**Republic of Iraq Ministry of**
**Higher Education and Scientific**
**Research University of Babylon**
**College of Nursing**

# Nurses' Knowledge and Attitudes Regarding Pressure Ulcer Prevention in Intensive Care Units

*A Thesis*

*To the Council of College of Nursing, University of Babylon*

**Submitted by**

**Hamza Muslim Abu Saud**

*In Partial Fulfillment of The Requirements for The Master Degree of Science in Nursing*

**Supervised by**

**Prof. Dr. Salma Kadhim Jihad**

**May. 2023AD** **Shawwal. 1445**

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

**((وَتَحْسَبُهُمْ أَيْقَاظًا وَهُمْ رُقُودٌ وَنُقَلِّبُهُمْ ذَاتَ الْيَمِينِ وَذَاتَ الشِّمَالِ))**

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**سورة الكهف- الآية 18**

## *Supervisor Certification*

I certify that this thesis, which entitled "**Nurses' Knowledge and Attitudes Regarding Pressure Ulcer Prevention in Intensive Care Units**", was prepared under my supervision at the College of Nursing- University of Babylon in partial fulfillment of the requirements for the master degree of Science in Nursing.

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# Dedication

**Praise be to God, and prayers and peace be upon the beloved of God, Aba Al-Qasim Muhammad**

**After that I dedicate this work:**

**To My dear mother and father, may God protect them….**

**To my brothers and sisters….**

**To my life partner, my dear wife….**

**To the apple of my eyes, my children Abbas and Maryam….**

**To my friends and everyone who helped me in my study**

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# Abstract

Pressure ulcer is a localized injury caused by excessive pressure on the skin and soft tissue that causes tissue ischemia and eventually tissue necrosis and may result in serious complications, including death. Nursing role, among other healthcare staff, play a significant role in the prevention of pressure ulcers. Knowledge and attitudes of nursing staff is a key factor and successful for pressure ulcer prevention.

The purpose of this study to assess the level of nurses' knowledge and attitudes regarding pressure ulcer prevention in intensive care unit at Hilla Hospitals.

A descriptive cross-sectional study was selected to assess nurses knowledge and attitudes regarding pressure ulcer prevention in the intensive care units. This study was carried out from November 9th, 2022, to May 2nd , 2023. A non-probability (convenience) sample consists of 150 nurses working in the intensive care units. To achieve the objectives of the study, a special questionnaire was prepared, consisting of three parts: the first part was demographic information (seven items), and the second part was knowledge, consisting of 72 items divided into three domains: prevention (28 items), stages (24 items) and wound description (20 items), while part three was attitudes (11 items), the method of data collection was self-report. The validity is determined by 13 experts. Internal consistency reliability high-level using "Cronbach's alpha" for knowledge (0.82) and attitudes (0.84) was accepted.

The results found the majority of the participants, by (90.6%) are between the age group (20-29) years, were male (56.7%), most of them urban residence (75.3%), B.Sc. nursing were predominated (45.3%), most participants have (1-3) years in nursing and in ICU (64% - 50% ), most of

nurses work at morning shift (63.3%) and (58.7%) have training courses (1-2). No significant between knowledge and attitudes of nurses with respect to the (age, gender and residence), found significant between knowledge and attitudes of nurses with (experience in nurse, experience in intensive care unit and shift work). Study found significant differences between nurses knowledge and training and found no statistically significant between nurses attitudes and training.

The study concluded that most of the nurses participating in this study showed fair level regarding knowledge of pressure ulcer prevention, however, the nurses' attitudes were positive towards pressure ulcer prevention.

The study recommended to the health directorate can help preparing continuous training programs regarding pressure ulcer prevention for nurses working in intensive care units at Hilla hospitals.

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# List of Abbreviations

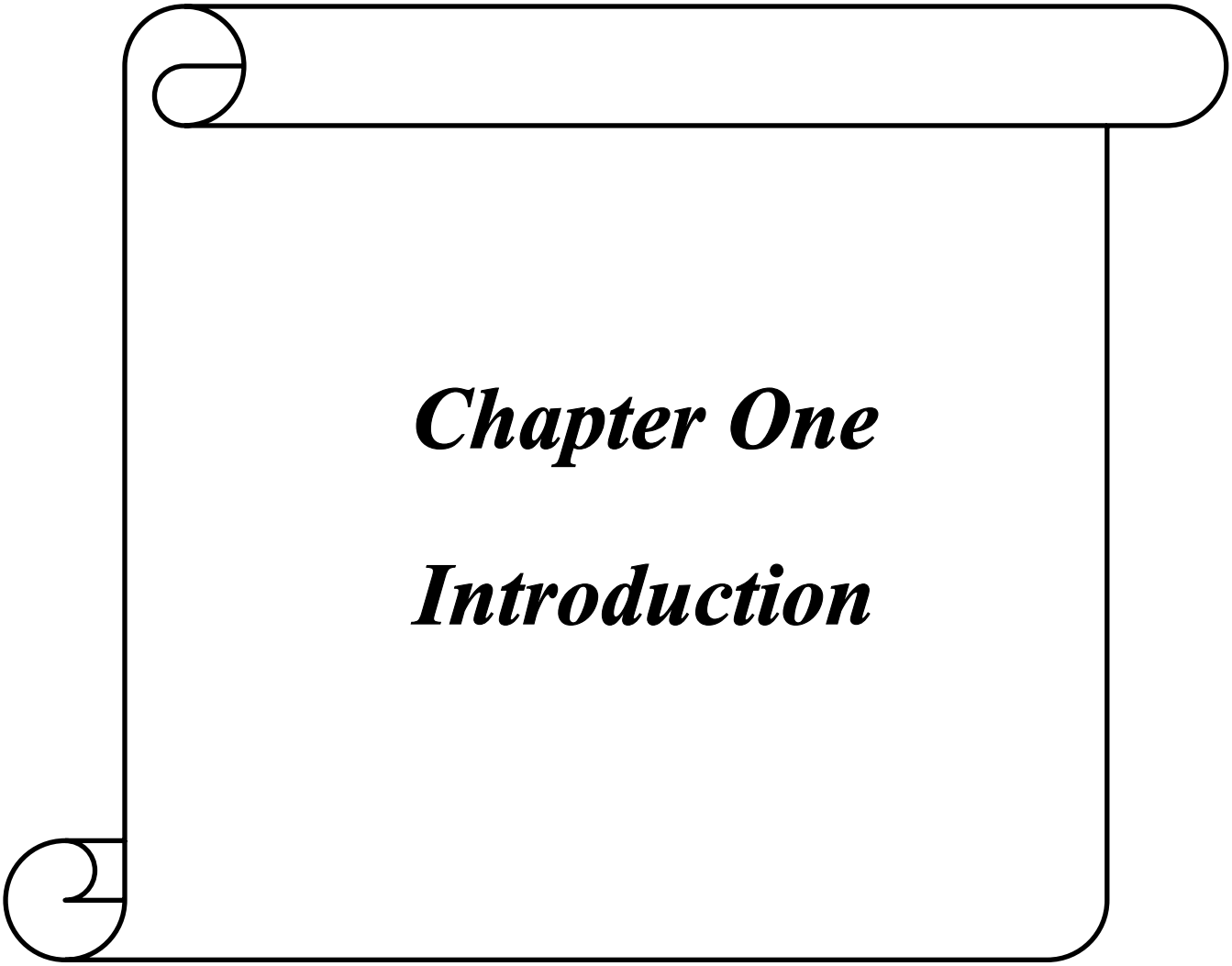
| Items | Meaning |
|---|---|
| **AP** | Alternating-Pressure |
| **APuP** | Attitude Pressure ulcer Prevention |
| **Ass.** | Assessment |
| **BMI** | Body Mass Index |
| **CCU** | Critical Care Unit |
| **CLP** | Constant Low-Pressure |
| **CMS** | Centers for Medicare and Medicaid Services |
| **DALYs** | Disability-Adjusted Life Years |
| **DTI** | Deep Tissue injury |
| **EPUAP** | European Pressure Ulcer Advisory Panel |
| **FAPIs** | Facility-Acquired Pressure Injuries |
| **HAPIs** | Hospital-Acquired Pressure Injuries |
| **HAPU** | Hospital-Acquired Pressure Ulcers |
| **ICU** | Intensive Care Unit |
| **IL-1α** | Interleukin-1α |
| **M.S** | Mean of Scores |
| **NDNQI** | National Database of Nursing Quality Indicators |
| **No** | Number |
| **NPUAP** | National Pressure Ulcer Advisory Panel |
| **NS** | No Significant |
| **PIs** | Pressure Injury's |
| **PU** | Pressure Ulcer |
| **PUFAs** | Polyunsaturated Fatty Acids |
| **PUKT** | Pressure Ulcer Knowledge Test |
| **RRR** | Relative Risk Reduction |
| **S.D** | Standard Deviation |
| **SDVs** | Socio-Demographic Variables |
| **Sig** | Significant |
| **SPSS** | Statistics Package of Social Sciences |

| | |
|---|---|
| **TNF-α** | Tumour Necrosis Factor-α |
| **US** | Unstageable |
| **USA** | United States of America |

## List of Statistical Symbols

| Items | Meaning |
|---|---|
| **%** | Percentage |
| < | Less than |
| > | More than |
| ≤ | Equal or less than |
| ∑ | Summation of |
| **X** | The value in the data set |
| $\tilde{\chi}$ | Mean of all values in the data set. |

# List of Appendices



# *Chapter One*

# *Introduction*

# Chapter One

# Introduction

## 1.1. Background

The skin is the largest organ of the body, accounting for about 15% of the total adult body weight. It performs many vital functions, including protection against external physical, chemical and biologic assailants, as well as prevention of excess water loss from the body and a role in thermoregulation. The skin is continuous, with the mucous membranes lining the body's surface (Goodwin, 2011).

Skin is the first site of immunological defense by the action of the Langerhans cells in the epidermis which are dendritic epidermal T-lymphocytes and part of the adaptive immune system. The skin preserves the bodies homeostasis by regulating temperature and water loss, while also serving both endocrine and exocrine functions. The exocrine functions of the skin are by way of the sweat and sebaceous glands. Another important role of the skin is a sensation to touch, heat, cold and pain by the actions of the nociceptors. The general appearance, turgor, and other qualities also give insight into the general health of the body (Yousef *et al.*, 2017).

Pressure ulcer (PU), and also called pressure sore, bedsore, pressure injury, and decubitus ulcer is a localized injury induced by prolonged pressure for a longer period to the skin and underlying soft tissue that leads to tissue ischemia, which in turn, decreases the supply of oxygen, essential nutrients and ultimately tissue necrosis and can lead to serious complications including death (Headlam and Illsley, 2020).

Pressure ulcers are localized regions of necrotic soft tissue that develop over time when pressure on the skin exceeds the typical capillary closure pressure, which is roughly 32 mm Hg. Patients who are critically unwell have a decreased capillary closure pressure and a higher risk of developing pressure ulcers. Patients who are more likely to develop pressure ulcers include those who are bedridden for extended periods of time, have motor or sensory impairments, have muscle atrophy, and have less padding between the skin's surface and the bone beneath (Sullivan and Schoelles, 2013).

Patients in intensive care unit are at higher risk for development of pressure ulcers because of severity of illness, the presence of multiple diseases, and complications of bed rest or other positioning restrictions. Common pressure ulcer points include the occiput, scapula, sacrum, buttocks, ischium, heels and toes (Iranmanesh *et al*., 2011).

These critically ill patients are generally not able to notice increased tissue pressure and to react accordingly, because they receive sedation, analgesics and/or muscle relaxants. Moreover their underlying disease, hemodynamic instability and oxygenation disorders increase the risk of developing a pressure ulcer (Eleni, 2014).

The interventions performed in the intensive care unit (ICU) significant pressure ulcer risk factors in the ICU include low cardiac output state, vasopressor use, impaired level of consciousness, immobility and decreased nutrition. Devices such as cervical collars, interfaces for critically ill patients are at increased risk for acquiring pressure injures compared with other hospitalized patients because of the critical illness itself, the preexisting comorbid conditions, and noninvasive ventilation, sequential compression devices, surgical drains, enteral feeding tubes, and endotracheal intubation

tubes are commonly used in the care of ICU patients and may also contribute to pressure ulcer (Makic, 2015).

Various risk factors for pressure ulcer can be categorized as intrinsic and extrinsic factors. The intrinsic risk factors include limited mobility, comorbidities, such as diabetes, chronic obstructive pulmonary disease, congestive heart failure, malignancy and renal dysfunction, poor nutrition and aging skin. Extrinsic factors include: pressure, friction, shear and moisture (Tewari and Sekhon, 2016).

Pressure ulcers are increasingly viewed as indicators of the quality of care provided to patients. Strategies to prevent facility-acquired pressure injuries (FAPIs) and other types of skin breakdown are of increasing interest in healthcare settings. Despite this, pressure ulcers remain a common problem. Hospital-acquired pressure injuries (HAPIs) occur in 3%–34% of hospitalized patients worldwide and result in longer hospital stays, increased morbidity and increased human suffering (Alderden *et al*., 2017).

Poor pressure ulcer prevention practice increases the incidence and prevalence of complications associated with pressure ulcer in most healthcare settings. So, preventing pressure ulcers has become a key focus of many healthcare facilities in the world and it is a vital part of nursing care. Even though nurses make prevention as part of their routine care, study revealed that shortage of supplies for pressure ulcer prevention, heavy work load/ lack of staff, patient's condition, lack of pressure ulcer related knowledge and job satisfaction were the identified barriers that hinder to carrying out appropriate pressure ulcer prevention practice (Getie *et al*., 2020).

Pressure ulcers increase hospital stay by seven days, adding to the financial costs. The time spent on the treatment of pressure ulcers has an

impact on the workload of nursing staff, especially in settings which are short-staffed. Apart from the financial implications, pressure ulcers affect the quality of life of patients as they experience pain, limited mobility, and increased dependency on family for assistance with activities of daily living (Dlungwane, 2020).

In the Arab world, pressure ulcers in hospitalized patients is a major health problem; there is a lack of sufficient pressure ulcer documentation, risk assessment, education and preventive protocols for Pressure ulcers. So, improving knowledge of PU prevention by nurses increases the outcomes of patients in terms of decreased hospital stay, decreased pain and decreased human suffering (Al-Ghamdi, 2017).

According to international literature, the level of knowledge of the nurses regarding the prevention of pressure ulcers has been described as poor, and this reflects negatively on their practices in this field because they do not meet with guidelines for best practices. So, poor nurses' knowledge and practice contribute greatly to the higher incidence of pressure ulcers (Campoi *et al.*, 2019).

Nurses' knowledge and positive attitude towards early enactment of pressure ulcers' prevention measures, are essential factors for the effective prevention and management of pressure ulcers (Simonetti *et al.*, 2015).

## 1.2. Importance of the Study

Pressure ulcers are skin and soft tissue injuries that form as a result of constant or prolonged pressure exerted on the skin. As the literature review has shown, knowledge and attitudes of nurses towards pressure ulcer management are mostly deficient. Issues related to nurses´ knowledge and

attitudes towards management of pressure ulcers offers an insight to a condition in four major Eastern Slovak hospitals and compares the results with other countries. Slovak hospitals are lacking research regarding the knowledge and attitudes towards pressure ulcer management (Grešš Halász *et al.*, 2021).

Nursing staff, among other healthcare personnel, play a significant role in the prevention of pressure ulcers. Therefore, the knowledge of nursing staff is a key factor in evidence-based and successful pressure ulcer prevention. The researcher recognised that current evidence on the different factors associated with nursing staff pressure ulcer prevention knowledge is still limited, as most previous studies have been conducted with relatively small samples and low response rates. Additionally, there is still a lack of clarity as to what kind of pressure ulcer prevention training would be the most beneficial for nurses. Thus, more information is required to strengthen current evidence to be used to improve nurses' knowledge (Parisod *et al.*, 2022).

As well as significant pain and suffering, the consequences of developing a pressure ulcer include increased morbidity and mortality, higher medical costs resource use, and lower odds of discharge to the community. The American Nurses Association tracks hospital-acquired pressure ulcers (HAPU) quarterly as part of the National Database of Nursing Quality Indicators (NDNQI). Between the years 2004 and 2011, there was a decreasing trend in the HAPU rate overall, with more improvement beginning in 2008 (He *et al.*, 2013).

Pressure ulcer is the third most expensive condition after cancer and cardiovascular disease. This localized damage to the skin and underlying soft tissue, usually over a bony prominence or related to a medical or other device,

can engage skin, muscle, connective tissue, cartilage and bone (Tirgari *et al.*, 2018).

The Centers for Medicare and Medicaid Services (CMS) has recently implemented an inpatient rehabilitation facility quality reporting measure related to the percentage of residents with new or worsened pressure ulcers. Based on data from the 2011 International Pressure Ulcer Prevalence Survey, the facility prevalence of pressures ulcers was 11.2% among all facilities surveyed (Wang *et al.*, 2014).

The actual pressure ulcers in the ICU patients have a huge effect on mortality and treatment costs. It has been calculated that (5%) of the overall ICU budget is spent on the prevention of pressure ulcers and treatment, and if an ulcer occurs, the nursing staff workload rises by about (50%). Mortality of patients in ICU who have the chance of developing pressure ulcers four times higher than in patients in another setting (the patients have a minimal chance of developing this complication), so accurate risk assessment of pressure ulcers is of special significance for the critically ill patients treated in intensive care unit (Noor and Hassan, 2021).

Pressure ulcers occur across the spectrum of health care settings. The highest incidence is actually in the hospital, while the highest prevalence is in long-term care facilities. The incidence and prevalence of pressure ulcers in acute care facilities and countries var. International health care publications report incidence rates of 1% to 11% and prevalence rates of 3% to 22% in hospitalized patients. The rates are higher in critical care patients. These values are reflected in Australia, hospital data. Yearly prevalence surveys conducted in Victoria, Australia, between 2003 and 2006 revealed prevalence

rates for pressure ulcers of 17.6% to 26.5% overall and14.9% to 47.7% in critical care patients. The incidence differs by ward, with orthopedic patients and intensive care patient's severity. In long- term care facilities, the prevalence ranges between 2.4% and 23%. Fewer than20% of pressure ulcers occur outside of institutions in home care patients the prevalence ranges between 9% and 20% (Aathi, 2013).

In the United States, a study aimed to determine the burden associated with the diagnosis of pressure injuries from 1990 to 2017, showed that Louisiana had the most significant incidence (139.3% per 100,000) and Vermont had the lowest incidence (84.7% per 100,000). These findings were gathered by extracting data from the Global Burden of Disease Study 2017 about the incidence and disability-adjusted life years (DALYs) associated with pressure ulcers (Siotos *et al.*, 2022).

Every year in the United States, (2.5) million people are prone to a high risk of developing PUs, among them (60,000) people who die due to its complications such as osteomyelitis and sepsis. Pressure ulcers can also adversely impact health institutions, communities and service providers, impose therapeutic burdens on family and medical centers. The health system costs (18.5) billion in America to treat them, of which ($129,000) is spent to treating patients whose entire skin thickness has been compromised by the ulcer (Khojastehfar *et al.*, 2020).

European Pressure Ulcer Advisory Panel (EPUAP) sets and regularly reviews standards and procedures of pressure ulcer management on bases of research. In many cases, it was found that standards and procedures are not used or used insufficiently (Demarré *et al.*, 2012).

## 1.3. Statement of the study

Nurses' Knowledge and Attitudes Regarding Pressure Ulcer Prevention in Intensive Care Units.

## 1.4. Objectives of the study are to:

**1.** Identify demographic characteristics of the study sample.

**2.** Assess the level of Nurses' knowledge regarding pressure ulcer prevention at intensive care unit.

**3.** Determine the level of Nurses' attitudes regarding pressure ulcer prevention at intensive care unit.

**4.** Find out relationship between nurses knowledge and attitudes with their demographic characteristics such as (age, gender and educational level).

### 1.5. Definition of Terms

#### 1.5.1. Nurse

**A. Theoretical :**

Nurse is a person who has competency works to promote and maintain health of ill or well individual and provide nursing care for patients (Aziz and Ali, 2020).

**B. Operational :**

The nurse in this study is the professional working in the intensive care unit who are expected to possess a specific knowledge and attitude regarding pressure ulcer.

### 1.5.2. Knowledge

**A. Theoretical :**

It is the facts, information, and skills acquired through experience or education or understanding that have been obtained through learning or experience (Sechabe, 2011).

**B. Operational:**

Knowledge refers to the cognitive domain of the nurse regarding pressure ulcer.

### 1.5.3. Attitudes

**A. Theoretical:**

A relatively enduring evaluation reaction to other individuals, situations, or objects, which may be positive or negative. Typically defined as compression effective cognitive and behavioral components (Vogel, 2016).

**B. Operational:**

The way the intensive care units nurses perceive the fact of the pressure ulcer.

### 1.5.4. Pressure Ulcer

**A. Theoretical :**

Pressure ulcers are painful burden for patients/clients of all ages, which causes complications as comfort, pain, quality of life, costs and a long stay in hospitals they might result in a life-threatening situation (Moore *et al*., 2011).

**B. Operational :**

Pressure ulcers are complications that occur in the skin of patients who lie for long periods in the intensive care unit without clinical intervention, such as changing the position or cleaning the patient by the nursing staff.

**1.5.5. Prevention**

**A. Theoretical:**

Refers to actions aimed at avoiding the manifestation of a disease. This may include actions to improve health through changing the impact of social and economic determinants on health (WHO, 2018).

**B. Operational :**

This concept assessing the knowledge and attitudes of nurses in regard to pressure ulcer in the intensive care unit.

**1.5.6. Intensive Care Unit**

**A. Theoretical :**

Intensive care represents the highest level of patient care and treatment designated for critically ill patients with potentially recoverable life-threatening conditions (Bassford, 2017).

**B .Operational :**

A special department concern with some complication related to the pressure ulcer.

# *Chapter Two*

# *Review of Literature*

# Chapter Two

# Review of Literature

## 2.1. Pressure Ulcer: A Historical Overview

Pressure ulcers are chronic wounds associated with significant morbidity and are a substantial burden to the healthcare system. Pressure wounds are considered a preventable disease and the National Quality Forum identified the development of a severe pressure ulcer as a serious reportable event that will not receive Centers for Medicaid and Medicare Services (CMS) reimbursement (Aydin *et al*., 2015) .

Pressure ulcers have been recognized as a disease entity since ages. It has been found in Egyptian mummies, some of which are more than 5,000 years old. Egyptians used honey for the treatment of such ulcers and wounds. In Persia, Avicenna used a variety of topical applicants on wounds. In Arabia, Maimonides recommended nutritional support to promote ulcer healing. A wide variety of topical remedies like honey, moldy bread, meat, animal and plant extracts, copper sulfate, zinc oxide and alum have been used in the past (Leaticia *et al*., 2019).

Hippocrates (460-370 B.C) had described pressure ulcer in association with paraplegia with bladder and bowel dysfunction. During the renaissance, Ambrose Paré, a 16$^{th}$ century French army barber-surgeon and founding father of medical surgical practice, wrote in his autobiography about a wounded French aristocrat developing a pressure ulcer. He mentioned cure with good nutrition, pain relief and debridement; which is no different than the present modality to some extent (Agrawal and Chauhan, 2012).

Despite the fact that after a first international conference on the etiology of pressure ulcers, which was held in Glasgow in 1975, a book called Bedsore Biomechanics was published, which made reference to what we could translate as ulcers or bed sores, the term (pressure ulcer) became popular in the early 1990s. as opposed to bed sores (bedsores) or decubitus ulcers, pressure ulcers being the term commonly accepted from the nineties of the last century. Proof of it is Torrance's 1983 publication of his book Pressure sores: etiology, treatment and prevention. Recently, in the area of Southeast Asia, Australia and New Zealand, the term has begun to be used "pressure injuries (Torra-Bou *et al*., 2017).

Reswick and Rogers (1976) further described this relationship with humans in terms of a pressure-time curve, although more recent work has indicated that if the pressure or resulting deformations are sufficiently high, damage can occur over very short time period i.e. orders of minutes, represented by a sigmoid curve of tissue deformation and time (Gefen, 2009).

Pressure injury (PI) is still prevalent despite the major developments observed in health care technology, materials, and procedures in recent years. Up to 2016, PI was defined by the National Pressure Ulcer Advisory Panel (NPUAP) in the USA, the European Pressure Ulcer Advisory, and the Pan pacific pressure injury alliance as being a localised injury to the skin and/or underlying tissues or structures, usually above a bony prominence, resulting from isolated pressure or pressure combined with shear and/or friction(Serpa *et al*., 2020).

