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Effect of Stress level and Burnout Among Critical Care Nurses Regarding Quality of Care and Patients Satisfaction at Wad Madani Hospitals - Sudan

A Thesis
Submitted in Requirements to Fulfill Ph.D. In Medical Surgical Nursing

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الآيـــــة

قال تعالي : { فَمَنْ حَاجَّكَ فِيهِ مِنْ بَعْدِ مَا جَاءَكَ مِنَ الْعِلْمِ فَقُلْ تَعَالَوْا نَدْعُ أَبْنَاءَنَا وَأَبْنَاءَكُمْ وَنِسَاءَنَا وَنِسَاءَكُمْ وَأَنْفُسَنَا وَأَنْفُسَكُمْ ثُمَّ نَبْتَهِلْ فَنَجْعَلْ لَعْنَتَ اللَّهِ عَلَى الْكَاذِبِينَ } صدق الله العظيم

الآية [61] آل عمران

Declaration

I declare that the study of effects of stress level and burnout on quality of care and patient satisfaction among critical care nurses, which I now submit for assessment of study leading to the award of Ph.D.in medical surgical nursing is my own work, that it has not been submitted for any degree or examination in any other university, and that all the sources I have used have been indicated and acknowledged as references

Signature: *Mohamed Alnaiem* **Date:** June 2019

Mohamed Salih Elebeed Elnaiem

Dedication

I dedicate this thesis to:

My dear parents

My great teacher:

Sheikh: Awad allah Fadelalseed

My dearest wife

My beautiful girl: Fatima

My family

Acknowledgments

First, I thank Allah, I praise him and I glorify him as he had to be praised and glorified. Peace and blessings be upon the prophet Mohamed peace is upon him.

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ملخص الدراسة

خلفية :

يتعرض الممرضون و الممرضات في بيئة العمل لضغوطات جسدية ، نفسية واجتماعية ، وقد وجد أن مهنة التمريض تسبب الإرهاق النفسي وتبلد المشاعر بسبب هذه الضغوطات. وقد ثبت أن هناك علاقة وثيقة بين زيادة ضغط العمل والإرهاق النفسي وتضاؤل جودة الرعاية التمريضية.

الأهداف :

هدفت هذه الدراسة لتقييم وقياس مستويات الإجهاد والضغوطات المتعلقة بالعمل التي يعاني منها الممرضين في بيئة العمل ومعرفة مدي تأثيرها علي جودة الرعاية التمريضية ورضا المرضي.

المنهجية :

هذه الدراسة وصفية أجريت بوحدات الرعاية الحرجة في ثلاثة مستشفيات بمدينة ود مدني . حيث شملت الدراسة 117 ممرضاً و ممرضة و 94 مريض ، جمعت البيانات عن طريق المقابلة المباشرة باستخدام استبيان قياسي ، مقياس الإجهاد التمريضي ، مقياس ماسلاش للإنهاك ومقاييس كارين للجودة. تم استخدام تحليل الانحدار الخطي علي النتائج التي تم الحصول عليها .

النتائج :

أظهرت النتائج أن مستوى ضغوط العمل بين الممرضين كان منخفضًا 97.4٪ وأحيانًا متوسط 2.6 ٪ ، وكان مستوى الانهاك النفسي معتدل في كل من الارهاق العاطفي بمتوسط (23.34) وقلة الانجاز الشخصي بمتوسط (37.27) . فقد وجد أن ضغوط العمل لها تأثير احصائي إيجابي على الإرهاق العاطفي وتبلد المشاعر. بينما تبلد المشاعر والضغوط المتعلقة بموت المرضي لها تأثير إحصائي سلبي على جودة الرعاية التمريضية.

الخلاصة :

جميع ممرضي وحدات الرعاية الحرجة يعانون من الضغوط والإنهاك النفسي في مكان العمل ، ووجدت الدراسة تأثيرًا واضحاً لضغوط العمل والإنهاك النفسي على جودة الرعاية التمريضية ، بينما لم يوجد لها تأثير على مستوي رضي المرضى .

// Abstract

Background: Nurses are exposed to various stressors from physical, psychological and social working environments, nursing has been considered as a risk profession for burnout due to this stressors .It was demonstrated that a close relationships between increased work stress and burnout as well as diminished quality of nursing care .

Objectives: This study was performed to explore the effect of nurses' burnout, stress level on the quality of nursing care and patient's satisfaction.

Methods: The study was descriptive cross-sectional hospital based, using correlational design. A total of 117 nurses and 94 patients from three hospitals in Wad-Medani city were covered. Data was collected by general questionnaire, nursing stress scale, Maslach Burnout Inventory, and Karen instruments. Obtained results from the research scales were analyzed by using regression analysis.

Results: It showed that the level of nurse's stress was low among 97.4 % and moderate among 2.6 %. In addition, the level of Job burnout was moderate via emotional exhaustion (23.34) and low personal accomplishment (37.27). It was found that stress has a positive statistical effect on emotional exhaustion and depersonalization. While depersonalization and death / dying stressors has negative statistical effect on quality of care that perceived by nurses.

Conclusion: All nurses in critical care units were experienced stress and burnout at work place, the study found a significant effect of work stress and burnout on quality of care. While no effect on quality that perceived by patients and their satisfaction level.

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Chapter one

Introduction

1. Introduction

1.1. Background:

The largest group of health care provider are nurses, they provide a direct care to the hospital patients, and assurance of hospital quality of care is strongly linked to the performance of nursing staff (Hassmiller and Cozine, 2006); to ensure and sustain high quality of patient care, nursing practice environment was need to high quality leadership and management, sufficient staffing, positive nurse–physician relationships, reasonable workloads and appropriate working conditions, this characteristics can reduce nurse burnout, improve nurse job satisfaction and intention to stay in the hospital and the nursing profession (Van Bogaert et al, 2009).

Providing specialized and necessary care to patients suffering from a critical condition is a challenging job that need trained and qualified critical care nurses to provide compassionate care, because these patients come to hospital in an unconscious state, unstable, and have erratic vital signs, so a critical care nurse has slightly different duties as compared to other staff nurses (Inscol, 2018). Also critical care units is a highly stressful environment and may therefore be associated with a high rate of burnout in staff members; that is due to nature of nurses work in complex settings with multiple conflicting missions, it was found strong negative relationship between nurse's occupational stress and job satisfaction, and ultimately growing occupational stress results in increasing turnover rate (Sveinsdóttir et al, 2006), increase staff turnover rate will increase work burden on other nurses, predispose them to negative health outcomes, and may ultimately affect their performance; this dissatisfaction of nurses distracts their attention from patients and leads to their failure to provide

comprehensive care of high quality; and this have a negative impact on patient's satisfaction (Mrayyan , 2006 ; Poghosyan et al, 2010).

Furthermore, occupational stress is one of the main causes of work-related health problems; it was found that night work and job stress were associated with sleep deficiency, and increased cardio-metabolic risk (Jacobsen et al., 2014), so it is very important to understand how stress affects nurses, and what factors have led to this in their working environment (Sveinsdóttir et al, 2006).

It was concluded by (Elshaer et al, 2018) that critical care health care workers had high burnout syndrome, and the majority of them had high levels of emotional exhaustion; in addition to that burnout undermines the care and professional attention given to patients by nurses; it is worth mentioning that job turnover is significantly higher among nurses experiencing burnout (Poghosyan et al, 2010).The cost of burnout among nurses includes absenteeism , poor communication with patients and families and decreased quality of patients care (Poncet et al, 2007).

Patient-centered care is the goal for all healthcare institutions; it is include respectful of and responsive to individual patient preferences, patient's needs, values , good manner communication, coordination of care, emotional support, physical comfort, involvement of the family ; the dominant metric used to measure patient-centered care is patient satisfaction ,is an important indicator for measuring the quality in health care, because has an impact on the results of medical care, retention of patients as clients of the health care; and also increased patient satisfaction reduces medical malpractice claims (Heidenreich, 2013). Patient satisfaction is a very effective indicator to measure the success of health care providers and hospitals (Prakash Bhanu, 2010).

1.2. Justification

Providing safe care is the number one priority of health-care professionals, especially for critical care patients. The critical care nurses are surrounded by the extreme intensity of trauma-inducing factors and constant exposure to serious illness because the intensive care units is a stressful environment due to high patient mortality and morbidity, so nurses experience difficulties in meeting patient needs and consequently reduce nursing quality, this may contribute to high staff turnover and hinder the patients safety.

By the other hand there is no actual available data that support this study about the level of stress and burnout in these hospitals, this study will fill the gap between stress level, burnout and quality of nursing care.

1.3. Problem statement

The importance of quality nursing care is the right of all patients and the responsibility of all nurses; so the patients' needs to be included in the evaluation, in order to measure that quality to reflect the care exchange between nurse and patients; patient satisfaction with the care received is considered the outcome of care (Lynn et al, 2007).

Stress at work contributes to impaired health; well-being and mistakes which can lead to accidents (Elfering et al, 2006). Due to nurses experience difficulties in meeting patient needs; they become frustrated about their inability to complete their work and burned out; this can produce serious consequences for both nurses and patients, because work associated stress adversely affect patient outcomes (Vahey et al, 2004; Sveinsdóttir et al, 2006). It was demonstrated that a close relationships between increased work stress and burnout as well as diminished quality of care (Weigl et al, 2015).

Furthermore, more than 60% of nurses have suffered from the side-effects of work-related stress such as physical or mental health problems (Steve Ford, 2014). It was found in health and safety survey that nurses face many workplace hazards include manual lifting of patients, needles, physical assault, and exposure to infectious diseases from a needle stick (45%) because of stressful conditions; and also found a chronic nursing shortage and burnout (70%) it was due to effects of stress and overwork (American Nurses Association, 2011). In Sudan there is study was conducted in Elmak Nemir university hospital, found that nurse`s had sustained to needle stick injures (79.2%) with contaminated item (53.7%) due to occupational stress (Ali, E.S., 2014). It is therefore important to measure stress levels and burnout among critical care nurses, and see if they have effect on quality of nursing care provided.

1.4. Objectives

1.4.1. General objective:

Effects of stress level and burnout on quality of care and patient satisfaction among critical care nurses

1.4.2. Specifics objectives:

1. To determine the level and possible causes of stress among the critical care nurses.
2. To determine the level of burnout among the critical care nurses.
3. To explore relationship between job burnout and nursing stressors.
4. To explore the influence of nurses burnout and nursing stressors on the quality of nursing care, patient satisfaction.

1.5. Research questions

- Is it nurses have any stress and burnout at the work environment?
- What are the factors that can cause stress and burnout among nurses?
- Is there a statistically relationship between the stress and burnout?
- Is there a statistically relationship between the stressors, burnout dimensions and the quality of nursing care?
- Does burnout level affected with nursing stressors?
- Does stress level and burnout affect the quality of nursing care and patient satisfaction?

Chapter two

literature review

2. Literature Review

2.1. Definitions of terms:

2.1.1 Stress: is a general term which refers to two distinct concepts, namely ‘stressors’ (environmental characteristics, or thoughts which cause an adverse reaction in the individual) and ‘strain’ (the individual’s adverse reaction to the stressor (Bamber, 2006).

2.1.2 Job-related stress: Refers to any work situation perceived by the employee as threatening because of the mismatch between the situation’s demands and the individual’s coping abilities (AbuAlRub, 2004)

2.1.3 Compassion fatigue: Is a combination of physical, emotional, and spiritual depletion associated with caring for patients in significant emotional pain and physical distress (Lombardo and Eyre, 2011)

2.1.4 Job satisfaction: Has been described as the degree of positive affective orientation toward a job (Abushaikha and Saca, 2009)

2.1.5 Job performance: Defined as the effectiveness of the person in carrying out his or her roles and responsibilities related to direct patient care (AbuAlRub, 2004).

2.1.6 Burnout: Is a phenomenon in which the cumulative effects of a stressful work environment gradually overwhelming the defenses of staff members, forcing them to withdraw psychologically (Sahraian et al, 2008). Burnout is a physical and emotional exhaustion, involving the development of negative self-concept, negative job attitudes and loss of concern for clients (Abushaikha and Saca, 2009); common in occupations where time is spent supporting other people (Maslach, 2003).

2.1.7 The burnout syndrome: is a state of fatigue or frustration, this is caused by the lack of expected reward after an effort dedicated to a life project, preceded by a stage of failure to state reasons, production and inefficiency, this is a main cause of deterioration of working conditions

(Álvarez and Prieto, 2013); it is an inability to cope with emotional stress at work or as excessive use of energy and resources leading to feelings of failure and exhaustion (Poncet et al, 2007).

2.1.8 Job-related burnout: Is described as a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment; emotional exhaustion is described as a feeling of being overextended and exhausted by one's work. Depersonalization is an unfeeling or impersonal response toward recipients of one's service, care, treatment, or instruction. Reduced personal accomplishment describes feelings of incompetence and unsuccessful achievement of one's work with people (Vahey et al, 2004).

2.1.9 Patients satisfaction: Is defined as the degree of congruence between the expected quality of nursing care and the actual received care (Mrayyan, 2006), by the other hand is fulfilling expectations, needs or desires. Satisfaction suggests that healthcare users compare their expectations against the actual service and that this leads to either a positive or negative feeling. If expectations are exceeded, healthcare users are more satisfied (Zuidgeest, 2011).

2.1.10 Quality of care: Is defined by the Institute of Medicine as: doing the right thing, at the right time, in the right way, for the right person, and having the best possible results, this definition refers to a number of concepts which are considered as essential to quality: safety, effectiveness, patient-oriented, timeliness, efficiency, and equity (Zuidgeest, 2011).Also it is defined by (Mainz,2003) as 'the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge .

2.1.11 Quality of nursing care: Is a care that is provided according to hospitals' standards and job requirements. Determinants of quality of

nursing care include: adequate skills and numbers, caring attitudes, effective communication, efficient organizational and management systems, effective community participation, staffing data (staff mix and nursing care hours) and data about patients outcomes indicators (falls, skin integrity, nosocomial infection rates and satisfaction) (Mrayyan, 2006).

2.2. Background:

Declines in any factors of healthy work environments like quality of patient care, staffing, communication and collaboration, respect, physical and mental safety, moral eustress, nursing leadership, support for certification and continuing education, meaningful recognition, and career plans are a concern; because there is declined in health of critical care nurses work environments since 2008 ;and it has been shown that affect patient care outcomes, job satisfaction and retention of nurses according to nurses' perceptions of the quality of care; so the health of critical care nurse work environments needs attention and care (Ulrich et al, 2014).

According to previous studies conducted by (Golubic et al, 2009; Elkonin & Van der, 2011) there has been growing interest among researchers in the psychosocial work environment of healthcare workers; particularly in critical care nursing. This is because a demanding work environment where they are at high risk of burnout, role conflict , job dissatisfaction ,traumatic situations and experience many forms of stress, including physical, psychological, and moral stress (Mealer et al, 2007; Ganz, 2012).

It is considered that occupational stress; compassion fatigue and burnout are occupational hazards prevalent among nurses and have a negative impact on psychological health of the nurse due to cumulative effect of chronic exposure to frequent deaths and family grieving, as well

as harmful consequences on the quality of nursing and patient safety(Peters et al, 2012). Also it has been shown that nurses, especially in emergency department, experience high rates of on-the-job violence (Masoudi Alavi, 2014); and negative consequences after caring for suffering patients; in conjunction with an empathetic response (Dominguez and Rutledge, 2009).

It was found that working in a critical care environment increases the incidence of patient care errors, because nursing practice within the critical care environment is exceptionally difficult, requiring rapid assessment and intervention; this difficulty increases the workload of nursing, leading to practice errors, which are the leading cause of death and disability, by the other hand, the severity of the disease requires additional therapies, medicines and new procedures, which increases the responsibilities of nurses (Trinier Ruth, 2016). Moreover, medical errors have a high cost on the health care system and also have a psychological effect on the caregiver, which has consequences for self-esteem and ability to continue working; the cost of American Health Care System was estimated between 8.5 and 14.5 billion yearly (Assadian et al, 2007).

2.3. Stress in nursing:

Occupational stress is a recognized problem in health care workers (Burbeck et al, 2002). It considered that nursing is one of the most stressful professions. That is attributed largely to the prolonged physical labor, suffering and emotional demands of patients and their families, conflict within the work and other pressures. By the other hand uses of sophisticated healthcare technologies in the high dependency units; budget cuts; increasing workload, and constant organizational changes can lead to increase level of stress among nurses (Roberts et al, 2012).

Helping others and providing empathetic care for patients with critical physical, mental, emotional, and spiritual needs; is a core of

nursing practice; meeting the needs of those patients result in compassion fatigue , it was found that job stress and compassion fatigue has impacts on nurse's emotional health, wellbeing, job satisfaction and their abilities to cope with job demands; also stress has a cost for the hospitals in work absenteeism , decreasing productivity and increasing staff turnover, so a negative relationship between occupational stress and quality of care due to loss of compassion for patients may impact the quality of patient care and the effectiveness of health services delivery; furthermore increasing incidences of mistakes and practice errors because attention, concentration, decision making, and judgment skills can affected by high level of occupational stress (Lombardo and Eyre, 2011;Sharma et al, 2014).

2.4. Causes and risk factors for stress among nurses:

There are various factors are associated with occupational stress; that influence nurse's performance. Also sources of stress vary in both nature and frequency across nursing specialties, according to (Roberts et al, 2012); nurses are heavily exposed to stressors in their daily work, with negative consequences.

2.4.1 Nature of nursing profession:

Someone enter the nursing field because he want to help people but when he is confronted with the reality of the nursing "regarding the nature of nursing tasks and the involvement with death and dying people " he realize that is not what he thought it would be (Moustaka and Constantinidis, 2010).There is a difference in health care institutions in terms of size and nature, and nurses are challenged with different tasks and long working hours, rotating shifts, decrease resources, suffering and death of critically ill patients (Cooper, 1998).

Also nurses are facing infectious diseases due to the nature of their work they come into contact with biological dangers people as they use

sharp needles and through skin contact are exposed to the infection by handling patients' blood and bodily liquids; by the other hand chemical dangerous substances such as those used in chemotherapy, all of these are serious stressors within the nursing (Elinyae, 2007).

2.4.2 Working environment:

Nurses are confronted with situations from social, physical and psychological environment that affect the nurse's performance; this includes the working conditions with wrong ventilation, poor lighting and the inadequate temperature. Moreover difficulties in coping with stressful situation; in addition to psychological or emotional instability could lead to violence particularly in the emergency department (Moustaka and Constantinidis, 2010).

2.4.3 Organizational factors:

Regarding organizational factors that influence the occupational stress experience at work and performance of professional nurses; the workload rated the highest as perceived by nurses, manager support, and resources availability respectively (Thulth and Sayej, 2015). Occupational stress also is associated with other factors; for example (Roberts et al, 2012) found that unavailability of doctors, lack of control, inadequate structure of communication flow in hospital, are a determinants of emotional exhaustion at work environment.

