CHAPTER 1
INTRODUCTION

1. 1 Background

The Information Age (also known as the Computer Age, Digital Age, or New Media Age) is a period in human history characterized by the shift from traditional industry that the Industrial Revolution. During the Information Age, the phenomenon is that the digital industry creates a knowledge-based society surrounded by a high-tech global economy that spans over its influence on how the manufacturing throughout and the service sector operate in an efficient and convenient way (Edward, June 2016).

Globalisation is the process by which the world is becoming increasingly interconnected as a result of massively increased trade and cultural exchange. Globalisation has increased the production of goods and services (http://www.bbc.co.uk/aboutthebbc).

Transportation is closely linked with the process of globalization. Efficiently distributing freight and moving people has always been an important factor for maintaining the cohesion of economic systems from empires to modern nation states and economic blocs. It became possible to move people and cargoes faster, in greater volumes, over longer distances and more conveniently (Rodrigue, 2018).

Fragility fractures are common; 1 in 2 women over 50 years of age will suffer one, as will 1 in 5 men. Globally, during year 2000, there were an estimated 9 million new fragility fractures, of which 1.6 million were at the hip, 1.7 million at the wrist, 0.7 million at the humerus and 1.4 million symptomatic vertebral fractures. As shown in the table below, Europe and the Americas accounted for half of all these fractures, while most of the

remainder occurred in the Western Pacific region and Southeast Asia (http://www.capturethefracture.org).

We report a prospective study of the incidence of fractures in the adult population of Edinburgh, related to age and gender. Over a two-year period, 15,293 adults, 7428 males and 7865 females, sustained a fracture, and 5208 (34.0%) required admission. Between 15 and 49 years of age, males were 2.9 times more likely to sustain a fracture than females (95% CI 2.7 to 3.1). Over the age of 60 years, females were 2.3 times more likely to sustain a fracture than males (95% CI 2.1 to 2.4). There were three main peaks of fracture distribution: the first was in young adult males, the second was in elderly patients of both genders, mainly in metaphyseal bone such as the proximal femur, although diaphyseal fractures also showed an increase in incidence (http://www.capturethefracture.org).

The third increase in the incidence of fractures, especially of the wrist, was seen to start at 40 years of age in women. Our study has also shown that 'osteoporotic' fractures became evident in women earlier than expected, and that they were not entirely a postmenopausal phenomenon. Humerus fractures are among the most common of fractures. Proximal fractures make up 5% of all fractures and 25% of humerus fractures, middle fractures about 60% of humerus fractures (12% of all fractures), and distal fractures the remainder. Among proximal fractures, 80% are one-part, 10% are two-part, and the remaining 10% are three- and four-part. The most common location of proximal fractures is at the surgical neck of the humerus (http://www.capturethefracture.org).

Incidence of proximal fractures increases with age, with about 75% of cases occurring among people over the age of 60. In this age group, about three times as many women than men experience a proximal fracture. Middle fractures are also common among the elderly, but they frequently occur among physically active young adult men who experience physical trauma

to the humerus. Distal fractures are rare among adults, occurring primarily in children who experience physical trauma to the elbow region *(Malhotra, 2013)*.

A fracture is a broken bone. It can range from a thin crack to a complete break. Bone can fracture crosswise, lengthwise, in several places, or into many pieces. Most fractures happen when a bone is impacted by more force or pressure than it can support (Belleza, 2016).

A humerus fracture is a break of the humerus bone in the upper arm. Fractures of the humerus may be classified by the location into proximal region, which is near the shoulder, the middle region or shaft, and the distal region (*https://orthoinfo.aaos.org/en/diseases./distal-humerus-fractures-of - the-elbow*).

You can develop a fracture when your bone is impacted with greater pressure or force than it can support. This force usually occurs suddenly or is very intense. The strength of the force determines the severity of the fracture (*https://orthoinfo.aaos.org/en/diseases./distal-humerus-fractures-of-the-elbow)*.

After a humerus fracture, pain is immediate, enduring, and exacerbated with the slightest movements. The affected region swells, with bruising appearing a day or two after the fracture. The fracture is typically accompanied by a discoloration of the skin at the site of the fracture. A crackling or rattling sound may also be present, caused by the fractured humerus pressing against itself. In cases in which the nerves are affected, then there will be a loss of control or sensation in the arm below the fracture. If the fracture affects the blood supply, then the patient will have a diminished pulse at the wrist (Lineage Medical, 2018 Inc).

Displaced fractures of the humerus shaft will often cause deformity and a shortening of the length of the upper arm. Distal fractures may also cause

deformity, and they typically limit the ability to flex the elbow (Lineage Medical, 2018 Inc).

Humerus fractures usually occur after physical trauma, falls, excess physical stress, or pathological conditions. Proximal humerus fractures most often occur among elderly patients with osteoporosis who fall on an outstretched arm (Lineage Medical, 2018 Inc).