## 2.2. Pressure Ulcer Pathophysiology

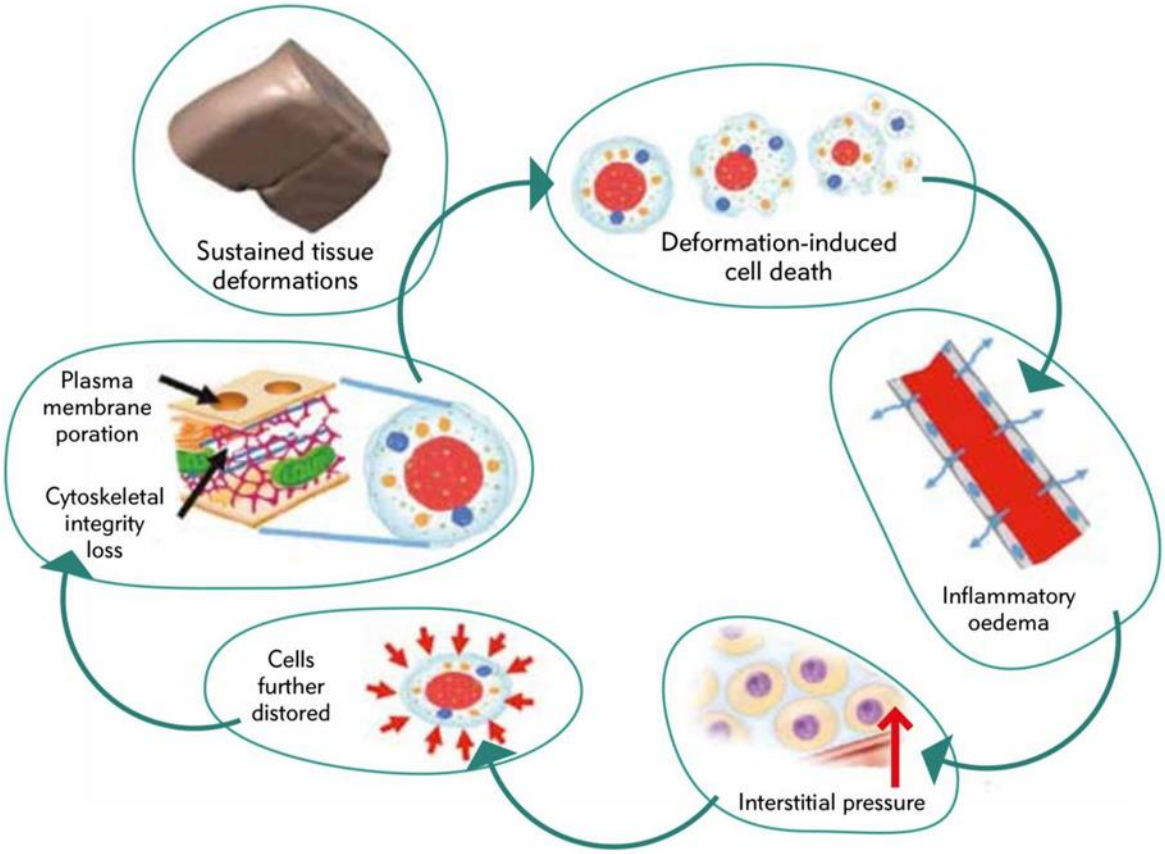
Pressure ulcers (PUs), or pressure injuries, result from sustained cell and

tissue. Deformations tissue damage in PUs does not appear instantaneously but develops gradually from the cellular to the tissue level. It ultimately presents as skin breakdown or discoloration (typically purple or maroon marks) due to underlying tissue necrosis. When lying in bed, the transfer of body weight forces to the support surface cause sustained soft tissue distortion and high concentrations of tissue stress, particularly under bony prominences where rigid and highly curved (almost 'sharp') bone surfaces come into contact with easily deformable soft (muscle, adipose or skin) tissues. High levels of tissue stress progressively damage the cytoskeleton, the complex protein scaffold that forms the structural framework of cells and supports the plasma membrane. Damage to the cytoskeleton leads to plasma membrane poration, which in turn compromises molecular transport across the cell membrane. The inability of a large number of cells to control molecu traffic causes collective loss of homeostasis, resulting in massive apoptotic cell death within minutes(Gefen *et al*., 2019).

This triggers damaged and dead cells and nearby immune cells to release pro-inflammatory cytokines, such as interleukin-1α (IL-1α) and tumour necrosis factor-α (TNF-α), which activate and attract additional immune and tissue-repairing cells such as mast cells and fibroblasts (Soetens *et al.*, 2019)

The recruitment of immune and tissue erepairing cells is a normal phase in the body's response to localised cell and tissue damage and is primarily aimed at clearing cellular debris, neutralising potential pathogens and preparing for tissue regeneration. However, in the context of PU aetiology, pro-inflammatory signalling can contribute to injury as local vasodilation and increased blood vessel permeability facilitate leukocyte extravasation, enabling immune cells to migrate from the circulatory system to the site of

initial damage and resulting in leaky vasculature, causing plasma to build-up in the interstitial spaces, resulting in oedema, show in the **Figure(2.1)**(Traa *et al.*, 2019).




**Figure(2.1):** Explains the pathophysiology of pressure ulcer occurrence (Gefen, 2018).

When constrained between a bony prominence and a support surface, which is often the case for bed-bound patients, the soft tissues cannot sufficiently expand in volume. This causes a sharp rise in interstitial pressure, leading to further cell deformation and additional cell death(Gefen, 2018).

In an effort to relieve rising interstitial pressure, reactive oxygen and nitrogen species may be released. These degrade and damage the extracellular

matrix. Growing interstitial pressure may eventually obstruct the vasculature, inducing additional ischaemic damage. The three key aetiological factors that contribute to PUs — direct deformation damage (primary), inflammatory damage (secondary) and ischaemic damage (tertiary) — degrade and exacerbate the state of the cells and tissue. Each is activated successively at a time and rate specific to the individual. A person's anatomy (bony prominences, soft tissue mass and composition) affects the extent of deformation inflicted tissue damage. Their immune system function affects the extent and rate of accumulated inflammation-related damage and their cardiovascular system determines the magnitude and rate of ischaemic damage(Gefen *et al*., 2020).

Exposure to sustained cell and tissue deformation is always the triggering event and driving factor in this cycle. The most effective intervention is to reduce exposure to sustained tissue deformation and high concentrations of tissue stressfor being effective in PU prevention(Levy *et al*., 2018).

Additional features affecting the sustained tissue loading conditions of a patient positioned on a mattress are the frictional properties of the skin-facing layer (which could potentially be the bedsheets or the mattress cover) and thermal properties of the support surface, which determine the microclimate at the body–mattress interface. Elevated skin temperatures may lead to perspiration, which causes adhesive friction resulting in elevated frictional forces on the skin and sustained shearing in underlying tissues (Zeevi *et al*., 2018).

Skin temperature rise will also increase the metabolic rate and demands on skin and underlying tissues, making tissues more susceptible to ischaemic damage. Each 1°C rise in tissue temperature is associated with a 10–13%

increment in oxygen consumption by the tissue's cells (Landsberg *et al*., 2009).

### 2.3. Risk Factors

There are different risk factors related to Pressure Ulcers development among ICU patients. Immobility and friction are important risk factors for PUs. Malnutrition and Body Mass Index are associated with pressure injury prevalence. Therefore, routine and formal assessment of both BMI and nutritional status are important to enable the identification of patients with high risk of developing PUs.The days in hospital, skin moisture and other neurological factors are significant risk factors for PUs development (Qaddumi and Almahmoud, 2019).

#### 2.3.1. Nutritional Status:

As undernutrition is a key risk factor for Pressure ulcer, calorie and protein intake should be adequately, periodically and closely monitored, with nutrition risk assessments conducted regularly, and undernutrition addressed effectively. As nutritional status may become poor after hospitalisation, identifying patients who are at risk for undernutrition should be common practice as a mean to prevent and treat Pressure ulcer (Serpa *et al.*, 2020).

#### 2.3.2. Friction:

Mechanical forces also contribute to the development of pressure injuries. Friction is the force of rubbing two surfaces against each another and is often caused by pulling a patient over a bed sheet or from a poorly fitted prosthetic device. Shear is the result of exerting a parallel force on the patient's body, such as the resistance between the patient and the chair or bed when the patient slides down (Edsberg *et al.*, 2016).

### 2.3.3. Shear:

When shear occurs, tissue layers slide over one another, blood vessels stretch and twist, and the microcirculation of the skin and subcutaneous tissue is disrupted. Evidence of deep tissue damage may be slow to develop and may present through the development of a sinus tract (also called tunneling), which is an area of destroyed tissue that extends from the edge of a wound; this results in dead space that is susceptible to abscess formation. The sacrum and heels are most susceptible to the effects of shear. Pressure injuries from friction and shear occur when the patient slides down in bed or when the patient is positioned or moved improperly (e.g., dragged up in bed). Spastic muscles and paralysis increase the patient's vulnerability to pressure injuries related to friction and shear(Edsberg *et al.*, 2016).

### 2.3.4. Immobility:

When a person is immobile and inactive, pressure is exerted on the skin and subcutaneous tissue by objects on which the person rests, such as a mattress, chair seat, or cast. The development of pressure injuries is directly related to the duration of immobility. If pressure continues long enough, small-vessel thrombosis and tissue necrosis occur and a pressure injury is the result. Weight-bearing bony prominences are most susceptible to pressure injury development because they are covered only by skin and small amounts of subcutaneous tissue. Susceptible areas include the sacrum and coccygeal areas, ischial tuberosities (especially in people who sit for prolonged periods), greater trochanter, heel, knee, malleolus, medial condyle of the tibia, fibular head, scapula, and elbow (Doughty *et al*., 2016).

### 2.3.5. Decreased Tissue Perfusion:

Any condition that reduces the circulation and nourishment of the skin and subcutaneous tissue (altered peripheral tissue perfusion) increases the risk of pressure ulcer development. Patients with diabetes have compromised microcirculation. Similarly, patients with edema have impaired circulation and poor nourishment of the skin tissue. Patients who are obese have large amounts of poorly vascularized adipose tissue, which is susceptible to breakdown (Hinkle and Cheever, 2018).

### 2.3.6. Impaired Sensory Perception or Cognition:

Patients with sensory loss, impaired level of consciousness, or paralysis may not be aware of the discomfort associated with prolonged pressure on the skin and therefore may not change their positions to relieve the pressure. This prolonged pressure impedes blood flow, reducing nourishment of the skin and underlying tissues. A pressure injury may develop in a short period of time, sometimes within minutes (Hinkle and Cheever, 2018).

### 2.3.7. Increase Moisture:

Prolonged contact with moisture from perspiration, urine, feces, or drainage produces maceration (softening) of the skin. The skin reacts to caustic substances in the excreta or drainage and becomes irritated. Moist, irritated skin is more vulnerable to pressure breakdown. Once the skin breaks, the area is invaded by microorganisms (e.g., streptococci, staphylococci, Pseudomonas aeruginosa, Escherichia coli) and infection occurs. Foul-smelling infectious drainage is present. The lesion may enlarge and allow a continuous loss of serum, which may further deplete the body of essential protein needed for tissue repair and maintenance. The lesion may continue to

enlarge and extend deep into the fascia, muscle and bone, with multiple sinus tracts radiating from the pressure injury. With extensive pressure injuries, life-threatening infections and sepsis may develop, frequently from gram-negative organisms, as shown in the **Figure(2.2)**(Hinkle and Cheever, 2018).

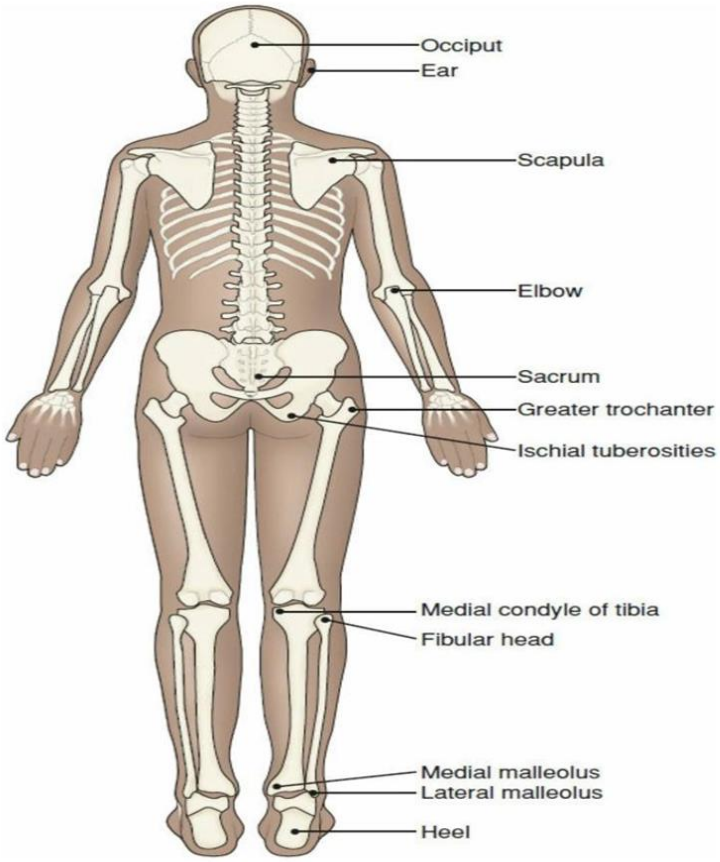



**Figure (2.2):** Most areas where pressure ulcer occur (Hinkle and Cheever, 2018).

### 2.3.8. Gerontologic Considerations:

In older adults, the normal aging process leads to diminished epidermal thickness, dermal collagen and tissue elasticity. The skin is drier as a result of diminished sebaceous and sweat gland activities. Cardiovascular changes

result in decreased tissue perfusion. Muscles atrophy and bone structures become prominent. Diminished sensory perception and reduced ability to reposition oneself contribute to prolonged pressure on the skin. Therefore, older adults are more susceptible to pressure injuries, which cause pain, suffering and reduced quality of life (Eliopoulos, 2018).

### 2.4. Pressure Ulcer Stages

Over the decades, PIs have had alternate naming conventions such as decubitus ulcers, pressure sores, and pressure ulcers. In 2016, the National Pressure Injury Advisory Panel (NPIAP), formerly the National Pressure Ulcer Advisory Panel, updated the definition of PI and the staging system to classify each pressure ulcer type (Hess, 2020).

#### 2.4.1. Stage 1 Pressure Ulcer:

This occurs as intact skin with a localized area of nonblanchable erythema, which may appear differently in darkly pigmented skin. Presence of blanchable erythema or changes in sensation, temperature, or firmness may precede visual changes. Color changes do not include purple or maroon discoloration; these may indicate deep tissue pressure ulcer, as shown in **Figure (2.3**)(Edsberg et al., 2016).

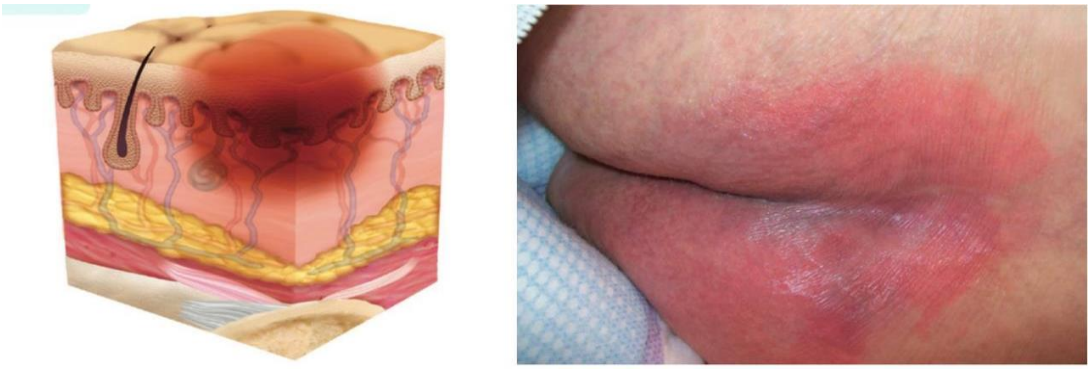


**Figure (2.3):** Stage 1 pressure ulcer (NPUAP/EPUAP, 2014)

### 2.4.2. Stage 2 Pressure Ulcer:

This appears as partial-thickness loss of skin with exposed dermis. The wound bed is viable, pink or red and moist and may also present as an intact or ruptured serum-filled blister. Adipose (fat) tissue is not visible and deeper tissues are not visible. Granulation tissue, slough, and eschar are not present. These injuries commonly result from adverse microclimate and shear in the skin over the pelvis and shear in the heel. This stage should not be used to describe moisture-associated skin damage, including incontinence-associated dermatitis, intertriginous dermatitis, medical adhesive-related skin injury, or traumatic wounds skin tears, burns, abrasions, display in **Figure(2.4)**(Hommel and Santy-Tomlinson, 2018).

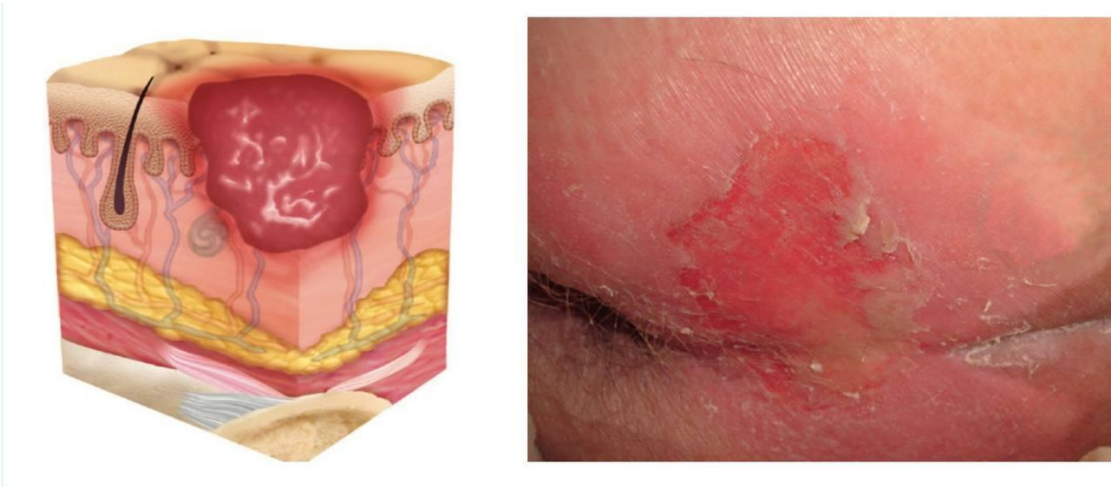


**Figure (2.4):** Stage 2 pressure ulcer (NPUAP/EPUAP, 2014).

### 2.4.3. Stage 3 Pressure Ulcer:

This manifests as full-thickness loss of skin, in which adipose (fat) tissue is visible in the ulcer and granulation tissue, and epibole (rolled wound edges) are often present. Slough and/or eschar may be visible. The depth of tissue

damage varies by anatomical location; areas of significant adiposity can develop deep wounds. Undermining and tunneling may occur. Fascia, muscle, tendon, ligament, cartilage, and/or bone are not exposed. If slough or eschar obscures the extent of tissue loss, this is an unstageable Pressure ulcer, show in **Figure(2.5)**(Ayello *et al*., 2014)

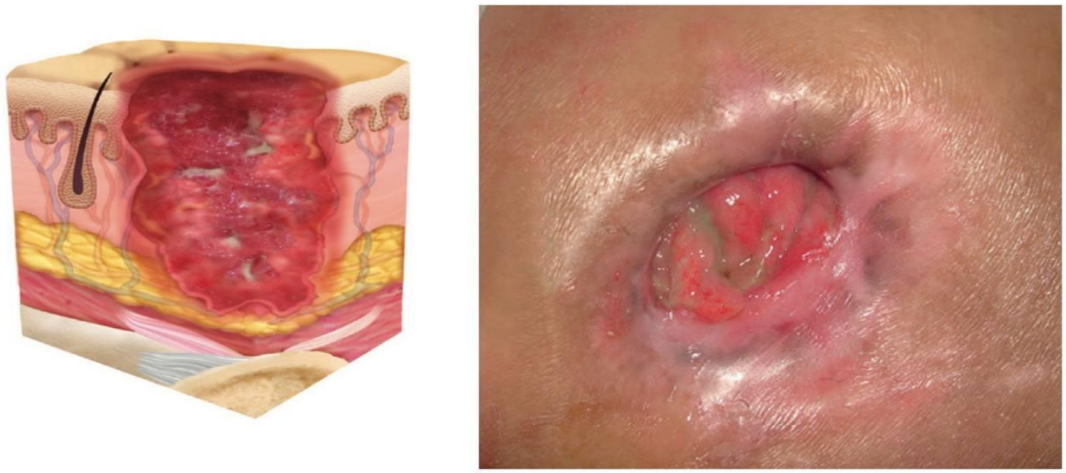


**Figure (2.5):** Stage 3 pressure ulcer (NPUAP/EPUAP, 2014).

### 2.4.4. Stage 4 Pressure Ulcer:

Full-thickness skin and tissue loss occurs with exposed or directly palpable fascia, muscle, tendon, ligament, cartilage, or bone in the ulcer. Slough and/or eschar may be visible. Epibole (rolled edges), undermining, and/or tunneling often occur. Depth varies by anatomical location. If slough or eschar obscures the extent of tissue loss, this is an unstageable Pressure ulcer, shown in the **Figure(2.6)**(Michel *et al.*, 2018).

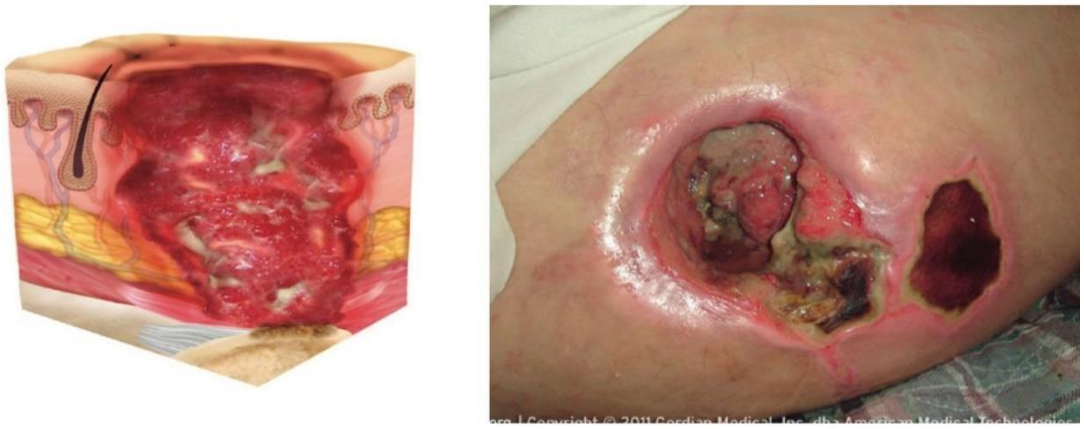
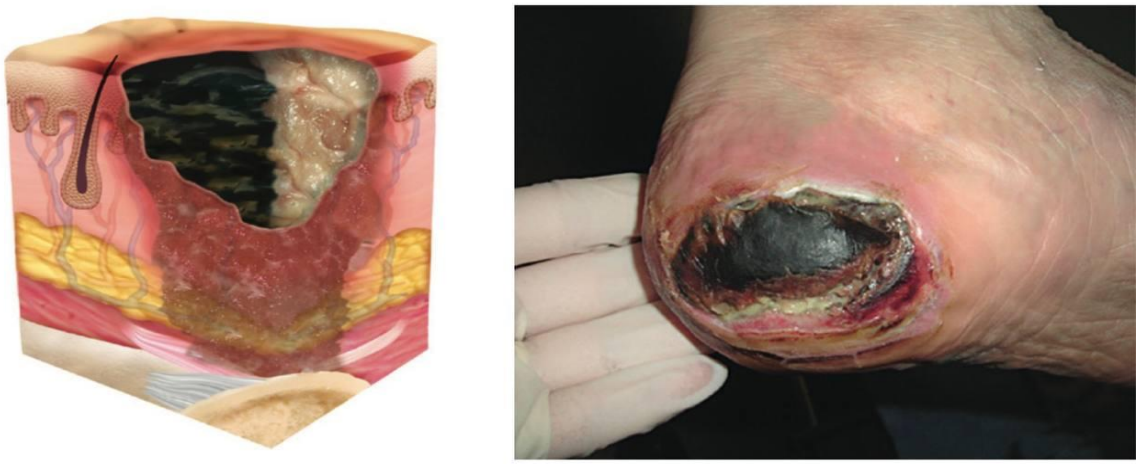


**Figure (2.6):** Stage 4 pressure ulcer (NPUAP/EPUAP, 2014).

### 2.4.5. Unstageable Pressure Ulcer:

Full-thickness skin and tissue loss occurs in which the extent of tissue damage within the ulcer cannot be confirmed because it is obscured by slough or eschar. If slough or eschar is removed, a stage 3 or stage 4 PI will be revealed. Stable eschar (ie, dry, adherent, intact without erythema or fluctuance) on the heel or ischemic limb should not be softened or removed, as shown in the **Figure (2.7)**(Edsberg *et al*., 2016)**.**



**Figure(2.7):** Unstageable pressure ulcer (NPUAP/EPUAP, 2014).

### 2.4.6. Deep Tissue Pressure Ulcer:

Intact or nonintact skin with localized area of persistent nonblanchable deep red, maroon, purple discoloration, or epidermal separation reveals a dark wound bed or blood-filled blister. Pain and temperature change often precede skin color changes. Discoloration may appear differently in darkly pigmented skin. This injury results from intense and/or prolonged pressure and shear forces at the bone-muscle interface. The wound may evolve rapidly to reveal the actual extent of tissue injury or may resolve without tissue loss. If necrotic tissue, subcutaneous tissue, granulation tissue, fascia, muscle, or other underlying structures are visible, this indicates a full-thickness PI (unstageable, stage 3 or stage 4). Do not use deep tissue PI to describe vascular, traumatic, neuropathic, or dermatologic conditions, shown in the **Figure(2.8)** (Edsberg *et al*., 2016).