2.4.4 Individual characteristics:

Occupational stress emerge from social environment that are determined by the hospital polices and the interaction between these polices and the individual characteristics of nurses (Mäkinen,et al ,2003). By the other hand, occupational stress in nursing is determined by how each nurse copes with the job-related stress situations in workplace ,that's depend on personal adaptation energy for each one ; for example , lack of

preparation in handling the emotional needs of patients which causes anxiety within the nursing staff (Sveinsdóttir et al ,2006).

2.4.5 Interpersonal relationships:

The interpersonal relationship is a determinant factor for the undertaking of the care of the patients in critical care, can positively influence the routine of the team's work, through harmonious relationships; or negatively, through unfavorable, tense relationships (Martins et al, 2014). According to (Roberts et al, 2012; Sveinsdóttir et al ,2006) that less satisfaction with the head nurses ,unsupportive management, interpersonal conflicts, poor reward systems contribute significantly to the appearance of stress.

2.4.6 Role characteristics:

Professional healthcare providers must clearly understand what is expected of their performance; this can be achieved when all member in the organization have clearly defined roles and overall objectives (Mahfouz et al, 2013). Stress will occurs when the situation is complex, ambiguous and unclear in addition to the lack of opportunities to practice the professional role of nursing (Sveinsdóttir et al, 2006). Role ambiguity and role conflict in nurses can lead to lowered health service performance and efficiency (Rovithis et al, 2017). It is important to understand how work-associated stress affects nurses, and what factors in their working environment cause the greatest burden (Moustaka and Constantinidis, 2010), also understand nurse's perspectives and the importance of involving them in identifying initiatives to reduce negative consequences of occupational stress (Happell et al, 2013).

2.5 Stress in critical and emergency nursing:

Emergency nurses experience more stress than nurses working in other units in hospitals, work with critical care patients predispose nurses to stress, in addition to the work overload and interpersonal relationship

problems in the organizational environment of critical care unit nurses (Preto and Pedrão, 2009). Nurses working in emergency departments experience exposure to traumatizing incidents such as mutilation, aggression, and extreme suffering of patients. In addition, emergency care requires nurses to make instant decisions which may be life and death decisions regarding critical patients. Psychological problems such as chronic fatigue syndrome, secondary traumatic stress, and nursing burnout may also occur due to stress (Steinhoff, 2015).

Health care workers, especially trauma care nurses are subjected to significant stress. There are occupational hazards have a negative effect on the life and the health of the nurses, as well as negative implications for patient care within the trauma unit; this includes compassion fatigue and burnout (Elkonin and Van der, 2011).

Occupational stress contributes to many nurses leaving their jobs (Nabirye et al, 2011) ,it was found that high staff turnover appear in intensive care nurses who are surrounded by extremely stressful situations that result from the constant exposure to serious illness, regular expectation of emergencies, high technological complexity, and human tragedy, severely injured patients subject to sudden changes in their general health status, and high emotionally risky scenario, this may compromised health care , thus this work environment may effect on professionals , patients and their family members (Elkonin and Van der, 2011; Preto and Pedrão, 2009). By the other hand high turnover of nurses results in a shortage of nurses, which leads to work overload, exhaustion and dissatisfaction for the other nurses; so the shortage of nurses, job stressors, and low job control are risk factors for patient safety, and lead to poor job performance including reduced quality of nursing care and medical mistakes (Nabirye et al, 2011).

In previous study conducted in Pennsylvania ,it was found that surgical patients experienced a high risk mortality and failure to rescue when the patient-to-nurse ratio was high, they were more at risk of dying because the nurses could not rescue them when hospital units were understaffed , also nurses are experience burnout and job dissatisfaction when the patient-to-nurse ratio was high, the job dissatisfaction of nurse's manifested in chronic absenteeism, lateness , reduced effort and increased error rate , and this a manifestation of poor nursing care which places patients' lives at risk (Aiken, et al, 2002 a).

2.6 Occupational stress consequences:

Occupational stress can have far reaching consequences for nurse's health negatively, health organization and patient outcomes (Sarafis et al, 2016).It is stated that excessive exposure to job stressors resulting in various short- and long-term problematic outcomes (Roberts et al, 2012).

2.6.1. Behavioral problems:

Occupational stress has a significant impact on individual nurses and their ability to accomplish tasks (Jones et al, 2003), can cause unusual and dysfunctional behavior at work (Kivimäki et al, 2002) that include the difficulty thinking logically or poor decision making, lack of concentration, apathy, decreased motivation and feel less committed to work, creating uncharacteristic errors, absenteeism, decreased work performance, burnout, poor diet and little exercise , smoke and abuse alcohol and drugs.

2.6.2 Mental problems:

Occupational stress consequences on nurse's behavior can create mental problems (Wong et al, 2001; Roberts et al, 2012) such as feelings of inadequacy, self-doubt, lower self-esteem, anxiety, depression, irritability, somatic disturbance, psychiatric outpatient consultation and admissions and insomnia.

2.6.3 Physical health problems:

The delivery of quality services is linked to the health of healthcare providers, when providers are not well, this may lead to deterioration in the quantity and quality of patient care, so healthy nurses more efficient in their healthcare delivery; chronic exposure to stress at work can lead to the poor health, upset stomach and duodenal ulcer, headaches, high blood pressure and cholesterol levels, cardiovascular disease, infectious and autoimmune diseases, accidents and musculoskeletal injury, irritable bowel syndrome, muscle, back and joint pain(Roberts and Grubb , 2014).

2.6.4 Effect of Stress on healthcare organizations and patient care:

Care is an interpersonal a procedure based on positive communication and intimate relationships between health care providers and the patient, so as to provide the best service with superior quality; job related stress leads to loss of compassion for patients, which increases incidences of practice errors, and this has a direct or indirect impact on the delivery of care and health of patients (Sarafis et al, 2016).

The impact of stress is not confined to the health, safety, and well-being of health care providers, but also negatively affect patients safety and their care outcomes, because increase rate of staff turnover related to absenteeism, there is also a significant negative impact on the hospital in terms of healthcare cost and judicial claims related to lateral workplace violence that jeopardize patients safety and satisfaction (Roberts et al, 2012). So effort of supervisors should creation empowering work environments that influence nurses' to practice in a professional manner, ensuring excellent patient care quality and positive organizational outcomes (Laschinger et al., 2003).

2.7 Burnout among critical care nurses:

Critical care nurses are particularly vulnerable to developing burnout, it was concluded that health care providers in critical care units

are under immense chronic occupational stressors leading to burnout and more likelihood of committing errors by the nursing staff (Ansari et al, 2015), these stressors include; high patient acuity, high levels of responsibility, caring for families in crisis, involved in morally distressing situations and workload (Epp, 2012).

Critical care nurses are emotionally affected by issues of euthanasia, ethical decision-making, and continuous observing of patient suffering, futile medical care, misunderstandings, and demands of relatives of patients; on the other hand, critically ill patients do not have the ability to make decisions, so caregivers rely on communication with parents to make a decision, which may complicate the communication process and worsen the emotional exhaustion. Intensive care unit nurses are characterized by a kind of perfectionism and sense of guilt if their performance not good; this may hinder their duties and lead to frequent absences; therefore working in critical care units is an emotional challenge that may become a burden on the personal life of the nurses, possibly manifested in fatigue, emotional exhaustion or burnout (Van Mol et al, 2015).

Severe burnout is more appear among critical care physicians and nurses, due to organization of critical care units, long working hours, conflicts within the unit, communication manner among healthcare workers, and the issues of end of life (Embriaco et al, 2007).

2.8. Causes ,risk factors and symptoms of nurses burnout :

2.8.1 Predisposing factors for nurse burnout:

Danielle LeVeck (2018) mentioned that there are some factors that are considered predisposing of nurse's burnout, which are as following:

- Women are at a higher risk of burnout due to higher levels of anxiety and more responsibilities at home and at work
- Single or divorced nurses,

- Lacking spirituality
- Holding associates versus a bachelor's degree, especially a new grad, are at a higher risk of burning out.
- Full-time work at the bedside (the close patient-relationship) lead to burnout.

2.8.2 Causes of burnout:

It was mentioned on "nursing.org, 2018" that the causes of burnout are related to some of the issues facing nurses in the work environment, such as:

More commonly include dealing with death on a regular basis, emotional strain due to losing patients, assisting grieving family members, long shifts of 12 or more hours, high-stress environments such as emergency departments and trauma.

Less commonly include personal characteristic, lack of independent decision making, constant pressure to meet social expectations, taking the perceived job-related success or failure personally.

2.8.3 Nurse burnout symptoms:

Health care providers specifically nurses should be fully aware of the symptoms of burnout as early as possible before they get worse; also it was stated on "nursing.org, 2018" several common nurse burnout symptoms include the excessive irritability in the workplace due to frustration, frequently sick leave, intolerance to change (work rotating shift), exhaustion (even on days off), checked out mentality (repetition); a chronic feeling of going through the motions.

2.9. Consequences of burnout:

It was concluded that high prevalence of burnout among health care professionals affect quality, safety, and health care system performance (Dyrbye et al ,2017), because burnout is associated with a lower effectiveness at work, a decreased job satisfaction, practice

mistakes, unjustified absenteeism and a reduced commitment to the job (Suñer-Soler et al, 2014).It was found about 50% of critical care physicians and one third of critical care nurses they have severe burnout syndrome with symptoms of depression and poor quality of private life; and they have a desire to leave their jobs (Embriaco et al, 2007). Regarding health consequences, burnout cause physical and psychological problems as well as depression, anxiety, low self-esteem, guilt feelings, and low tolerance of frustration (Schulz et al, 2011).

There is a relationship between high level of depersonalization and poorer patients care; patients' dissatisfaction was also found to correlate closely with the high level of nurse burnout, on the other hand, high levels of burnout among nurses have a negative impact on work colleagues, whether by disrupting work or personal conflicts (Embriaco et al, 2007).

2.10. Prevention of burnout:

Vokhlacheva et al (2018), referring to previous studies has mentioned methods and strategies for preventing burnout among nurses, summarized in the following:

2.10.1 Interventions done by workplace:

- Regular team meeting, to promote teamwork, group dynamics and creation of support among nurses.
- Design active program based on staff needs, consists activities and well-being courses throughout the day to fit different working patterns.
- Clinical supervision ,to provide support and guidance for nurses that they feel valued and be heard; make them more equipped against problems and having control over the work.
- Job redesign and training program, job redesign focuses on aspects of the job that require a lot more effort from staff and are modifiable,

such as workload; training for alleviating kinds of job demands that cannot be changed easily, such as emotional demands among nurses.

- A psycho-educational intervention of self-care strategies; to assists nurses to develop personalized stress management plans, regulate and lighten the stress response and improve proactive, adaptive coping behaviors.

2.10.2 Intervention done by nurses as a community in the ward:

- Formation of ethics and concept of support, help, and solidarity between nurses; by sharing crises, worries, emotions and experiences with colleagues. As well as interpersonal care, attention, and understanding.
- Joint activities to get to know each other; inside and outside the workplace to alleviate emotional distress, understand each other better and cope with the conflicts at work in a more positive way.
- Organizing ritual after patient´s death; helps to cope with experienced losses and grief and preserve humanistic aspect of care.

2.10.3 Intervention done by nurses as individuals:

- Life style changes; such as diet, physical activities, relaxation that helps nurses to have healthier lifestyle, for preventing burnout and improve nurses wellbeing.
- Coping strategies concentrate on problem; such as time management skills, good relationships with colleagues, keeping control over the existing situation.
- Coping strategies concentrate on emotion; positive and negative coping strategies, examples of negative form of coping strategies may be avoidance and escapism and positive form include reflection
- Coping strategies related to self- awareness and emotional intelligence; it is ability to process, understand and manage emotions

- Developing empathy skills; to create personal relationship and different ways of communication with a patient.
- Mindfulness; it leads to positive effects such as task attention, self-efficacy and motivation; yoga is an example of mindful-movement.

2.10.4 Interventions done simultaneously by nurses as individual and workplace:

- Improving personal resources together with alleviating the work demands; because burnout will occur when work demands exceeding individual resources, by other hand, resilience happens when individual resources can reach to the level of work demands.

2.11. Stress and burnout relationship:

Occupational stress is one of the possible reasons for job burnout; according to study conducted in in Shanghai by (xie et al, 2011); found that high levels of burnout among younger nurses was strongly associated with work-related stress. Jamal and baba (2000) found that Job stress was significantly correlated with overall burnout and its three dimensions and job satisfaction; it was also significantly correlated with psychosomatic health problems and organizational commitment. Also it was found that the frequency of moral distress situations in critical care nurses has a significant relationship to the experience of emotional exhaustion due to providing futile care (Meltzer and Huckabay, 2004).

Watson et al. (2008), in their study have conclude that the main predictors of stress, burnout and psychological morbidity among nurses, is largely related to individual personality and coping traits. While Escribà et al. (2006) see that the prevalence of burnout syndrome, and higher emotional exhaustion it is due to low job control, low supervisors' social support. By the other hand, Lu Jinky (2008) found a significant correlation between burnout and self-efficacy, hazard exposure and

organizational role stress; it has also been found that organizational stress is most significant predictor of burnout.

2.12. Nurse's role in patient safety and quality of care:

The nurse's role in patient safety has been described as key to the success of any patient safety scheme, with nurse staffing levels and workload clearly linked to patient safety (Page, A. ed., 2004). Ramanujam et al, (2008) examines the relationship between nurse's perception of job demands and their perceptions of safety; they confirm that nurses perceptions of patient safety decrease as the demands of the job increase; these significant relationship between job demands and patient safety confirms that a connection between nurses working conditions and the ability to deliver safe care, so if nurses they overworked, their patients are become less safe.

The nurse is holding an important position for ensuring the safety of patients because the high rate of interaction between nurses and patients (Cook et al, 2004). There is a link between patient softy outcomes and adverse events, and nurse staffing levels and work environment ; it was reported that staffing levels, nurse environment, and management approach, contribute to uneven quality of care, adverse outcomes for patients, medical errors, it was found that in hospitals with high patient-to-nurse ratios, patients experience higher risk-for mortality and failure-to-rescue rates, and nurses are more likely to experience burnout and job dissatisfaction ;also it was found a strong a significant association between higher emotional exhaustion, greater job dissatisfaction in nurses and patient-to-nurse ratios (Aiken et al, 2002a). Also it was demonstrated a correlation between higher nursing staff numbers and reduced adverse patient events (Cho et al, 2003), it was noted by Clarke et al, (2002) that report of risk factor, needle-stick injuries, and near misses among nurses from units with low staffing and

poor organizational climates, were twice than those on well-staffed units. It concluded by (Aiken et al, 2002b) that adequate nurse staffing and organizational/managerial support for nursing are key to improving the quality of patient care, to diminishing nurse job dissatisfaction and burnout and, ultimately, to improving the nurse retention in hospital settings.

Havens and Aiken (1999) demonstrates that the organization of nurse's work is a determinant of nurse and patient outcomes. Levels of patient surveillance and patient outcomes can be improved by adequate nurse staffing (Aiken et al 2002a). Aiken et al (2011) shown that better hospital nurse staffing, more educated nurses, and better nurse work environments, reduce the hospital mortality rate.

The importance of nurse staffing to the delivery of high quality patient care was a principal finding in the report of the Institute of Medicine’s ; in their analyzing the role of nurses in the safety of patients ,they noted that the nurses and the environment in which they work are very critical to ensure the safety of patients, this depends on the fact that nurses are the largest work force in the health sector ; and the nature of the work they do , actually nurses are regularly involved in commission, detection and prevention of patient safety incidents (Page, A. ed., 2004). In addition nurse's work routinely involves patient surveillance and co-ordination of care, both vital to ensuring patients safety (Brady et al, 2009).

Nurses play important role in patient safety, this puts them at the sharp end of patient care, so there is the need to improve health care systems to enable nurses to not be at the “sharp end” so that they can provide the right care and ensure that patients safe (Warburton ,2009). Therefore, nurses are the medium through which the other members of the medical team can communicate with patients, by the other hand co-

ordination of the care provided by the multidisciplinary team is implicit in the role of the nurse (Brady et al, 2009), according to this role of nurses and close interaction with patients, they can identify patient safety issues and implement necessary changes because they are ideally placed to providing direct care (Kirwan, 2012).

Nurses are the largest group of health care professionals providing direct patient care in hospitals, and the quality of care for hospital patients is strongly linked to the performance of nursing staff (Hassmiller and Cozine, 2006), so quality of nursing care is vital to patient outcomes and safety, in point of fact the level of patient satisfaction with nursing care is an important indicator of quality of care provided in hospitals ,it was noted that patient satisfaction with nursing care is strongly associated with patients overall satisfaction with hospital experience ,to improve quality of nursing care ; nurses need to know what factors influence patient satisfaction (Laschinger et al, 2005). The measurement of nurses' job satisfaction and patient satisfaction with nursing care is important to determine and meet patients need in terms of care to evaluate quality of care provided (Rajeswari, 2011); because patients satisfaction and nurses job satisfaction are closely related concepts, which influence the quality of nursing care and therefore hospital services (Mrayyan , 2006).

To ensure and sustain high-quality patient care, is required a professional nursing practice environment characterized by high quality leadership and management, sufficient staffing, positive nurse–physician relationships, reasonable workloads and appropriate working conditions (Milisen et al. 2006); this environment can reduce nurse burnout and improve nurse job satisfaction and intention to stay in the hospital and the nursing profession (Aiken et al, 2002 b; Stordeur and Dhoore, 2007).

According to Loan et al. (2003), determinants of quality of nursing care include: adequate skills and numbers, caring attitudes, effective

communication, efficient organizational and management systems, effective community participation, staffing data and data about patient's outcomes.

2.13. Patient Satisfaction and its determinants to quality of care:

In the health sector, patients satisfaction with the nursing care provided has become a primary objective of each health institution and a measure of the quality of medical care; and an important part of its components (Mrayyan, 2006). It can be used to attain, maintain and monitor the quality of care, because is considered a focal concern of quality assurance and represents the patient's perspective through which that the health institution and the services provided to patients can be evaluated (Charalambous and Adamakidou 2012).

According to the "American Nurses Association", patient’s satisfaction is sensitive key to measure nursing care outcome (Spence & Almost, 2003). It shows that nurses strongly influence patient's retention (Joseph and Freda 2001); because it found that professional nursing practice influence organizational and patients’ outcomes (Mark et al. 2003). According to Chawani (2009); the determinants of patient satisfaction with nursing care include the socio demographic factors, nature of care provided, organizational and environmental factors, communication and information, professional-technical skills and competence, interpersonal relationships, maintenance of dignity , emotional support and empathy.

2.13.1. Socio demographic factors:

Patient's expectations about health services can be influenced by the socio demographic background of them before the care begins, during and after the care. According to Avis et al (1995); age, gender, racial/ethnicity, language, culture, education levels, levels of anxiety, health status and previous hospitalization are socio demographic factors

that influence patient satisfaction. Regarding age and gender; Liu and Wang (2007) found that they influence on patients perception of care, it was found older patients more satisfied with nursing care than the young and middle aged patients.

