of immobilized patients in the prevention of immobilization complications in the Orthopaedic wards at UTH. I have received adequate information regarding the nature of the study and understand what will be requested of me. I

am aware of my right to withdraw at any point during the study without penalty. I hereby consent to participate in this research study.

Participants Signature:

Date:

Researchers Signature:

Date:

Appendix V: LETTER OF PERMISSION

C/O Lusaka Apex Medical University

P.O Box 31909

Lusaka, Zambia

The Director

University Teaching Hospital

Lusaka, Zambia

Dear Sir/Madam

REF: PERMISSION TO CARRY OUT A STUDY AT YOUR INSTITUTION

Reference is made to the subject above. I wish to request for permission to carry out my research at UTH

I am a fifth-year physiotherapy student at Lusaka apex medical university. In partial fulfilment of the degree program, I am expected to carry out a final year research project leading to the award of the Bachelor of Science Degree in Physiotherapy.

My study title is: knowledge and practice of immobilized patients in the prevention of immobilization complications in the Orthopaedic wards at UTH. Kindly allow the patients to take part in this study. The findings of this study will be handled with the highest confidentiality and will be used only for academic purposes.

Your consideration and quick response will be highly appreciated.

Yours sincerely,

Lenganji Nakamba

BSc Physiotherapy 5:2

Cell: 0966594351

Lenganjinakamba4@gmail.com

Lusaka Apex Medical University,

P.O. Box 31090,

Lusaka, Zambia.

The Research Ethics Committee
Lusaka Apex Medical University,
Lusaka.

RE: REQUEST FOR APPROVAL OF THE RESEARCH PROPOSAL

In reference to the above mentioned subject, I am hereby applying for approval of my research proposal.

I am a 5th year student pursuing a bachelor's degree in physiotherapy at Lusaka Apex Medical University. I am carrying out a research project entitled "Knowledge and practice of immobilized patients on the prevention of immobilization complications in the orthopaedic wards at university teaching hospital" as partial fulfilment of the degree program.

Your favourable response will be highly appreciated.

Yours faithfully

lenganjinakamba4@gmail.com

0966594351

APPENDIX VI: QUESTIONNAIRE

Section 1: Demographic Data

1. Please indicate your gender by ticking in the box below.

Male [☐] Female [☐]

2. Age

3. Kindly indicate your marital status below by ticking in the box below.

Married [] Single [] Divorced [] Widowed []

4. Level of education: Primary [] Secondary [] Tertiary [] None []

5. How long have you been in this state?

.....

6. What condition led you to being in a state that does not allow movement?

Bed rest []

Cast []

Wound infection []

Pelvic fracture []

Traction -skeletal and skin []

Amputation []

External/internal screws []

Section 2: knowledge on immobilization complications

7. Do you know about the complications of being in the state that does not allow movement?

Yes [] No [] Not sure []

8. If yes where did you first hear about these complications?

Health workers []

Family & Friends []

Teachers []

None of the above []

9. Does inability to move increases the risk of having bed sores?

Yes [] No [] Not sure []

10. Can being in a state that does not allow movement cause bone problems that can later led to reeducation in joint space, bone thinning or skin changes?

Yes [] No [] Not sure []

11. Can being unable to move predispose you to having heart problems?

Yes [] No [] Not sure []

12. Can being in a state that does not allow movement cause blood circulatory problems?

Yes [] No [] Not sure []

13. Can being in a state that does not allow movement cause breathing difficulties?

Yes [] No[] Not sure []

14. Can being in a state that does not allow movement lead to having pain while passing urine?

Yes [] No[] Not sure []

15. Will frequent turning and movements prevent complications of prolonged bedrest?

Yes [] No [] Not sure []

16. Does being in a state that does not allow movement cause painful and difficulties in passing stool?

Yes [] No [] Not sure []

17. When last did you discuss with your health care provider about your condition?

In the last week []

In the last 2-4 weeks []

More a month age []

More than 6 months ago []

More than a year ago []

Can't remember []

18. Has your family been affected by your present condition?

Yes []

No []

Not sure []

19. How does this state you are in affect you emotionally?

Less often []

Very often []

Not Often []

Rarely []

Never []

Section 3: Practice

20. Practicing prevention of immobilization is Beneficial

Yes []

No []

Not Sure []

21. Do you follow the stipulated time to turn or move as instructed?

Yes []

No []

sometimes []

22. How often are your bedsheets changed?

Everyday [] once a week[] once a month [] never changed[] can't remember[]

Others specify.....

23. Do you follow instructions given to you by medical personnel e.g. exercises prescribed by the physiotherapist?

Yes []

No []

sometimes []

24. Do you know that it is important for you to do exercises as recommended by the health personnel?

Yes []

No []

Not sure []

25. How many times do you do your exercise as recommended by your health personnel?

Once a day []

More than once a day []

More than twice a week []

I can't remember []

26. Is doing exercises helping you feel better or worsening the problem?

Yes []

No []

Not sure []

THANK YOU VERY MUCH FOR YOUR PARTICIPATION!!!