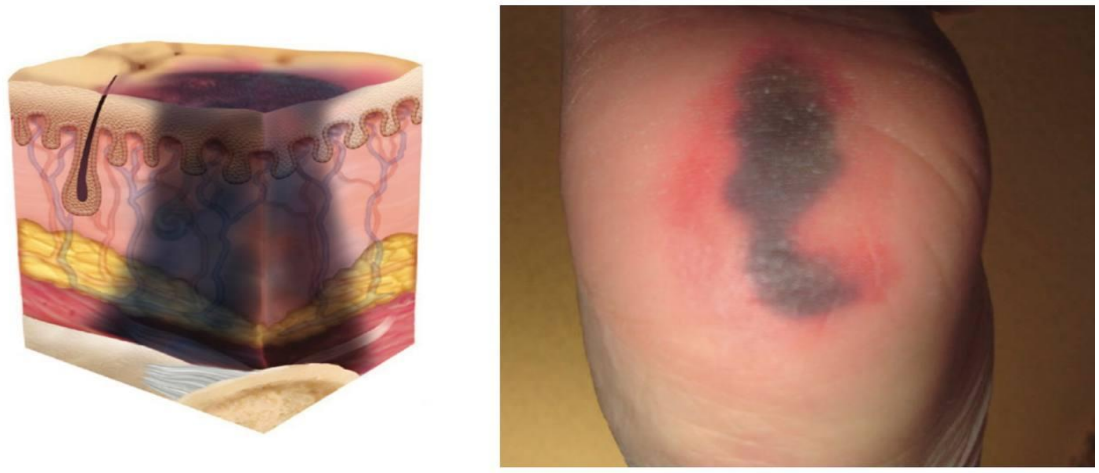


**Figure (2.8):** Deep tissue pressure ulcer(NPUAP/EPUAP, 2014).

### 2.5. Complications Pressure Ulcer

Complications often develop with decubitus ulcers. The most common problem is infection. Grade III and IV ulcers require management intensively

as their complications can be life-threatening. Microbial analysis has shown that both aerobic and anaerobic bacteria are present in the lesions. If the infection spreads to deeper tissues and the bone it can result in; Periostitis (infection of the layer covering the bone), Osteomyelitis (infection of a bone) and Septic arthritis (infection of a joint). And formation of sinuses (abnormal cavity formed by loss of tissue). The invasion of the infective agent results in fatal consequences because septicemia is challenging to manage in an already debilitated patient. These wounds are catabolic (meaning that they use up a lot of energy). The catabolic nature of these ulcers causes severe fluid and protein loss, which can result in hypoproteinemia or malnutrition. Up to 50 grams of body protein can be lost daily due to a draining ulcer (Dana and Bauman, 2015).

Chronic pressure ulcers can cause chronic anemia or secondary amyloidosis. Anemia also occurs secondary to chronic water loss and bleeding. If there is inadequate postoperative care complications secondary to reconstructive surgery can occur. These include hematoma or seroma formation, wound dehiscence, abscess formation, or postoperative wound sepsis (Zaidi and Sharma, 2021).

## 2.6. Prevention of Pressure Ulcer

Prevention of pressure ulcer formation is directed at alleviating the risk factors for the individual patient, and is primarily focused on minimizing episodes of prolonged pressure either by placing appropriate padding at pressure points or by frequent patient repositioning. All patients using prosthetics or requiring a wheelchair for mobility should be appropriately fitted to ensure that the fit is correct and there is adequate padding. The fitting process should be repeated if there are any significant changes in weight or

body habitus that can affect fit. Sweat, urine and stool can lead to maceration of the skin and the initial skin breakdown can lead to a pressure ulcer if the skin is overlying a pressure point (Park and Choi, 2016).

A significant focus for care of at-risk patients is keeping the skin clean and dry. Even with adequate padding, it is important to make routine positional changes as even relatively low pressures can cause a pressure ulcer with prolonged exposure (McInnes *et al.*, 2015).

Pressure mapping technologies have been developed to measure the amount of pressure placed on different parts of the sitting or reclining body. These technologies have been used to develop pressure-relieving wheelchair cushions and to study normal weight-shifting behavior. These technologies were also used in determining that 30 degrees of wheelchair tilt is needed to relieve pressure from the ischial and sacral areas. Their use in bed-bound patients has been limited but has great potential for determining pressure points at risk for ulceration and in determining the effect of pressure-relieving positions on established wounds (BoykoTatiana *et al.*, 2018).

Any patient who has been determined to be at risk for development of a pressure ulcer or who already has a pressure ulcer needs to have a plan for repositioning. The plan needs to be individually tailored for each patient to address his or her specific needs. Frequency of repositioning needs to take many factors into account, including the support surface for the patient, general medical condition and goals of care. Clinicians need to be cognizant of the fact that repositioning itself can create shear forces on skin, and so, the fragility and condition of the patient's skin need to be part of the assessment for how frequently to reposition them. There are a variety of factors to take into account for how to reposition patients depending on whether the patient is

supine, prone, or in a wheelchair. Of special note for patients in the acute hospital setting are medical devices. Care must be taken since inadvertent positioning of the device between the patient and the support surface can create a high-pressure zone. While repositioning, lifting instead of dragging patients reduces friction and shear forces on the skin and prevents skin damage (Gould *et al*., 2015).

Documentation of repositioning and regular skin condition assessment is key in determining early signs of pressure ulcer formation such as nonblanching erythema. System solutions such as electronic medical record programs, which prompt providers to document results of pressure ulcer screening every shift or day, are of great importance in diagnosing pressure ulcers early and preventing progression (Gunningberg *et al*., 2008).

A variety of pads are available, which are designed to specifically cover pressure points such as the sacrum and heels as well as foam pads designed to wrap around body parts at risk (especially feet). However, it is important to note that some pads can actually be detrimental. For example, supports with cutouts can have increased pressure at their edges. There are an equal number of mattress pads (egg crate mattresses, natural sheepskins, etc.) that serve to decrease pressure across a large surface area. Silk-based fabrics have been shown to be superior in pressure ulcer prevention when compared to cotton-based fabrics due to a decrease in friction forces and subsequent damage to skin (BoykoTatiana *et al*., 2018).

Adequate nutrition is very important in preventing pressure ulcer formation. Nutritional supplementation can benefit patients with limited oral intake and enteral or parenteral feeding can become necessary in patients who are not able to safely ingest enough oral nutrients. Protein intake is especially

important to maintain a positive nitrogen balance, and vitamin/mineral supplements are recommended in patients lacking a balanced diet. Prealbumin is used as a laboratory test of short-term nutritional adequacy. Albumin is also useful, but its longer half-life means it is more reflective of nutrition over a long period of time(Roberts, 2015).

## 2.7. Risk Assessment Tools of pressure Ulcer

### 2.7.1. Braden Scale:

The Braden Scale is one of the most intensively studied risk assessment scales used in identifying the risk of developing a pressure injury. A pressure injury, previously (and still) known as pressure sore or pressure injury is defined as a localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear (Edward *et al*., 2021).

Braden revisited her research 25 years after she developed the Braden Scale and concluded that the scale, supplemented with good nursing judgment, provided a reliable method of addressing pressure ulcer risk factors in an individual patient. And to determine risk most accurately, the nursing staff must have the ability to understand the six domains in the Braden Scale, calculate the risk and then use their nursing judgment to adjust the risk to reflect the condition of the patient(Warner-Maron *et al*., 2015).

The Braden Scale, as displayed in **Table(2.1)**, consists of six subscales to evaluate sensory perception, activity level, mobility, nutrition status, skin moisture and friction and shear forces to assess the risk of PU. The subscales are rated independently according to the observed severity from 1 to 4 points except for the subscale friction and shear, which is ranked from 1 to 3 points.

Hence, the total score can range from 6 to 23 points (19 to 23 points, not at risk). The lower the score, the higher the PU risk for a patient. Several different cut-off points have been reported. Frequently, a score of 9 or lower indicates very high risk, 10 to 12 points high risk, 13 to 14 points moderate risk, and 15 to 18 mild risk to develop a pressure ulcer (Schumacher and Mueller, 2021).

**Table (2.1):** Braden scale (Schumacher and Mueller, 2021).

Patient's Name_____ Evaluator's Name_____ Date of Assessment

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **SENSORY PERCEPTION**<br>ability to respond meaning-fully to pressure-related discomfort | **1. Completely Limited**<br>Unresponsive (does not moan, flinch, or grasp) to painful stimuli, due to diminished level of consciousness or sedation<br>OR<br>limited ability to feel pain over most of body. | **2. Very Limited**<br>Responds only to painful stimuli. Cannot communicate discomfort except by moaning or restlessness<br>OR<br>has a sensory impairment which limits the ability to feel pain or discomfort over ½ of body. | **3. Slightly Limited**<br>Responds to verbal commands, but cannot always communicate discomfort or the need to be turned<br>OR<br>has some sensory impairment which limits ability to feel pain or discomfort in 1 or 2 extremities. | **4. No Impairment**<br>Responds to verbal commands. Has no sensory deficit which would limit ability to feel or voice pain or discomfort | | | | |
| **MOISTURE**<br>degree to which skin is exposed to moisture | **1. Constantly Moist**<br>Skin is kept moist almost constantly by perspiration, urine, etc.Dampness is detected every time patient is moved or turned. | **2 .Very Moist**<br>Skin is often, but not always moist. Linen must be changed at least once a shift. | **3. Occasionally Moist:**<br>Skin is occasionally moist, requiring an extra linen change approximately once a day. | **4. Rarely Moist**<br>Skin is usually dry, linen only requires changing at routine intervals. | | | | |
| **ACTIVITY**<br>degree of physical activity | **1. Bedfast**<br>Confined to bed. | **2 . Chairfast**<br>Ability to walk severely limited or non-existent. Cannot bear own weight and/or must be assisted into chair or wheelchair. | **3. Walks Occasionally**<br>Walks occasionally during day, but for very short distances, with or without assistance. Spends majority of each shift in bed or chair. | **4. Walks Frequently**<br>Walks outside room at least twice a day and inside room at least once every two hours during waking hours. | | | | |
| **MOBILITY**<br>ability to change and control body position | **1. Completely Immobile**<br>Does not make even slight changes in body or extremity position without assistance. | **2 .Very Limited**<br>Makes occasional slight changes in body or extremity position but unable to make frequent or significant changes independently. | **3. Slightly Limited**<br>Makes frequent though slight changes in body or extremity position independently. | **4. No Limitation**<br>Makes major and frequent changes in position without assistance. | | | | |
| **NUTRITION**<br>usual food intake pattern | **1. Very Poor**<br>Never eats a complete meal. Rarely eats more than ½ of any food offered. Eats 2 servings or less of protein (meat or dairy products) per day. Takes fluids poorly. Does not take a liquid dietary supplement<br>OR<br>is NPO and/or maintained on clear liquids or IV's for more than 5 days | **2. Probably Inadequate**<br>Rarely eats a complete meal and generally eats only about ½ of any food offered. Protein intake incudes only 3 servings of meat or dairy products per day. Occasionally will take a dietary supplement<br>OR<br>receives less than optimum amount of liquid diet or tube feeding. | **3. Adequate**<br>Eats over half of most meals. Eats a total of 4 servings of protein (meat, dairy products) per day. Occasionally will refuse a meal, but will usually take a supplement when offered<br>OR<br>is on a tube feeding or TPN regimen which probably meets most of nutritional needs. | **4. Excellent**<br>Eats most of every meal. Never refuses a meal. Usually eats a total of 4 or more servings of meat and dairy products. Occasionally eats between meals. Does not require supplementation. | | | | |
| **FRICTION & SHEAR** | **1. Problem**<br>Requires moderate to maximum assistance in moving. Complete lifting without sliding against sheets is impossible. Frequently slides down in bed or chair, requiring frequent repositioning with maximum assistance. Spasticity, contractures or agitation leads to almost constant friction. | **2. Potential Problem**<br>Moves feebly or requires minimum assistance. During a move skin probably slides to some extent against sheets, chair,restraints or other devices. Maintains relatively good position in chair or bed most of the time but occasionally slides down. | **3. No Apparent Problem**<br>Moves in bed and in chair independently and has sufficient muscle strength to lift up completely during move. Maintains good position in bed or chair. | | | | | |
|  | | | | Total Score | | | | |

### 2.7.2. Norton scale :

The Norton Scale **Table(2.2**), the first scale for assessing the risk of pressure injuries, was introduced by Doreen Norton in 1962. Based on clinical experience and discussions with her colleagues, five primary risk factors; physical condition, mental condition, activity, mobility and incontinence were included in the instrument. These risk categories are scored on an ordinal scale of 1 (most impaired) to 4 (least impaired) with a maximum total score of 20 points. Low total scores represent an increased pressure injury risk. The Norton Scale includes components that are subjective in nature and is limited in its ability to assess known pressure injury predictors associated with critical illness, such as oxygenation and perfusion. Conversely, optimization of the Norton Scale by addressing these deficiencies can increase the efficiency of pressure injury risk assessment among nurses in the critical care setting, as evidenced by accurate identification of at-risk patients, increased interrater reliability, and improved usability with the Norton Scale (proposed tool) as compared to the Braden Scale (current tool) (Sullivan, 2018).

### 2.7.3. Waterlow scale:

The Waterlow scale evaluates patients on age, sex, body build, appetite, continence of urine and feces, mobility, skin appearance in risk areas, and special risks (disorders associated with tissue malnutrition, neurological deficits, medication, recent surgery, or trauma). Scores are totalled to produce a summary score from 3 (best prognosis) to 45 (worst prognosis). Scores of 10+ denote risk of developing a PU, 15+ high risk, and 20+ very high risk (Kumari *et al*., 2015).

**Table (2.2):** Norton scale (Rabinovitz *et al*., 2016).

| Domains | Scores |
|---|---|
| Physical condition | 4 = Good |
| | 3 = Fair |
| | 2 = Poor |
| | 1 = Very bad |
| Mental condition | 4 = Alert |
| | 3 = Apathetic |
| | 2 = Confused |
| | 1 = Stuporous |
| Activity | 4 = Independent |
| | 3 = Slightly dependent |
| | 2 = Very dependent |
| | 1 = Fully dependent |
| Mobility | 4 = Ambulant |
| | 3 = Walks with help |
| | 2 = Chair-bound |
| | 1 = Bedridden |
| Incontinence | 4 = None |
| | 3 = Occasional |
| | 2 = Usually urinary |
| | 1 = Urinary and fecal |

## 2.8. Reposition Technique

A main reason for developing pressure sores, besides immobility and malnutrition, is believed to be sustained pressure on the skin as well as pressure combined with shearing force. The pressure leads to a compression of the blood vessels, reduction of oxygen perfusion with local ischemia and, as a consequence, the formation of necrosis. To avoid sustained pressure, patients at risk have to regularly be put into different positions. In case that this is

insufficient, the patient is positioned on antidecubitus soft foam or alternating pressure mattresses, which reduce the total pressure. The disadvantage of these mattresses, however, is that they compromise patients' perception of the body. Moreover, they hinder patients' activities and impede nursing care. In a European prevalence study, it was shown that only 10% of patients at risk for developing decubitus ulcers receive adequate preventive treatment (Pickenbrock *et al*., 2017).

Repositioning should be undertaken with consideration for the patient's comfort, dignity and functional ability. Any repositioning must take into account that while pressure is being relieved or redistributed it is also important the patient is able to function, for example, take diet and fluids in that position. When repositioning a patient, manual-handling aids must be used to avoid dragging the individual along the mattress, which can cause tissue damage through shear and friction. If the individual is to remain in bed, his or her position should be changed regularly and at least every two hours (although this should be adjusted to suit individual requirements as some patients may need more frequent intervention than others). Patients should be rested at a 30-degree tilt and on alternate sides to avoid prolonged pressure at bony prominences, show in **Figure (2.9)**(Gillespie *et al.*, 2020).

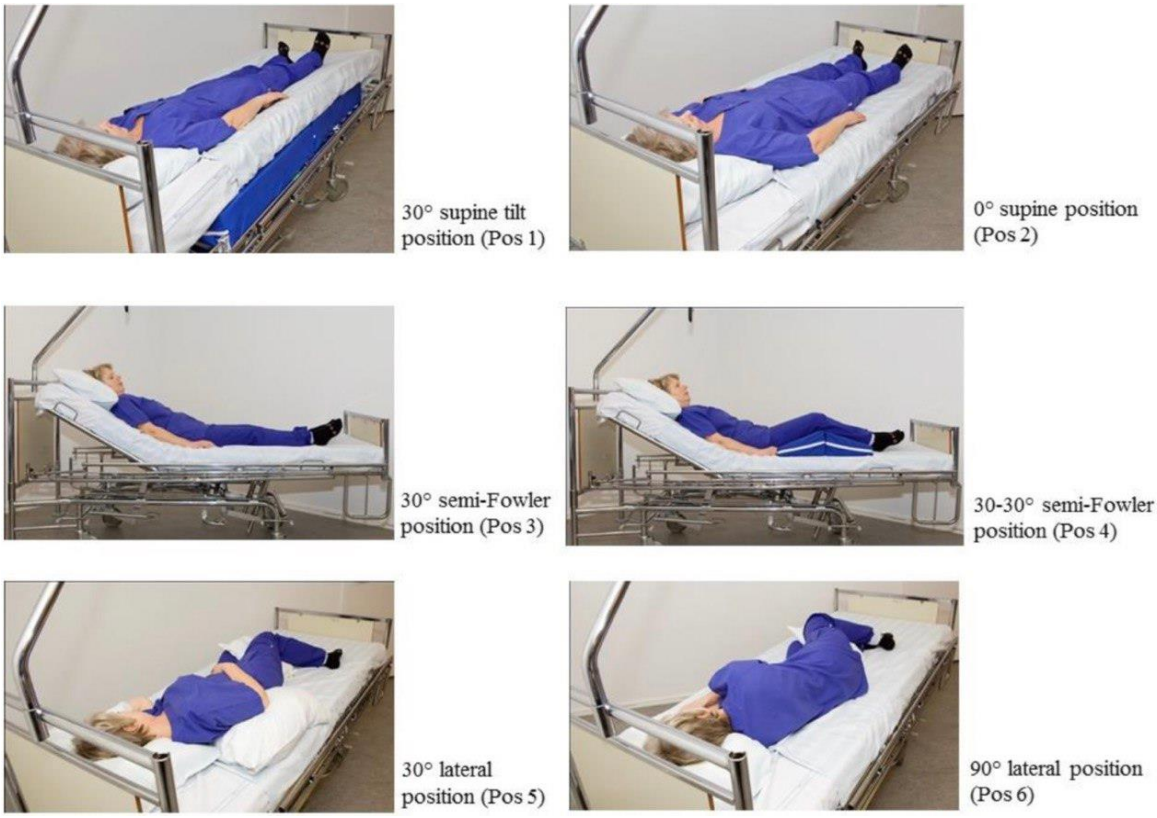



**Figure (2.9):** Appropriate positions for the patient while lying on the bed (Källman, 2015).

## 2.9. Support Surface for Patient

Pressure ulcers are ulcers on the skin caused by pressure or rubbing at the weight-bearing, bony points of immobilised people (such as hips, heels and elbows). Different support surfaces (e.g. beds, mattresses, mattress overlays and cushions) aim to relieve pressure, and are used to cushion vulnerable parts of the body and distribute the surface pressure more evenly. The review found that people lying on ordinary foam mattresses are more likely to get pressure ulcers than those lying on a higher-specification foam mattress. In addition the review also found that people who used sheepskin overlays on their mattress developed fewer pressure ulcers. While alternating-pressure mattresses may

be more cost effective than alternating-pressure overlays, the evidence base regarding the merits of higher-specification constant low-pressure and alternating-pressure support surfaces for preventing pressure ulcers is unclear (McInnes *et al.*, 2015).

Support surfaces for pressure ulcer treatment can include specially-designed beds, mattresses, mattress overlays and cushions that are used to protect vulnerable parts of the body and distribute the surface pressure more evenly. Low-tech support surfaces include mattresses filled with foam, fluid, beads or air; and alternative foam mattresses and overlays. High-tech support surfaces include mattresses and overlays that are electrically powered to alternate the pressure within the surface, beds that are powered to have air mechanically circulated within them and low-air-loss beds that contain warm air moving within pockets inside the bed. Other support surfaces include sheepskins, cushions and operating table overlays(Katakwar *et al.*, 2020).

A systematical review concluded that there was low quality evidence supporting the use of an alternative foam mattress to produce a relative risk reduction (RRR) of 69% for PUs when compared with a standard hospital mattress(Zuo and Meng 2015).

Another study reported the low quality evidence of a statistically non-significant difference in the incidence of grade 2 PUs between persons using an alternating pressure mattress and those using an alternating pressure overlay. With low-quality evidence, the study revealed that use of air suspension bed in the ICU for a stay of at least three days resulted in a statistically significant 76% lower recurrence rate in PUs compared with a standard ICU bed(Coleman *et al.*, 2013).

Trials that evaluated the following interventions for preventing pressure ulcers were included: Low-tech (non-powered) constant low-pressure (CLP) support surfaces, standard foam mattresses, Alternative foam mattress overlays (e.g., convoluted foam, cubed foam) are conformable and aim to redistribute pressure over a larger contact area. Gel-filled mattress overlays, fiber-filled mattress overlays, air-filled mattress overlays, water-filled mattress overlays, bead-filled mattress overlays, and Sheep skins proposed mode of action is unclear (McInnes *et al*., 2018).

High-tech support surfaces Alternating-pressure (AP) mattresses overlays: patients lie on air-filled sacs that inflate and deflate sequentially to relieve pressure at different anatomical sites for short periods; these may incorporate a pressure sensor, Air-fluidised beds Warmed air circulates through fine ceramic beads covered by a permeable sheet, allowing support over a larger contact area and Low-air-loss beds support patients on a series of air sacs through which warmed air passes(Bambi *et al.*, 2022).

Other support surfaces turning beds frames these work either by aiding manual repositioning of the patient, or by motor driven turning and tilting, operating table overlays mode of action as for low-tech (CLP) support surfaces, wheelchair cushions either conforming cushions that reduce contact pressures by increasing surface area in contact, or mechanical cushions e.g. alternating pressure and limb protectors: pads and cushions of different forms to protect bony prominences(Thompson *et al.*, 2009).

## 2.10. Nutritional Importance about Prevention of Pressure Ulcer

Nutritional deprivation and insufficient dietary intake are the key risk factors for the development of pressure ulcers and impaired wound healing. A

number of studies including The national pressure ulcer long-term care study revealed that weight loss and inadequate nutritional intake were associated with a higher risk of developing pressure ulcers(Saghaleini *et al*., 2018).

Pressure ulcers reduce the quality of life of an individual, cause rapid mortality in some patients and an important cost for healthcare organizations. Therefore, the prevention and management of pressure ulcers are very important. Inadequate nutrition and unbalanced nutrition are the main risk factors for the development of pressure ulcers and wound healing due to their negative effects on the immune system and collagen synthesis. Laboratory tests such as serum albumin, Prealbumin, transferrin and retinol binding protein measurements and other anthropometric measurements such as height, weight and body mass index measurements are useful only in the determination of the overall prognosis, but they cannot fully identifying the nutritional status of the individual. Although the effect of optimum nutrient intake is not known in the promotion of wound healing, the positive effects of energy, protein, zinc and vitamins A, C and E, as well as amino acids such as arginine and glutamine are emphasized. Hydration plays a vital role in the preservation and repair of skin integrity. Adequate fluid intake is of great importance to support blood flow to injured tissues and to prevent further deterioration of the skin (Sayilan, 2019).

Low albumin levels are an indicator of malnutrition (normal levels fall between 36 and 52 g/L), and Prealbumin levels (normal levels fall between 16 and 35 mg/d L) may be a reflection of current nutritional status. Albumin and Prealbumin levels should be routinely assessed (weekly or bi-weekly) to reveal trends in the adequacy of nutritional therapy. Decreasing or low serial albumin or Prealbumin levels should alert the intensive care nurse to inform

the physician or nutritionist of a potential need to alter the current nutritional therapy. Nurses should identify the nutrition status of patients upon admission and advocate for the earliest possible nutrition supplementation when necessary. Ensuring adequate nutrition is particularly difficult in patients receiving vasopressors because the vasoconstrictive action of vasopressors constricts the gastric mucosa, preventing absorption of nutrients. Additionally, enteral nutrition often causes loose stools, and if patients are unable to indicate the need for a bedpan, they must rely on frequent nursing assessment of continence status. A recent study reported that among ICU patients who received an enteral nutritional formula enriched with fish oil containing u-3 light-chain polyunsaturated fatty acids (PUFAs) and micronutrients, the incidence of new PUs was significantly reduced(Zuo and Meng, 2015).