Race was also found to be a crucial social demographic factor in patient satisfaction; it was mentioned that racial and ethnic minority patients receive lower quality of interpersonal care than their white counterparts (Cooper et al 2006). In terms of education level found that greater satisfaction is associated with less education (Gerteis, et al. 1993). Quite the opposite, it was reported in study conducted in china by (Liu and Wang, 2007) that patients with high levels of education showed greater satisfaction with nursing care than those who had less education. On the other hand, the length of stay of patients in the hospital with increased experience also affect the level of satisfaction, the patients with more experience of hospitalization have more realistic expectations and are therefore easily satisfied (Ramhqvist, 2001).

2.13.2. Nature of care provided:

Satisfaction of patients about the care provided are determined by their expectations of the health care they are about to get and expectations of what they have already experienced, this includes individual care of patients and their participation in the care provided to them. Patients are expected to be treated as important individuals and not only as individuals has a diagnosis and treatment (Johansson and Eklund, 2003). Effective involvement of patients in their care and decision making ,can influence and enhances their level of satisfaction (Johansson, et al., 2002) ; because patients need to be included and involved in decision making and choices about their care and treatment (Attree, 2001).

2.13.3. Organizational and Environmental Factors:

Organizational and environmental factors that influence patient satisfaction included cleanliness, food, noise, fellow patients, the comfort and aesthetics of premises (Johansson, et al., 2002). Also the hospital condition can influence on patients expectations ,noise from other patients and their visitors, high technology equipment which made patients feel anxious and insecure, size of the hospital because most patients believe that the a quality of care is higher in private or small hospitals more than in public hospitals (Field et al,2008). Long waiting times also have an impact on patients' satisfaction, it reported that high levels of patients dissatisfaction is related to long-term waiting (Westaway et al,2003), because patients do not like to be left alone for a long time (Hasin et al, 2001) without knowing who is responsible for their service (Ericksson and Svedlund 2007).

2.13.4. Communication and Information:

Information is important for patients; patients feel anxious and fear while in the hospital, so they need to know more about their health and care (Strahan and Brown, 2005). It was found that lack of patient's knowledge regarding they illness, its causes and treatment ways, is one of the reasons for dissatisfaction (Bankauskaite and Saarelma, 2003).

2.13.5 Professional-Technical Skills and Competence of the Provider:

Patient assurance has a great impact on the level of satisfaction, patients will be more satisfied when they feel more assure of their health outcomes, a basic expectation of patients is that they will be treated professionally and efficiently by skilled and competent staff, furthermore the better level of assurance provided by nursing staff lead to higher level of patient satisfaction with the services (Andaleeb, 2001). Patients also expect nurses to have full knowledge of each patient and their treatment (Johansson et al, 2002). If the nurses are competent and skillful, the

patients feels that they are in safe hands and staff competence gives them a sense that the staff knows what they are doing (Jennings et al, 2005).On the other hand, the patients fear will increase when they feel that the nurses are unfamiliar with treatment protocols of them (Kools et al, 2002).

2.13.6. Interpersonal Relationships:

The relationship between the patients and the nurse is a determinant of patient satisfaction; it provide a crucial emotional element which is important for the patient to respond positively to treatment plans and increase satisfaction level; it is include trust, respect, understanding, empathy, knowing patients, friendliness and feeling connected (Shattell et al, 2007), the good relationships is characterize by honesty, cooperation and humor (Irvine 2007).

2.13.7. Maintaining Dignity and Privacy:

Dignity and privacy also a determining factors in patient satisfaction, is considered as fundamental human needs and recognized as one of the central concepts in nursing science, respecting human dignity is a cornerstone of all nursing practices, in fact patients for the most part trust that the nursing staff will maintain their dignity, privacy and confidentiality of information as well as trusting that the staff know what they do during nursing care (Richardson et al, 2007).

2.13.8. Emotional Support and Empathy:

Empathy is a complex multi-dimensional concept that has moral cognitive emotive and behavioral components ,Clinical empathy involves an ability to understand the patient's situation, perspective, and feelings; to communicate that understanding and check its accuracy; and to act on that understanding with the patient in a helpful therapeutic way (Mercer & Reynolds, 2002). It is the feeling of others without saying ; the ability to empathize, communicate and relate to sick individuals ,derive from

one's own personality ,so patients appreciate nursing staff that empathize with what the patient is going through ,this helps in easing their fears and anxiety involving the treatment and their general well-being (Schofield et al,2005).

2.14. Effect of stress and burnout on quality of care:

Providing safe care is a paramount goal for every health-care institution. Safe care depends on procedural efficiency, implementation of evidence-based standards, and use tools that are designed to minimize medical errors such as computerized medication orders and bar-coded patient identification (Patterson et al, 2006). Work stress has been shown to be associated with mistakes that can contribute to the occupational accidents (Zohar, 2000) and medical malpractice (Jones et al, 1988) because it can impair concentration, cognitive processing, decision-making and work behavior (Elfering et al, 2006). So stress among nurses is an important issue due to its relationship to the health of nurses (Gonge et al. 2002), the care they provide (Leveck & Jones 1996), and their desire to continue in nursing work (Hasselhorn et al. 2008).

High level of stress lead to the loss of highly trained nurses from the clinical environment this will increase the burden on other nurses (Chang et al. 2007), moreover work stress and burnout are associated with negative work attitudes and performance (Laschinger & Leiter, 2006), this threaten the quality of patient care and make it difficult to maintain patient safety (Williams et al. 1998). Conversely, it was found that job autonomy and job control are associated positively with safe working practices, high productivity and staff health (Parker et al. 2001).

Chapter three

Methodology

3.1. Methods

3.1.1. Study design:-

This study was descriptive cross-sectional hospital based , using correlational design to explore the effects of nurse's stress and burnout on the quality of nursing care and patient's satisfaction within the clinical environment, that include nurses and patients in critical care hospitals units, in wad Medani city.

3.1.2. Study time:-

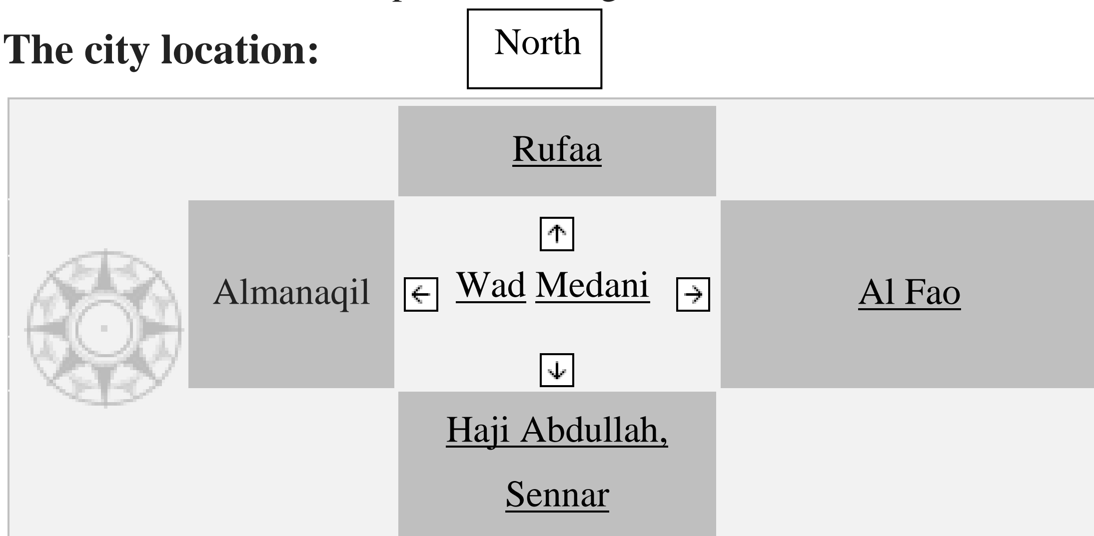
The study was conducted during the period which extends from April 2016 to April 2019

3.1.3. Study area:

Wad Medani city located in central Sudan at an altitude of 409 meters above sea level, on the Western side of Blue Nile for agricultural Geziera project, and away from the capital, Khartoum, about 186 kilometers (115 miles) to the south, and is one of the great Sudanese cities, which is also the capital of the Algeziera state.

The city location:

North



The Wad Medani City has the advantage of the main road network linking the various regions of Sudan in Khartoum and Port Sudan point. Wad Medani linked with cities of Sudan through a network of paved routes is also linked with other parts of the Algazeira state through paved

roads like Medani -Almnaql and length of 95 kilometers, Medani-Rovaah and Medani-Alhsahissa leading to Khartoum.

There in Wad Medani, Gezira University, one of the largest and most important universities in Sudan. Surrounded the city of Wad Medani a large group of villages that have a significant role in the development of the city through the contribution of the vitality of agricultural products supplied to the city's markets, and there are persistent movement between the city and these villages where moving people a daily between them to receive health and other services .The Agricultural Gezira project which is established 1925 that make the Wad Medani city which is the capital of Gezira State one of the largest and most important demographic polarization regions in Sudan with population (368 thousands "census 2009") . The city replete with a number of government and private hospitals, including:

1. Wad Medani Teaching Hospital
2. Police Hospital
3. Wad Medani Rehabilitation Hospital
4. Huda Specialist Hospital
5. Alia Specialist Hospital
6. Mecca Ophthalmology Hospital
7. Pediatric Surgery Hospital
8. Wad Medani Cardiac Centre
9. Wad Medani Emergency and accident Hospital
10. Wad Medani Renal Hospital
11. National Cancer Institute – Gezira University

3.1.4. Setting:-

This study was carried out at critical care units in three governmental public hospitals in Wad Medani city as following:

3.1.4.1 Wad Medani Cardiac Centre:

Was established since 2010, receives patients from the Elgezeira state, and a very large proportion of eastern Sudan, also in the foreign medical delegations receives patients from the Khartoum state each year. With 111 beds , and 134 nursing staff only (58) with fix job .The center includes an emergency room , outpatient clinic, intensive care unit , coronary care unit , cardiac catheterization, theater room, surgical and medical wards.

3.1.4.2 Wad Medani Renal Hospital:

Was established since 2002, receives patients from the Gezira state, Sinnar, Blue Nile state, and Elgadarif and Kassala state. The number of bed about 66 beds, and (137) nursing staff, only (50) with fix job, the dialysis Centre have four shift per day, and the total number of patients on continuous hemodialysis are (353) , that mean high nurse / patients ratio during the shift without the emergency cases . The hospital includes intensive care unit, dialysis Centre, urology and kidney disease department (wards, outpatient's clinic).

3.1.4.3 National Cancer Institute – Gezira University:

Was established since 1992, includes Nuclear medicine, Molecular Biology, Biophysics, and Oncology. The oncology department includes general wards, Chemotherapy, Radiotherapy, and Palliative care. The hospital receives patients from the state of Elgezira, Khartoum, Sinnar, Elgadarif, Kassala, Red sea, Kordofan, Northern state, Blue Nile, White Nile, Darfor, Naher Elneil, and Foreigner patients. The number of bed about 55 beds, and only 50 nurses.

3.1.5. Study population:-

Study was cover nurses working in critical care units and hospitalized patients during the study period.

3.1.6. The inclusion criteria:

For patients: The study was including all patients hospitalized more than three days during the study period.

For nurses: The study was including nurses with fixed job working in critical care units more than one year.

3.1.7. Exclusion criteria:

For patients: The study excluded uncooperative patients, critically severs ill patients, and mentally ill patients.

For nurses: The study excluded nurses on training, annual leave, partial contract, national services and who they have fixed job less than one year.

3.1.8. Sampling & Sample size:-

A. For nurses:

The study included all nurses they have fixed job, as following:

No	Hospital name	Nurses number	Participants	Annual leave
1	Wad Medani Cardiac Centre	58	38	
2	Wad Medani Renal Hospital	50	36	41
3	National Cancer Institute	50	43	
	Total	158	117	

B. For patients:

The entire population number was 1676 patients according to available data of statistics department for three months. The population was divided into three strata (A, B, C).The study was conducted in the 94 patients among three hospitals were selected using simple random sampling. Sample size was calculated by stratified random proportional technique, a simplified formula for proportions was used for determining the sample size "the Yamane formula" (Israel, 1992), as follow:

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

n = the sample size.

N = the population size.

e = the level of confidence.

When this formula is applied to the above sample, with a 99% confidence level, it:

$$n = \frac{N}{1 + N(e)^2} = \frac{1676}{1 + 1676(0.1)^2} = 94$$

So the minimum sample size for the patients = 94, illustrated as follow:

Proportional sample size :

	Strata (Hospitals)	Population	Percentage	Sample size
A	Cardiac center	374	22 %	21
B	Renal hospital	603	36 %	34
C	National Cancer Institute	699	42 %	39
	Total	1676	100 %	94

3.1.9. Study variables:-

3.1.9.1. Independents:

- Socio-demographic characteristics of nurses
- Work characteristics for nurses
- Socio-demographic characteristics of patients

3.1.9.2. Dependents:

- Quality level from two perspectives (nurses and patients)
- Patients satisfaction

3.2. Materials

3.2.1. Data collection tools:

The data in this study was collected through four tools, that were translated into the nurses mother tongue (Arabic).

3.2.1.1. General questionnaire:

It includes three parts (socio-demographic characteristics of nurses, work characteristics for nurses and socio-demographic characteristics of patients)

3.2.1.2. The Nursing Stress Scale:

Was developed by Pamela Gray-Toft and James Anderson (Pamela and Anderson, 1981), it was designed in a simple, understandable english language form; that globally measure stress specific to clinical nursing.

The nursing stress scale was sub-divided into seven factors, which focused on different aspects that were considered potential stressors in nursing practice:

- Factor 1 :Workload (eight items)
- Factor 2 : Death and dying (seven items)
- Factor 3 : Inadequate preparation (three items)
- Factor 4 : Lack of Staff Support (three items)
- Factor 5 : Uncertainty concerning treatment (seven items)
- Factor 6 : Conflict with physicians (six items)
- Factor 7 : Conflict with other nurses (six items)

The Nursing Stress Scale identifies the sources of stress and perceived stressful situations in the clinical nursing environment. Each item of subscales is scored according to the frequency with which these situations are assessed as stressful for respondents according to themselves perceiving; with response options in 4-points Likert-scale format from (0) never, (1) occasionally, (2) frequently, and (3) very frequently; higher scores indicate higher levels of perceived stress.

Stress level was measured according to the weighted mean and the general trend of scale factors, using the general trend and intervals of 4 -point likert scale (Pimentel, 2010; Vagias, 2006) as shown below:

Table {1}: 4 - point's likert scale

likert - scale	Interval	Differences	Description	Stress level
0	0.00 – 0.75	0.75	Never	Low
1	0.76 – 1.51	0.75	Occasionally	
2	1.52 – 2.27	0.75	Frequently	Moderate
3	2.28 – 3.00	0.72	Very frequently	High

- Low level: {0.00 - 1.51}
- Moderate level :{ 1.52 - 2.27}
- High level: {2.28 - 3.00}

3.2.1.3. The Maslach Burnout Inventory:

The Maslach Burnout Inventory was developed by Maslach, et al (1986), which is questionnaire that relates to three constructs of burnout:
Emotional Exhaustion (9 items): captures the experience of having one's emotional resources depleted and having no source of replenishment; the subscale items describe feelings of being emotionally overextended and exhausted by one's work .
Depersonalization (5 items): describes the experience of becoming cold and indifferent to other's needs; the subscale items capture negative and cynical feelings about one's patients or colleagues.
Reduced Personal Accomplishment (8 items): is a sense of inadequacy about one's ability to relate to patients, which may result in a self-imposed verdict of "failure"; the subscale items assess how one perceives his or her competence .

A seven-point Likert-type scale was used for how frequently experience the feeling among nurses (0 = Never, 6 = Every day). The scale is scored by calculating subscale means; using maslach cut-off scores for the means (Thorsen et al, 2011) as showed in (Table 2), the levels of burnout are classified as high, moderate and low on the subscales. High mean scores on emotional exhaustion and

depersonalization subscales correspond to higher degrees of experienced burnout, whereas a low mean score on the personal accomplishment subscale corresponds to a higher degree of burnout. The Maslach Burnout Inventory yields three noncumulative scores on each subscale separately.

Table {2}: Maslach burnout inventory subscales cut-off scores and categories

Subscales	Category	Cut- off scores
Emotional exhaustion (Score : 0 – 54)	High	≥ 27
	Moderate	19 – 26
	Low	0 – 18
Depersonalization (Score : 0 – 30)	High	≥ 10
	Moderate	6 – 9
	Low	0 – 5
Personal accomplishment (Score : 0 – 48)	High	0 – 33
	Moderate	34 – 39
	Low	≥ 40

3.2.1.4. The Karen instruments for measuring quality care:

The Karen-patient and Karen-personnel instruments are new and have been developed by Andersson in 1995, to measure the quality of nursing care. The Karen instruments are general and broad it have been used in previous studies (Andersson and Lindgren 2008; Andersson and Lindgren 2013), whereas other instruments often focus on some specific dimension of quality. When using the factors in the Karen instruments, it is possible to measure important dimensions of the quality of care both from a patient and nurses perspective. This scale was sub-divided into the following factors:

The Karen-patient instrument:

- Factor 1: Patient satisfaction (13 items)
- Factor 2: Influence (4 items)
- Factor 3: Staff competence (5 items)
- Factor 4: Caring / uncaring (5 items)
- Factor 5: Integrity (3 items)
- Factor 6: Organization (4 items)

The Karen-personnel instrument:

- Factor 1: Psychosocial relation (8 items)
- Factor 2: Commitment (5 items)
- Factor 3: Work satisfaction (6 items)
- Factor 4: Openness/ closeness (5 items)
- Factor 5: Competence development (5 items)
- Factor 6: Security/ insecurity (6 items)

The variables were measured using a 5-points likert- scale ranging from 1= strongly disagree to 5 = strongly agree**,** quality level was measured according to the weighted mean and the general trend of scale factors, using the general trend and intervals of 5 - point likert scale (Pimentel, 2010; Vagias, 2006) as shown below:

Table {3}: 5 - point's likert-scale

likert - scale	Interval	Differences	Description	Level
1	1.00 – 1.79	0.79	Strongly disagree	Poor
2	1.80 – 2.59	0.79	disagree	Fair
3	2.60 – 3.39	0.79	Neutral	Good
4	3.40 – 4.19	0.79	Agree	Very good
5	4.20 – 5.00	0.80	Strongly agree	Excellent

3.2.2. Validity & reliability:

The general questionnaire in its initial form was presented to the supervisors for given they opinion by adding, excluding; and amending some of the statements and phrases of the questionnaire, to be clear and appropriate for the study. The scales have been examined, revised to achieving the aims of the study. A pilot study was carried before embarking on the actual study (data collection) to test applicability of the tools of data collection and to estimate the time required for filling the required forms. It was carried out on twelve nurses and ten patients to evaluate the content of tools in order to determine whether or not the

items were understood by nurses and patients. Tools reliability was tested using Cronbach alpha coefficients.