The aim of treatment is to minimize pain and to restore as much normal function as possible. Most humerus fractures do not require surgical intervention. One-part and two-part proximal fractures can be treated with a collar and cuff sling, adequate pain medicine, and follow up therapy. Two-part proximal fractures may require open or closed reduction depending on neurovascular injury, rotator cuff injury, dislocation, likelihood of union, and function (Lineage Medical, 2018 Inc).

For three- and four-part proximal fractures, standard practice is to have open reduction and internal fixation to realign the separate parts of the proximal humerus. A humeral hemiarthroplasty may be required in proximal cases in which the blood supply to the region is compromised. Fractures of the humerus shaft and distal part of the humerus are most often uncomplicated, closed fractures that require nothing more than pain medicine and wearing a cast or sling for a few weeks. In shaft and distal cases in which complications such as damage to the neurovascular bundle exist, then surgical repair is required (Lineage Medical, 2018 Inc).

In most cases, patients are discharged from an emergency department with pain medicine and a cast or sling. These fractures are typically minor and heal naturally over the course of a few weeks. Fractures of the proximal region, especially among elderly patients, may limit future shoulder activity. Severe fractures are usually resolved with surgical intervention, followed by a period of healing using a cast or sling. Severe fractures often

cause long-term loss of physical ability. Complications in the recovery process of severe fractures include osteonecrosis, malunion or nonunion of the fracture, stiffness, and rotator cuff dysfunction, which require additional intervention in order for the patient to fully recover (Lineage Medical, 2018 Inc).

Nursing care of a patient with fracture include, the nurse should instruct the patient regarding proper methods to control edema and pain, it is important to teach exercises to maintain the health of the unaffected muscles and to increase the strength of muscles needed for transferring and for using assistive devices. Plans are made to help the patients modify the home environment to promote safety such as removing any obstruction in the walking paths around the house. Wound management, irrigation and debridement are initiated as soon as possible. Elevate extremit, the affected extremity is elevated to minimize edema, and the last, signs of infection**.** The patient must be assessed for presence of signs and symptoms of infection (https://nurseslabs.com/fracture).

The following should be evaluated for a successful implementation of the care plan, such as pain was relieved. Achieved a pain-free, functional, and stable body part. Maintained asepsis. Maintained vital signs within normal range. Exhibited no evidence of complications (*Medical Education Division, Brookside Associates, 2018 Ltd).*

So we can take a conclution that, a fracture is a broken bone. For humerus fracture is a break of the humerus bone in the upper arm. After a humerus fracture, pain is immediate, enduring, and exacerbated with the slightest movements. The affected region swells, with bruising appearing a day or two after the fracture.

1. 2 The Purpose

1.2.1. General Purpose

The general purpose of writing this scientific paper is to report the results of nursing care with close fracture distal humerus to Mr. D in Tulip 1B (Orthopedic) Ward Ulin General Hospital Banjarmasin.

1.2.2. Specific Purpose

1.2.2.1. Describing the result of assessment on clients with close fracture proximal humerus which include bio-psycho-socio-spiritual aspect.

1.2.2.2. Formulating a nursing diagnoses to the client Mr. D

1.2.2.3. Determining nursing interventions that can be performed to client Mr. D

1.2.2.4. Giving the implementation of nursing care according to the intevention

1.2.2.5. Evaluating the outcomes of nursing care that was given to the client Mr. D

1.2.2.6. Documenting the results of nursing care

1. 3 The Benefits of Writing

The benefits of writing are:

1.3.1 Practically

1.3.3.1. Patient

To increase health, prevent complication, improve knowledge about the treatment of close fracture proximal humerus.

1.3.3.2. Family

To enhance cooperative relations, member motivation, comply with treatment and care programs, as well as increase family knowledge about the disease.

1.3.3.3. Health service

To increase knowledge of nursing care in patient with close fracture proximal humerus so that the quality of services can be improved.

1.3.3.4. Writer

Getting experience in performing nursing care with a comprehensive approach to the nursing process and can determine tips and art to improve the quality of nursing care to clients with close fracture proximal humerus case.

1.3.4 Academic

It is expected that the results of the practice of nursing care can be used as a reference for nursing science development efforts, and useful also to be a reference for students who conduct studies on nursing practice activities.

1. 4 The Scientific Method of Nursing Care

Scientific method used in the writing of this paper is a case study approach in order to explore the treatment process all the data that supports both, subjective data and objective data. The nursing process approach includes the assessment, formulation of nursing diagnosis, nursing plans, implementation according to the existing plans, to evaluate the care provided.

1. 5 The Format of Writing

This report consists of four parts.

1.5.1 Chapter 1 introduction consists of background, general purpose, specific purpose, scientific method of nursing care, format of writing, and benefits.

1.5.2 Chapter 2 about theoretical background, of the close fracture proximal humerus, includes anatomy and physiology, definition, etiology, type of close fracture proximal humerus, staging

pathophysiology, clinical manifestation, diagnostic examination, treatment, prognosis, complications, nursing care plan, nursing diagnosis, intervention, and evaluation.

1.5.3 Chapter 3 nursing care report, consists of assessment, data analysis, diagnosis nursing, intervention, implementation, and evaluation of nursing.

1.5.4 Chapter 4 closing, that Conclusion and Suggestion