## 2.11. Categories of Dressings

The goal in clean wounds that are to be closed primarily, or in wounds that are granulating well, is to provide a moist healing environment to facilitate cell migration and prevent desiccation. Wounds covered with an occlusive dressing were shown to heal 40% faster than those exposed to air (Foutsizoglou,.2018).

### 2.11.1. Gauze Dressings:

It’s the traditional first choice for generic wound care. Gauze can be applied to the wound over a non-stick sheet as part of the basic dressing as described earlier. Dry gauze dressings should not be applied directly to skin wound or incision as they are painful to remove and are nonselective debriders that cause significant collateral damage to healthy surrounding tissue upon

removal. Furthermore, gauze dressings may leave behind fine microfibres that can act as an irritant or a source of infection (Dhivya *et al.*, 2015).

### 2.11.2. Films Dressing:

A moist wound environment has been demonstrated to accelerate re-epithelialisation. Facilitated keratinocyte migration over a moist wound surface and a consistent increase of growth factors and proteinases in wound fluids have all been suggested as theories to explain scar reduction in occluded wounds. Films are semi-occlusive dressings usually made up of transparent thin sheets of polyurethane (polymer) coated with a layer of acrylic adhesive. Polyurethane sheets are waterproof and impermeable to bacteria and contaminants. Although these dressings cannot absorb fluid, they are permeable to moisture – allowing one-way passage of carbon dioxide and excess moisture vapour away from the wound (Tenorová *et al.*, 2022).

### 2.11.3. Hydrocolloids Dressing:

Hydrocolloids are complex dressings containing polymers held in suspension plus gel-forming agents (methylcellulose, pectin, gelatin, polyisobutylene) and adhesives. They come as pads, sheets, or filler forms (e.g. paste) for occlusive use. They slowly absorb wound fluids, changing their physical state to become a covering, soft gel that sits on the wound. They are impermeable to gases and liquids. Initially, it is prefer changing them daily, but when the exudate has diminished hydrocolloid dressings may be left on the wound for three to seven days; during this time, they provide a moist environment that promotes cell migration and wound debridement by autolysis (Rezvani Ghomi *et al.*, 2019).

### 2.11.4. Hydrogels Dressing:

Hydrogel are organic polymers with a cross-linked hydrophilic matrix. They are usually made up of about 90% water that is suspended in a gel base. Hydrogel dressings are useful in maintaining a moist wound bed and rehydrating wounds to facilitate healing through autolytic debridement these are three main types: Sheet hydrogel the hydrogel is suspended inside a thin mesh that can overlap with skin without harming it – which can occur with some other wound dressings, Impregnated hydrogel the gel compound is added into a gauze pad, a sponge rope or into gauze strips, but this dressing often needs to be covered by a secondary dressing to provide full protection and Amorphous hydrogel Unlike the other two, this dressing is free-flowing. It is viscous (thick), but still able to flow into the nooks and crannies of puncture and other deep wounds (Brumberg *et al*., 2021).

### 2.11.5. Foam Dressings:

Foam dressings are usually made of non-adhering polyurethane, which is hydrophilic, and an occlusive cover. Foam dressings can be silicone based too. The polyurethane is highly absorptive and acts as a wick for wound fluids, making them useful for highly exudative wounds, as show in **Figure(2.10)** (Shi *et al.*, 2020).

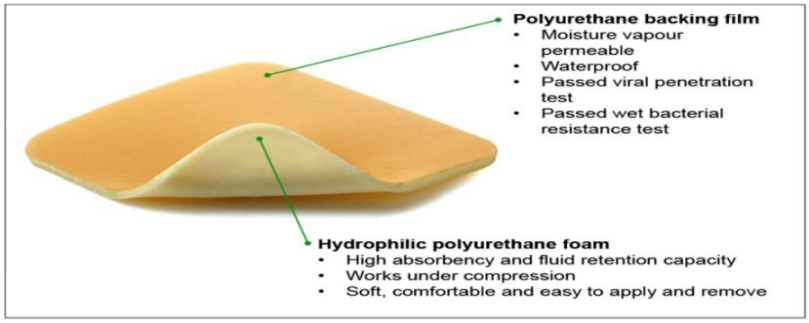



**Figure (2.10):** Foam dressing (Foutsizoglou., 2018).

### 2.11.6. Alginates Dressing:

Alginate dressings have been used in various forms for 50 years, and yet they remain a poorly understood and probably underused dressing. Compared to many modern dressings, the literature is sparse and inconclusive. Alginate dressings are derived from brown seaweed and are particularly useful in wounds characterised by significant amounts of exudate as they can absorb 20 times their dry weight. The high absorption is achieved via strong hydrophilic gel formation (Rezvani Ghomi *et al.,* 2019).

### 2.11.7. Honey-Containing Dressing :

There are anecdotal reports of the use of honey in the treatment of wounds since antiquity. In modern times, there is currently low evidence for the use of honey in the setting of pressure ulcers. Medical-grade honey has been shown to have mild antibiotic properties. Medical honey comes in stand-alone forms of gel or paste as well as impregnated into dressings where it is combined with alginate or hydrocolloid materials (Jull *et al.*, 2015).

### 2.11.8. Silver-Containing Dressing:

Silver has bactericidal properties and dressings that are impregnated with silver are ideal for use in infected wounds. This dressing should be discontinued after clearance of infection as it can delay wound healing due to its toxicity to keratinocytes and fibroblasts. Silver is often incorporated into foam and alginate dressings. Silver alginate comes in rope and square forms, which are well suited for infected wounds with exudate, and gel form, which is better suited for drier wounds (Iheanacho, 2010).

## 2.12. Nurses' Knowledge Toward Pressure Ulcer

Knowledge represents the ground for practice leading to quality and safety of care provided. Most research worldwide shows a deficiency in knowledge and inadequate attitudes of nurses in this field of interest. This phenomenon has not changed much in the past 15–20 years. Several studies used the Pieper´s Pressure Ulcer Knowledge Test (PUKT) to examine nurses´ knowledge in pressure ulcer management. Older researches tested pressure ulcer knowledge of registered nurses. The more recently had participants read about pressure ulcers, the higher scores they reached. There was no relation between the knowledge and age, educational background, or years of nursing experience found (Grešš Halász *et al.*, 2021).

Lack of knowledge and skills in pressure ulcer prevention contributes significantly to the occurrence or worsening of pressure ulcer; therefore, nurses require regular training and education in this area of practice. Moreover, increased knowledge about pressure ulcer prevention among nurses not only improves the quality of PU care but also reduces hospital stays, and the number of patients suffering from this condition (Smith and Waugh, 2009).

The three cross sectional descriptive studies were similar in that the demonstrated knowledge gaps that were unexpected, or lower than expected in Turkey, Brazil, and the United States. These three studies elucidated the need for specific pressure injury program education, focusing on evidence-based practice, documentation, and assessment skills for wound care providers. They emphasized individualization of programs to meet provider's needs, and recommended repetitive, or pre-test and post-test studies to demonstrate

sustained knowledge and observations to support change in practice (Cowan *et al., 2018)*.

### 2.13. Nurses Attitudes about Pressure Ulcer

Even with evidence-based interventions and educational programs, pressure injuries happen to acute care admitted patients, especially in the critical care areas, such as intensive care units (ICU), critical care units (CCU). Many cross-sectional descriptive studies on the attitudes of caregivers have been performed to assist in understanding other factors involved in pressure injury care and prevention. While knowledge, barriers, interventions, and skills are important researched topics in pressure injury care, attitudes and values of the caregiver is a factor often overlooked. Research has demonstrated that caregivers often neglect, avoid, or place lower priority on prevention techniques as a result of devaluation of pressure injury prevention or care (Brooks, 2020).

Impact of workload meaning optimal care was compromised due to the number of tasks, and the prioritization of care in the critical care setting. Their study of critical care nurses showed positive attitude expression, but actions demonstrated neglect of evidence-based practices, interventions, and care as a result of lower priorities placed on skin health, especially when dealing with critical illness. Time barriers had an impact as well, in that the number of care tasks required to be performed were disproportionate to the time available to perform them (Tayyib *et al.*, 2016).

Nurses attitudes in Iran for the intensive care unit were evaluated. A moderate attitudes regarding pressure injury prevention and care was demonstrated, but lower scores were noted in the categories of responsibility

for care and confidence of effectiveness of interventions, demonstrating distrust or lack of knowledge in efficacy of care (Tirgari *et al.*,2018).

## 2.14. Previous Studies

### 2.14.1. First Study:

A study conducted by Dilie and Mengistu, (2015). Objective was to assess nurses' knowledge, attitudes and perceived barriers to expressed pressure ulcer prevention practice in Addis Ababa government hospitals. Methods and Materials. This is a cross-sectional study by design. A total of 217 eligible nurses participated in the study and data were collected through pretested self-administered questionnaire. Conclusion and Recommendation. More than half of the nurses were found to have adequate knowledge about pressure ulcer prevention and their attitude towards it was overall favorable. Expressed pressure ulcer prevention practice was affected by the participant's level of knowledge, attitude, and barriers of care.

### 2.14.2. Second Study:

A study was conducted by Barakat-Johnson *et al.*, (2018). The study aimed to examine the knowledge and attitudes of nurses on pressure injury prevention and determine if there was a relationship between knowledge, attitude, and years of experience following an unexplained increase in reported hospital-acquired pressure injuries across 1 health district in Sydney, Australia. Multisite cross-sectional study. Multisite cross-sectional study using a modified version of the pressure ulcer knowledge test and the staff attitude scale, nurses were invited to complete the survey online or on paper. Conclusion of the study nurses had good knowledge and held positive attitudes toward pressure injury prevention. Positive attitudes were associated

with greater time spent in the workforce. Additional research is required to examine relationships between knowledge of and attitude toward pressure injury prevention and clinical practice.

### 2.14.3. Third Study:

A study conducted by Yilmazer *et al.*,( 2019) in Turkey. The objective of this study focused on assessing the knowledge and attitudes of nurses towards pressure ulcer (PU) prevention in intensive care units. A cross sectional study was performed in eight intensive care units. 81 out of 95 nurses completed the questionnaire. The response rate of those who completed the questionnaire was 85.3%. As the data collection form of the study, "nurse information tool", "tool for PU information" and "attitude toward PU tool (APuP)" were used. The participating nurses were fully informed by the researcher about the purpose and method of the study and were asked to complete the tools. In conclusion, nurses' knowledge on prevention of pressure ulcer in intensive care units is inadequate. This study also explored that only in less than a quarter of the nurses' attitudes towards pressure ulcer prevention is positive. As the knowledge level of the nurses increases, the decrease in their positive attitudes is also thought provoking. In this study, it is thought that the individual differences of nurses are more effective on positive attitude than knowledge. The study Strategic plans (regular individual training, prevention policies and management, etc.) are necessary to improve both knowledge and positive attitude towards prevention of pressure ulcer.

### 2.14.4. Fourth Study:

A study was done by Charalambous *et al*., (2019). This study aimed to identify the knowledge and attitudes of nurses towards pressure

ulcer prevention in a major public hospital in Cyprus. A descriptive and cross-sectional study design was used to collect the data between December 2014 and February 2015, the sample consisted of n = 102 nurses employed in a major public hospital in Cyprus. Customised and standardised Pressure Ulcer Knowledge Test and an attitudes Likert questionnaire was used to investigate both parameters. Descriptive and inferential statistics, parametric (*t*-test), non-parametric tests (Mann-Whitney U) and Pearson test was applied. Statistical significance was set at p = 0.05. Conclusion of the study suggests that nurses had relatively inadequate knowledge levels and positive attitudes, attitudes and knowledge's correlated statistically significantly and positively.

**2.14.5. Fifth Study:**

A study was carried out Kim and Lee,( 2019) the study aimed to investigate Korean nurses' level of knowledge, attitude and performance of pressure ulcer prevention in long-term care facilities. A descriptive study was performed. Convenience sampling was used, and registered nurses were recruited from the attendees of a continuing education programme for nurses in long-term care facilities. A total of 282 participants (RN) completed the questionnaire. Data were collected from September to December 2015. Nurses participating in this study demonstrated a moderate level of knowledge of pressure ulcer prevention (60.1%) and exhibited positive attitudes towards pressure ulcer prevention (33.80 ± 2.48). Nurses regularly assessed the risk factors of pressure ulcers during the hospitalisation period for all patients in the hospital when performing pressure ulcer prevention care. However, the plan for preventive nursing care was not properly reviewed. It was also found that nurses did not consider changes in the patient's condition as important to why they had to change their nursing plans to prevent pressure ulcer.

# *Chapter Three*

# *Methodology*

# Chapter Three

# Methodology

This chapter is a set of specific scientific standards and controls that are followed during scientific research work. Therefore, the methodology of scientific research is one of the most important aspects upon which good scientific research is built and organized. This chapter includes several important matters: study design, administrative arrangements used in the study, data collection, instrument validity, an experimental reliability study, and data analysis.

## 3.1. Design of the Study

This study aims to assess nurses knowledge and attitudes regarding pressure ulcer prevention in intensive care unit at Hilla Hospitals. A descriptive cross – sectional study was undertaken using an assessment methodology with questionnaire items for the period of the November 9$^{th}$, 2022, to May 2$^{nd}$ , 2023.

## 3.2. Administrative Arrangements

Before the direct process of collecting study data, official approvals were obtained from the competent authorities, as follows:

**1.** Approval from the research ethical committee at the College of Nursing University of Babylon (Appendix:- 1).

**2.** Official letter from College of Nursing University of Babylon to the Babylon health director (Appendix:- 2).

**3.** Official approvals were obtained from the Babylon health director (Training and Development Center) to access hospitals (Appendix:- 3)

**4.** Official approvals which included the three hospitals:

**A.** Imam Al-Sadiq Hospital (Appendix:- 4).

**B.** Hilla Teaching Hospital (Appendix:- 4).

**C.** Marjan Teaching Hospital (Appendix:- 4).

### 3.3. Ethical Consideration

Ethical consideration is an important field in the study of scientific research that the researcher must follow and commit to during the conduct of the required study. Before starting to collect data for the sample that is about to participate in this study, the researcher told nurses about their liberty to participate in this study. The researcher explained the purpose and objectives of this study, and after clarifying the purpose of the study and obtaining the participants' approval, the nurses were handed an anonymous questionnaire to be completed in order to preserve the participants' privacy.

### 3.4. Setting of the Study

This study was conducted in the intensive care units (Respiratory care unit ) at Al-Hilla Teaching Hospitals, which include the following:

#### 3.4.1. Al-Imam Al-Sadiq Hospital:

Al-Imam Sadiq Teaching Hospital is the largest hospital in the city of Hilla. This is one of the modern hospitals. It was opened in (2016). It has a total capacity of (492) beds, where the respiratory care unit consists of (20) beds.

### 3.4.2. Al-Hilla Teaching Hospital:

Al-Hilla Teaching Hospital is an important and necessary hospital in Al-Hilla City, where it receives accidents and critical conditions. It was established to provide health services in (1972) and has a hospital capacity of (447) beds. The respiratory care unit (RCU) is an important center in this hospital is consist of (18) beds.

### 3.4.3. Marjan Teaching Hospital:

Marjan Teaching Hospital, which has been established to receive patients for its residence in Babylon since (1957) and has a capacity of (316) beds, It includes both the emergency department and the medical department, as well as a cardiac care unit and consultant. It also recently opened an intensive care unit for critical epidemiological cases since the start of the Corona pandemic in (2020), which consists of (26) beds.

## 3.5. Sample of the Study

Using a non-probability (Convenience) sample method was selected to achieve the objectives of the study. The total number of nurses who participated in the study (150) nurses.

### 3.5.1. Inclusion Criteria

**1.** Nurses who work in the respiratory care unit .

**2.** Nurses who agreed to participate in this study.

**3.** Nurses who are of different education classification .

### 3.5.2. Exclusion Criteria

**1.** The nurses who underwent the pilot study.

**2.** Nurses who refused to participate in the study.

**Table (3.1): Distribution of the study sample according to setting:**

| No. | Hospital name | Actually No. of Nurses | 10% | Nurses Obtained |
|---|---|---|---|---|
| **1.** | Al-Imam Al-Sadiq Hospital | 58 | 6 | 44 |
| **2.** | Al-Hilla Teaching Hospital | 90 | 9 | 67 |
| **3.** | Marjan Teaching Hospital | 52 | 5 | 39 |
| **4.** | Total | 200 | 20 | 150 |

### 3.6. Study Instruments

The questionnaire is one of the tools that help collect data that contribute to achieving the expected results in the study. In order to assess the nurses' knowledge and attitudes towards pressure ulcers, standard questionnaire was used extensively in many studies. The questionnaire consists of three parts as follows:

**Part I:This part consist of two sections:**

**A.** Section one composed from socio-demographics characteristic consist of: nurse age, gender, education level and residency.

**B.** Section two work information consist of: years of experience in nursing, years' experience in intensive care unit, work shift and number of training sessions about pressure ulcer .

**Part II: Nurses knowledge about pressure ulcer:**

Nurses knowledge regarding pressure ulcer prevention tool was used the

Pieper-Zulkowski pressure ulcer knowledge test Pieper and Zulkowski(2014) version 2. The researcher modified the questionnaire on the basis of scientific contexts and the experts comments opinion in order to collect data for the purpose of the current study. this tool consist from (72) Items It is divided into three domains:

**A.** First domain about pressure ulcer prevention consist of (28) item .

**B.** Second domain pressure ulcer stages consist of (20) item.

**C.** Third domain about wound descriptions consist of (24) item .

**Part III: Nurses Attitudes towards prevention of pressure ulcer:**

This part consists of (11) statements in three points LiKert scale about pressure ulcer prevention.

### 3.7. Rating and Scoring

The second part included nurses' knowledge of pressure ulcer prevention the scale adopted three point LiKert scale (I know = 3 score , uncertain = 2 score and I don’t know = 1 score). while the third part included nurses' attitudes towards pressure ulcers also three score (Agree = 3 score , partially agree = 2 score and Disagree = 1 score ) respectively the nurses answered all the questions and an option can be selected one for each question.

**Table (3.2): Rating Scales and Scoring**

| Grade | Score | Scales |
|---|---|---|
| Poor knowledge | (1-1.66) | Knowledge |
| Fair knowledge | (1.67- 2.33) | |
| Good knowledge | (2.34 -3) | |
| Negative Attitude | (1-1.66) | Attitudes |
| Neutral | (1.67- 2.33) | |
| Positive Attitude | (2.34 -3) | |

### 3.8. Data Collection

After obtaining official approval from the Babylon director of Health, data collection began using a special questionnaire developed to conduct this study. The researcher delivered the questionnaire in Arabic to the nurses after explaining the instructions and answering their questions regarding the questionnaire, urging them to participate and thanking them for their cooperation. It takes about 25–30 minutes to fill out the questionnaire. Self-report was used on an individual basis, and data was collected from February 25$^{th}$, 2023, to March 30$^{th}$, 2023.

### 3.9. Validity of the Questionnaire

The questionnaire was presented in Arabic and English to thirteen experts, face validity using for the clarity and accuracy of the questionnaire, the modification focused on the translating the questionnaire into Arabic. Among the experts were dermatologists and professors of the adult branch. Where a questionnaire was presented to two expert from the College of

Nursing University of Babylon, three experts from the College of Nursing University of Kufa. And one expert from the College of Nursing University of Al-Qadisiyah, two experts from the College of Nursing University of Karbala, three experts from the College of Nursing University of Baghdad and two specialists in consultant dermatology at Imam Al-Sadiq Hospital. modifications were implemented and opinions taken into consideration, as shown in (Appendix:- 7).

### 3.10. Pilot Study

Before starting data collection, a pilot study was conducted for a period from February 15th , 2023, to February 22th, 2023. In (Al-Imam Al-Sadiq Hospital and Hilla Teaching Hospital). A sample consist of (15) nurse was selected from the place of study and they were excluded from the main sample.

#### 3.10.1. The pilot study tries to accomplish the following objectives:

**1.** The questionnaire is reliable .

**2.** The questionnaires items are clear and can be understood easily .

**3.** The period required to complete the items questions ranged from 25-30 minutes.

**4.** Identification of barriers that may not be counting during the data collection process .

#### 3.10.2. Reliability of Questionnaire :

Study reliability was used to determine the accuracy of the questionnaire by evaluating the questionnaire, where the stability coefficient of Cronbach's alpha (0.82) for knowledge and attitudes (0.84) was reached, which is an

acceptable result in statistics, as the results confirmed a high level of internal consistency for (Cronbach's alpha). All the questionnaire statements were entered into the program Statistical *SPSS* version 20 of reliability analysis as shown below.

**Table (3.3): Questionnaire Reliability (N =15)**

| Variables | N. of Items | Cronbach's Alpha | Ass. |
|---|---|---|---|
| Knowledge | 72 | 0.82 | Acceptable |
| Attitudes | 11 | 0.84 | Acceptable |

This table is statistically formed to show the reliability coefficient for the study instrument. The calculated result shows that the questionnaire is reliable measure to study the phenomenon of Nurses' knowledge and Attitudes Regarding Pressure Ulcer Prevention in Intensive Care Units on the same population at any time in the future.

### 3.11. Statistics Analysis

In order to statistically analyze the data collected from the study sample to arrive at the results, the researcher used the *SPSS-20* and Microsoft Excel (2010) program to analyze this data and deal with it statistically, to find the relationships between the variables, and obtain the final results of the research based on a set of statistical tests.

#### 3.11.1. Descriptive Approach

Descriptive statistics includes a set of mathematical and statistical methods that are adopted to describe the main features of a data quantitatively

by using tables and charts. Descriptive statistics always aim to present and describe the data which is required to be processed, organized, summarized and categorized, as well as presenting them in a simple and clear manner that makes it easier for the recipient to recognize and understand its content. The analysis performed through use:

**A.** Statistical tables Frequencies (No.) and Percent (%).

$$\% = \frac{\boldsymbol{Frequency}}{\boldsymbol{Sample\ Size}}\ x100$$

**B.** Average of the scores M.s. and the overall average score (M±).

The average score can be calculated by using the following:

$$\textbf{total mean of scores} = \frac{\textbf{Maximum total sores} - \textbf{Munimum total sores}}{\textbf{Levels}}$$

Total mean score for Knowledge Outcomes:

**[Poor = 72-120; Fair = 120.1-168; Good =168.1-216]**

Total mean score for Attitudes Outcomes:

**[Negative = 11-18.33; Neutral = 18.34-25.66; Positive =25.67-33]**

**C.** Standard Deviation test ±*SD*.

$$SD = \sqrt{\frac{1}{n-1}\sum_{i=1}^{n}(Xi - \bar{x})^2}$$

**D.** It uses a correlational coefficient "Cronbach alpha" used in estimating the internal consistency of the study tool. Which can be calculated by using:

$$\alpha = \frac{K}{K-1}\left[1 - \frac{\sum_{i=1}^{K}\sigma_{ii}}{\sum_{i=1}^{K}\sum_{j=1}^{K}\sigma_{ij}}\right]$$

### 3.11.2. Inferential Approach

**1. Analysis of Variance (ANOVA)**

For equality of means, is used (variance test when the mean parameter varies).

| Source of Variation | Sum of Squares | Degrees of Freedom | Mean Squares (MS) | F |
|---|---|---|---|---|
| Within | $SS_w = \sum_{j=1}^{k}\sum_{j=1}^{l}(X-\bar{X}_j)^2$ | $df_w = \mathrm{k}-1$ | $MS_w = \frac{SS_w}{df_w}$ | $F = \frac{MS_b}{MS_w}$ |
| Between | $SS_b = \sum_{j=1}^{k}(\bar{X}_j - \bar{X})^2$ | $df_b = \mathrm{n}-\mathrm{k}$ | $MS_b = \frac{SS_b}{df_b}$ | |
| Total | $SS_t = \sum_{j=1}^{n}(\bar{X}_j - \bar{X})^2$ | $df_t = \mathrm{n}-1$ | | |

**2. Independent Sample t-test**

The sample that is unrelated the *t-test* compares the means of two independent groups to check if there is statistical evidence that the associated population means differ significantly.

$$t = \frac{\mu_A - \mu_B}{\sqrt{\left[\frac{\left(\Sigma A^2 - \frac{(\Sigma A)^2}{n_A}\right) + \left(\Sigma B^2 - \frac{(\Sigma B)^2}{n_B}\right)}{n_A + n_B - 2}\right] \cdot \left[\frac{1}{n_A} + \frac{1}{n_B}\right]}}$$

$(\Sigma A)^2$: Sum of data set A, squared (Step 2).
$(\Sigma B)^2$: Sum of data set B, squared (Step 2).
$\mu_A$: Mean of data set A (Step 3)
$\mu_B$: Mean of data set B (Step 3)
$\Sigma A^2$: Sum of the squares of data set A (Step 4)
$\Sigma B^2$: Sum of the squares of data set B (Step 4)
$n^A$: Number of items in data set A
$n^B$: Number of items in data set B

# *Chapter Four*

# *Results*

# Chapter Four

## Results of the Study

The finding of data analysis systematically in following figures and tables based on stated objectives:

**Table( 4.1): Socio-demographic characteristics of study sample**

| SDVs | Rating | Freq | % |
|---|---|---|---|
| Age/years | **20-29 years old** | **136** | **90.6** |
| | 30-39 years old | 12 | 8.0 |
| | 40-49 years old | 1 | .7 |
| | ≥50 years old | 1 | .7 |
| | Total | 150 | 100.0 |
| | ***M ± SD= 26.09 ± 3.77*** | | |
| Gender | **Male** | **85** | **56.7** |
| | Female | 65 | 43.3 |
| | Total | 150 | 100.0 |
| Residents | **Urban** | **113** | **75.3** |
| | Rural | 37 | 24.7 |
| | Total | 150 | 100.0 |

The results show of table(4.1) the characteristics of the participants, the average age is 26.09 (±3.77) years among age group 20-29 years was the highest recorded (90.6%). Regarding gender, more than half were male (56.7%) as compared to female nurses. Regarding residents, the urban residents were predominated (75.3%) as compared with those who are rural.