The Nursing Stress Scale and its seven subscales are reliable and the internal consistency coefficient ranging from 0.79 to 0.89 (Gray and Anderson, 1981; Makie 2006).The reliability and the internal consistency coefficient for Maslach Burnout Inventory subscales were good: 0.90 for emotional exhaustion, and acceptable: 0.79; 0.71 for depersonalization and personal accomplishment respectively (Maslach et al, 1986). The Karen-patient and the Karen-personnel instruments have acceptable levels of construct validity. The internal consistency of the Karen-patient and Karen- personnel is good and the Cronbach's alpha coefficients were 0.89 and 0.92, respectively. This indicates that the instruments are suitable for measuring the quality of nursing care in clinical practice (Lindgren and Andersson 2011; Andersson and Lindgren 2013).

Table {4}: The Cronbach alpha coefficients for tools of the present study

<table>
<tr><td>Tool 1</td><td colspan="5">Nurses intention to leave job /4 questions</td><td colspan="3">Plane after leaving / 6 questions</td></tr>
<tr><td>α =</td><td colspan="5">0.79</td><td colspan="3">0.80</td></tr>
<tr><td rowspan="2">Tool 2</td><td colspan="8">Nursing Stress scale / subscales</td></tr>
<tr><td>Scale</td><td>Factor 1</td><td>Factor 2</td><td>Factor 3</td><td>Factor 4</td><td>Factor 5</td><td>Factor 6</td><td>Factor 7</td></tr>
<tr><td>α =</td><td>0.90</td><td>0.84</td><td>0.69</td><td>0.77</td><td>0.17</td><td>0.79</td><td>0.76</td><td>0.65</td></tr>
<tr><td>Tool 3</td><td colspan="3">Emotional exhaustion</td><td colspan="2">Depersonalization</td><td colspan="3">Personal accomplishment</td></tr>
<tr><td>α =</td><td colspan="3">0.92</td><td colspan="2">0.60</td><td colspan="3">0.85</td></tr>
<tr><td>Tool 4</td><td colspan="2">Karen-patients</td><td>Factor 1</td><td>Factor 2</td><td>Factor 3</td><td>Factor 4</td><td>Factor 5</td><td>Factor 6</td></tr>
<tr><td>α =</td><td colspan="2">0.91</td><td>0.93</td><td>0.41</td><td>0.73</td><td>0.95</td><td>0.68</td><td>0.77</td></tr>
<tr><td>Tool 5</td><td colspan="2">Karen-personnel</td><td>Factor 1</td><td>Factor 2</td><td>Factor 3</td><td>Factor 4</td><td>Factor 5</td><td>Factor 6</td></tr>
<tr><td>α =</td><td colspan="2">0.92</td><td>0.36</td><td>0.79</td><td>0.89</td><td>0.82</td><td>0.87</td><td>0.36</td></tr>
</table>

3.2.3. Data collection technique:

Following ethical approval, the main study data collection was undertaken during the period extends from 15 October 2017 to 15 January December 2018. The data was collected by researcher himself and trained nurses within the clinical environment, from both nurses and

patients who they received care from those nurses during hospitalization at time of study. The demographics and work characteristics were collected through the general questionnaire. Nurses reported their level of stress through the nursing stress scale; burnout through the Maslach Burnout Inentory and quality of nursing care through karen-instruments.

Table {5}: Operational procedure of data collection

Population	Task	Filling time	number / week	Collection Period
Patients	1. General questionnaire	5 minutes	6–8 patients	12 weeks
	2. Karen-patients instrument	15-20 minutes		
Nurses	1. General questionnaire	5-10 minutes	7 – 10 nurses	
	2. Nursing stress scale	15-20 minutes		
	3. Maslach burnout inventory	10-15 minutes		
	4. Karen-patients instrument	15-20 minutes		

3.2.4. Data analysis:

After the data was collected, it was coded and transferred into a computer. Data analyses were performed through the utilization of Statistical Package for the Social Sciences version 16.0, following data entry, checking and verification process were carried out to avoid any errors during data entry. Frequency and percentage distribution were used to assess the demographic data of the participants (nurses and patients) and level of stress; burnout among nurses.

Mean and standard deviation were also utilized for the analysis of descriptive statistics for the nurse stressors; burnout dimensions and level of quality of care.

Two inferential tests were used to determine the factors that may influence the quality of nursing care and patient's satisfaction:

1. Pearson Correlation Coefficient (Pearson r) to assess the relationship between variables (dependents and independents)

2. Analysis of variance (ANOVA) was used to validate the goodness of fit of the regression model and F Test for significance of regression.

Simple, stepwise and multiple regression analysis were used to determine the predictive influence of those variables that had a statistically significant correlation with the quality of nursing care and patient's satisfaction.

3.2.5. Ethical consideration:-

- Approval was taken to conduct the study from the graduate study and scientific research board and ethics Committee in Shendi University.
- Permission was taken originally from the directors of hospitals and nursing supervisors of critical care units.
- All the participants (nurses and patients) received a verbal explanation regarding the research purpose. They were also informed about the anonymity of the study and the fact that they were free to participate or not. The verbal consents were obtained from all the participants.

Chapter four

4. Results

This chapter includes five sections as the following:

- **Section one:** descriptive statistics for the demographical characteristics of study participants (nurses and patients) in addition to work characteristics of nurses; nurse's opinion and future plan regarding they job.
- **Section two :** descriptive statistics for nursing stress factors
- **Section three :** descriptive statistics for burnout dimensions and it level among nurses
- **Section four :** descriptive statistics for the quality of nursing care as perceive from two perspectives (nurses and patients) measured with Karen - Instrument
- **Section five :** the relationship between variables , regression analysis of predictors for dependent variables

Section one

Table {6}: Demographic characteristics of nurses (n = 117)

Item (s)		N	%	Total
Gender:	Male	26	22.2 %	117
	Female	91	77.8 %	(100 %)
Age:	20 – year	68	58.1 %	
	31 – year	33	28.2 %	117
	41 – year	13	11.1 %	(100 %)
	51 – 60 year	3	2.6 %	
Education level:	Diploma	15	12.8 %	
	Bachelor	87	74.4 %	
	Master	14	12 %	117
	Doctorate	1	0.8 %	(100 %)
Place of residence :	City	81	69.2 %	117
	Rural area	36	30.8 %	(100 %)
Marital status :	Single	49	41.9 %	
	Married	67	57.3 %	117
	Divorced	1	0.8 %	(100 %)
Nursing experience:	Less than 3 years	23	19.7 %	
	3 – 5 years	27	23 %	117
	More than 5 years	67	57.3 %	(100 %)
Working period in the hospital:	1 – 3 years	32	27.4 %	117
	More than 3 years	85	72.6 %	(100 %)
Monthly income:	500 – SDG	26	22.2 %	
	1000 – SDG	79	67.5 %	117
	2000 – SDG	7	6 %	(100 %)
	≥ 3000 SDG	5	4.3 %	

In this table the result showed that the majority of nurses were female (77.8%) and had bachelor degree in nursing (74.4%), more than half (58.1) their age between 20 – 31 years, married (57.3%), they have more than five years' experience in nursing (57.3). More than two thirds of nurses (69.2%) live in Wad-Medani city, the majority of them (72.6%) work more than three years with fixed job in the hospital; with monthly salary ranged between 1000 – 2000 SDG (67.5%).

Table {7}: Work characteristics of nurses (n = 117)

Item (s)		Frequency	Percent	Total
Work Shift:	Morning	70	59.8 %	
	Afternoon	9	7.7 %	
	Afternoon /Night	24	20.5 %	117
	Nights	14	12 %	(100 %)
Work unit:	Coronary care unit	6	5.1 %	
	Intensive care unit	12	10.3 %	
	Emergency room	4	3.4 %	117
	Hemodialysis unit	28	23.9 %	(100 %)
	High dependency unit	51	43.6 %	
	Operating room	16	13.7 %	
Patient-to-nurse ratio:	1 : 1	10	8.5 %	
	1 : 2	11	9.4 %	117
	≥ 1 : 3	96	82.1 %	(100 %)
Working days per week:	3 days	15	12.8 %	
	5 days	54	46.2 %	117
	Full week	48	41 %	(100 %)
Overtime Performed at Work:	Yes	47	40.2 %	117
	No	70	59.8 %	(100 %)
	Voluntary	42	35.9 %	47
	Pressured expected	5	4.3 %	(40.2 %)
	Paid	47	40.2 %	47 (40.2 %)

The above table show that nearly half of nurses (46.2%) working five days per week at high dependency unit (43.6) with high patient to nurse ratio (82.1%). Most nurses (59.8) work in the morning shift; with additional paid shift (40.2%) voluntary (35.9)

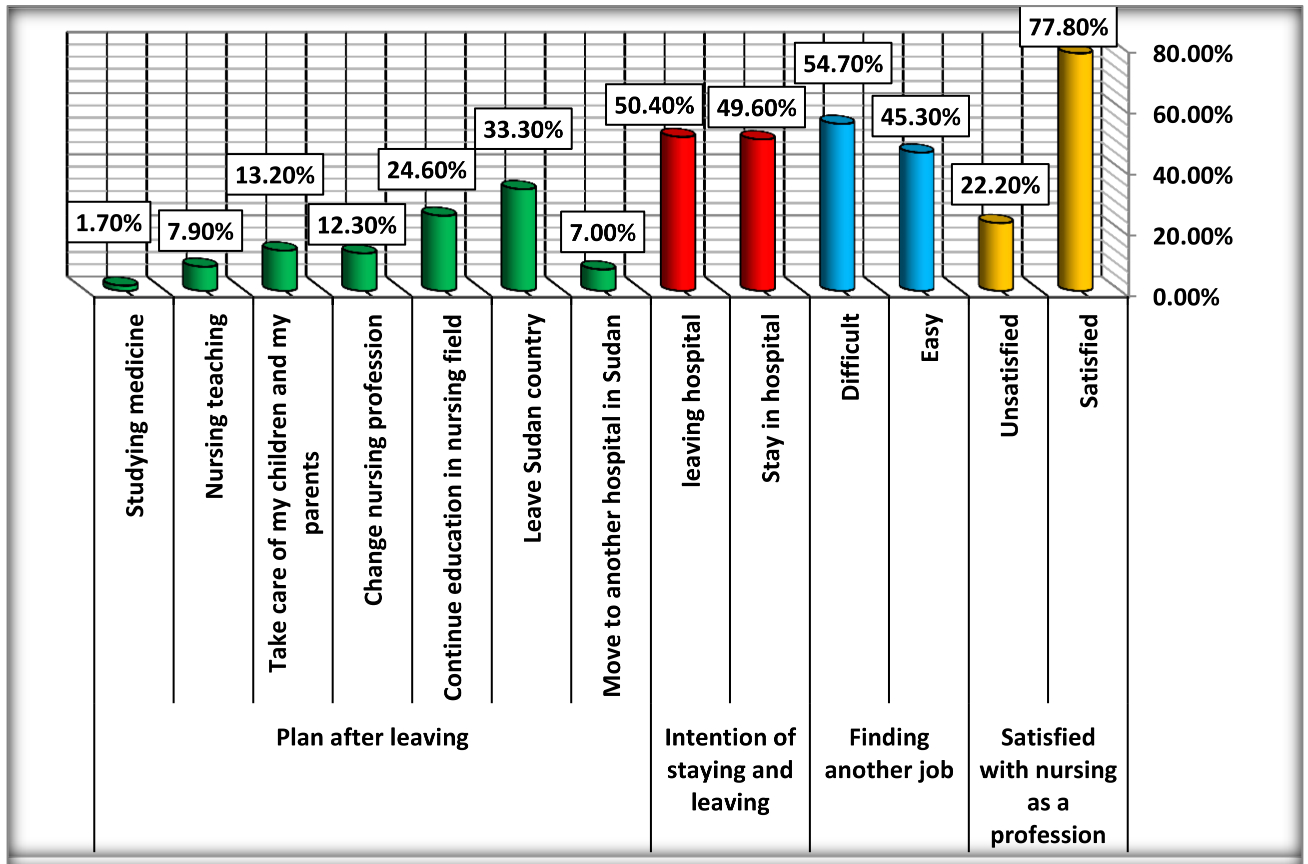


Figure {1}: distribution of nurses according to their opinion and future plan regarding their job.

The above figure reflect that the majority of nurses (77.8%) are satisfied with nursing as a profession and more than half of them (54.7%) think finding another job out of hospital is difficult. Half of nurses (50.4%) they intend to leave hospital, and (33.3%, 24.6%) have a plan to leaving Sudan; and continue postgraduate study in nursing respectively.

Table {8}: Demographic characteristics of patients (n = 94)

Item (s)		N	%	Total
Gender:	Male	58	61.7 %	94
	Female	36	38.3 %	(100 %)
Age:	20 – 30 year	18	19.1 %	
	31 – year	15	16 %	
	41 – year	16	17 %	94
	51 – 60 year	25	26.6 %	(100 %)
	More than 60 years	20	21.3 %	
Education level:	Illiterate	17	18.1 %	
	khalwa	12	12.8 %	
	Primary school	16	17 %	
	Intermediate school	14	14.9 %	94
	Secondary school	21	22.3 %	(100 %)
	Graduate	13	13.8 %	
	Postgraduate	1	1.1 %	
Residence place :	Ghadarif state	8	8.5 %	
	Kassala state	3	3.2 %	
	Blue Nile state	9	9.5 %	
	Northern state	3	3.2 %	94
	Wad -Medani city	15	16 %	(100 %)
	Wad -Medani rural area	56	59.6 %	
Previous hospitalization:	None	7	7.4 %	
	First time	41	43.6 %	94
	2– 3 times	27	28.7 %	(100 %)
	More than 3 times	19	20.2 %	
Days of hospitalization:	3 – 7 days	73	**77.7** %	
	8 – 15 days	14	14.9 %	
	16 – 21 days	4	4.3 %	94
	22 – 30 days	2	2.1 %	(100 %)
	More than 1 month	1	1 %	
Health insurance coverage:	Yes	73	**77.7** %	94
	No	21	22.3 %	(100 %)
Monthly income:	< 1000 SDG	61	64.9 %	94
	1000 – 2000 SDG	33	35.1 %	(100 %)

In this table the result showed that the most of patients (61.7%, 59.6%) were male from rural area of Wad-Medani city respectively; nearly half of them (47.9%) their age above 51 years old, (22.3%) have a secondary school education. The majority of patients (77.7%) have health insurance and they duration of the hospitalization was 3-7 days, as the first time in this hospital (43.6%), about two third of them reported that their incomes were inadequate to meet their needs (64.9%)

Section two

Table {9}: Descriptive statistics for (work load) variables among nurses

Questions – factor 1		Never	Occasionally	Frequently	Very frequently	Mean	Std. deviation	Direction
Demands of patient classification system	N	28	35	25	29	1.47	1.11086	Occasionally
	%	23.9%	29.9%	21.4 %	24.8 %			
Unpredictable staffing and scheduling	N	54	46	7	10	0.77	0.90387	Occasionally
	%	46.2 %	39.3 %	6 %	8.5 %			
Too many non-nursing tasks required, such as clerical work	N	18	40	20	39	1.68	1.09584	Frequently
	%	15.4 %	34.2 %	17.1 %	33.3 %			
Not enough time to provide emotional support to a patient	N	37	41	22	17	1.16	1.03355	Occasionally
	%	31.6 %	35 %	18.8 %	14.5 %			
Not enough time to complete all of my nursing tasks	N	64	33	10	10	0.71	0.94741	Never
	%	54.7 %	28.2 %	8.5 %	8.5 %			
Not enough staff to adequately cover the unit	N	35	35	17	30	1.36	1.16309	Occasionally
	%	29.9 %	29.9 %	14.5 %	25.6 %			
Having to work through breaks	N	31	29	21	36	1.53	1.18593	Frequently
	%	26.5 %	24.8 %	17.9 %	30.8 %			
Having to make decisions under pressure	N	27	45	20	25	1.37	1.06349	Occasionally
	%	23.1 %	38.5 %	17.1 %	21.4 %			
- Total mean of workload = 10.05 - Standard Deviation of workload = 5.13918 - weighted mean of workload = 1.26								Occasionally

Table {9}: show descriptive statistics for work load variables, from which was find that the highest average was awarded to variable: (too many non-nursing tasks required, such as clerical work) with mean 1.68 and standard deviation 1.09584, followed by variable: (having to work through breaks) with mean 1.53 and standard deviation 1.18593. While the lowest average was awarded to the variable: (unpredictable staffing and scheduling, not enough time to complete all of my nursing tasks) with mean and standard deviation 0.77 ± 0.90387, 0.71 ± 0.94741 respectively.

The weighted average of workload was 1.26, which indicates that the trend of workload stressors is (Occasionally), as general trend according to 4 - point likert scale as showed in table (1).

Table {10}: Descriptive statistics for (death and dying) variables among nurses

Questions – factor 2		Never	Occasionally	Frequently	Very frequently	Mean	Std. deviation	Direction
Performing procedures that patients experience as painful	N	25	43	29	20	1.38	1.00624	Occasionally
	%	21.4%	36.8%	24.8%	17.1%			
Feeling helpless in the case of a patient who fails to improve	N	19	27	30	41	1.79	1.09496	frequently
	%	16.2%	23.1%	25.6%	35%			
Listening or talking to a patient about his/her approaching death	N	34	46	26	11	1.12	0.93921	Occasionally
	%	29.1%	39.3%	22.2%	9.4%			
The death of a patient	N	7	35	31	44	1.96	0.95946	frequently
	%	6%	29.9 %	26.5%	37.6%			
The death of a patient with whom you developed a close relationship	N	19	53	30	15	1.35	0.90321	Occasionally
	%	16.2 %	45.3 %	25.6 %	12.8 %			
Physician not being present when a patient dies	N	65	36	7	9	0.66	0.90175	Never
	%	55.6 %	30.8 %	6 %	7.7 %			
Watching a patient suffer	N	11	23	20	63	2.15	1.04729	frequently
	%	9.4 %	19.7 %	17.1 %	53.8 %			
- Total mean of death and dying = 10.41 - Standard Deviation of death and dying = 3.60592 - weighted mean of death and dying = 1.49								Occasionally

Table {10}: show descriptive statistics for death and dying variables, from which was find that the highest average was awarded to variable: (Watching a patient suffer) with mean 2.15 and standard deviation 1.04729, followed by variable: (The

death of a patient) with mean 1.96 and standard deviation 0.95946. While the lowest average was awarded to the variable: (listening or talking to a patient about his/her approaching death, physician not being present when a patient dies) with mean and standard deviation 1.12 ± 0.93921, 0.66 ± 0.90175 respectively.

The weighted average of death and dying was 1.49, which indicates that the trend of workload stressors is (Occasionally), as general trend according to 4 - point likert scale as showed in table (1).

Table {11}: Descriptive statistics for (Inadequate preparation) variables among nurses

Questions – factor 3		Never	Occasionally	Frequently	Very frequently	Mean	Std. deviation	Direction
Feeling inadequately prepared to help with the emotional needs of a patient's family	N	51	50	10	6	0.75	0.81902	Occasionally
	%	43.6 %	42.7 %	8.5 %	5.1 %			
Being asked a question by a patient for which i do not have a satisfactory answer	N	26	62	23	6	1.08	0.78952	Occasionally
	%	22.2 %	53 %	19.7 %	5.1 %			
Feeling inadequately prepared to help with the emotional needs of a patient	N	56	47	11	3	0.67	0.75430	Never
	%	47.9 %	40.2 %	9.4 %	2.6 %			
- Total mean of Inadequate preparation = 2.5 - Standard Deviation of Inadequate preparation = 1.78897 - weighted mean of Inadequate preparation = 0.83								Occasionally

Table {11}: show descriptive statistics for inadequate preparation variables, from which was find that the highest average was awarded to variable: (Being asked a question by a patient for which i do not have a satisfactory answer) with mean 1.08 and standard deviation 0.78952, followed by variable: (Feeling inadequately prepared to help with the emotional needs of a patient's family) with mean 0.75 and standard deviation 0.81902. While the lowest average was awarded to the variable: (Feeling inadequately prepared to help with the emotional needs of a patient) with mean 0.67 and standard deviation 0.75430. The weighted average of inadequate preparation was 0.83, which indicates that the trend of workload stressors is (Occasionally), as general trend according to 4 - point likert scale as showed in table (1).

Table {12}: Descriptive statistics for (Lack of staff support) variables among nurses

Questions – factor 4		Never	Occasionally	Frequently	Very frequently	Mean	Std. deviation	Direction
Lack of an opportunity to talk openly with other unit personnel about problems on the unit	N	47	48	13	9	0.86	0.89929	Occasionally
	%	40.2 %	41 %	11.1 %	7.7 %			
Lack of an opportunity to share experiences and feelings with other personnel on the unit	N	54	42	12	9	0.79	0.91481	Occasionally
	%	46.2 %	35.9 %	10.3 %	7.7 %			
Lack of an opportunity to express to other personnel on the unit my negative feelings toward patients	N	50	45	17	5	0.80	0.84322	Occasionally
	%	42.7 %	38.5 %	14.5 %	4.3 %			
- Total mean of Lack of staff support = 2.45 - Standard Deviation of Lack of staff support = 1.99801 - weighted mean of Lack of staff support = 0.82								Occasionally

Table {12}: show descriptive statistics for lack of staff support variables, from which was find that the highest average was awarded to variable: (Lack of an opportunity to talk openly with other unit personnel about problems on the unit) with mean 0.86 and standard deviation 0.89929, followed by variable: (Lack of an opportunity to express to other personnel on the unit my negative feelings toward patients) with mean 0.80 and standard deviation 0.84322, followed by variable: (Lack of an opportunity to share experiences and feelings with other personnel on the unit) with mean 0.79 and standard deviation 0.91481. The weighted average of lack of staff support was 0.82, which indicates that the trend of workload stressors is (Occasionally), as general trend according to 4 - point likert scale as showed in table (1).

Table {13}: Descriptive statistics for (Uncertainty concerning treatment) variables among nurses

Questions – factor 5		Never	Occasionally	Frequently	Very frequently	Mean	Std. deviation	Direction
Inadequate information from a physician regarding the medical condition of a patient	N	16	65	23	13	1.28	0.83919	Occasionally
	%	13.7%	55.6 %	19.7 %	11.1 %			
A physician ordering what appears to be inappropriate treatment for a patient	N	24	69	17	7	1.06	0.76891	Occasionally
	%	20.5 %	59 %	14.5 %	6 %			
A physician not being present in a medical emergency	N	57	38	14	8	0.77	0.91336	Occasionally
	%	48.7 %	32.5 %	12 %	6.8 %			
Not knowing what a patient or a patient's family ought to be told about the patient's medical condition and its treatment	N	65	44	8	0	0.51	0.62444	Never
	%	55.6 %	37.6 %	6.8 %	0 %			
Uncertainty regarding the operation and functioning of specialized equipment	N	80	34	2	1	0.35	0.56196	Never
	%	68.4 %	29.1 %	1.7 %	0.9 %			
Being exposed to health and safety hazards	N	16	56	31	14	1.37	0.86700	Occasionally
	%	13.7 %	47.9 %	26.5 %	12 %			
Feeling inadequately trained for what I have to do	N	80	34	2	1	0.35	0.56196	Never
	%	68.4 %	29.1 %	1.7 %	0.9 %			
- Total mean of uncertainty concerning treatment = 5.69 - Standard Deviation of uncertainty concerning treatment = 2.83896 - weighted mean of uncertainty concerning treatment = 0.81								Occasionally

Table {13}: show descriptive statistics for uncertainty concerning treatment variables, from which was find that the highest average was awarded to variable: (Being exposed to health and safety hazards) with mean 1.37 and standard deviation

0.86700, followed by variable: (Inadequate information from a physician regarding the medical condition of a patient) with mean 1.28 and standard deviation 0.83919. While the lowest average was awarded to the variable: (uncertainty regarding the operation and functioning of specialized equipment; feeling inadequately trained for what I have to do) with mean 0.35 and standard deviation 0.56196. The weighted average of uncertainty concerning treatment was 0.81, which indicates that the trend of workload stressors is (Occasionally), as general trend according to 4 - point likert scale as showed in table (1).

Table {14}: Descriptive statistics for (Conflict with physicians) variables among nurses

Questions – factor 6		Never	Occasionally	Frequently	Very frequently	Mean	Std. deviation	Direction
Criticism by a physician	N	45	41	20	11	0.97	0.96902	Occasionally
	%	38.5 %	35 %	17.1 %	9.4 %			
Conflict with a physician	N	49	40	15	13	0.93	0.99764	Occasionally
	%	41.9 %	34.2 %	12.8 %	11.1 %			
Fear of making a mistake in treating a patient	N	59	44	11	3	0.64	0.75955	Never
	%	50.4 %	37.6 %	9.4 %	2.6 %			
Disagreement concerning the treatment of a patient	N	41	62	8	6	0.82	0.77254	Occasionally
	%	35 %	53 %	6.8 %	5.1 %			
Making a decision concerning a patient when the physician is unavailable	N	21	60	25	11	1.22	0.85209	Occasionally
	%	17.9 %	51.3 %	21.4 %	9.4 %			
Having to organize doctor's work	N	30	49	16	22	1.26	1.04348	Occasionally
	%	25.6 %	41.9 %	13.7 %	18.8 %			
- Total mean of conflict with physicians = 5.85 - Standard Deviation of conflict with physicians = 3.38255 - weighted mean of conflict with physicians = 0.98								Occasionally

Table {14}: show descriptive statistics for conflict with physicians variables, from which was find that the highest average was awarded to variable: (having to organize doctor’s work) with mean 1.26 and standard deviation 1.04348, followed by variable: (Making a decision concerning a patient when the physician is unavailable) with mean 1.22 and standard deviation 0.85209. While the lowest average was awarded to the variable: (Fear of making a mistake in treating a patient) with mean 0.64 and standard deviation 0.75955.

The weighted average of conflict with physicians was 0.98, which indicates that the trend of workload stressors is (Occasionally), as general trend according to 4 - point likert scale as showed in table (1).

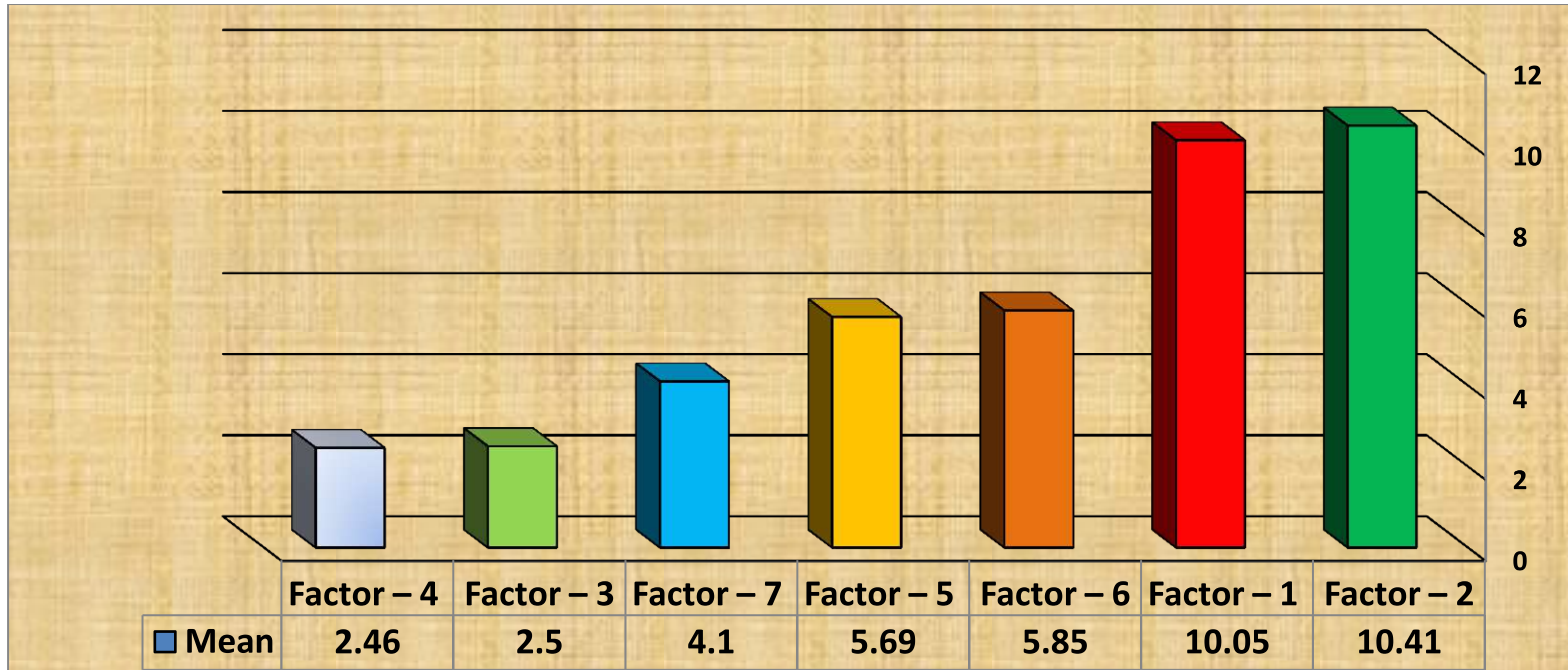
Table {15}: Descriptive statistics for (Conflict with other nurses) variables among nurses

Questions – factor 7		Never	Occasionally	Frequently	Very frequently	Mean	Std. deviation	Direction
Difficulty in working with a particular nurse (or nurses) on the unit	N	89	24	4	0	0.27	0.51902	Never
	%	76.1 %	20.5 %	3.4 %	0 %			
Difficulty in working with a particular nurses (or nurses) outside the unit	N	71	38	8	0	0.46	0.62337	Never
	%	60.7 %	32.5 %	6.8 %	0 %			
Floating to other units that are short-staffed	N	37	55	18	7	0.96	0.84479	Occasionally
	%	31.6 %	47 %	15.4 %	6 %			
Criticism by a supervisor	N	58	33	12	14	0.85	1.03070	Occasionally
	%	49.6 %	28.2 %	10.3 %	12 %			
Conflict with a supervisor	N	65	31	11	10	0.71	0.95646	Never
	%	55.6 %	26.5 %	9.4 %	8.5 %			
Being held accountable for things over which I have no control	N	56	33	17	11	0.85	0.99364	Occasionally
	%	47.9 %	28.2 %	14.5 %	9.4 %			
- Total mean of conflict with other nurses = 4.1 - Standard Deviation of conflict with other nurses = 3.32541 - weighted mean of conflict with other nurses = 0.68								Never

Table {15}: show descriptive statistics for conflict with other nurses variables, from which was find that the highest average was awarded to variable: (Floating to other units that are short-staffed) with mean 0.96 and standard deviation

0.84479. While the lowest average was awarded to the variable: (Difficulty in working with a particular nurse or nurses on the unit) with mean 0.27 and standard deviation 0.51902.

The weighted average of conflict with other nurses was 0.68, which indicates that the trend of workload stressors is (Never), as general trend according to 4 - point likert scale as showed in table (1).



- Factor .1 Work load (10.05)
- Factor .2 Death and dying (10.41)
- Factor .3 Inadequate emotional preparation (2.5)
- Factor .4 Lack of staff support (2.46)
- Factor .5 Uncertainty concerning treatment (5.69)
- Factor .6 Conflict with physicians (5.85)
- Factor .7 Conflict with other nurses (4.1)

Figure {2}: Mean distribution of nursing stress scale factors.

The results in this figure show that the highest average was awarded to factor.2 (death and dying) with mean 10.41, followed by factor.1 (workload) with mean 10.05. While the lowest average was awarded to factor.3 (Inadequate emotional preparation) and factor.4 (Lack of staff support) with mean 2.50, 2.46 respectively.

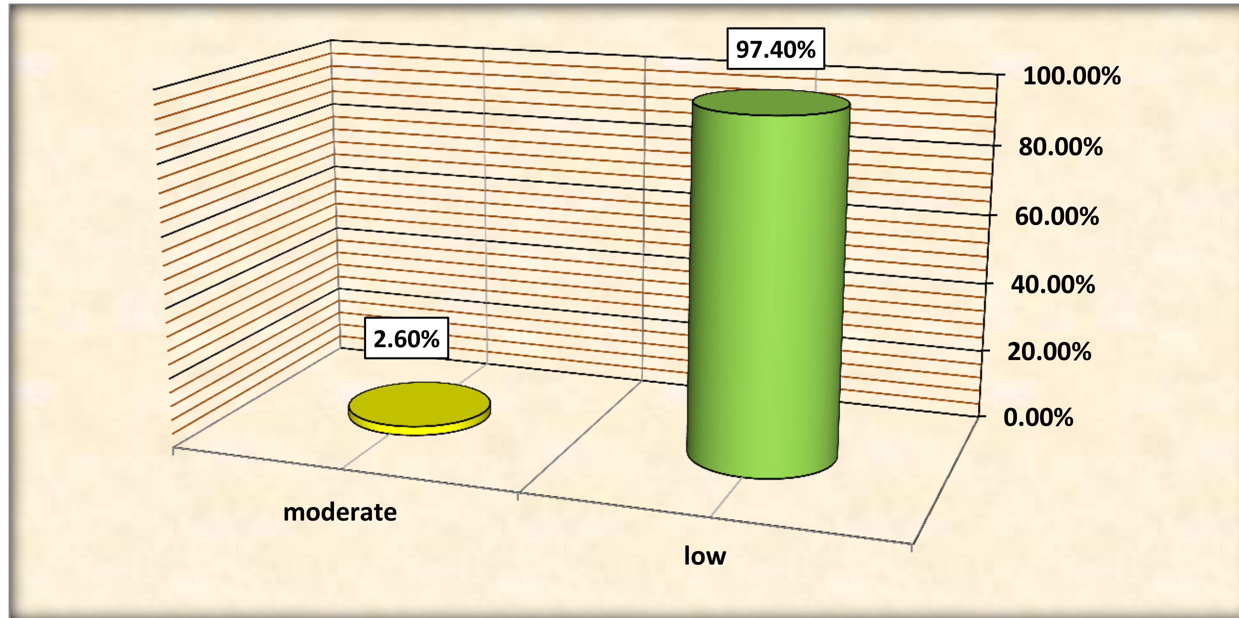


Figure {3}: Distribution of nurse`s according to their level of stress .

The results in this figure show that all participants had stress; the majority of nurses (97.4%) had low level of stress. while a little of them had moderate level of stress (2.6%)

Table {16}: Mean score and rank order of nursing stress scale factors (n = 117)

Stress Scale factors	Factors description	Total mean	Standard deviation	Weighted mean	Direction
Factor – 1	Work load	10.05	5.13918	1.26	Occasionally
Factor – 2	Death and dying	10.41	3.60592	1.49	Occasionally
Factor – 3	Inadequate preparation	2.5	1.78897	0.83	Occasionally
Factor – 4	Lack of staff support	2.46	1.99801	0.82	Occasionally
Factor – 5	Uncertainty concerning treatment	5.69	2.83896	0.81	Occasionally
Factor – 6	Conflict with physicians	5.85	3.38255	0.97	Occasionally
Factor – 7	Conflict with other nurses	4.1	3.32541	0.68	Never

Table {16}: show descriptive statistics and direction of nursing stress scale factors, from which was find that the weighted mean of all factors lie in interval {0.00 – 1.51 }.Which indicates that the trend of factors is (occasionally ; never), as general trend according to 4 - point likert scale as showed in table (1). So the weighted mean of all factors indicate a low level of stress; since the intervals of level as follow:

- Low level: {0.00 - 1.51}
- Moderate level :{ 1.52 - 2.27}
- High level: {2.28 - 3.00}

Section three

Table {17}: Mean and standard deviations of burnout dimensions variables among nurses (n=117)

Subscales variables		Mean	SD
Emotional exhaustion	I feel emotionally drained from my work	2.80	1.55497
	I feel used up at the end of the day	3.46	1.43562
	I feel tired when I get up in the morning and have to face another day at work	3.32	1.76571
	I feel burned out from my work	2.30	1.82069
	I feel frustrated by my job	2.03	1.88429
	I feel I am working too hard on my job	2.69	1.76392
	Working with people directly puts too much stress on me	3.62	1.62272
	I feel like I am at the end of my tether	1.85	1.73014
	Working with people all day is a real strain for me	1.27	1.70002
Total Mean / SD		**23.34**	**10.59885**
Depersonalization	I feel I treat some clients as if they were impersonal objects	0.12	0.51129
	I have become more callous toward people since I took this job	0.86	1.61302
	I worry that this job is hardening me emotionally	0.92	1.53777
	I don't really care what happens to some clients	0.12	0.43870
	I feel clients blame me for some of their problems	1.15	1.50439
Total Mean / SD		**3.17**	**3.68896**
Personal accomplishment	I can easily understand how clients feel about things	4.48	1.84109
	I deal effectively with the problems of clients	4.87	1.62703
	I feel I am positively influencing other peoples' lives through my work	4.76	1.61699
	I feel very energetic	4.73	1.56813
	I can easily create a relaxed atmosphere with clients	4.66	1.56008
	I feel exhilarated after working closely with clients	5.04	1.42873
	I have accomplished many worthwhile things in this job	4.42	1.86732
	In my work, I deal with emotional problems very calmly	4.31	2.01487
Total Mean / SD		**37.27**	**9.39955**

The results in this table show that the highest average in emotional exhaustion was awarded to variable: (Working with people directly puts too much stress on me) with mean 3.62 and standard deviation 1.62272, followed by variable: (I feel used up at the end of the day) with mean 3.46 and standard deviation 1.43562. While the lowest average was awarded to variable: (Working with people all day is a real strain for me) with mean 1.27 and standard deviation 1.70002.