**Table( 4.2): Job-related characteristics of study sample**

| Job Variables | Rating | Freq | % |
|---|---|---|---|
| Educational Level | School Nursing | 18 | 12.0 |
| | Diploma Nursing | 61 | 40.7 |
| | **B.Sc Nursing** | **68** | **45.3** |
| | Postgraduate | 3 | 2.0 |
| | Total | 150 | 100.0 |
| Years of Experience | <1 year | 13 | 8.7 |
| | **1-3 years** | **96** | **64.0** |
| | 4-6 years | 24 | 16.0 |
| | >6 years | 17 | 11.3 |
| | Total | 150 | 100.0 |
| Years of experience in the ICU | <1 year | 27 | 18.0 |
| | **1-3 years** | **78** | **52.0** |
| | 4-6 years | 35 | 23.3 |
| | >6 years | 10 | 6.7 |
| | Total | 150 | 100.0 |
| Work shift | **Morning** | **95** | **63.3** |
| | Evening | 55 | 36.7 |
| | Total | 150 | 100.0 |
| Training Sessions | No trained | 53 | 35.3 |
| | **1-2 session** | **88** | **58.7** |
| | >2 sessions | 9 | 6.0 |
| | Total | 150 | 100.0 |

The results in the table(4.2) showed the job related characteristics of the participants, in terms of education level, B.Sc nursing were predominated (45.3%) as compared with other levels. Years of experience related finding, one-third of participants expressed 1-3 years in nursing and in ICU(64% - 52% ) respectively. In terms of work shift, most of nurses work at morning shift (63.3%). Training courses associated findings, (58.7%) of participants attended 1-2 sessions.

## Table (4.3): Nurses knowledge about pressure ulcer prevention

| List | Pressure Ulcer Prevention Items | I know | Uncertain | I don't Know | M.s | Ass. |
|---|---|---|---|---|---|---|
| | | Freq | Freq | Freq | | |
| 1 | Hot water and soap may dry the skin and increase the risk for pressure injury/ulcers. | 44 | 70 | 36 | 2.05 | Fair |
| 2 | Chair-bound persons should be fitted for a chair cushion. | 119 | 5 | 26 | 2.62 | Good |
| 3 | A person confined to bed should be repositioned based on the individual's risk factors and the support surface's characteristics. | 111 | 13 | 26 | 2.57 | Good |
| 4 | A pressure injury/ulcer scar will break down faster than unwounded skin. | 49 | 66 | 35 | 2.09 | Fair |
| 5 | The goal of palliative care are to relieve pain, Prevent disease and maintain the best quality of life possible. | 104 | 18 | 28 | 2.51 | Good |
| 6 | Dragging the patient up in bed increases friction. | 53 | 64 | 33 | 2.13 | Fair |
| 7 | Small position changes may need to be used for patients who cannot tolerate major shifts in body positioning. | 62 | 49 | 39 | 2.15 | Fair |
| 8 | An incontinent patient should have a toileting care plan. | 80 | 35 | 35 | 2.30 | Fair |
| 9 | A pressure redistribution surface manages tissue load and the climate against the skin. | 91 | 23 | 36 | 2.37 | Good |
| 10 | When possible, high-protein oral nutritional supplements should be used in addition to usual diet for patients at high risk for pressure injury/ulcers. | 89 | 26 | 35 | 2.36 | Good |
| 11 | The home care setting has unique considerations for support surface selection. | 29 | 44 | 77 | 1.68 | Fair |
| 12 | Donut devices/ring cushions alone do not help prevent pressure ulcer . | 45 | 26 | 79 | 1.77 | Fair |
| 13 | Specialized beds cannot be used for all patients at risk of developing pressure/ulcers. | 32 | 40 | 78 | 1.69 | Fair |
| 14 | Persons at risk for pressure injury/ulcers should be nutritionally assessed (i.e., weight, nutrition intake, blood work). | 97 | 20 | 33 | 2.43 | Good |
| 15 | Critical care patients may need slow, gradual turning because of being hemodynamically unstable. | 49 | 65 | 36 | 2.09 | Fair |
| 16 | Staff education alone does not reduce the incidence of pressure injury/ulcers. | 45 | 68 | 37 | 2.05 | Fair |
| 17 | A footstool/footrest should be used for an immobile patient whose feet do not reach the floor. | 47 | 62 | 41 | 2.04 | Fair |
| 18 | Massage of bony prominences is not essential for skin care. | 17 | 82 | 51 | 1.77 | Fair |
| 19 | Poor posture in a wheel chair may be the cause of a pressure injury/ulcer. | 87 | 26 | 37 | 2.33 | Fair |
| 20 | For persons who have incontinence, skin cleaning should occur at the time of soiling and at routine intervals. | 63 | 18 | 69 | 1.96 | Fair |
| 21 | Patients who are spinal cord injured need knowledge about pressure injury/ulcer prevention and self-care. | 57 | 20 | 73 | 1.89 | Fair |
| 22 | People, who are not moving and can be taught, should change the posture of sitting every two hours while sitting in a chair. | 60 | 19 | 71 | 1.93 | Fair |
| 23 | Choosing a supportive surface bed for the patient should take into account all levels of risk of pressure ulcers in the person. | 45 | 35 | 70 | 1.83 | Fair |
| 24 | It is necessary to have the patient with a spinal cord injury evaluated for seating. | 87 | 29 | 34 | 2.35 | Good |
| 25 | To help prevent pressure injury/ulcers, the head of the bed should be elevated at a 30-degree angle or less. | 27 | 45 | 78 | 1.66 | Poor |
| 26 | Urinary catheter tubing should be positioned above the leg. | 33 | 30 | 87 | 1.64 | Poor |
| 27 | Pressure injury/ulcers may be avoided in patients who are obese with use of properly sized equipment. | 44 | 32 | 74 | 1.80 | Fair |
| 28 | Pressure injury/ulcers are a lifelong concern for a person who is spinal cord injured. | 41 | 36 | 73 | 1.79 | Fair |

*Level of Assessment (Poor [P]=1-1.66; Fair [F]=1.67-2.33; Good [G]=2.34-3)*

Table (4-3) demonstrated that the nurses expressed a fair responses towards knowledge about pressure ulcer prevention at all studied items except, the responses were good at items number (2, 3, 5, 9, 10, 14 and 24) and poor responses at items number (25 and 26).

**Table(4.4):Overall nurses Knowledge about pressure ulcer prevention**

| Knowledge of ulcer Prevention | Freq | % | *M (±SD)* | *Ass.* |
|---|---|---|---|---|
| Poor (28-46.66) | 24 | 16.0 | *57.85 ± 14.74* | *Fair* |
| Fair (46.67-65-33) | 69 | 46.0 | | |
| Good (65.34-84) | 57 | 38.0 | | |
| Total | 150 | 100.0 | | |

*M: Mean for total score, SD=Standard Deviation for total score*

Table (4-4) show that the (46%) of nurses expressed a fair knowledge towards pressure ulcer prevention 57.85 (±14.74).

**Table (4.5): Nurses knowledge about pressure ulcer stages**

| List | Pressure Ulcer Stages Items | I know | Uncertain | I don't Know | M.s | Ass. |
|---|---|---|---|---|---|---|
| | | Freq | Freq | Freq | | |
| 1 | A Stage 2 pressure injury/ulcer is a partial thickness skin loss involving the epidermis and/or dermis. | 92 | 30 | 28 | 2.43 | Good |
| 2 | Skin that doesn't blanch when pressed is a Stage 1 pressure injury/ulcer. | 48 | 67 | 35 | 2.09 | Fair |
| 3 | A Stage 3 pressure injury/ulcer is a full thickness skin loss. | 74 | 39 | 37 | 2.25 | Fair |
| 4 | A Stage 3 pressure injury/ulcer may have slough in its base. | 52 | 54 | 44 | 2.05 | Fair |
| 5 | If necrotic tissue is present and if bone can be seen or palpated, the ulcer is a Stage 4. | 72 | 32 | 46 | 2.17 | Fair |
| 6 | When necrotic tissue is removed, an unstageable pressure injury/ulcer will be classified as a Stage 3 injury/ulcer. | 56 | 48 | 46 | 2.07 | Fair |
| 7 | It is worrying about the appearance of blisters on heels. | 68 | 39 | 43 | 2.17 | Fair |
| 8 | Bone, tendon, or muscle may be exposed in a Stage 4 pressure injury/ulcer. | 65 | 45 | 40 | 2.17 | Fair |
| 9 | Dry, adherent eschar on the heels should not be removed. | 25 | 63 | 62 | 1.75 | Fair |
| 10 | Deep tissue injury is a localized area of purple or maroon discoloured intact skin or a blood-filled blister. | 47 | 58 | 45 | 2.01 | Fair |

| | | | | | | |
|---|---|---|---|---|---|---|
| 11 | In large and deep pressure injury/ulcers, the number of dressings used needs to be counted and documented so that all dressings are removed at the next dressing change. | 72 | 37 | 41 | 2.21 | Fair |
| 12 | A mucosal membrane pressure injury/ulcer is found on mucous membrane as the result of medical equipment used at that time on that location; this pressure injury is not staged. | 36 | 62 | 52 | 1.89 | Fair |
| 13 | Pressure injury/ulcers can occur around the ears in a person using oxygen by nasal cannula. | 70 | 30 | 50 | 2.13 | Fair |
| 14 | Stage 1 pressure injury/ulcers are intact skin with non-blanchable erythema over a bony prominence. | 80 | 36 | 34 | 2.31 | Fair |
| 15 | When the ulcer base is totally covered by slough, it cannot be staged. | 28 | 79 | 43 | 1.90 | Fair |
| 16 | Nurses should avoid turning a patient onto a reddened area. | 63 | 55 | 32 | 2.21 | Fair |
| 17 | Skin tear are not classified from pressure ulcer staging. | 41 | 64 | 45 | 1.97 | Fair |
| 18 | A Stage 3 pressure injury/ulcer may appear shallow if located on the ear, malleolus/ankle, or heel. | 52 | 51 | 47 | 2.03 | Fair |
| 19 | Deep tissue injury will progress to another injury/ulcer stage. | 78 | 42 | 30 | 2.32 | Fair |
| 20 | A Stage 4 pressure injury/ulcer may be undermining. | 53 | 58 | 39 | 2.09 | Fair |

*Level of Assessment (Poor [P]=1-1.66; Fair [F]=1.67-2.33; Good [G]=2.34-3)*

Table (4-5) demonstrated that the nurses expressed a fair responses towards knowledge about pressure ulcer stages at all, studied items while, the responses were good at item number (1).

**Table(4.6):Overall nurses knowledge about pressure ulcer stages**

| Knowledge of ulcer Stages | Freq | % | *M (±SD)* | *Ass.* |
|---|---|---|---|---|
| Poor (20-33.33) | 20 | 13.3 | *42.22 ± 8.98* | *Fair* |
| Fair (33.34-46.66) | 74 | 49.4 | | |
| Good (46.67-60) | 56 | 37.3 | | |
| Total | 150 | 100.0 | | |

*M: Mean for total score, SD=Standard Deviation for total score*

Table (4-6) show that the (49.4%) of nurses expressed a fair knowledge towards pressure ulcer stages 42.22 (±8.98).

## Table (4.7): Nurses knowledge about wound descriptions

| List | Wound Descriptions Items | I know | Uncertain | I don't Know | M.s | Ass. |
|---|---|---|---|---|---|---|
| | | Freq | Freq | Freq | | |
| 1 | Slough is yellow or cream-colored necrotic /devitalized tissue on a wound bed. | 94 | 29 | 27 | 2.45 | Good |
| 2 | Pressure ulcers are contaminated wounds. | 85 | 37 | 28 | 2.38 | Good |
| 3 | Gauze dressings increase the pain in the wound. | 26 | 77 | 47 | 1.86 | Fair |
| 4 | Hydrogel dressings can be used on pressure injury/ulcers with granulation tissue. | 36 | 64 | 50 | 1.91 | Fair |
| 5 | Pressure ulcers is not progress in a linear fashion from Stage 1 to 2 to 3 to 4. | 30 | 66 | 54 | 1.84 | Fair |
| 6 | Eschar is not healthy tissue. | 93 | 32 | 25 | 2.45 | Good |
| 7 | Honey dressings can sting when initially placed in a wound. | 24 | 69 | 57 | 1.78 | Fair |
| 8 | Foam dressing may be used on areas at risk for shear injury. | 33 | 61 | 56 | 1.85 | Fair |
| 9 | Biofilms may develop in any type of wound. | 64 | 50 | 36 | 2.19 | Fair |
| 10 | Blanching refers to whiteness when pressure is applied to a reddened area. | 70 | 48 | 32 | 2.25 | Fair |
| 11 | Early changes associated with pressure injury/ulcer development may be missed in persons with darker skin tones. | 39 | 82 | 29 | 2.07 | Fair |
| 12 | Deep tissue injury (DTI) may be difficult to detect in individuals with dark skin tones. | 57 | 59 | 34 | 2.15 | Fair |
| 13 | Eschar is not good for wound healing. | 75 | 47 | 28 | 2.31 | Fair |
| 14 | It may be difficult to distinguish between moisture associated skin damage and a pressure injury/ulcer. | 59 | 55 | 36 | 2.15 | Fair |
| 15 | Wounds that become chronic are frequently stalled in the inflammatory phase of healing. | 52 | 56 | 42 | 2.07 | Fair |
| 16 | Shear injury is a concern for the patient even using a side a lateral-rotation bed. | 47 | 61 | 42 | 2.03 | Fair |
| 17 | A dressing should keep the wound bed moist, but the surrounding skin dry. | 58 | 59 | 33 | 2.17 | Fair |
| 18 | Hydrocolloid and film dressings must be carefully removed from fragile skin. | 71 | 45 | 34 | 2.25 | Fair |
| 19 | Hydrocolloid dressings should be not used on an infected wound. | 52 | 53 | 45 | 2.05 | Fair |
| 20 | Pressure injury/ulcers can be cleansed with water that is suitable for drinking. | 37 | 62 | 51 | 1.91 | Fair |
| 21 | Alginate dressings can be used for heavily draining pressure injury/ulcers or those with clinical evidence of infection. | 38 | 72 | 40 | 1.99 | Fair |
| 22 | Alginate dressings absorb a lot of drainage. | 54 | 59 | 37 | 2.11 | Fair |
| 23 | Non-sting skin prep should be used around a wound to protect surrounding tissue from moisture. | 74 | 43 | 33 | 2.27 | Fair |
| 24 | Some Bacteria can develop immunity to silver dressings. | 42 | 60 | 48 | 1.96 | Fair |

*Level of Assessment (Poor [P]=1-1.66; Fair [F]=1.67-2.33; Good [G]=2.34-3)*

Table (4-7) demonstrated that the nurses expressed a fair responses towards knowledge about wound descriptions at all, studied items while, the responses were good at items number (1, 2 and 6).

**Table(4.8):Overall nurses knowledge about wound descriptions**

| Knowledge of Wound Descriptions | Freq | % | *M (±SD)* | *Ass.* |
|---|---|---|---|---|
| Poor (24-40) | 19 | 12.7 | *50.45 ± 11.20* | *Fair* |
| Fair (40.1-56) | 86 | 57.3 | | |
| Good (56.1-72) | 45 | 30.0 | | |
| Total | 150 | 100.0 | | |

*M: Mean for total score, SD=Standard Deviation for total score*

Table(4-8) shows that the (57.3%) of nurses expressed a fair knowledge towards wound descriptions 50.45 (±11.20).

**Table (4.9):Overall nurses knowledge regarding pressure ulcer Prevention in intensive care units**

| Overall Knowledge | Freq | % | *M (±SD)* | *Ass.* |
|---|---|---|---|---|
| Poor Knowledge | 21 | 14.0 | *150.52 ± 30.07* | *Fair* |
| Fair Knowledge | 92 | 61.3 | | |
| Good Knowledge | 37 | 24.7 | | |
| Total | 150 | 100.0 | | |

*M: Mean for total score, SD=Standard Deviation for total score*

***[Poor= 72-120; Fair= 120.1-168; Good=168.1-216]***

Table (4-9) shows that over half (61.3%) of nurses expressed a fair knowledge regarding pressure ulcer prevention in intensive care units 150.52 (±30.07).

**Table (4.10): Nurses attitudes towards pressure ulcer prevention**

| List | Nurses Attitudes Items | Agree | partialy agree | Disagree | M.s | Ass. |
|---|---|---|---|---|---|---|
| | | Freq | Freq | Freq | | |
| 1 | Not All patients are at potential risk of developing pressure sores. | 74 | 57 | 19 | 2.37 | Agree |
| 2 | I value that joining educational activities on pressure ulcer prevention is important for my practice. | 111 | 33 | 6 | 2.70 | Agree |
| 3 | In my opinion, patients tend not to get as many pressure sores nowadays. | 50 | 61 | 39 | 2.07 | Neutral |
| 4 | I am more interested in preventing pressure ulcers in my practice. | 96 | 46 | 8 | 2.59 | Agree |
| 5 | Pressure sore prevention is a greater priority than pressure treatment. | 108 | 31 | 11 | 2.65 | Agree |
| 6 | Continuous nursing assessment of patients will give an accurate picture of their pressure sore risk. | 90 | 47 | 13 | 2.51 | Agree |
| 7 | Most pressure sores can be avoided. | 63 | 64 | 23 | 2.27 | Neutral |
| 8 | I am more interested in pressure sore prevention than other aspects of nursing care. | 89 | 51 | 10 | 2.53 | Agree |
| 9 | I am aware to turn my patient who is at risk for pressure ulcer every 2 hours. | 101 | 35 | 14 | 2.58 | Agree |
| 10 | Patient should be cleansed immediately after soiled. | 87 | 48 | 15 | 2.48 | Agree |
| 11 | Pressure ulcer should be an important indicator for quality of nursing care. | 71 | 54 | 25 | 2.31 | Neutral |

*Level of Assessment (Disagree [D]=1-1.66; Neutral [N]=1.67-2.33; Agree [A]=2.34-3)*

Table (4-10) demonstrated that the nurses expressed an agree (positive) responses towards pressure ulcer prevention at all, studied items except, the items number (3, 7 and 11) the responses were neutral (partially agree).

**Table(4.11):Overall nurses attitudes regarding pressure ulcer prevention in intensive care units**

| Overall Attitudes | Freq | % | *M (±SD)* | *Ass.* |
|---|---|---|---|---|
| Negative | 4 | 2.7 | *27.06 ± 3.59* | *Positive* |
| Neutral | 32 | 21.3 | | |
| Positive | 114 | 76.0 | | |
| Total | 150 | 100.0 | | |

*M: Mean for total score, SD=Standard Deviation for total score*

***[Negative= 11-18.33; Neutral= 18.34-25.66; Positive =25.67-33]***

Table (4-11) shows that the majority of (76%) of nurses expressed a positive attitudes regarding pressure ulcer prevention in intensive care units 27.06 (±3.59).

## 4.12. Statistical differences in nurses knowledge and attitude's with respect their socio-demographic variables

**Table (4.12.1):**Differences in nurses knowledge and attitudes based on their age groups

| Age groups | Source of variance | Sum of Squares | d.f | Mean Square | *F-statistic* | *Sig.* |
|---|---|---|---|---|---|---|
| Knowledge | Between Groups | 0.099 | 3 | 0.033 | 0.187 | 0.905 |
| | Within Groups | 25.899 | 146 | 0.177 | | |
| | Total | 25.998 | 149 | | | |
| Attitudes | Between Groups | 0.132 | 3 | 0.044 | 0.408 | 0.747 |
| | Within Groups | 15.758 | 146 | 0.108 | | |
| | Total | 15.890 | 149 | | | |

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Analysis of variance in the table (4.12.1) showed that there were no statistically significant differences in knowledge (*F= .187; p=.905*) and attitudes (*F= .408; p=.747*) between nurses with respect to their age groups.

**Table(4.12.2):** Differences in nurses knowledge and attitudes based on their gender

| Variables | Gender | Mean | SD | t-value | d.f | *Sig.* |
|---|---|---|---|---|---|---|
| Knowledge | Male | 2.12 | 0.415 | 1.081 | 148 | 0.281 |
| | Female | 2.04 | 0.420 | | | |
| Attitudes | Male | 2.48 | 0.312 | 1.057 | 148 | 0.292 |
| | Female | 2.42 | 0.344 | | | |

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The independent sample t-test indicated that there were no statistically significant differences in knowledge (*t= 1.081; p= .281*) and attitudes (*t= 1.057; p= .292*) between nurses with respect to their who are male or female, as shown in table(4.12.2).

**Table (4.12.3):** Differences in nurses knowledge and attitudes based on their residents

| Variables | Residents | Mean | SD | t-value | d.f | *Sig.* |
|---|---|---|---|---|---|---|
| Knowledge | Urban | 2.15 | 0.432 | 1.042 | 148 | 0.061 |
| | Rural | 2.05 | 0.351 | | | |
| Attitudes | Urban | 2.46 | 0.325 | 0.354 | 148 | 0.724 |
| | Rural | 2.44 | 0.332 | | | |

The independent sample t-test indicated that there were no statistically significant differences in knowledge (*t= 1.042; p= .061*) and attitudes (*t= .354; p= .724*) between nurses with respect to their who are urban or Rural, as shown in table (4.12.3).

**Table(4.12.4):** Differences in nurses knowledge and attitudes based on their education level

| Education Level | Source of variance | Sum of Squares | d.f | Mean Square | *F-statistic* | *Sig.* |
|---|---|---|---|---|---|---|
| Knowledge | Between Groups | 12.495 | 3 | 4.165 | 45.034 | 0.000 |
| | Within Groups | 13.503 | 146 | 0.092 | | |
| | Total | 25.998 | 149 | | | |
| Attitudes | Between Groups | 0.819 | 3 | 0.273 | 2.644 | 0.051 |
| | Within Groups | 15.071 | 146 | 0.103 | | |
| | Total | 15.890 | 149 | | | |

The analysis of variance shown in table(4.12.4) that there were statistically significant differences in knowledge (*F= 45.034; p=.000*) and attitudes (*F= 2.644; p=.051*) between nurses with respect to their education level.