In depersonalization, variable (I feel clients blame me for some of their problems) has the highest average value 1.15 and standard deviation 1.50439. In contrast

variable (I feel I treat some clients as if they were impersonal objects; I don't really care what happens to some clients)obtained the lowest value of mean and standard deviation 0.12±0.51129; 0.12±0.43870 respectively.

Regarding personal accomplishment the highest average was awarded to variable: (I feel exhilarated after working closely with clients) with mean 5.04 and standard deviation 1.42873. While the lowest average was awarded to variable: (In my work, I deal with emotional problems very calmly) with mean 4.31 and standard deviation 2.01487.

Table {18}: Descriptive statistics for the burnout dimensions among nurses by levels high, moderate and low (n=117).

Burnout dimensions	Cut-off scores and categories		Total		Mean	Standard. Deviation
			N 117	100 %		
Emotional exhaustion	High	≥ 27	45	38.5 %	23.34	10.59885
	Moderate	19 – 26	29	24.8 %		
	Low	0 – 18	43	36.7 %		
Depersonalization	High	≥ 10	10	8.5 %	3.17	3.68896
	Moderate	6 – 9	14	12 %		
	Low	0 – 5	93	79.5 %		
Personal accomplishment	High	0 – 33	34	29 %	37.27	9.39955
	Moderate	34 – 39	25	21.4 %		
	Low	≥ 40	58	49.6 %		

In the emotional exhaustion was finding that the highest percentage appear at the high level of burnout 38.5% of the total nurses, followed by 36.7 % at the low level; while 24.8 % of nurses at the moderate level. The mean score of emotional exhaustion was 23.36 with, which indicates that the trend is (moderate), which near to the lower limit of high burnout level. Via depersonalization, the highest percentage 79.5% was appear at the low level, this is illustrated by an average of 3.17 which lie at low level of burnout. At the personal accomplishment the highest percentage 49.6% was appear at the low level, this is illustrated by an average of 37.27 which near to the lower limit of low burnout level.

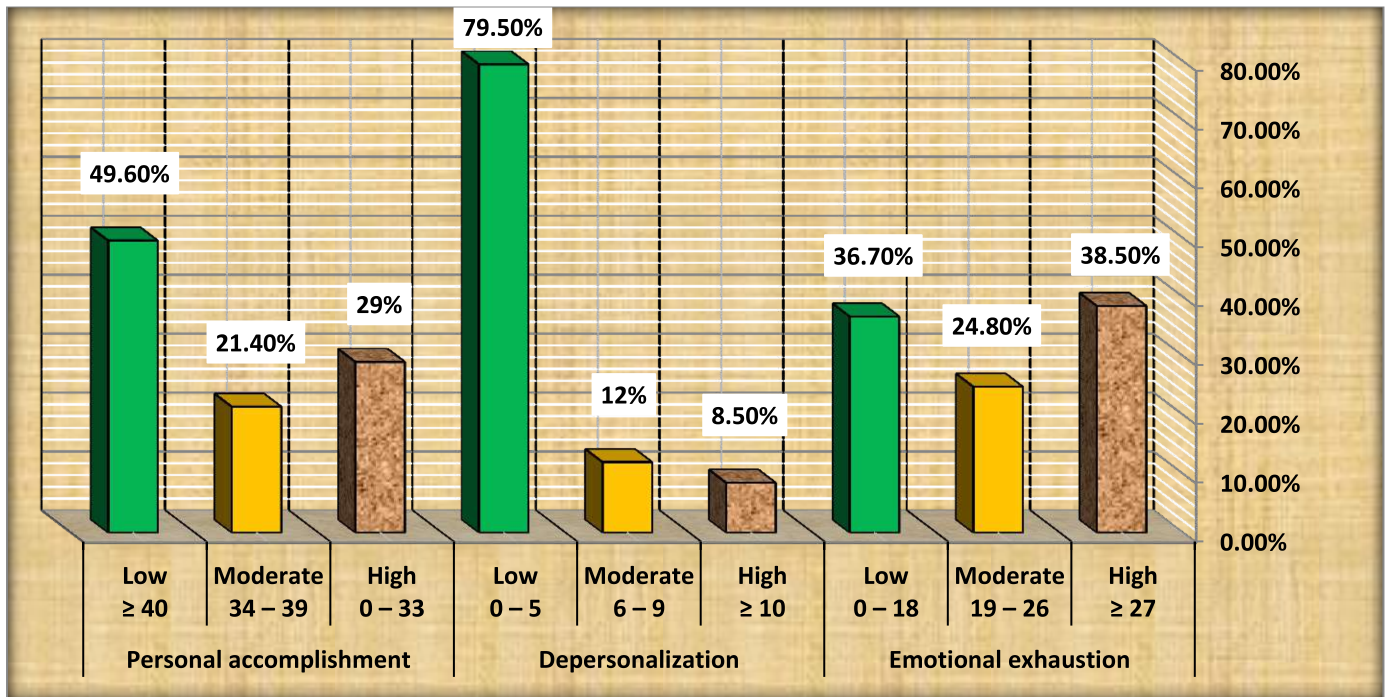


Figure {4}: Percentage distribution among nurses for the burnout dimensions by levels (high, moderate, low)

The results in this figure show that all nurses had burnout; 79.5%, 49.6% of nurses experienced low level of burnout via depersonalization and personal accomplishment respectively; while 38.5% of them had high level of burnout via emotional exhaustion.

Section four

Table {19}: Mean, standard deviations and general direction of subscale variables for Karen- personnel Instrument

Personnel Subscales variables	Subscales Mean (SD)					
	Psychosocial relation	Commitment	Work satisfaction	Openness/ closeness	Competence development	Security/ insecurity
We are able to talk to each other	4.23 (0.52)					
We all get on well together	4.38 (0.76)					
The staff collaborates	4.06 (0.91)					
There is a positive atmosphere	3.36 (1.25)					
There is no enviousness	3.64 (1.13)					
The patients receive an individual treatment	3.62 (1.16)					
The staff is nice, kind, happy, good	4.13 (0.89)					
The patients get to know the staff	4.13 (0.69)					
The staff shows interest		3.21 (1.22)				
The staff shows commitment		3.85 (0.96)				
The staff shows consideration		4.21 (0.75)				
The staff have the ability to show compassion		4.27 (0.76)				
The staff are able to motivate the patients		4.24 (0.69)				
The work develops me as a human being			4.07 (1.01)			
The work gives me a lot as a human being			4.08 (1.00)			
I feel harmony in the work			3.87 (1.09)			
The work gives me satisfaction			3.62 (1.20)			
There is orderliness on this ward			3.90 (0.99)			
They are able to find out what is wrong, to diagnose			4.06 (0.81)			

We consider each other	4.04 (0.76)		
The staff is calmed, assured	3.97 (0.75)		
We can talk about the problems	3.94 (0.87)		
We listen to each other	3.97 (0.80)		
Our teamwork have affected the patients outcome	4.34 (0.67)		
We learn new things		3.97 (0.96)	
The patient is involved in the treatment		2.92 (1.28)	
Someone is responsible		4.23 (0.69)	
The patient has a say		4.18 (0.78)	
The tasks are performed routinely		4.09 (0.78)	
I do feel secure in my work			3.60 (1.16)
So many staff categories			4.30 (0.72)
I fell work fellowship			4.11 (0.79)
I have the strength for the nursing tasks			4.22 (0.68)
Personal contact with the patients			3.39 (1.11)
The staff make the patients calm			4.22 (0.66)

Subscales	**Total mean**	**Standard deviation**	**Weighted mean**	**Subscales direction**
Psychosocial relation	31.55	4.54771	3.94	Agree
Commitment	19.78	3.45690	3.96	Agree
Work satisfaction	23.60	4.46085	3.93	Agree
Openness/ closeness	20.26	3.23671	4.05	Agree
Competence development	19.39	2.87032	3.88	Agree
Security/ insecurity	23.84	3.18568	3.97	Agree

Table {19}: showed that the highest mean was awarded to psychosocial relation with mean 31.55, including the variables: (we all get on well together and we are able to talk to each other with mean 4.38, 4.23 respectively). While the lowest

average was awarded to competence development with mean 19.39, including the variable: (the patient is involved in the treatment 2.92). Also Table 17, reflect that the general direction of all subscales is (agreement) , which indicates that the quality of nursing care as perceived by nurses is very good at all subscales, as general trend according to 5- point likert scale as showed in table (3).

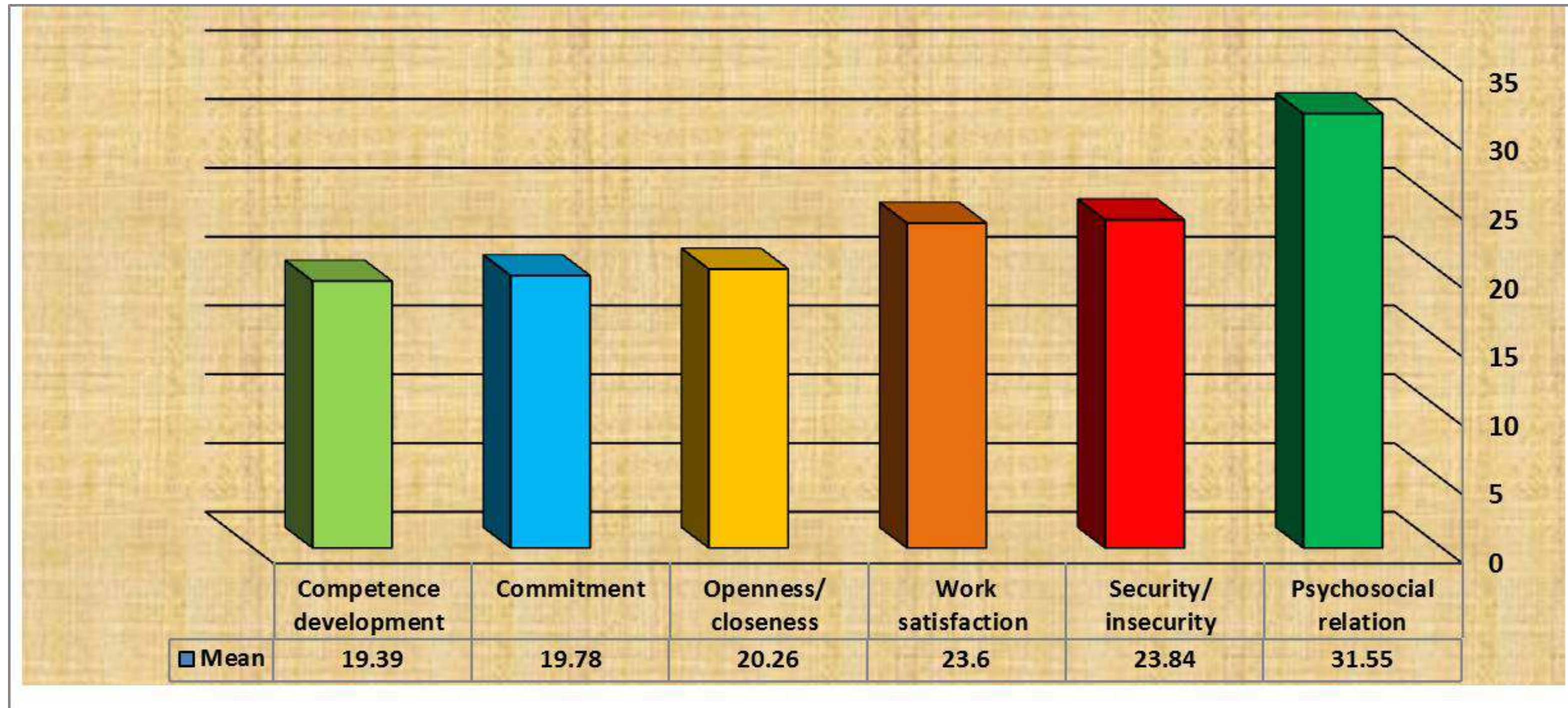


Figure {5}: Quality of nursing care as perceived by nurses measured with Karen- personnel Instrument.

The results in this figure show that the highest mean was awarded to psychosocial relation with mean 31.55. While the lowest mean was awarded to competence development with mean 19.39.

Table {20}: Mean and standard deviations of subscale variables for Karen – patient instrument

Patients scale variables	Subscales Mean (SD)					
	Patient satisfaction	Influence	Staff competence	Caring / uncaring	Integrity	Organization
I do receive the help/care I need	4.05 (0.65)					
I receive the help/ care I needed	4.14 (0.58)					
My expectations were realized	3.89 (0.87)					
I am satisfied with my stay	3.71 (0.88)					
I have received help to live with my illness	4.22 (0.55)					
Here they are able to find out what's wrong, to diagnose	4.11 (0.77)					
I have become healthier	3.87 (0.82)					
I was quickly relieved from my suffering	3.90 (0.73)					
I receive some information about my treatment	3.84 (0.90)					
Now I can go home and work with what I usually do	3.78 (0.81)					
Now I can go home and take care of myself	3.83 (0.78)					
I am happy with the care/ treatment	3.96 (0.72)					
I get to learn about my illness	3.90 (0.82)					
I feel that I have been participating in decisions of my care/treatment		3.10 (1.02)				
My care is planned together with the staff		3.15 (1.07)				
I have been encouraged and can live with my illness		4.15 (0.39)				
One receives an individual and personal treatment		4.11 (0.43)				
One sleeps well here			3.50 (0.89)			
The staff makes the patients feel calm			4.27 (0.53)			
There is orderliness on this ward			4.26 (0.59)			
The staff is nice, kind, happy, good			4.35 (0.50)			
The staff is able to motivate, stimulate and encourage the patient			4.38 (0.51)			

The staff shows consideration	4.40 (0.49)		
The staff shows commitment	4.33 (0.59)		
The staff shows interest	4.35 (0.62)		
The staff have the ability to show compassion	4.36 (0.58)		
The staff shows tact or dignity	4.37 (0.53)		
There is a positive atmosphere		3.88 (0.76)	
The staff is calm, assured		4.32 (0.59)	
The staff treats me with respect		4.38 (0.55)	
So many staff categories			4.45 (0.54)
There are so many different staff members taking care of me			4.35 (0.67)
I have got to know the staff			4.29 (0.62)
I have a nurse of my own who is responsible for my care			3.74 (1.24)

Subscales	Total mean	Standard deviation	Weighted mean	Subscales direction
Patient satisfaction	51.20	6.62818	3.94	Agree
Influence	14.51	2.21311	3.63	Agree
Staff competence	20.76	2.31724	4.15	Agree
Caring / uncaring	21.81	2.50575	4.36	Strongly agree
Integrity	12.58	1.60248	4.19	Agree
Organization	16.83	2.34470	4.21	Strongly agree

Table {20}: show that the highest mean was awarded to patient satisfaction with mean 51.20, including the variables: (I have received help to live with my illness; I receive the help/ care I needed) with mean 4.22, 4.14 respectively. While the lowest average was awarded to integrity with mean 12.58, including the variable: (The staff is calm, assured; treats me with respect; and there is a positive atmosphere, with mean 4.32, 4.38, 3.88 respectively). Also Table 18, reflect that the general direction of subscales is (agreement) , which indicates that the quality of nursing care as perceived by patients is very good

at integrity, staff competence , patients satisfaction and influence with mean 4.19, 4.15 , 3.94 , 3.63 respectively ;and excellent at Caring / uncaring ;organization with mean 4.36 , 4.21 respectively , as general trend according to 5- point likert scale as showed in table (3).

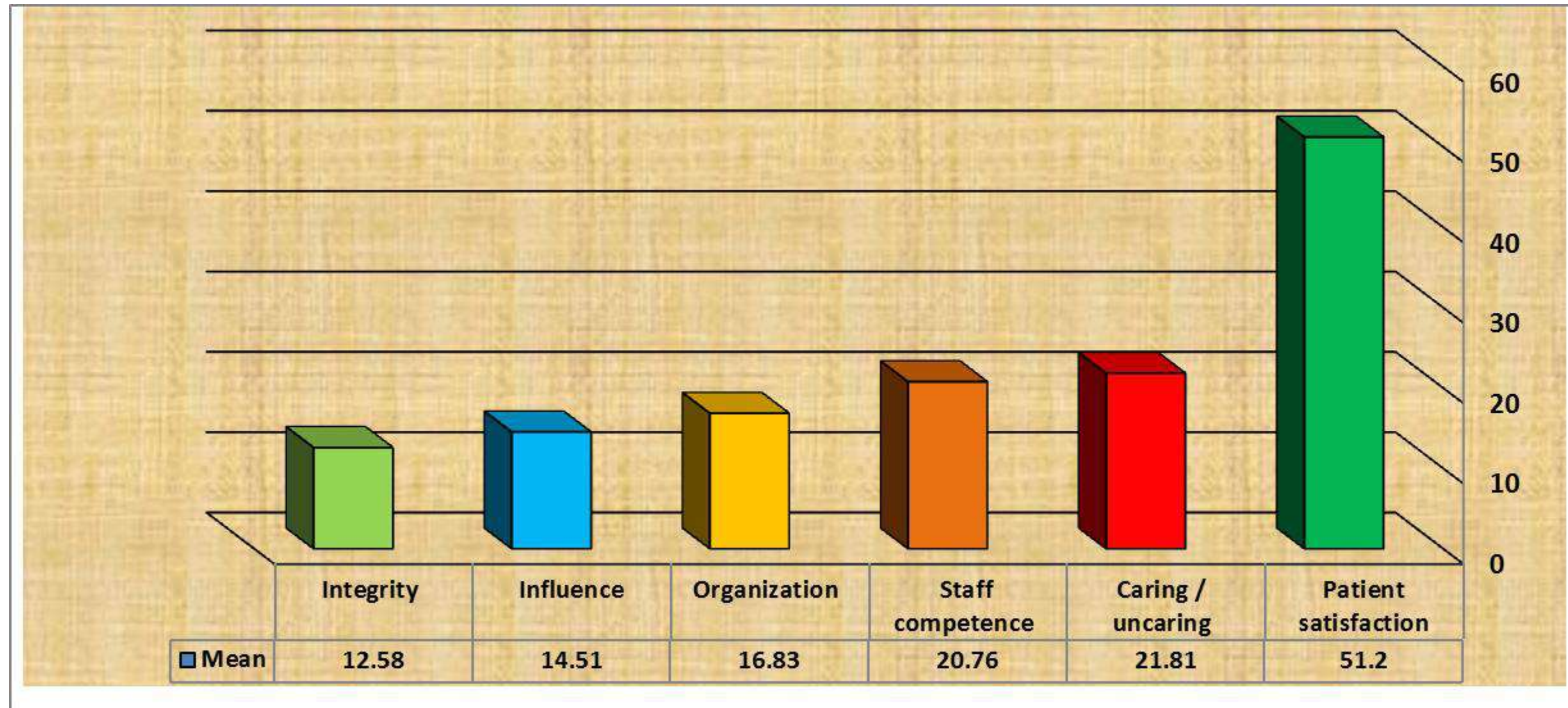


Figure {6}: Quality of nursing care as perceived by patients measured with Karen- patient Instrument.