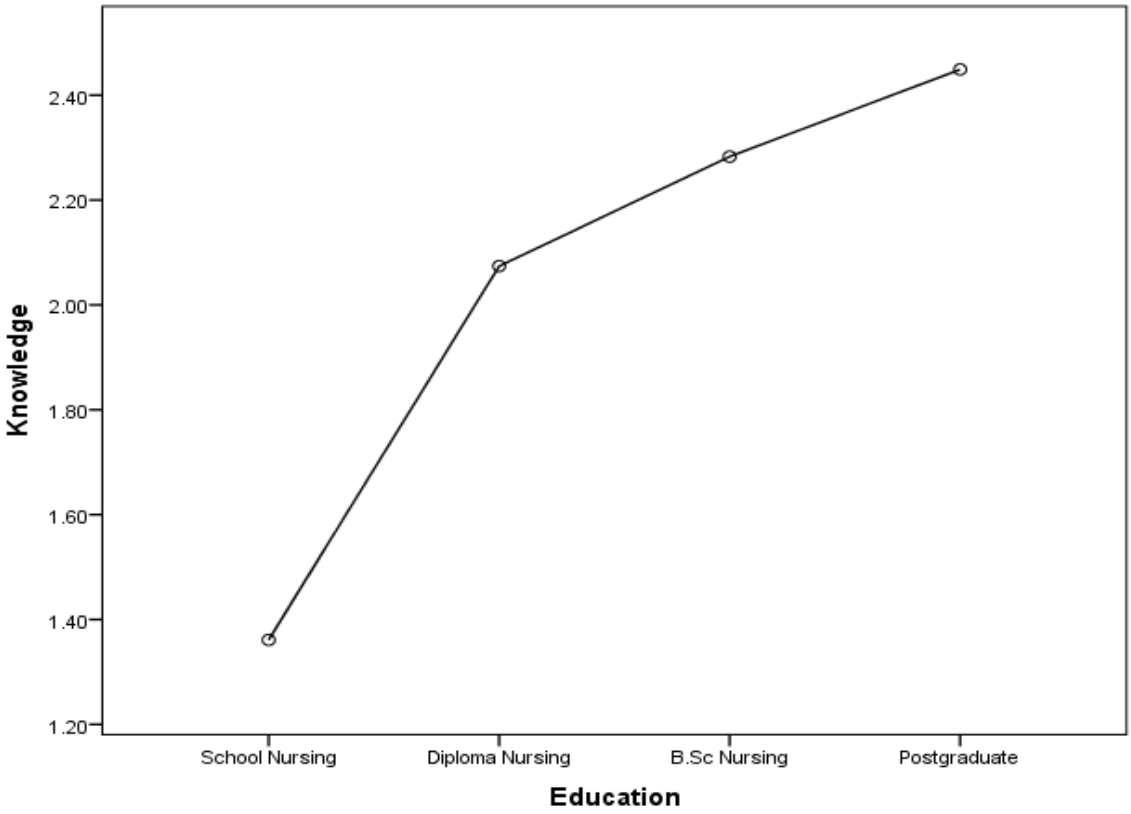


**Figure (4.1):** Distribution of nurses knowledge based of their education level

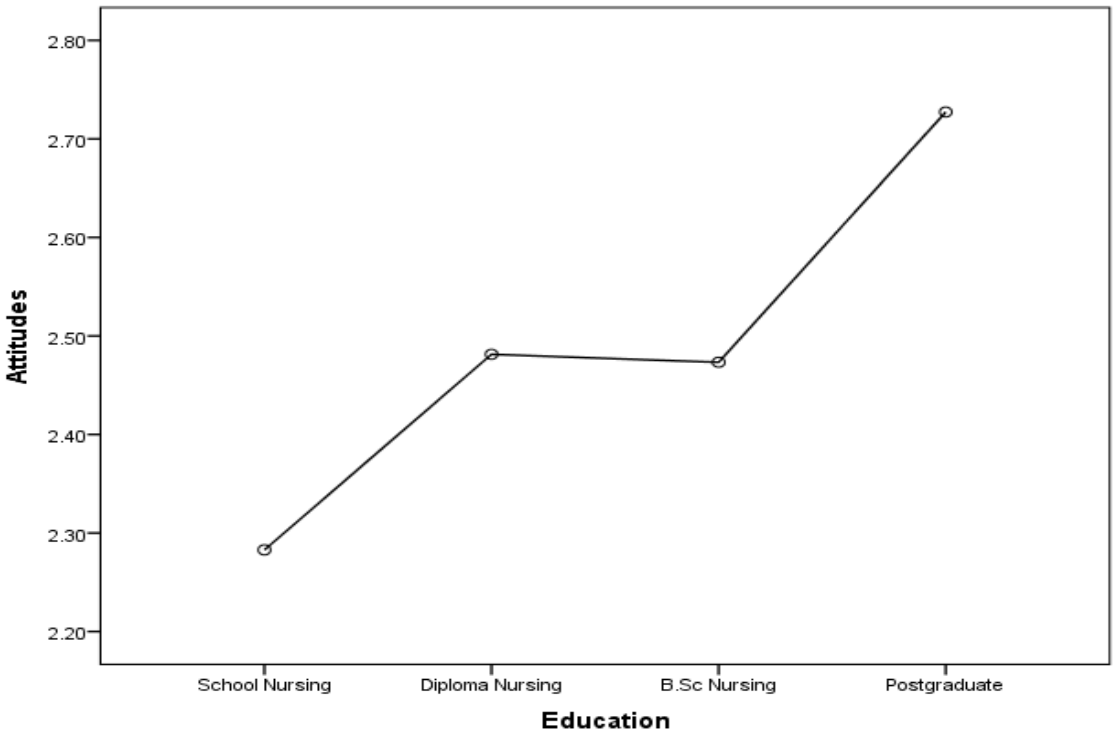


**Figure (4.2):** Distribution of nurses attitudes based of their education level

**Table (4.12.5):** Differences in nurses knowledge and attitudes based on their years of experience in nursing

| Years of Experience | Source of variance | Sum of Squares | d.f | Mean Square | *F-statistic* | *Sig.* |
|---|---|---|---|---|---|---|
| Knowledge | Between Groups | 15.838 | 3 | 5.279 | 75.863 | 0.000 |
| | Within Groups | 10.160 | 146 | 0.070 | | |
| | Total | 25.998 | 149 | | | |
| Attitudes | Between Groups | 1.357 | 3 | 0.452 | 4.543 | 0.004 |
| | Within Groups | 14.533 | 146 | 0.100 | | |
| | Total | 15.890 | 149 | | | |

The analysis of variance showed in table(4.12.5) that there were statistically significant differences in knowledge (*F= 75.863; p=.000*) and attitudes (*F= 4.543; p=.004*) between nurses with respect to their years of experience in nursing.

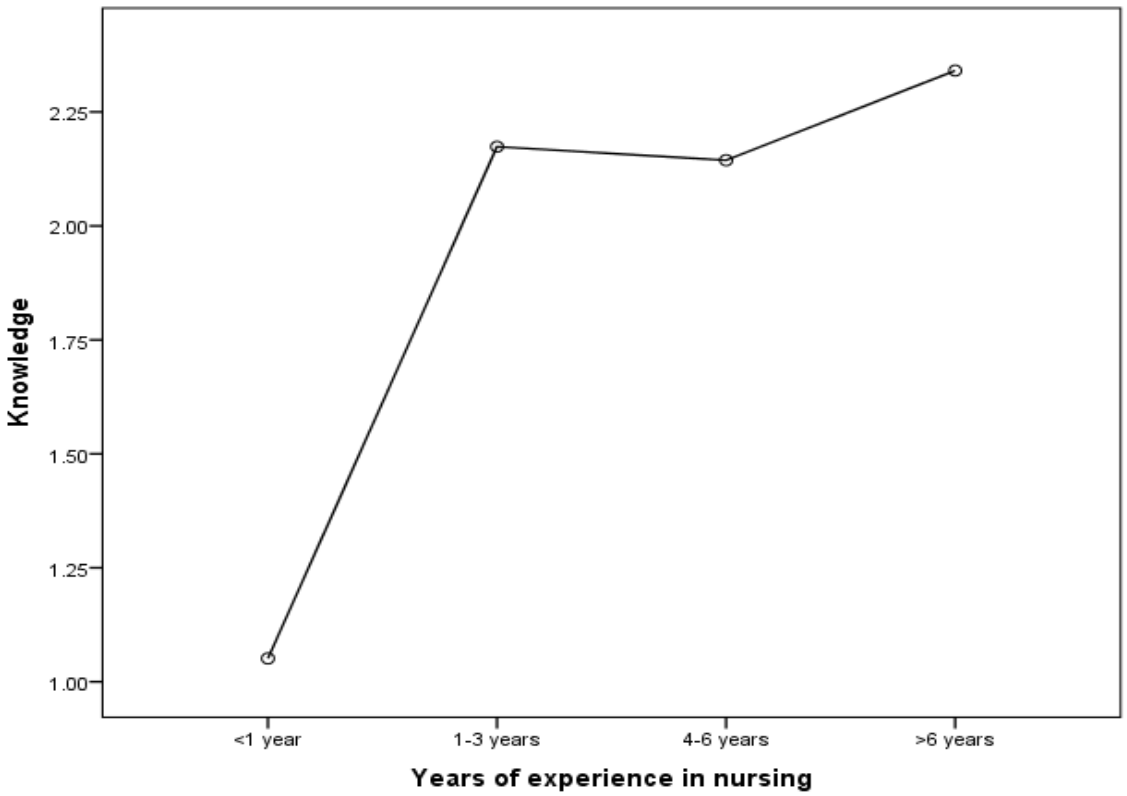


**Figure (4.3):** Distribution of nurses knowledge based of their years of experience


**Figure (4.4):** Distribution of nurses attitudes based of their years of experience

**Table(4.12.6):** Differences in nurses knowledge and attitudes based on their experience in ICU

| Experience in ICU | Source of variance | Sum of Squares | d.f | Mean Square | *F-statistic* | *Sig.* |
|---|---|---|---|---|---|---|
| Knowledge | Between Groups | 16.160 | 3 | 5.387 | 79.939 | 0.000 |
| | Within Groups | 9.838 | 146 | 0.067 | | |
| | Total | 25.998 | 149 | | | |
| Attitudes | Between Groups | 1.249 | 3 | 0.416 | 4.150 | 0.007 |
| | Within Groups | 14.641 | 146 | 0.100 | | |
| | Total | 15.890 | 149 | | | |

The analysis of variance shown in table(4.12.6) that there were statistically significant differences in knowledge (*F= 79.939; p=.000*) and attitudes (*F= 4.150; p=.007*) between nurses with respect to their experience in ICU.

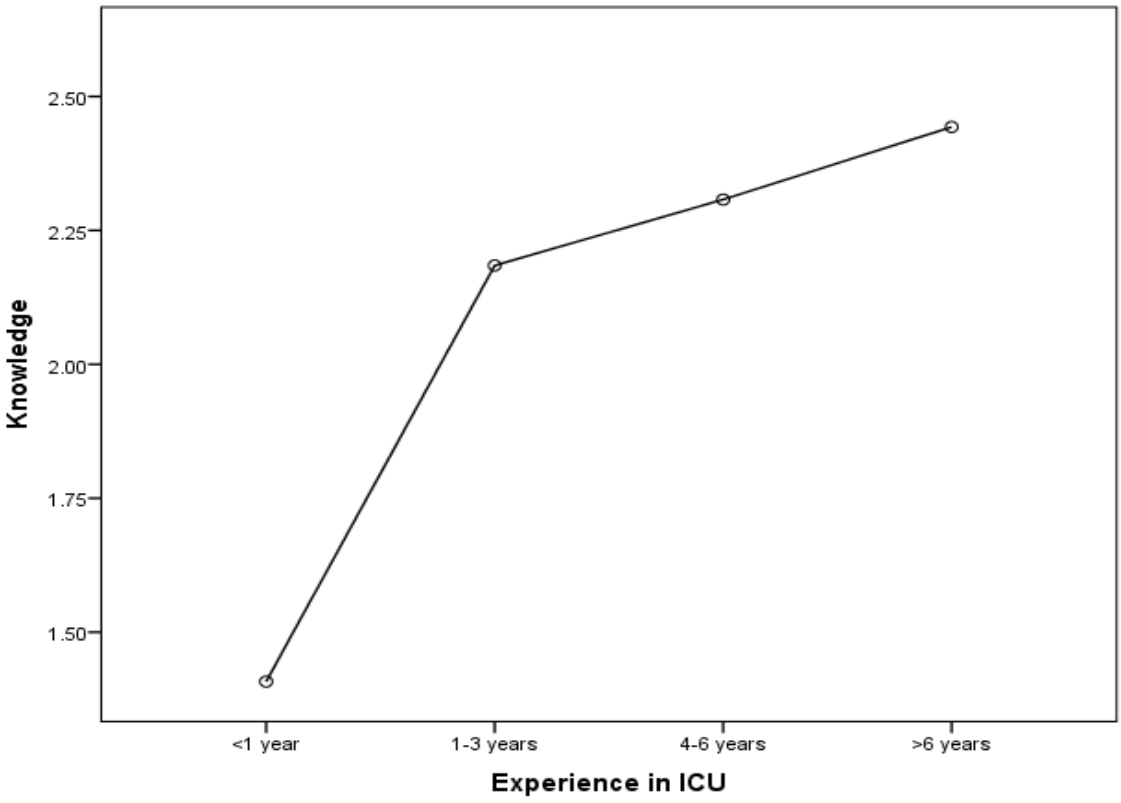


**Figure (4.5):** Distribution of nurses knowledge Based of their experience in ICU

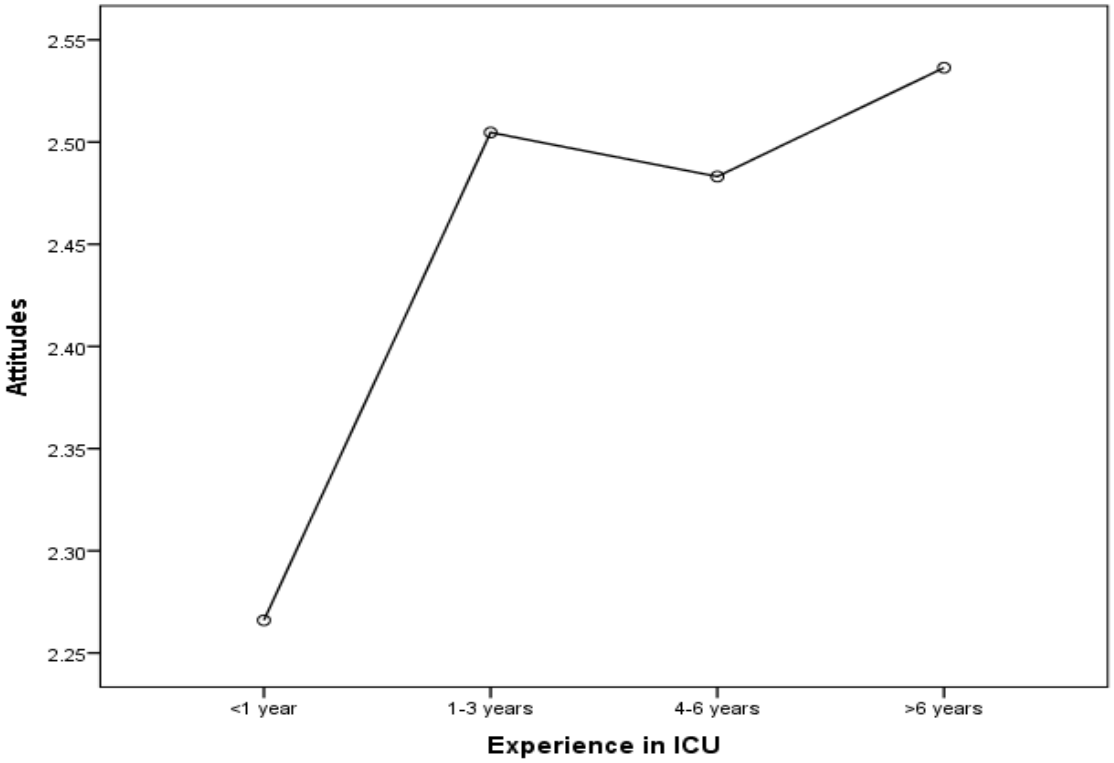


**Figure (4.6):** Distribution of nurses attitudes based of their experience in ICU

**Table(4.12.7):** Differences in nurses knowledge and attitudes based on their shift

| Variables | Shift | Mean | SD | t-value | d.f | *Sig.* |
|---|---|---|---|---|---|---|
| Knowledge | Morning | 2.21 | 0.276 | 5.052 | 148 | 0.000 |
| | Evening | 1.88 | 0.526 | | | |
| Attitudes | Morning | 2.49 | 0.224 | 1.982 | 148 | 0.052 |
| | Evening | 2.39 | 0.446 | | | |

The independent sample t-test indicated that there were statistically significant differences in knowledge (*t= 5.052; p= .000*) and attitudes (*t= 1.982; p= .052*) between nurses with respect to their who work at morning or evening, as show in table (4.12.7).

**Table (4.12.8):** Differences in nurses knowledge and attitudes based on their training courses

| Training Courses | Source of variance | Sum of Squares | d.f | Mean Square | *F-statistic* | *Sig.* |
|---|---|---|---|---|---|---|
| Knowledge | Between Groups | 9.896 | 2 | 4.948 | 45.168 | 0.000 |
| | Within Groups | 16.103 | 147 | 0.110 | | |
| | Total | 25.998 | 149 | | | |
| Attitudes | Between Groups | 0.133 | 2 | 0.067 | 0.621 | 0.539 |
| | Within Groups | 15.757 | 147 | 0.107 | | |
| | Total | 15.890 | 149 | | | |

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The analysis of variance shown in table (4.12.8) that there were statistically significant differences in knowledge (*F= 45.168; p=.000*); and no statistically significant differences in attitudes (*F= .621; p=.539*) between nurses with respect to their training courses.

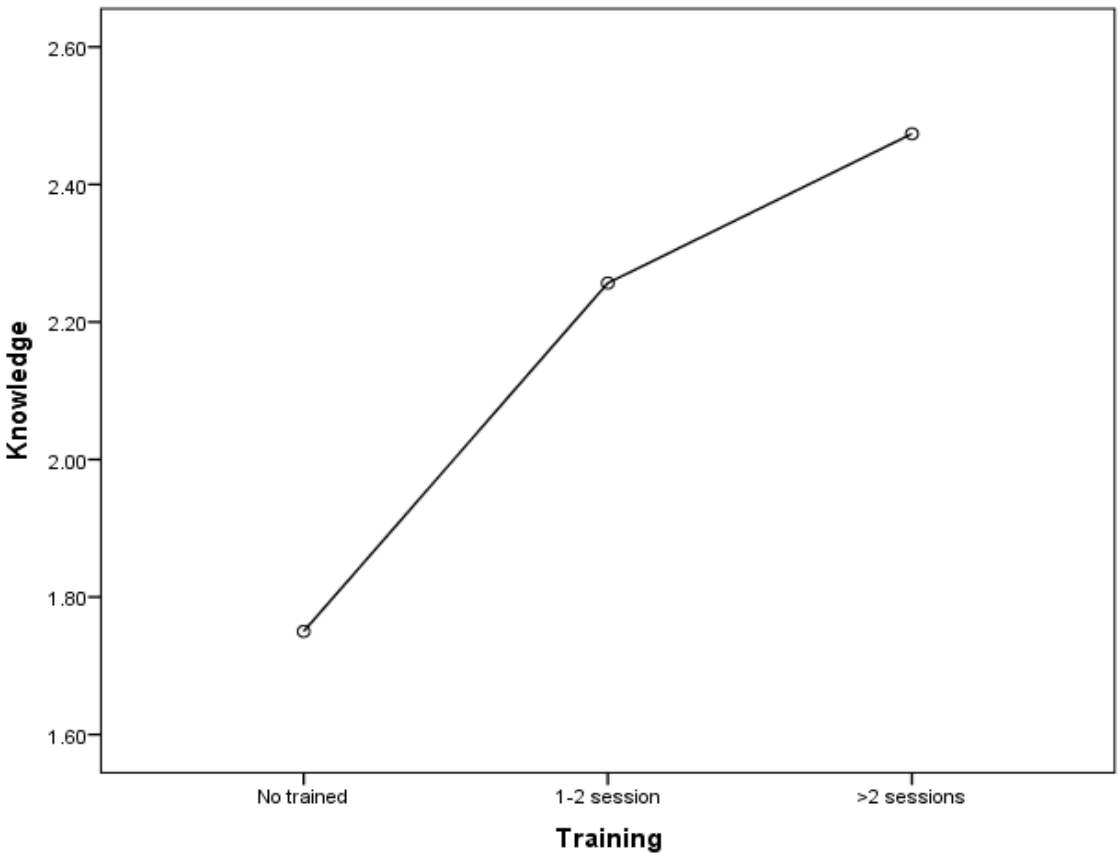


**Figure (4.7):** Distribution of nurses knowledge based of their training

# *Chapter Five*

# *Discussion of the Results*

# Chapter Five

# Discussion

This chapter will present an abstract interpretation over logical grids and reasonable driven argumentation for statically results which were supported by the available literatures, and the researcher's opinion. Results of the study will be discussed according to the objectives of the study.

## 5.1. Demographic Characteristics

### 5.1.1. Socio-Demographic Characteristic for Nurses

According the table(4.1) in results the social demographic characteristics of the participants, as it shows that the majority of the sample aged between (20-29) years was the highest recorded (90.6%). This is actually the reasonable age group for nurses, as the intensive care unit requires hard work and needs youth nurses to deliver a good and qualified care. Moreover, these results are parallel to the study conducted by Reza *et al*.,(2020) in Bangladesh found that (294) nurses, found the majority of them 160 (54.4%) were from age (21-30) years. In another similar study in Baghdad Governorate, where the results of the study showed that the predominant age sample of nursing workers was within (21-30) years (74%)(Noor and Hassan,.2021).

Regarding the gender, more than half were males (56.7%) compared to female nurses. This is due to the finding that male nurses are more in contact with patients, as patient interaction requires a high level of physical activity. These results come in parallel with the results of the study done by Getie *et al.*, (2020) In this study, a total of (401) study participants were involved, with a response rate of (95.02%). From the total number of respondents, more than

half 237 (59.1%) were males compared female. As well as a study Ebi *et al*., (2019) in hospitals Wollega showed that most of them were males (131, 61.8%).

Concerning the residency, the urban residents were predominated majority (75.3%) as compared with those who are rural. As well as a considered the need of such number of nurses to be employed in the city Centre hospitals as more patients were admitted from different regions and to meet the shortage of staff. Whereas, the Crowder-Klobofski, (2013) study found that the majority of participating nurses are urban residents (65%) and rural facilities may need additional education to improve their practices. While Baernholdt *et al*., (2020) conducted a study between nurses working in rural hospital and nurses working in urban hospitals, the results found that the majority of respondents are workers in urban hospitals (76.14% vs. 74.67 %).

### 5.1.2. Job related data

In the table(4.2) job characteristics of the participants in terms of educational level revealed that B.Sc. Nursing was predominant (45.3%) compared to other degrees, and this is due to the majority of nurses working in intensive care having a bachelor's degree, as this category is more efficient and capable to care such patients. These results are consistent with the study by Tubaishat and Aljezawi, (2014) in Jordan nurses, it was revealed that most Jordanian nurses participants were registered nurses (87.7%, *n* = 179), holding a bachelor degree. In a similar study conducted by Tirgari *et al.*, (2018), the findings showed that (87.65%) had a bachelor's degree in nursing.

More than half of the research participants have an experience in nursing and experience in intensive care from one - three years, which is the highest

percentage (64% - 52% ) respectively, from the morning shift by, this is due to the fact that work load and the time factor are among the reasons for the unwillingness and continuation of the nurses to work in the intensive care unit. It is a fact that most of the nurses like to move to other departments in the hospital. Moreover, a study conducted in Hawassa university comprehensive specialized Hospital, in southern Ethiopia, revealed similar results to the study among 356 nurse Participants, it was found that (0 – 4) years old (47.20%) is the majority of the nurses participating in the study, with an eight-hour work Muhammed *et al*., (2020). Addition, in another study conducted in North Africa, it is consistent with these results, as it showed that more than half of the participants, by (65.2) percent, had experience of less than four years (Tesfa Mengist *et al.*, 2022).

With regard to work shift, the finding presented study revealed that most of nurses work at morning shift (63.3%). It is expected because the shortage of nurses in evening shift comparing with nurses in the evening shift. This result is inconsistent with the study conducted by Etafa *et al.*, (2018) was found that the majority of participating nurses work in less time 185 (83.1) from (222) the nurses have a lack of knowledge. In another study, Muhammed *et al*., (2020) in Ethiopia hospitals, found that the nurses work with eight hours less knowledgeable than those who work from eight to twelve hours at a rate of ( 62%).

Concerning training courses associated findings, (58.7%) of participants attended (1-2) sessions. This indicates attending and doing training courses for nurses, and this increases the quality of nursing care by acquiring knowledge and information. This finding concurred with Hu *et al*., (2021) in China is showed most participants reported that they had received training on pressure

ulcer prevention over the last year (n = 341, 66.9%), and that they required further training on this topic (n = 486, 95.3%).

## 5.2. Nurses Knowledge Regarding Pressure Ulcer

### 5.2.1. Nurses Knowledge Regarding Pressure Ulcer Prevention

According to the finding (46%) in the table(4.4) of the samples expressed a fair knowledge towards pressure ulcer prevention. In this regard, the average level is due to the lack or unavailability of adequate medical equipment needed by the patient. This research focuses along with studies in the Pomeranian Medical University is appears that over half of the respondents (57.64%) had a sufficient level of knowledge on the prevention of pressure ulcers (Szymański *et al.*, 2020).

Moreover, this study agrees with the study of Fulbrook *et al*., **(**2019) in Australian revealed that most of the responses were good about management and prevention of pressure ulcers. Another research conducted by Nuru *et al.*, (2015) in northwest Ethiopia discover In this study, it was found More than half of the answers were moderate of the participants, but not sufficient, because majority (91.1 %) of the nurses had not received any formal training and 223 (89.9 %) of them were not using any existing guidelines about risk assessment and prevention of pressure ulcer.

In contrast to the results of the study Yilmazer *et al.,(*2019) in Turkey, explored concerns about nurses' knowledge regarding pressure ulcer prevention was poor knowledge unsatisfactory.

### 5.2.2. Nurses Knowledge Concerning Pressure Ulcer Stages

Based on the results in the table (4-6) show that (49.4%) of participants

expressed a fair knowledge towards pressure ulcer stages. The reason for this is due to the nurses' lack of awareness of the dangers of ulcers, in addition to that, the absence of the role of officials in encouraging the conduct of continuous ulcer courses, despite the establishment of these training courses, but not at the required level.

The results of this study, which corresponded to several studies, were shown in the results, including a study conducted by Chianca *et al.*, (2010) in Brazil, the results showed satisfactory regarding pressure ulcer stage. Corresponds to Çelik *et a*l., (2017) the results of his study also showed nurses' knowledge of pressure injury and staging was moderate level. As stated in another study Kim & Lee, (2019) reported that nurses' knowledge of pressure injury and staging was found to be at a moderate level.