The results in this figure show that the highest mean was awarded to patient's satisfaction with mean 51.2. While the lowest mean was awarded to integrity with mean 12.58.

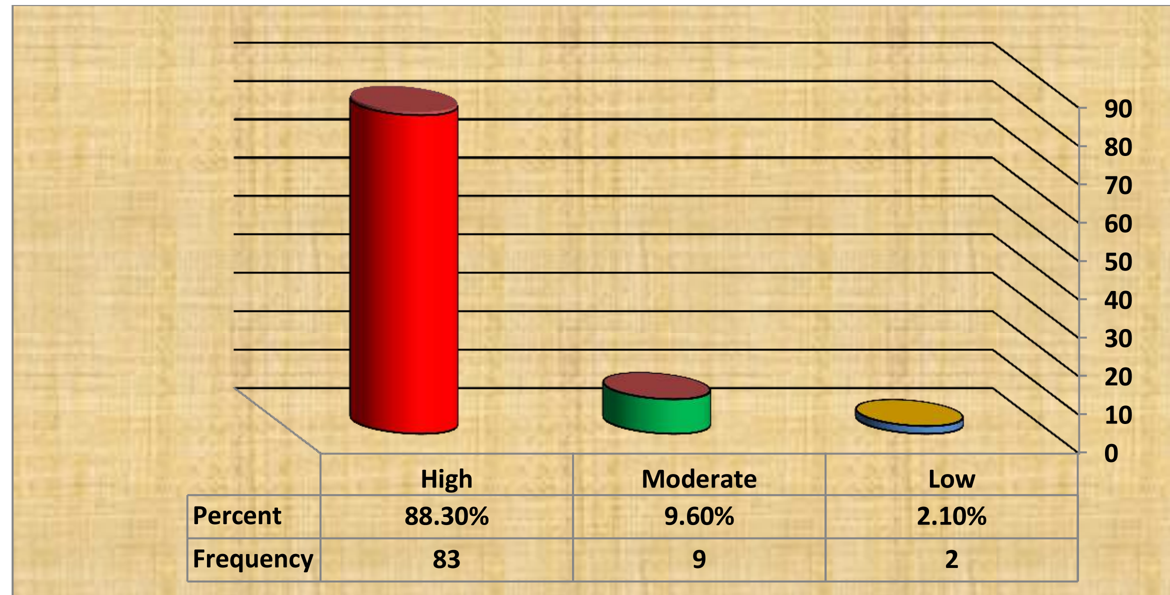


Figure {7}: Distribution of patients according to their level of satisfaction with nursing care.

The results in this figure show that all patients are satisfied; the majority of patients (88.3%) had high level of satisfaction. while a little of them had moderate and low level of satisfaction (9.6%; 2.1%), respectively.

Section five

Table {21}: The relationship between job stress and its subscales factors (n = 117)

Subscale factors	Job stress			
	Mean	Standard deviation	r	Sig.
work load	10.05	5.13918	0.749**	0.000
death / dying	10.41	3.60592	0.528**	0.000
Inadequate emotional preparation	2.50	1.78897	0.539**	0.000
lack of staff support	2.46	1.99801	0.574**	0.000
Uncertainty concerning treatment	5.69	2.83896	0.702**	0.000
Conflict with physicians	5.85	3.38255	0.678**	0.000
Conflict with nurses	4.10	3.32541	0.676**	0.000

**. Correlation is highly significant at the 0.01 level.
*. Correlation is significant at the 0.05 level.

As shown in Table 21, there is statistically significant positive relationship at the 0.01 level between job stress and subscale factors; that is, high levels of subscales are associated with high levels of job stress. The highest value of the correlation coefficient was awarded to work load stressors (0.749) while the lowest value was awarded to death and dying stressors (0.528).

Table {22}: The relationship between burnout dimensions (n = 117)

	Mean	Standard deviation	1.		2.	
			r	Sig.	r	Sig.
1. Emotional exhaustion	23.36	10.59885				
2. Depersonalization	3.17	3.68896	0.369**	0.00		
3. Personal accomplishment	37.27	9.39955	− 0.126	0.174	− 0.127	0.173

**. Correlation is highly significant at the 0.01 level.
*. Correlation is significant at the 0.05 level.

As shown in Table 22, there is statistically significant positive relationship at the 0.01 level between emotional exhaustion and depersonalization, with value of the correlation coefficient (0.369) while the relation of personal accomplishment with emotional exhaustion and depersonalization not statistically significant at value (− 0.126 ; − 0.127) respectively.

Table {23}: The relationship between quality of nursing care as perceived by nurses and its subscales factors (n = 117)

Subscale factors	Quality of nursing care as perceived by nurses			
	Mean	Standard deviation	r	Sig.
Psychosocial relation	31.54	4.54771	.767**	0.000
Commitment	19.78	3.45690	.806**	0.000
Work satisfaction	23.59	4.46085	.810**	0.000
Openness /closeness	20.27	3.23671	.843**	0.000
Competence development	19.38	2.87032	.629**	0.000
Security/ insecurity	23.85	3.18568	.789**	0.000

**. Correlation is highly significant at the 0.01 level.
*. Correlation is significant at the 0.05 level.

As shown in Table 23, there is statistically significant positive relationship at the 0.01 level between nurses perception regarding the quality of care and subscale factors; that is, high levels of subscales are associated with high levels of quality of care. The highest value of the correlation coefficient was awarded to openness/ closeness variables (0.843) while the lowest value was awarded to competence development variables (0.629).

Table {24}: The relationship between quality of nursing care as perceived by patients and its subscales factors (n = 117)

Subscale factors	Quality of nursing care as perceived by patients			
	Mean	Standard deviation	r	Sig.
Patients satisfaction	51.21	6.62818	.871**	0.000
Influence	14.50	2.21311	.591**	0.000
Staff competence	20.76	2.31724	.766**	0.000
Caring/ uncaring	21.82	2.50575	.677**	0.000
Integrity	12.59	1.60248	.763**	0.000
Organization	16.83	2.34470	.429**	0.000

**. Correlation is highly significant at the 0.01 level.
*. Correlation is significant at the 0.05 level.

As shown in Table 24, there is statistically significant positive relationship at the 0.01 level between patients perception regarding the quality of care and subscale factors; that is, high levels of subscales are associated with high levels of quality of care. The highest value of the correlation coefficient was awarded to patient's satisfaction variables (0.871) while the lowest value was awarded to organization variables (0.429).

Table {25}: The relationship between job burnout dimensions, job stress, and stress subscales (n = 117)

Independent variables	Mean	Standard deviation	Emotional exhaustion		Depersonalization		Personal accomplishment	
			r	Sig.	r	Sig.	r	Sig.
Job stress	41.06	14.40025	0.424**	0.000	0.208*	0.012	0.152	0.051
1. work load	10.05	5.13918	0.328**	0.000	0.216*	0.010	0.035	0.355
2. death / dying	10.41	3.60592	0.299**	0.001	0.028	0.381	0.109	0.120
3. Inadequate emotional preparation	2.50	1.78897	0.209*	0.012	0.052	0.288	0.014	0.440
4. Lack of staff support	2.46	1.99801	0.098	0.147	0.079	0.198	0.105	0.130
5. Uncertainty concerning treatment	5.69	2.83896	0.304**	0.000	0.116	0.106	0.115	0.109
6. Conflict with doctors	5.85	3.38255	0.249**	0.003	0.092	0.162	0.178*	0.027
7. Conflict with nurses	4.10	3.32541	0.323**	0.000	0.266**	0.002	0.136	0.072

**. Correlation is significant at the 0.01 level.

*. Correlation is significant at the 0.05 level.

As shown in Table 25, job stress and all subscale factors were found to have a statistically significant relationship with emotional exhaustion except lack of staff support was very low and not statistically significant. The table also shows a statistically significant positive relationship between depersonalization and job stress; work load; conflict with nurses respectively. Also personal accomplishment was a statistically correlated with conflict with doctors.

Table {26}: Simple, stepwise and multiple regression analysis for the effect of overall job stress and subscale factors on burnout dimensions

Regression	Independent variables	B	Beta	Sig.	Partial correlation	R	R^2	F	Sig.
Emotional exhaustion									
Simple	- Job stress	0.312	0.424	0.000	0.424	0.424	0.180	25.25	0.000
Stepwise.1	- Work load	0.352	0.171	0.075	0.167	0.453	0.205	9.732	0.000
	- Death /dying	0.718	0.244	0.006	0.257				
	- Conflict with nurses	0.753	0.236	0.012	0.233				
Depersonalization									
Simple	- Job stress	0.053	0.208	0.025	0.208	0.208	0.043	5.193	0.025
Stepwise. 2	- Conflict with nurses	0.295	0.266	0.004	0.266	0.266	0.071	8.778	0.004
Personal accomplishment									
Simple	- Job stress	0.099	0.152	0.102	0.152	0.152	0.023	2.721	0.102
Multiple	- Work load	-0.148	-0.081	0.465	-0.070	0.230	0.053	0.866	0.536
	- Death /dying	0.221	0.085	0.413	0.079				
	- Inadequate emotional preparation	-0.425	-0.081	0.450	-0.072				
	- Lack of staff support	0.329	0.070	0.523	0.061				
	- Uncertainty concerning treatment	0.107	0.032	0.790	0.026				
	- Conflict with doctors	0.428	0.154	0.190	0.125				
	- Conflict with nurses	0.185	0.066	0.590	0.052				

Table 26, regarding emotional exhaustion, showed that the two models was valid as the value of F = (25.25; 9.732) with a level of significance (0.000).In simple regression, the independent variable (Job stress) accounted for 18 % of the variation of the emotional exhaustion, while in stepwise regression, workload , death/ dying and conflict with nurses accounted for 20.5 % of the variation. Beta values showed that death /dying has more effect (0.244) than other variables on emotional exhaustion.

Regarding depersonalization, also it was showed that the two models was valid as the value of F = (5.193; 8.778) with a level of significance = (0.025; 0.004) respectively. In simple regression, the independent variable (Job stress) accounted for 4.3 % of the variation of the depersonalization, while in stepwise regression, conflict with nurses accounted for 7.1 % of the variation.

Regarding personal accomplishment, it was showed that the two regression models was statistically insignificant at the value of F = (2.721; 0.866) with significance level (0.102; 0.536) respectively. The results showed that independent variables have no statistically significant effect on personal accomplishment, in addition to value of R^2 in two models was very low = (0.023, 0.053).

Table {27}: Excluded variables in multiple stepwise regression analysis.

Regression	Excluded variables	Beta	Sig.	Partial correlation
Stepwise **1**	- Inadequate emotional preparation	0.054	0.551	0.056
	- Lack of staff support	-0.124	0.185	-0.125
	- Uncertainty concerning treatment	0.091	0.362	0.086
	- Conflict with doctors	0.018	0.861	0.017
Stepwise **2**	- Work load	0.127	0.202	0.119
	- Death /dying	0.012	0.892	0.013
	- Inadequate emotional preparation	-0.011	0.908	-0.011
	- Lack of staff support	-0.007	0.942	-0.007
	- Uncertainty concerning treatment	0.010	0.915	0.010
	- Conflict with doctors	-0.073	0.497	-0.064

Table 27, shows the names of the variables that were excluded in the stepwise regression, which are variables (work load, death /dying, inadequate emotional preparation, lack of staff support, uncertainty concerning treatment, conflict with doctors), it was found that the partial correlation between these independent variables and the dependent variable was statistically insignificant as shown by the Sig.value in the table

Table {28}: The relationship between job burnout dimensions, overall job stress, work load and death /dying and quality of nursing care as perceived by nurses (n = 117)

Independent variables	Quality of nursing care as perceived by nurses			
	Mean	Standard deviation	r	Sig.
work load	10.05	5.13918	.172*	.032
death / dying	10.41	3.60592	−.125	.090
Job stress	41.06	14.40025	.071	.225
Emotional exhaustion	23.36	10.59885	−.075	.212
Depersonalization	3.17	3.68896	−.221**	.008
Personal accomplishment	37.27	9.39955	.148	.056

**. Correlation is significant at the 0.01 level.

*. Correlation is significant at the 0.05 level.

In Table 28, the results showed a significant negative correlation at the 0.01 level between the total scores of the quality of nursing care and the depersonalization and a positive correlation with work load at the 0.05 level

Table {29}: Stepwise Multiple Regression analysis for the effect of job burnout dimensions , overall job stress, work load and death /dying on quality of nursing care as perceived by nurses (n = 117)

Independent variables	Quality of nursing care as perceived by nurses							
	B	**Beta**	**Sig.**	**Partial correlation**	**R**	**R^2**	**F**	**Sig.**
1. Work load	0.907	0.275	0.004	0.270	0.362	0.131	5.690	0.001
2. Death /dying	− 0.856	− 0.182	0.04	− 0.187				
3. Depersonalization	− 1.267	− 0.276	0.003	− 0.278				
Excluded variables		**Beta**	**Sig.**	**Partial correlation**				
4. Job stress		0.059	0.712	0.035				
5. Emotional exhaustion		− 0.012	0.909	− 0.011				
6. Personal accomplishment		0.127	0.155	0.134				

Table 29, showed that the regression model is valid as the value of F was (5.690) with a level of significance (0.001). The results showed that only workload, death /dying and depersonalization have statistically significant effect on quality of nursing care as perceived by nurses, while job stress , emotional exhaustion and personal accomplishment does not have statistically significant effect on quality of nursing care , so were excluded from the model when other predictors were statistically superior. The independent variables (workload, death /dying and depersonalization) accounted for 13.1% of the variation of the quality of nursing care .Beta values showed that depersonalization has more negative effect (− 0.276) than other variables on quality of nursing care.

Table {30}: The relationship between job burnout dimensions, overall job stress, work load and death /dying and quality of nursing care as perceived by patients (n = 94)

Independent variables	Quality of nursing care as perceived by patients			
	Mean	Standard deviation	r	Sig.
work load	10.05	5.13918	− 0.060	.281
death / dying	10.41	3.60592	.019	.429
Job stress	41.06	14.40025	− 0.054	.303
Emotional exhaustion	23.36	10.59885	− 0.139	.091
Depersonalization	3.17	3.68896	.048	.323
Personal accomplishment	37.27	9.39955	.178*	.043

**. Correlation is significant at the 0.01 level.

*. Correlation is significant at the 0.05 level.

I in Table 30, the results showed a significant positive correlation at the 0.05 level between the total scores of the quality of nursing care perceived by patients and the personal accomplishment

Table {31}:Results of multiple regression analysis for the effect of job burnout dimensions , overall job stress, work load and death /dying on quality of nursing care as perceived by patients (n = 94)

Independent variables	Quality of nursing care as perceived by patients							
	B	**Beta**	**Sig.**	**Partial correlation**	**R**	**R^2**	**F**	**Sig.**
1. Work load	0.034	0.013	0.941	0.008	0.248	0.062	0.953	0.462
2. Death /dying	0.351	0.102	0.454	0.080				
3. Job stress	− 0.095	− 0.111	0.600	− 0.056				
4. Emotional exhaustion	− 0.172	− 0.140	0.256	− 0.122				
5. Depersonalization	0.412	0.106	0.337	0.103				
6. Personal accomplishment	0.219	0.169	0.119	0.166				

Table 31, showed that the regression model is statistically insignificant at the value of F was (0.953) with significance level (0.462). The results showed that independent variables have no statistically significant effect on quality of nursing care as perceived by patients, in addition to value of R2 = 0.062 was very low.

Table {32}: The relationship between job burnout dimensions, overall job stress, work load and death /dying and patients satisfaction regarding the nursing care (n = 94)

Independent variables	Patients satisfaction			
	Mean	Standard deviation	r	Sig.
work load	9.72	4.92613	− 0.109	.148
death / dying	10.55	3.70590	− 0.014	.445
Job stress	41.00	14.86137	− 0.087	.202
Emotional exhaustion	23.38	10.39552	− 0.134	.100
Depersonalization	2.93	3.28319	− 0.061	.280
Personal accomplishment	37.16	9.88678	.070	.251

**. Correlation is significant at the 0.01 level.

*. Correlation is significant at the 0.05 level.

In Table 32, the results showed that the relation between patient's satisfaction and other independent variables was very low and not statistically significant.

Table {33}: Results of multiple regression analysis for the effect of job burnout dimensions, overall job stress, work load and death /dying on patient's satisfaction regarding the nursing care

Independent variables	Patients satisfaction							
	B	Beta	Sig.	Partial correlation	R	R^2	F	Sig.
1. Work load	− 0.112	− 0.083	0.642	− 0.050	0.169	0.029	0.429	0.858
2. Death /dying	0.101	0.056	0.683	0.044				
3. Job stress	− 0.004	− 0.009	0.968	− 0.004				
4. Emotional exhaustion	− 0.069	− 0.109	0.383	− 0.094				
5. Depersonalization	− 0.040	− 0.020	0.858	− 0.019				
6. Personal accomplishment	0.038	0.057	0.604	0.056				

Table 33, showed that the regression model is statistically insignificant at the value of F was (0.429) with significance level (0.858). The results showed that independent variables have no statistically significant effect on patient's satisfaction, in addition to value of $R^2 = 0.029$ was very low.

Chapter five

Discussion

Conclusion

Recommendation

5.1. Discussion

Nurses are exposed to various stress sources from physical, psychological and social working environments; stress at workplace has undesirable effect on health and work efficiency (Kumar and Kaur, 2013). Burnout is a response to chronic emotional and interpersonal stress on the job; therefore, nursing has been considered as a risk profession for burnout. Job burnout among nurses can result in fatigue, anxiety, lack of motivation and absence from work, which will increase nurse shortages and reduce patient safety outcomes (Wang, et al, 2015). It was demonstrated that a close relationships between increased work stress and burnout as well as diminished quality of care (Weigl et al, 2015).This study was descriptive cross-sectional hospital based, using correlational design to explore the effects of nurse's stress and burnout on the quality of nursing care and patient's satisfaction within the clinical environment.

The present study showed that the majority of nurses were female (77.8%). This is in line with the United States Census Bureau report, that men still make up only a small percentage (9%) , while female nurses are (91%) of nurses working in the United States (fastaff travel nursing ,2016). More than half (58.1) of nurses their age are between 20 – 31 years, that mean hospital working force was younger. This may be due to increase rate of nurses immigration. The majority of nurses (72.6%) work more than three years in fixed job with low monthly pay (67.5%). This may be explained by (40.2%) of them have additional works and (50.4%) they intend to leave hospital for this reason. Also the study showed that the patients to nurse ratio was high, it was found more than 1:3; among (82.1%) of nurses. And this may worsen patients care outcome (Sakr et al, 2015). Regarding nurses satisfaction, study showed that the majority of them (77.8%) are satisfied with nursing profession,

and about (24.6%) they have a plan for continue education in nursing field; (33.3%) intent leaving Sudan due to poor, unsatisfied economic status and low wages. this may be lead to nursing shortage (Spetz and Given, 2003), which affect quality of patients care (Aiken et al, 2002a).