Contrary to the results of the study Demarré *et al*., (2012),the study conducted using both similar and different scales in the literature have found that nurses' levels of knowledge for pressure ulcer staging were inadequate. Another Study conducted by Sayar *et al*., (2022) obtained a mean score for the modified (pressure ulcer knowledge tool) of 62.67%, which is below the average (70%). The result of the study indicated that the level of knowledge of nurses about PIs and staging was inadequate.

### 5.2.3. Nurses Knowledge about Wound Descriptions

According to the table (4-8)shown more than half of the samples (57.3%), expressed a fair knowledge towards wound descriptions. This might be as a result of the lack in reading articles or nursing books that contribute to gaining sufficient and useful information which help their professional development. From this aspect, these results were matched by the study of

Awali *et al.*,(2018) in Saudi Arabia, which showed that the nurses' knowledge of describing pressure ulcers is moderate level.

As well as, study of Shanmukanathan,.( 2019) in Hospital Batticaloa, Sri Lanka, study found that majority of nurses had very low level of knowledge toward wound description Because most of the nurses did not receive training courses.

Among these studies showed findings that indicate a gap in knowledge of current evidence-based interventions for pressure ulcer among nurses in Nigeria and confirm that most pressure ulcer practice decisions are based on tradition, myths, and past experience. A structured educational approach is needed to enable Nigerian nurse (Rose Ekama Ilesanmi *et al*., 2012).

## 5.3. Overall Nurses Knowledge Regarding Pressure Ulcer Prevention in Intensive Care Units

Overall for nurses knowledge shown in table (4-9) that over half (61.3%) of nurses expressed a fair knowledge regarding pressure ulcer prevention in intensive care units. This is results inconsistent with study in Lahore general hospital by Nasreen *et al*., (2017) the study showed that nurses' overall level of knowledge was poor regarding pressure ulcer prevention. Another study conducted by Sen, (2020) in Medical Hospital Kolkata, the study showed the overall level of nurses' knowledge was poor regarding pressure ulcer prevention. As well as, cross-sectional studies conducted in Rwanda by Mwiseneza, (2017), that found overall knowledge of the nurses regarding prevention of pressure ulcer was very low.

## 5.4.Overall Nurses Attitudes Regarding Pressure Ulcer Prevention in Intensive Care Units

In the table (4-11**)** overall of nurses attitudes is majority (76%) expressed a positive attitudes regarding pressure ulcer prevention in intensive care units (27.06) (±3.59). Pressure ulcer prevention is one of the most important goal of nursing care in hospitalised patients in ICU and a positive attitude towards it can result in an appropriate level of care being delivered.

With the same result, the study of Senmar *et al*.,(2018) in Iran came, where the results showed that Iranian nurses working in ICUs and CCUs have a positive attitude toward pressure ulcer prevention.an another study, where this study revealed that the attitude was good regarding the prevention and treatment of pressure ulcer in Bujumbura (Niyongabo *et al*., 2022).

Furthermore, these results agreed with the by Hu *et al*.,(2021), in China the study demonstrated that ICU nurses' attitudes toward pressure ulcer prevention were generally positive, with a mean score of (76.65%). While study Tshiamo,. (2021) contradicts the results of this study, as it showed the attitude of nurses was negative regarding pressure ulcers' prevention.

## 5.5. Statistical differences in nurses knowledge and attitude's with respect their socio-demographic variables

With age table (4.12.1) showed that the analysis of variance showed that there were no statistically significant differences in knowledge (F= .187; p=.905) and attitudes (F= .408; p=.747) between nurses with respect to their age groups.These results are consistent with Batiha, (2018) study, as the study revealed that no significant finding from the demographic variables according

to age in a critical care unit. Study Tubaishat *et al*., (2013) also revealed no relationship between attitudes and age.

In regarding to gender table (4.12.2) results display according to used independent sample t-test indicate that there were no statistically significant differences in knowledge (t= 1.081; p= .281) and attitudes (t= 1.057; p= .292) between nurses with respect to their who are male or female. This may reflect the preparation of nurses and pattern of the academic achievement. The results of this study agree with the study conducted by Tayyib *et al*., (2016) which illustrated that the participants demonstrated positive attitudes toward pressure ulcer prevention. No significant differences were found between demographic characteristics of the participants with the nurses attitude.

For the residency the independent sample t-test indicates that there were no statistically significant differences in knowledge (t= 1.042; p= .061) and attitudes (t= .354; p= .724) between nurses with respect to those who are urban or rural resident in the table (4.12.3). On the other hand, the study of Hu *et al*., (2021) showed the opposite of the results of this study, as the results showed that there is no relationship between knowledge and demographic characteristics.

Regarding the level of educational table (4.12.4) show the analysis of variance showed that there were statistically significant differences in knowledge (F= 45.034; p=.000) and attitudes (F= 2.644; p=.051) between nurses with respect to their education level. Most of the time it's logical that the issue of knowledge and attitudes will be affected by the level educational of nurses and way are prepared. The results of this study contradict with the study of Shrestha and Shrestha, (2016), as it showed non-significant results for

the demographic characteristics in relation to the level of education regarding nurses the knowledge for prevention of pressure ulcers.

Concerning experience in nursing service the analysis of variance showed that there were statistically significant differences in knowledge (F= 75.863; p=.000) and attitudes (F= 4.543; p=.004) between nurses with respect to their years of experience in nursing. definitely the time and years spending in working in particular area will improve or support the professional development. The results of this study contradict the results of the Qaddumi and Khawaldeh, (2014) study conducted in Jordan, where it was found that knowledge had no relation with nurses' concerning years of work experience. Table (4.12.5).

Regarding the experience in ICU analysis of variance showed that there were statistically significant differences in knowledge (F= 79.939; p=.000) and attitudes (F= 4.150; p=.007) between nurses with respect to their experience in ICU table (4.12.6). Providing a quality of care in this vital units need as well, qualified nurses skillful and this require a time those professional spend. This result agrees with a study Batiha, (2018) the only significant finding from the demographic variables was 'years employed in a critical care unit.

whereas the shift work in table (4.12.7) was used independent sample t-test indicate that there were statistically significant differences in knowledge (t= 5.052; p= .000) and attitudes (t= 1.982; p= .052) between nurses with respect to their who work at morning or evening. The reason for this result is due to the nature of the work and the effort exerted by the nurses, in addition to the difference in the number of working hours between the morning and

evening shifts. Muhammed *et al*., (2020) found that the nurses work with eight hours less knowledgeable than those who work from eight to twelve hours.

According to table (4.12.8), in relation to the training courses, the analysis of variance showed that there were statistically significant differences in knowledge (F= 45.168; p=.000); and no statistically significant differences in attitudes (F= .621; p=.539) between nurses with respect to their training courses. These results were not in consistent with the results of Shrestha and Shrestha,(2016) study, who the found out that there is no significant association between level of knowledge of respondents and independent variables toward training.

# *Chapter Six*

# *Conclusions*

# *and*

# *Recommendations*

# Chapter Six

# Conclusions and Recommendations

## 6.1. Conclusions

The current study concluded that :

**6.1.1.** Most of the participants in this study are middle age, the majority are male and most them are urban resident.

**6.1.2.** The majority of the participants in this study had experience in nursing and their experience in the intensive care unit are one to three years, and most of them have a bachelor's degree working in the morning shift who attended one to two courses.

**6.1.3.** Regarding the nurses' knowledge of pressure ulcers prevention , most of the participants' answers were fair level.

**6.1.4.** With regard to the nurses' attitudes towards the prevention of pressure ulcers, the majority of the participants in this study had positive answers.

**6.1.5.** No significant statistically differences in knowledge and attitudes between nurses with respect to the (age, gender and residence).

**6.1.6.** The study found significant differences in knowledge and attitudes between nurses with respect to the (educational level, experience in nurse , experience in intensive care unit and shift work).

**6.1.7.** The study found significant differences between nurses knowledge and training and found no statistically significant between nurses attitudes and training.

## 6.2. Recommendations

Based on the results of the study, it is useful to suggest the following recommendations:

**6.2.1.** Health directorate can preparing continuous training programs regarding pressure ulcer prevention for nurses working in intensive care units at Hilla hospitals.

**6.2.2.** The hospital must Increasing the number of evening workers in order to provide quality care, as the number of nurses and long working hours affect the quality of nursing care.

**6.2.3.** Senior nurses who have long and good experience in this field can help teach and supervise the junior ones in emphasize the issue of good quality of care in regard to pressure ulcer.

**6.2.4.** More studies can be conducted in the future on the practices of nurses in the prevention and treatment of pressure ulcers.

**6.2.5.** It's essential to emphasize continuous nursing documentation, which enhances nursing care and avoids pressure ulcers.

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# *Appendices*

# Appendix (1)

University of Babylon
College of Nursing
Research Ethics Committee

جـــامـــعة بـــابـــل
كـــلية التمريـــض
لجنة اخلاقيات البحث العلمي

**Issue No:**

**Date: / 1 /2023**

## Approval Letter

To, حمزة مسلم ابو سعود

The Research Ethics committee at the **University of Babylon, College of Nursing** has reviewed and discussed your application to conduct the research study entitled " **Nurses' Knowledge and Attitudes Regarding pressure ulcer Prevention in Intensive Care Unit**".

The Following documents have been reviewed and approved:

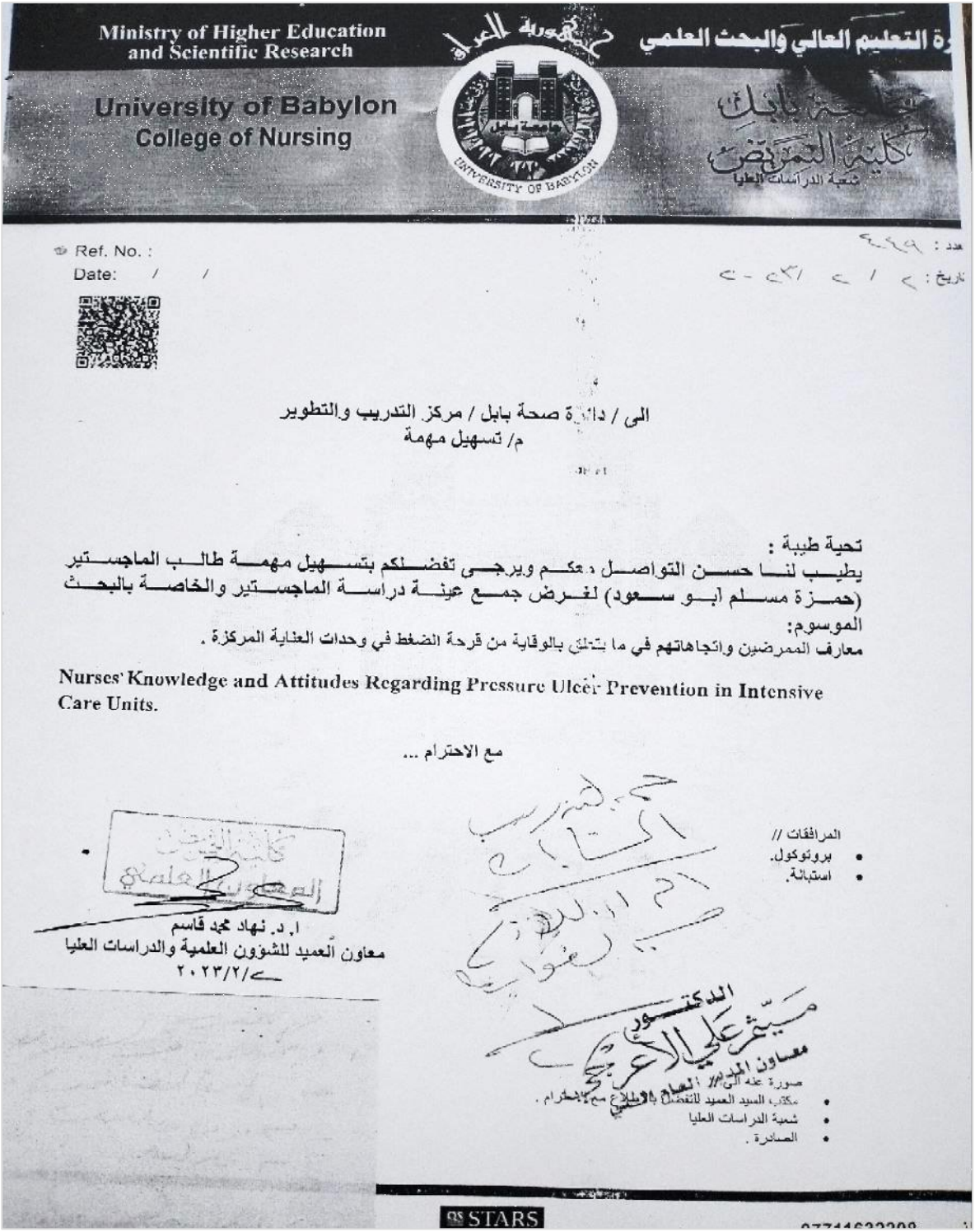
1. Research protocol
2. Research instrument/s
3. Participant informed consent

Committee Decision.

The committee approves the study to be conducted in the presented form. The Research Ethics committee expects to be informed about any changes occurring during the study, any revision in the protocol and participant informed consent.

Prof. Dr. Shatha Saadi Mohammed
Chair Committee
College of Nursing
Research Ethical Committee
31 / 1 /2023

## Appendix (2)



Ministry of Higher Education and Scientific Research

وزارة التعليم العالي والبحث العلمي

University of Babylon
College of Nursing

جامعة بابل
كلية التمريض
شعبة الدراسات العليا

Ref. No. :
Date: / /

العدد :
التاريخ :

الى / دائرة صحة بابل / مركز التدريب والتطوير
م/ تسهيل مهمة

تحية طيبة :

يطيب لنا حسن التواصل معكم ويرجى تفضلكم بتسهيل مهمة طالب الماجستير (حمزة مسلم ابو سعود) لغرض جمع عينة دراسة الماجستير والخاصة بالبحث الموسوم:

معارف الممرضين واتجاهاتهم في ما يتعلق بالوقاية من قرحة الضغط في وحدات العناية المركزة .

**Nurses' Knowledge and Attitudes Regarding Pressure Ulcer Prevention in Intensive Care Units.**

مع الاحترام ...

المرافقات //
- بروتوكول.
- استبانة.

أ. د. نهاد محمد قاسم
معاون العميد للشؤون العلمية والدراسات العليا
٢٠٢٣/٢/

الدكتور
معاون المدير

صورة عنه الى //
- مكتب السيد العميد للتفضل بالاطلاع مع الاحترام .
- شعبة الدراسات العليا
- الصادرة .

STARS

## Appendix (3)

جمهورية العـــراق

Ministry Of Health
Babylon Health Directorate
Email:-
Babel_Healthmoh@yahoo.com
Tel:282628 or 282621

وزارة الصحة والبيئة
دائرة صحة محافظة بابـــل
المديـــر العـــام
مركـز التدريب والتنمية البشرية
لجنة البحوث

استمارة رقم :-٠٣ /٢٠٢١

رقم القرار :- ١٩
تاريخ القرار :-٢/ ٢ /٢٠٢٣

### قرار لجنة البحوث

تحية طيبة ...

درست لجنة البحوث في دائرة صحة بابل مشروع البحث ذي الرقم ( ١٥ /٠/٢٠٢٣/ بابل)
المعنـون (معارف الممرضين واتجاتهم في ما يتعلق بالوقاية من قرحة الضغط في وحدات العناية المركزة)
والمقـدم من الباحث(حمزة مسلم أبو سعود) إلى وحدة أدارة البحوث والمعرفي مركز التدريب والتنمية البشرية في دائرة صحة بابل بتاريخ ٢٠٢٣/٢/٧ وقررت :

**قبول مشروع البحث أعلاه كونه مستوفيا للمعايير المعتمدة في وزارة الصحة والخاصة بتنفيذ البحوث ولا مانع من تنفيذه في مؤسسات الدائرة .**

مـــــع الاحتـــرام

وزارة الصحة
دائرة صحة بابل
مركز التدريب والتنمية البشرية
لجنة البحوث

الـدكتور
محمد عبد الله عجرش
رئيس لجنة البحوث
٢٠٢٣/ /

نسخة منه إلى :
- مكتب المدير العام / مركز التدريب والتنمية البشرية / وحدة إدارة البحوث ... مع الأوليات.

سوزان

## Appendix (4)

جمهورية العراق

| | | |
|---|---|---|
| Ministry Of Health<br>Babylon Health Directorate<br>Email:-<br>Babel_Healthmoh@yahoo.com<br>لأجل عراق اخضر مستدام ..سنعمل معا لترشيد استهلاك الطاقة الكهربائية والمحافظة على البيئة من التلوث |  | وزارة الصحة<br>دائرة صحة محافظة بابـــل<br>المديـــر العـــام<br>مركـز التدريب والتنمية البشرية<br>وحدة أدارة البحوث<br>العدد : ٢٥٠<br>التاريخ: ١٥/ ٢/ ٢٠٢٣ |

إلى / مستشفى الأمام الصادق (ع)
مستشفى مرجان التعليمي
مستشفى الحلة التعليمي

م// تسهيل مهمة

تحية طيبة ...

أشـارة إلـى كتـاب جامعـة بابـل/ كليـة التمـريض / الدراسـات العليـا ذي العـدد ٤٤٩ فـي ٢٠٢٣/٢/٢

نرفـق لكـم ربطـا اسـتمارات المـوافقة المبدنيـة لمشـروع البحـث العائـد للباحـث طالـب الدراسـات العليا/ ماجستير( حمزة مسلم ابو سعود ).

للتفضـل بـالاطلاع وتسـهيل مهمـة المومـا أليـه مـن خـلال توقيـع وخـتم اسـتمارات أجـراء البحـث المرفقـة فـي مؤسسـاتكم وحسـب الضـوابط والإمكانـات لاستحصـال الموافقـة المبدنيـة ليتسـنى لنـا أجراء اللازم على أن لا تتحمل مؤسساتكم أية تبعات مادية وقانونية .... مع الاحترام

المرفقات :
استمارة عدد /٢

وزارة الصحة
دائرة صحة بابل
مركز التدريب والتنمية البشرية

الدكتور
محمد عبد الله عجرش
مدير مركز التدريب والتنمية البشرية
/ /٢٠٢٣

نسخة منه إلى :
- مركز التدريب والتنمية البشرية / وحدة أدارة البحوث مع الأوليات ...

# Appendix(5)

# Questionnaire

**استمـــارة تحكيـــم**

**حضرة الأستــاذ/ة الفاضـــل/ة .....**

**تحيـــة طيبـــة**

**نظرا لما تمتلكه من خلفية ومكانة علمية وخبرة عملية في مجال اختصاصك يرجى التفضل بمراجعة ورقة الاستبانة المرفقة والخاصة برسالة الماجستير الموسومة**

**"معارف الممرضين واتجاهاتهم في ما يتعلق بالوقاية من قرحه الضغط في وحدات العناية المركزة"**

**"Nurses' Knowledge and Attitudes Regarding Pressure Ulcer prevention in Intensive Care Units"**

**وابداء ملاحظاتك القيمة عليها للأخذ بها مع فائق الشكر والتقدير.**

**الاسم الكامل: .....**

**اللقب العلمي: .....**

**مكان العمل: .....**

**سنين الخبرة: .....**

**التوقيع: .....**

**الباحـث**

**طالـب الماجستيـر**

**حمزة مسلم ابو سعود**

**جامعة بابـل / كلية التمريـض**

## Part l:

**Section one :Demographic characteristic of Nurses:**

**1-Age:** ☐ year

**2- Gender :** Male ☐ Female ☐

**3-Education level:** Secondary school nursing ☐ Diploma ☐
post gradual ☐ Bachelor ☐

**4-Residency:** Urban ☐ Rural ☐

**Section two : Work information :**

**1-Years of experience in nursing :** ☐ **year**

**2-Years' experience in intensive care unit :** ☐ year

**3-Work shift:** Morning ☐ Night ☐

**3-Your participation in special courses about pressure ulcers:**

Yes ☐ No ☐

**If yes write Number of course :** ☐

## Part II; Nurses knowledge about pressure ulcer:

### Domain I: Nurses knowledge about pressure ulcer prevention:

| No. | Items | I know | Uncertain | I don't know |
|---|---|---|---|---|
| 1. | Hot water and soap may dry the skin and increase the risk for pressure injury/ulcers. | | | |
| 2. | Chair-bound persons should be fitted for a chair cushion. | | | |
| 3. | A person confined to bed should be repositioned based on the individual's risk factors and the support surface's characteristics. | | | |
| 4. | A pressure injury/ulcer scar will break down faster than unwounded skin. | | | |
| 5. | The goal of palliative care are to relieve pain, Prevent disease and maintain the best quality of life possible. | | | |
| 6. | Dragging the patient up in bed increases friction. | | | |
| 7. | Small position changes may need to be used for patients who cannot tolerate major shifts in body positioning. | | | |
| 8. | An incontinent patient should have a toileting care plan. | | | |
| 9. | A pressure redistribution surface manages tissue load and the climate against the skin. | | | |
| 10. | When possible, high-protein oral nutritional supplements should be used in addition to usual diet for patients at high risk for pressure injury/ulcers. | | | |
| 11. | The home care setting has unique considerations for support surface selection. | | | |
| 12. | Donut devices/ring cushions alone do not help prevent pressure ulcer . | | | |
| 13. | Specialized beds cannot be used for all patients at risk of developing pressure/ulcers. | | | |
| 14. | Persons at risk for pressure injury/ulcers should be nutritionally assessed (i.e., weight, nutrition intake, blood work). | | | |
| 15. | Critical care patients may need slow, gradual turning because of being hemodynamically unstable. | | | |
| 16. | Staff education alone does not reduce the incidence of pressure injury/ulcers. | | | |
| 17. | A footstool/footrest should be used for an immobile patient whose feet do not reach the floor. | | | |

| | | | | |
|---|---|---|---|---|
| 18. | Massage of bony prominences is not essential for skin care. | | | |
| 19. | Poor posture in a wheel chair may be the cause of a pressure injury/ulcer. | | | |
| 20. | For persons who have incontinence, skin cleaning should occur at the time of soiling and at routine intervals. | | | |
| 21. | Patients who are spinal cord injured need knowledge about pressure injury/ulcer prevention and self-care. | | | |
| 22. | People, who are not moving and can be taught, should change the posture of sitting every two hours while sitting in a chair. | | | |
| 23. | Choosing a supportive surface bed for the patient should take into account all levels of risk of pressure ulcers in the person. | | | |
| 24. | It is necessary to have the patient with a spinal cord injury evaluated for seating. | | | |
| 25. | To help prevent pressure injury/ulcers, the head of the bed should be elevated at a 30-degree angle or less. | | | |
| 26. | Urinary catheter tubing should be positioned above the leg. | | | |
| 27. | Pressure injury/ulcers may be avoided in patients who are obese with use of properly sized equipment. | | | |
| 28. | Pressure injury/ulcers are a lifelong concern for a person who is spinal cord injured. | | | |

## Domain II: Nurses knowledge of pressure ulcer stages:

| No. | Items | I know | Uncertain | I don't know |
|---|---|---|---|---|
| 1. | A Stage 2 pressure injury/ulcer is a partial thickness skin loss involving the epidermis and/or dermis. | | | |
| 2. | Skin that doesn't blanch when pressed is a Stage 1 pressure injury/ulcer. | | | |
| 3. | A Stage 3 pressure injury/ulcer is a full thickness skin loss. | | | |
| 4. | A Stage 3 pressure injury/ulcer may have slough in its base. | | | |

| | | | | |
|---|---|---|---|---|
| 5. | If necrotic tissue is present and if bone can be seen or palpated, the ulcer is a Stage 4. | | | |
| 6. | When necrotic tissue is removed, an unstageable pressure injury/ulcer will be classified as a Stage 3 injury/ulcer. | | | |
| 7. | It is worrying about the appearance of blisters on heels. | | | |
| 8. | Bone, tendon, or muscle may be exposed in a Stage 4 pressure injury/ulcer. | | | |
| 9. | Dry, adherent eschar on the heels should not be removed. | | | |
| 10. | Deep tissue injury is a localized area of purple or maroon discoloured intact skin or a blood-filled blister. | | | |
| 11. | In large and deep pressure injury/ulcers, the number of dressings used needs to be counted and documented so that all dressings are removed at the next dressing change. | | | |
| 12. | A mucosal membrane pressure injury/ulcer is found on mucous membrane as the result of medical equipment used at that time on that location; this pressure injury is not staged. | | | |
| 13. | Pressure injury/ulcers can occur around the ears in a person using oxygen by nasal cannula. | | | |
| 14. | Stage 1 pressure injury/ulcers are intact skin with non-blanchable erythema over a bony prominence. | | | |
| 15. | When the ulcer base is totally covered by slough, it cannot be staged. | | | |
| 16. | Nurses should avoid turning a patient onto a reddened area. | | | |
| 17. | Skin tear are not classified from pressure ulcer staging. | | | |
| 18. | A Stage 3 pressure injury/ulcer may appear shallow if located on the ear, malleolus/ankle, or heel. | | | |
| 19. | Deep tissue injury will progress to another injury/ulcer stage. | | | |
| 20. | A Stage 4 pressure injury/ulcer may be undermining. | | | |

## Domain III: Nurses knowledge of wound descriptions:

| No. | Items | I know | Uncertain | I don't know |
|---|---|---|---|---|
| 1. | Slough is yellow or cream-colored necrotic /devitalized tissue on a wound bed. | | | |
| 2. | Pressure ulcers are contaminated wounds. | | | |
| 3. | Gauze dressings increase the pain in the wound. | | | |
| 4. | Hydrogel dressings can be used on pressure injury/ulcers with granulation tissue. | | | |
| 5. | Pressure ulcers is not progress in a linear fashion from Stage 1 to 2 to 3 to 4. | | | |
| 6. | Eschar is not healthy tissue. | | | |
| 7. | Honey dressings can sting when initially placed in a wound. | | | |
| 8. | Foam dressing may be used on areas at risk for shear injury. | | | |
| 9. | Biofilms may develop in any type of wound. | | | |
| 10. | Blanching refers to whiteness when pressure is applied to a reddened area. | | | |
| 11. | Early changes associated with pressure injury/ulcer development may be missed in persons with darker skin tones. | | | |
| 12. | Deep tissue injury (DTI) may be difficult to detect in individuals with dark skin tones. | | | |
| 13. | Eschar is not good for wound healing. | | | |
| 14. | It may be difficult to distinguish between moisture associated skin damage and a pressure injury/ulcer. | | | |
| 15. | Wounds that become chronic are frequently stalled in the inflammatory phase of healing. | | | |
| 16. | Shear injury is a concern for the patient even using a side a lateral-rotation bed. | | | |
| 17. | A dressing should keep the wound bed moist, but the surrounding skin dry. | | | |
| 18. | Hydrocolloid and film dressings must be carefully removed from fragile skin. | | | |
| 19. | Hydrocolloid dressings should be not used on an infected wound. | | | |
| 20. | Pressure injury/ulcers can be cleansed with water that is suitable for drinking. | | | |

| | | | | |
|---|---|---|---|---|
| 21. | Alginate dressings can be used for heavily draining pressure injury/ulcers or those with clinical evidence of infection. | | | |
| 22. | Alginate dressings absorb a lot of drainage. | | | |
| 23. | Non-sting skin prep should be used around a wound to protect surrounding tissue from moisture. | | | |
| 24. | some Bacteria can develop immunity to silver dressings. | | | |

## Part III: Nurses Attitudes towards prevention of pressure ulcer:

| List | Items | Agree | Partially Agree | Disagree |
|---|---|---|---|---|
| 1. | Not All patients are at potential risk of developing pressure sores. | | | |
| 2. | I value that joining educational activities on pressure ulcer prevention is important for my practice. | | | |
| 3. | In my opinion, patients tend not to get as many pressure sores nowadays. | | | |
| 4. | I am more interested in preventing pressure ulcers in my practice. | | | |
| 5. | Pressure sore prevention is a greater priority than pressure treatment. | | | |
| 6. | Continuous nursing assessment of patients will give an accurate picture of their pressure sore risk. | | | |
| 7. | Most pressure sores can be avoided. | | | |
| 8. | I am more interested in pressure sore prevention than other aspects of nursing care. | | | |
| 9. | I am aware to turn my patient who is at risk for pressure ulcer every 2 hours. | | | |
| 10. | Patient should be cleansed immediately after soiled. | | | |
| 11. | Pressure ulcer should be an important indicator for quality of nursing care. | | | |

## Appendix (6)

**الاستبانة**

**الجزء الاول :**

**القسم الاول :الخصائص الديموغرافية للممرضين :**

**1- العمر :** ☐ سنة

**2- الجنس:** ذكر ☐ أنثى ☐

**3- مستوى التعليم:** إعدادية تمريض ☐ خريج دبلوم ☐

خريج بكالوريوس ☐ دراسات عليا ☐

**4- السكن :** مدينة ☐ الريف ☐

**القسم الثاني معلومات عن العمل :**

**1- سنوات الخدمة في التمريض:** ☐ سنة

**2- سنوات الخدمة في وحدة العناية المركزة:** ☐ سنة

**3- نظام العمل :** صباحي ☐ مسائي ☐

**4- مشاركتك في دورات خاصة تتعلق بقرحة الضغط :** نعم ☐ لا ☐

**أذا شاركت اذكر عدد الدورات :** ☐

## الجزء الثاني: معارف الممرضين تجاه قرحة الضغط:

### المجال الاول :معارف الممرضين تجاه الوقاية من قرحه الضغط :

| الرقم | الفقرات | أعرف | غير متأكد | لا أعرف |
|---|---|---|---|---|
| .1 | الماء الساخن والصابون قد يؤدي إلى تجفيف الجلد وزيادة خطر الإصابة بقرحه الضغط. | | | |
| .2 | يجب تجهيز المرضى المرتبطين بالكرسي بوسائد مريحه لمنع القرحة. | | | |
| .3 | يجب تغير وضعية المريض المحتجز في السرير باستمرار حسب خطورة وضع المريض وخصائص سطح الداعم. | | | |
| .4 | ندبة قرحة الضغط لمريض مصاب بالقرحة مسبقا قد تتحلل بشكل أسرع من الجلد الغير مصاب بالقرحة. | | | |
| .5 | الهدف من الرعاية التلطيفية هو تخفيف الألم والوقاية من الأمراض والحفاظ على أفضل نوعية حياة ممكنة. | | | |
| .6 | سحب المريض إلى السرير يزيد من احتكاك الجلد. | | | |
| .7 | قد تحتاج إلى تغييرات الموقع الصغيرة الى استخدامها للمرضى الذين لا يستطيعون تحمل التحولات الكبيرة في وضع الجسم. | | | |
| .8 | يجب أن يكون لدى مريض سلس البول خطة للعناية باستخدام المرحاض. | | | |
| .9 | اعادة توزيع الضغط السطحي للسرير يساعد على معالجة تحمل الانسجة و البيئة التي تواجه جلد المريض. | | | |
| .10 | عند الامكان ، يجب استعمال المكملات الغذائية الفموية الغنية بالبروتين بالإضافة إلى النظام الغذائي المعتاد للمرضى المعرضين لخطر كبير لإصابة بقرحه الضغط. | | | |
| .11 | تتميز إعدادات الرعاية المنزلية بانها فريدة من نوعها لكونها تختار سطح الداعم والمناسب للمريض. | | | |
| .12 | الوسائد الحلقية وحدها لا تساعد على منع الإصابة بقرحة الضغط . | | | |

| | | | | |
|---|---|---|---|---|
| .13 | لا يمكن استعمال اسرة متخصصة لجميع المرضى المعرضين لخطر الإصابة بقرحة الضغط. | | | |
| .14 | يجب تقييم الأشخاص المعرضين لخطر الإصابة بقرحة الضغط من الناحية التغذوية (أي الوزن ، وتناول التغذية ، والتروية الدموية). | | | |
| .15 | قد يحتاج مرضى الرعاية الحرجة إلى تحريك بطيء وتدريجي بسبب عدم استقرار الدورة الدموية. | | | |
| .16 | تثقيف الموظفين وحده لا يقلل من حدوث إصابات بقرحة الضغط . | | | |
| .17 | يجب استعمال مسند القدم لمريض لا يتحرك لا تصل أقدامه إلى الأرض. | | | |
| .18 | ليس من الضروري تدليك النتوءات العظمية. | | | |
| .19 | قد تكون الوضعية السيئة للكرسي المتحرك هي سبب إصابة بقرحة الضغط. | | | |
| .20 | بالنسبة للأشخاص الذين يعانون من سلس البول ، يجب أن يتم تنظيف الجلد في وقت التلوث وعلى مدة منتظمة. | | | |
| .21 | يحتاج المرضى الذين لديهم أصابه في الحبل الشوكي واصحاب الرعاية الذاتية حول معرفة الوقاية من قرحة الضغط . | | | |
| .22 | الأشخاص، الذين لا يتحركون وذي الاوزان الثقيلة يمكن تعليمهم على تغيير وضعية جلوسهم على الكرسي كل ساعتين . | | | |
| .23 | يجب أن يكون اختيار سرير السطح داعم للمريض في الاعتبار لجميع مستويات الخطر الإصابة بقرحة الضغط لدى المريض. | | | |
| .24 | من الضروري أن يتم تقييم المريض المصاب في الحبل الشوكي من حيث الجلوس. | | | |
| .25 | للمساعدة في منع إصابة قرحة الضغط ، يجب رفع رأس السرير بزاوية 30 درجة أواقل . | | | |
| .26 | يجب وضع أنبوب القسطرة البولية فوق الساق لمنع القرحة . | | | |
| .27 | يمكن تجنب إصابة بتقرحات الضغط عند المرضى الذين يعانون من السمنة المفرطة باستعمال معدات ذات حجم مناسب. | | | |
| .28 | تعد إصابة بتقرحات الضغط مصدر قلق مدى الحياة للشخص المصاب في الحبل الشوكي. | | | |

**المجال الثاني : معارف الممرضين تجاه تصنيف قرحة الضغط:**

| الرقم | الفقرات | أعرف | غير متأكد | لا أعرف |
|---|---|---|---|---|
| .1 | قرحة الضغط في المرحلة الثانية هي فقدان جزئي للجلد يصيب البشرة أو الأدمة. | | | |
| .2 | الجلد الذي لا يكون لونه ابيض (شاحب) عند الضغط عليه هو إصابة بقرحة ضغط في المرحلة الأولى. | | | |
| .3 | قرحة الضغط في المرحلة الثالثة هي فقدان كامل للجلد. | | | |
| .4 | قرحة الضغط في المرحلة الثالثة قد تتقشر في قاعدتها. | | | |
| .5 | في حالة وجود نسيج نخر وإذا كان من الممكن رؤية العظام أو ملامستها ، فإن القرحة هي المرحلة الرابعة. | | | |
| .6 | عند إزالة الأنسجة الميتة ، سيتم تصنيف قرحة الضغط غير المستقرة كإصابة قرحة من المرحلة الثالثة . | | | |
| .7 | من الدواعي القلق بشأن ظهور فقاعه على الكعب. | | | |
| .8 | قد تتعرض العظام أو الأوتار أو العضلات في إصابة قرحة ضغط من المرحلة الرابعة . | | | |
| .9 | لا ينبغي إزالة قشرة الجرح الجافة (الجلد الملتهب او الميت) الملتصقة على الكعب. | | | |
| .10 | إصابة الأنسجة العميقة هي منطقة موضعية من الجلد السليم الذي يتغير لونه أرجواني أولون بني مائل للحمرة أو فقاعه مملوءة بالدم. | | | |
| .11 | في حالة الإصابة بالقرحة ذات الضغط الكبير والعميق ، يجب حساب عدد الضمادات المستخدمة وتوثيقها حتى تتم إزالة جميع الضمادات عند تغيير الضمادة التالي. | | | |
| .12 | قرحة الاغشية المخاطية والتي تتكون بسبب ضغط الاجهزة الطبية لا تصنف من ضمن مراحل القرحة. | | | |
| .13 | يمكن أن تحدث إصابة بتقرحات الضغط حول الأذنين في شخص يستعمل الأوكسجين عن طريق قناع الأنف. | | | |
| .14 | تقرحات الضغط في المرحلة الأولى هي جلد سليم مع احمراره غير قابلة للتحلل فوق بروز عظمي. | | | |

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|---|---|---|---|---|
| .15 | عندما تكون قاعدة القرحة مغطاة بالكامل بالتسلخ ، لا يمكن تصنيفها. | | | |
| .16 | يجب على الممرضين تجنب تحويل المريض إلى منطقة محمرة في جسم المريض. | | | |
| .17 | لا تصنف تمزقات الجلد(الدموع جلدية) من ضمن مراحل قرحة الضغط. | | | |
| .18 | قد تظهر قرحة الضغط في المرحلة الثالثة كبيرة إذا كانت موجودة على الأذن والكاحل أو الكعب. | | | |
| .19 | يمكن ان تتطور إصابة الأنسجة العميقة إلى مرحلة اخرى من مراحل القرحة. | | | |
| .20 | قد تنهدم قرحة الضغط في المرحلة الرابعة . | | | |

**المجال الثالث: معارف الممرضين تجاه وصف جرح قرحة الضغط:**

| الرقم | الفقرات | أعرف | غير متأكد | لا أعرف |
|---|---|---|---|---|
| .1 | الانسلاخ (الجلد المسلوخ) هو نسيج ميت اصفر او كريمي اللون على قاعدة الجرح. | | | |
| .2 | قرحة الضغط هي جرح ملوث. | | | |
| .3 | ضمادات الشاش تزيد من الألم الجرح. | | | |
| .4 | يمكن استعمال ضمادات الهيدروجيل لقرحة الضغط ذات الأنسجة الحبيبية | | | |
| .5 | تقرحات الضغط لا تتطور بطريقة خطية من المرحلة 1 إلى 2 إلى 3 إلى4. | | | |

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|---|---|---|---|---|
| .6 | قشرة الجرح ( الجلد الميت ) هو نسيج غير صحي. | | | |
| .7 | تعطي ضماد العسل احساس وخزي عند وضعها للحظات الاولى. | | | |
| .8 | يمكن استعمال الضمادات الرغوية في المناطق المعرضة لخطر إصابة القص. | | | |
| .9 | قد تتطور الأغشية الحيوية في أي نوع من الجروح. | | | |
| .10 | البياض الذي يحدث للجلد عند الضغط علية في منطقة محمرة للجلد لا تعني اصابة بالقرحة . | | | |
| .11 | قد يتم إغفال التغييرات المبكرة المرتبطة بالقرحة التي قد تتطور لدى الأشخاص ذوي البشرة الداكنة. | | | |
| .12 | لدى الافراد ذوي البشرة الداكنة قد يكون من الصعب اكتشاف اصابة في الأنسجة العميقة. | | | |
| .13 | قشرة الجرح (الجلد الميت) نسيج غير مفيد لالتئام الجروح. | | | |
| .14 | قد يكون من الصعب التمييز بين تلف الجلد المرتبط بالرطوبة وإصابة بقرحة الضغط. | | | |
| .15 | الجروح التي تصبح مزمنة في كثير من الاحيان تتوقف في المرحلية الالتهابية من الشفاء. | | | |
| .16 | إصابة القص تمثل مصدر قلق للمريض حتى اذا استعمل سرير الدوران الجانبي | | | |
| .17 | يجب أن تحافظ الضمادة على رطوبة الجرح ، لكن محيط الجلد جافً. | | | |
| .18 | يجب إزالة الضمادات الغروية المائية وضمادات الفيلم بعناية من الجلد الهش. | | | |
| .19 | لا يمكن استعمال الضمادات الغروية المائية على جروح القرحة المصابة بالعدوى. | | | |
| .20 | يمكن تطهير تقرحات الضغط بالماء المناسب للشرب. | | | |
| .21 | يمكن استعمال ضمادات الجينات لتقرحات الضغط الشديدة أو التي تمتلك دليل سريري على وجود عدوى. | | | |

| | | | | |
|---|---|---|---|---|
| .22 | تمتص ضمادات الجينات الكثير من سوائل القرحة. | | | |
| .23 | يجب استخدام مستحضر جلدي غير لاذع حول الجرح لحماية الأنسجة المحيطة من الرطوبة. | | | |
| .24 | يمكن لبعض البكتيريا ان تطور مناعة ضد ضمادات الفضة. | | | |

## الجزء الثالث:

## اتجاهات الممرضين حول الوقاية من قرحه الضغط :

| الرقم | الفقرات | اوافق | اوافق جزئيا | لا اوافق |
|---|---|---|---|---|
| .1 | لا يمكن ان يكون جميع المرضى معرضون لخطر محتمل للإصابة بقرح الضغط. | | | |
| .2 | أنا أقدر أن الانضمام إلى الأنشطة التعليمية للوقاية من قرحة الضغط أمر مهم لممارستي. | | | |
| .3 | رأيي ، المرضى يميلون إلى عدم الحصول على الكثير من تقرحات الضغط في الوقت الحاضر. | | | |
| .4 | انا اكثر اهتمام بمنع قرحة الضغط في ممارستي. | | | |
| .5 | يعتبر الوقاية قرحة الضغط أولوية أكثر من علاج قرحة الضغط. | | | |
| .6 | التقييم التمريضي المستمر للمرضى سيعطي صورة دقيقة عن خطر الإصابة بقرحة الضغط. | | | |
| .7 | يمكن تجنب معظم تقرحات الضغط. | | | |
| .8 | أنا اهتم كثيرا بالوقاية من قرحة الضغط من الجوانب الأخرى للرعاية التمريضية. | | | |

| | | | | |
|---|---|---|---|---|
| .9 | أنا على دراية بتقليب مريضي المعرض للخطر الإصابة بقرحة الضغط كل ساعتين. | | | |
| .10 | يجب تنظيف المريض لحظة اتساخه. | | | |
| .11 | يجب أن تكون قرحة الضغط مؤشرًا مهمًا لجودة العناية التمريضية. | | | |

## Appendix (7)

### خبراء تحكيم استمارة الاستبانة

| ت | اسم الخبير | اللقب العلمي | الاختصاص | مكان العمل | سنوات الخبرة |
|---|---|---|---|---|---|
| 1 | د. راجحة عبد الحسن حمزة | أستاذ | تمريض بالغين | جامعة الكوفة \ كلية التمريض | 39 |
| 2 | د. هدى باقر حسن | أستاذ | تمريض بالغين | جامعة بغداد \ كلية التمريض | 36 |
| 3 | د. سحر ادهم | أستاذ | تمريض بالغين | جامعة بابل \ كلية التمريض | 34 |
| 4 | د. صباح عباس احمد | أستاذ | تمريض بالغين | جامعة بغداد \ كلية التمريض | 34 |
| 5 | د. فاطمة مكي محمود | استاذ مساعد | تمريض بالغين | جامعة كربلاء \ كلية التمريض | 28 |
| 6 | د. حسن عبد الله عذبي | استاذ مساعد | تمريض بالغين | جامعة كربلاء \ كلية التمريض | 20 |
| 7 | د. حيدر امير جبر | استاذ مساعد | تمريض بالغين | جامعة القادسية \ كلية التمريض | 17 |
| 8 | د. وفاء عبد علي حطاب | استاذ مساعد | تمريض بالغين | جامعة بغداد \ كلية التمريض | 17 |
| 9 | د. ضياء كريم عبد علي | استاذ مساعد | تمريض بالغين | جامعة العميد \ كلية التمريض | 16 |
| 10 | د. محمد عبد الكريم مصطفى | استاذ مساعد | تمريض بالغين | جامعة الكوفة \ كلية التمريض | 15 |
| 11 | د. ماهر خضير هاشم | استاذ مساعد | مقوم لغة عربية | جامعة بابل \ كلية التمريض | 16 |
| 12 | د. رنا طالب ناصر | طبيبة جلدية | اخصائية جلدية | مستشفى الامام الصادق | 10 |
| 13 | د. منى صادق عباس | طبيبة اختصاص | اخصائية جلدية | مستشفى الامام الصادق | 5 |

## Appendix (8)

Ministry of Higher Education and Scientific Research
University of Babylon
College of Basic Education

وزارة التعليم العالي والبحث العلمي
جامعة بابل
كلية التربية الاساسية

No.:
Date: / /

العدد: ٨٧٨٦
التاريخ: ٢٠٢٣/٦/١٤

جامعة بابل / كلية التمريض
الصادرة
العدد: ١٢٤٩
٢٠٢٣/٦/١٤

كلية التربية الاساسية
شعبة الموارد البشرية
الصادرة

الى/جامعة بابل/كلية التمريض
م/ تقويم لغوي

تهديكم اطيب التحيات ...

كتابكم ذو العدد ٢٠٩٠ في ٢٠٢٣/٥/٢٩ نعيد اليكم رسالة الماجستير للطالب ( **حمزة مسلم ابو سعود**) الموسومة بـ ( معارف الممرضين واتجاهاتهم في ما يتعلق بالوقاية من قرحة الضغط في وحدات العناية المركزة)) بعد تقويمها لغوياً واسلوبياً من قبل (ا.م. نادية علي اكبر ابراهيم) وهي صالحه للمناقشة بعد الاخذ بالملاحظات المثبتة على متنها.

... مع الاحترام...

المرفقات //
- رسالة ماجستير
- اقرار المقوم اللغوي

جامعة بابل

UNIVERSITY OF BABYLON

أ.د. فراس سليم حياوي
معاون العميد للشؤون العلمية
٢٠٢٣/٦/

٦١٤

نسخة منه الى //
- مكتب السيد العميد المحترم ...للتفضل بالاطلاع مع الاحترام.
- ا.م. نادية علي اكبر.. للعلم لطفاً.
- الشؤون العلمية
- الصادرة

نادية

٦١٥

STARS

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وطني ٠٧٢٣٠٠٣٥٧٤٤
امنية ٠٧٦٠١٢٨٨٥٦٦
مكتب العميد ١١٨٤
المعاون العلمي ١١٨٨
المعاون الاداري ١١٨٩
العراق - بابل - جامعة بابل
بداله الجامعة ٠٠٩٦٤٧٢٣٠٠٣٥٧٤٤

## الخلاصة

**الخلفية العلمية:** قرحة الضغط هي إصابة موضعية ناتجة عن الضغط المطول على الجلد والأنسجة الرخوة التي تسبب نقص تروية الأنسجة وفي النهاية نخر الأنسجة وقد تؤدي إلى مضاعفات خطيرة بما في ذلك الوفاة. يلعب الممرضين من بين موظفي الرعاية الصحية الآخرين دورًا مهمًا في الوقاية من تقرحات الضغط. تعد معرفة ومواقف الممرضين عاملاً رئيسياً ونجاحًا في الوقاية من قرحة الضغط.

**اهدف الدراسة:** تقييم مستوى معارف الممرضين واتجاهاتهم في ما يتعلق بالوقاية من قرحة الضغط في وحدات العناية المركزة في مستشفيات الحلة.

**منهجية الدراسة:** تم اختيار دراسة وصفية مقطعية لتقييم معرفة الممرضين واتجاهاتهم فيما يتعلق بالوقاية من قرحة الضغط في وحدة العناية المركزة. أجريت هذه الدراسة في الفترة من 9 تشرين الثاني 2022 إلى 2 ايار 2023. عينة غير احتمالية (ملائمة) تتكون من 150 ممرضًا يعملون في وحدة العناية المركزة. لتحقيق أهداف هذه الدراسة تم إعداد استبيان خاص يتكون من ثلاثة أجزاء: الجزء الأول معلومات ديموغرافية (سبعة عناصر)، والجزء الثاني هو معارف، ويتكون من 72 فقرة مقسمة إلى ثلاثة مجالات: الوقاية (28 فقرة). )، والمراحل (24 فقرة) ، ووصف الجرح (20 فقرة) ، بينما الجزء الثالث كان المواقف (11 فقرة) ، وكانت طريقة جمع البيانات هي التقرير الذاتي. ولتحديد صحة الاستبيان عرضت على 13 خبير. تم قبول الثبات الداخلي عالي المستوى باستخدام الفا كرو نباخ حيث المعرفة (0.82) والمواقف (0.84).

**نتائج الدراسة:** أظهرت النتائج المعروضة أن غالبية المشاركين بنسبة (90.6٪) من الفئة العمرية (20-29) سنة، كانوا من الذكور (56.7٪) ، غالبيتهم سكن حضري (75.3٪) ، بكالوريوس في علوم التمريض هو السائد (45.3٪) ، ومعظم المشاركين لديهم (1-3) سنوات في التمريض وفي وحدة العناية المركزة (64٪ - 50٪)، غالبية الممرضين هم عاملين في النظام الصباحي (63.3٪) و (58.7٪) تلقوا دورات تدريبية ( 1-2). لا توجد دلالة معنوية بين معارف واتجاهات الممرضين في ما يتعلق (العمر والجنس والسكن)، وجدت ذات دلالة إحصائية بين معارف واتجاهات الممرضين مع (مستوى التعليم، خبرة في التمريض، خبرة في وحدة العناية المركزة، ونظام العمل ). بينما وجدت الدراسة فروق ذات دلالة إحصائية بين معارف الممرضين والتدريب ولا توجد أي دلالة إحصائية بين اتجاهات الممرضين والتدريب.

**الاستنتاج:** أظهرت غالبية الممرضين المشاركين في هذه الدراسة مستوى متوسط فيما يتعلق بمعرفة الوقاية من قرحة الضغط بينما كانت اتجاهات الممرضين إيجابية تجاه الوقاية من قرحة الضغط.

**التوصيات:** يمكن لمديرية الصحة المساعدة في إعداد برامج التدريب المستمر فيما يتعلق بالوقاية من قرحة الضغط للممرضين العاملين في وحدات العناية المركزة بمستشفيات الحلة.

وزارة التعلم العالي والبحث العلمي
جامعة بابل / كلية التمريض

# معارف الممرضين واتجاهاتهم في ما يتعلق بالوقاية من قرحة الضغط في وحدات العناية المركزة

رسالة مقدمة من قبل

حمزة مسلم أبو سعود

الى \

مجلس كلية التمريض \ جامعة بابل وهي جزء من متطلبات نيل شهادة الماجستير في علوم التمريض

بأشراف

أ. د. سلمى كاظم جهاد

شوال / 1445 هـ

أيار/ 2023 م