The study showed that most of patients (61.7%, 59.6%) were male from rural area respectively; nearly half of them (47.9%) their age above 51 years old. This is because the incidence of renal, cardiac, and caner diseases is more common among this group of age (O'Sullivan et al, 2017; Chiao et al, 2016; Thakkar et al, 2014). Also (85 %) of patients their education level did not exceed secondary school; about two third of them reported that their incomes were inadequate to meet their needs (64.9%); this is because most rural area populations work in agriculture.

Regarding stress level among nurses, the most important finding of this study was that all nurses experienced stress in the low (2.6%) and moderate level (97.4%). When comparing this result, the prevalence of stress among participant was higher than what has been reported in previous studies (Golam Kibria, 2018; Al-Makhaita et al, 2014). Emotional issues related to death and dying was identified as the most frequent source of stress for the present study at mean (10.41). These finding supported by two studies (Chatzigianni et al, 2018; Sarafis et al, 2016). The second most reported stressor was workload at mean (10.05). This is in line with the findings of (Makie, 2006). Also statistical significant relationship was not found between stress level and demographic characteristics; work characteristics of nurses and nurse's opinion regarding they job. These finding supported by two studies (Al-Makhaita et al, 2014; Shivaprasad AH.2013). Furthermore, the study results revealed highly significant positive association between stress level and all seven subscales of nursing stress scale at P.value (0.000)

Across Maslach Burnout Inventory; as a group the findings of the present study revealed that the nurse's participants experienced burnout in the moderate levels of emotional exhaustion; personal accomplishment and low level in the depersonalization. These finding supported by (Shafaghat et al, 2016), when compared to one of the Malawian studies ,level on emotional exhaustion and personal accomplishment were similar and participants depersonalization in this study was lower than has been reported in (Thorsen et al, 2011).

The results indicated that the burnout burden in the nurses were mainly on the subscales of emotional exhaustion and reduced personal accomplishment, but not depersonalization. This is in line with the findings of (Shafaghat et al, 2016). The study reveals that (63%, 21%, 50%) of nurses experienced moderate and high level of burnout via emotional exhaustion, depersonalization and personal accomplishment subscales, respectively. A positive Maslach Burnout Inventory intra-domains correlations were verified between emotional exhaustion and depersonalization at P.value (0.000), suggesting that nurses who obtain high scores in one of these domains will likely obtain high scores in the other.

Regarding relationship between job burnout and nursing stress level; the study found a significant effect of stress on emotional exhaustion. The overall regression was significant, F = 25.25, p = 0.000 (R^2 = .18), that mean the independent variable (Job stress) accounted for 18 % of the variation of the emotional exhaustion. Also it was found significant effect for stress on depersonalization. The overall regression was significant, F = 5.193, p = 0.025 (R^2 = .04), that mean the independent variable (Job stress) accounted for 4 % of the variation of the depersonalization. So stress is a good predictor of burnout, this finding is supported by two studies (Meltzer and Huckabay, 2004; Sun et al, 2017).

Furthermore, the quality of nursing care as perceived by nurses and patients were investigated. The findings revealed that the quality level from perspective of both is very good; it was found that patients and nurses seem satisfied with overall quality of care. The patients were less satisfied with integrity regarding a positive atmosphere; and influence, regarding participation in decisions of treatment and planning with the nurses, while nurses were less satisfied with commitment and competence development. The patients perceived that nurses had good competence and excellent care, which is supported by (Bassett, 2002; Andersson and Lindgren, 2013). Patients had a high level of satisfaction with nursing care (88.3%).Statistical significant relationship was not found between satisfaction level and demographic characteristics of patients , so were not influencing their satisfaction with nursing care. this result contrast with (Liu and Wang, 2007).

Regarding evaluating the effect of nursing stressors and burnout on quality of care, study found that depersonalization and death / dying stressors have negative effects on quality perceived by nurses, while workload has a positive effect (Salyers et al, 2017; Poghosyan et al, 2010; Aron, 2015). The overall regression was significant, $F = 5.690$, $p = 0.001$ ($R^2 = .13$), that mean the independent variables (death / dying, depersonalization, workload) accounted for 13 % of the variation of the quality perceived by nurses, Beta values showed that depersonalization has more negative effect than other variables on quality of nursing care, this is supported by (Embriaco et al, 2007), $\beta = 0.276$, $p = 0.003$. Study found no significant effect for nursing stressors and burnout on quality of care that perceived by patients and patients satisfaction. This result indicates that perception of patients toward quality of nursing care did not affected by stress level and burnout of nurses.

5.2. Conclusion

Based on the findings of present study it was concluded that:

- All nurses in critical care units were experienced stress at work place; the majority of them (97.4%) had low level of stress.
- As a group nurses in critical care units have burnout in moderate levels of emotional exhaustion and personal accomplishment and a low level in depersonalization.
- The most stressful factors for critical care nurses are those related to coping with death and dying, workload demands.
- The study found a significant effect of stress on emotional exhaustion and depersonalization.
- The quality level from perspective of both (nurses and patients) is very good.
- (88.3%) of patients had a high level of satisfaction with nursing care.
- The depersonalization; death/dying stressors have negative effects on quality that perceived by nurses.
- No significant effect for nursing stressors and burnout on quality of care that perceived by patients and patients satisfaction.

5.3. Recommendations

Based on the level of stress among nurses it is recommended that:

1. Establish educational programs promoting coping with stressors (patient suffering, patient's death, feeling helpless), problem-solving, goal setting, and efficient communication skills for supporting nursing staff.
2. Improve nursing work conditions in a way that provide a clear nurse job description to decrease non-nursing tasks, provision for more breaks, use patients classification system during work shifts
3. Enhancing of supervisors support and openly discussion with nurses regarding work problems, safety hazards and treatments plans.
4. Improving nurse's leadership abilities, teamwork, competencies to enhance the quality of care.

Based on the level of burnout among nurses it is recommended that:

1. Sharing crises, worries, emotions and experiences with colleagues. As well as interpersonal care, attention, and understanding.
2. Life style changes; such as diet, physical activities, relaxation for preventing burnout and improve nurses' wellbeing.
3. Using positive coping strategies concentrate on emotion (reflection) and negative coping strategies (avoidance and escapism).

Based on the level of quality among nurses, they were less satisfied with commitment and competence development. So it is recommended that:

1. Enhance nurses commitment toward their patients in a way that provide showing interest, consideration, compassion and motivation.

2. Increasing nurses autonomy and supporting them with continuous educational programs through professional center to improve their competencies and enhance the quality of care.

Based on the level of quality among patients, they were less satisfied with integrity and influence. So it is recommended that:

1. Involve the patients in decisions of treatment to enhancing their confidence and individualized patient care.
2. Provide a positive patients atmosphere by respect that supports patient's preferences for care with calm manner.

Appendices

- References
- Tools

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Appendix
(1)

Hospital name	Ques. No

Questionnaire to measure:

Effects of Stress level and Burnout on quality of care and patient satisfaction among critical care nurses in Wad Medani city hospitals

A- Demographic Characteristics of nurses:

1. do you have a fixed job in this hospital (more than one year)

1) Yes ☐ 2) No ☐

2. Your working period in this hospital:

1). Less than 1 year ☐ 2). 1 – 3 years ☐ 3). more than 3 years ☐

3. Gender :

1) Male ☐ 2) Female ☐

4. Age:

1) 20 - 30 years ☐
2) 31 - ☐
3) 41 - ☐
4) 51- 60 ☐
5) More than 60 years ☐

5. Marital status

1) Single ☐
2) Married ☐
3) Divorced ☐
4) Widow/widower ☐

6. Education level:

1) Diploma in nursing ☐
2) Bachelor ☐
3) Master degree ☐
4) Doctorate ☐

7. General nursing experience:

1) less than 3 years ☐
2) 3 – 5 years ☐
3) More than 5 years ☐

8. Place of residence:

1) Wad Medani City ☐
2) Rural area of Wad Medani ☐
3) Other ……………….. ☐

9. Monthly work salary :

1) 500 – 1000 SDG ☐
2) More than 1000 – 2000 SDG ☐
3) More than 2000 – 3000 SDG ☐
4) More than 3000 SDG ☐

B. Work characteristics:

10. Work unit:

1) High dependency unit ☐
2) Intensive care unit ☐
3) Emergency room ☐
4) Hemodialysis unit ☐
5) Coronary care unit ☐
6) Other ………………… ☐

11. Work Shift:

1. Morning
2. Afternoon
3. Afternoon /Night
4. Nights
5. Cyclic shift

12. Patient-to-nurse ratio at primary position:

1) 1 : 1
2) 1 : 2
3) More than 1 : 3

13. Working days per week:

1) 3 days
2) 5 days
3) Full week
4) Other ………………….

14. Do you have overtime work:

1) Yes
2) No

15. If you choose yes, please answer the following: do overtime work?

A.

1) Voluntary
2) Pressured expected

B.

3) Paid
4) Unpaid

C. Satisfaction regarding current job:

16. Thinking about the next 1-3 years, do you…

1) Intend to stay in your current job
2) Intend to leave your current job

17. In your opinion, finding another job in nursing would be…

1) Easy
2) Difficult

18. Are you satisfied with nursing as a profession?

1) Yes
2) No

19. If you are thinking of leaving your current job, please check the best options that describe your plans after leaving (more than one).

1) Move to another hospital in Sudan
2) Leave Sudan country
3) Continue education in nursing field
4) Change nursing profession
5) Take care of children or other dependents (parents)
6) Other, specify______________________________________

B. Demographical data for patients:

1. Gender :

1) Male ☐ 2) Female ☐

2. Age:

1) 20 – 30 years ☐
2) 31 – ☐
3) 41 – ☐
4) 51 – 60 years ☐
5) More than 60 years ☐

3. Education level:

1) Illiterate ☐
2) Khalwa ☐
3) Primary school ☐
4) Intermediate school ☐
5) Secondary school ☐
6) Graduate ☐
7) Postgraduate ☐

4. Place of Residence:

1) Ghadarif state ☐
2) Kassala state ☐
3) Blue Nile state ☐
4) Northern state ☐
5) Gazera state: ☐
   A. Wad Medani city ( )
   B. Rural area ( )
6) Other……………… ☐

5. Previous hospitalization in this hospital:

1) None ☐
2) First time ☐
3) 2 – 3 times ☐
4) More than 3 times ☐

6. Days of hospitalization:

1) Less than 3 days ☐
2) 3 – 7 days ☐
3) 8 – 15 days ☐
4) 16 – 21 days ☐
5) 22 – 30 days ☐
6) More than 1 month ☐

7. Health insurance coverage:

1) Yes ☐ 2) No ☐

8. Monthly income:

1) < 1000 SDG ☐
2) More than 1000 – 2000 SDG ☐
3) More than 2000 - 3000 SDG ☐
4) > 3000 SDG ☐

Appendix
(2)

Nursing Stress Scale

Hospital name	Scale No

Stressors	Never (0)	Occasionally (1)	Frequently (2)	Very frequently(3)
Factor 1: work load				
1. Demands of patient classification system				
2. Unpredictable staffing and scheduling				
3. Too many non-nursing tasks required, such as clerical work				
4. Not enough time to provide emotional support to a patient				
5. Not enough time to complete all of my nursing tasks				
6. Not enough staff to adequately cover the unit				
7. Having to work through breaks				
8. Having to make decisions under pressure				
Factor 2: death and dying	**Never (0)**	**Occasionally (1)**	**Frequently (2)**	**Very frequently(3)**
1. Performing procedures that patients experience as painful				
2. Feeling helpless in the case of a patient who fails to improve				
3. Listening or talking to a patient about his/her approaching death				
4. The death of a patient				
5. The death of a patient with whom you developed a close relationship				
6. Physician not being present when a patient dies				
7. Watching a patient suffer				
Factor 3: inadequate Emotional preparation	**Never (0)**	**Occasionally (1)**	**Frequently (2)**	**Very frequently(3)**
1. Feeling inadequately prepared to help with the emotional needs of a patient's family				
2. Being asked a question by a patient for which i do not have a satisfactory answer				
3. Feeling inadequately prepared to help with the emotional needs of a patient				
Factor 4: lack of staff support	**Never (0)**	**Occasionally (1)**	**Frequently (2)**	**Very frequently(3)**
1. Lack of an opportunity to talk openly with other unit personnel about problems on the unit				
2. Lack of an opportunity to share experiences and feelings with other personnel on the unit				
3. Lack of an opportunity to express to other personnel on the unit my negative feelings toward patients				

Factor 5: uncertainty concerning treatment	Never (0)	Occasionally (1)	Frequently (2)	Very frequently(3)
1. Inadequate information from a physician regarding the medical condition of a patient				
2. A physician ordering what appears to be inappropriate treatment for a patient				
3. A physician not being present in a medical emergency				
4. Not knowing what a patient or a patient's family ought to be told about the patient's medical condition and its treatment				
5. Uncertainty regarding the operation and functioning of specialized equipment				
6. Being exposed to health and safety hazards				
7. Feeling inadequately trained for what I have to do				
Factor 6: conflict with physicians	**Never (0)**	**Occasionally (1)**	**Frequently (2)**	**Very frequently(3)**
1. Criticism by a physician				
2. Conflict with a physician				
3. Fear of making a mistake in treating a patient				
4. Disagreement concerning the treatment of a patient				
5. Making a decision concerning a patient when the physician is unavailable				
6. Having to organize doctor's work				
Factor 7: conflict with other nurses	**Never (0)**	**Occasionally (1)**	**Frequently (2)**	**Very frequently(3)**
1. Difficulty in working with a particular nurse (or nurses) on the unit				
2. Difficulty in working with a particular nurses (or nurses) outside the unit				
3. Floating to other units that are short-staffed				
4. Criticism by a supervisor				
5. Conflict with a supervisor				
6. Being held accountable for things over which I have no control				

Appendix
(3)

The Maslach Burnout Inventory for nurses

Hospital name	Scale No

Emotional exhaustion		Never 0	Rarely 1	Occasionally 2	Sometimes 3	Frequently 4	Usually 5	Every day 6
		Never	1/year	1 / month	More / month	1 / week	More/ week	Every day
1	I feel emotionally drained from my work							
2	I feel used up at the end of the day							
3	I feel tired when I get up in the morning and have to face another day at work							
4	I feel burned out from my work							
5	I feel frustrated by my job							
6	I feel I am working too hard on my job							
7	Working with people directly puts too much stress on me							
8	I feel like I am at the end of my tether							
9	Working with people all day is a real strain for me							
Depersonalization								
1	I feel I treat some clients as if they were impersonal objects							
2	I have become more callous toward people since I took this job							
3	I worry that this job is hardening me emotionally							
4	I don't really care what happens to some patients							
5	I feel clients blame me for some of their problems							
Personal accomplishment								
1	I can easily understand how clients feel about things							
2	I deal effectively with the problems of my patients							
3	I feel I am positively influencing other peoples' lives through my work							
4	I feel very energetic							
5	I can easily create a relaxed atmosphere with clients							
6	I feel exhilarated after working closely with clients							
7	I have accomplished many worthwhile things in this job							
8	In my work, I deal with emotional problems very calmly							

Appendix
(4)

The Karen instruments for measuring quality of nursing care

Hospital	No

The Karen-patient instrument - Variable--Item		Strongly Disagree 1	Disagree 2	Undecided 3	Agree 4	Strongly Agree 5
No	**Patient Satisfaction**					
1	I do receive the help/care I need					
2	I receive the help/ care I needed					
3	My expectations were realized					
4	I am satisfied with my stay					
5	I have received help to live with my illness					
6	Here they are able to find out what’s wrong, to diagnose					
7	I have become healthier					
8	I was quickly relieved from my suffering					
9	I receive some information about my treatment					
10	Now I can go home and work with what I usually do					
11	Now I can go home and take care of myself					
12	I am happy with the care/ treatment					
13	I get to learn about my illness					
	Influence					
14	I feel that I have been participating in decisions of my care/treatment					
15	My care is planned together with the staff					
16	I have been encouraged and can live with my illness					
17	One receives an individual and personal treatment					
	Staff competence					
18	One sleeps well here					
19	The staff makes the patients feel calm					
20	There is orderliness on this ward					
21	The staff is nice, kind, happy, good					
22	The staff is able to motivate, stimulate and encourage the patient					

	Caring / uncaring					
23	The staff shows consideration					
24	The staff shows commitment					
25	The staff shows interest					
26	The staff have the ability to show compassion					
27	The staff shows tact or dignity					
	Integrity					
28	There is a positive atmosphere					
29	The staff is calm, assured					
30	The staff treats me with respect					
	Organization					
31	So many staff categories					
32	There are so many different staff members taking care of me					
33	I have got to know the staff					
34	I have a nurse of my own who is responsible for my care					

The Karen-personnel instrument - Variable--Item		Strongly Disagree 1	Disagree 2	Undecided 3	Agree 4	Strongly Agree 5
No	**Psychosocial relation**					
1	We are able to talk to each other					
2	We all get on well together					
3	The staff collaborates					
4	There is a positive atmosphere					
5	There is no enviousness					
6	The patients receive an individual treatment					
7	The staff is nice, kind, happy, good					
8	The patients get to know the staff					
	Commitment					
9	The staff shows interest					
10	The staff shows commitment					
11	The staff shows consideration					
12	The staff have the ability to show compassion					
13	The staff are able to motivate the patients					
	Work satisfaction					
14	The work develops me as a human being					
15	The work gives me a lot as a human being					
16	I feel harmony in the work					
17	The work gives me satisfaction					
18	There is orderliness on this ward					
19	They are able to find out what is wrong, to diagnose					
	Openness/ closeness					
20	We do consider each other					
21	The staff is calmed, assured					
22	We can talk about the problems					
23	We listen to each other					
24	Our teamwork have affected the patients outcome					

Competence development						
25	We learn new things					
26	The patient is involved in the treatment					
27	Someone is responsible					
28	The patient has a say					
29	The tasks are performed routinely					
Security/ insecurity						
30	I do feel secure in my work					
31	So many staff categories					
32	I fell work fellowship					
33	I have the strength for the nursing tasks					
34	Personal contact with the patients					
35	The staff make the patients calm					

رقم الاستبيان	المستشفي

استبيان لقياس :

آثر مستوى ضغوط العمل والإرهاق على جودة الرعاية ورضا المريض بين ممرضات الرعاية الحرجة بمستشفي الكلي ، القلب ، والذرة بمدينة ود مدني

ملحق رقم
(1)

أ. البينات الاساسية لأصطاف التمريض:

1. هل لديك وظيفة ثابتة بهذه المستشفي: 1. نعم ☐ 2. لا ☐

2. فترة عملك بهذه المستشفي؟

1) أقل من سنة ☐ 2) 1-3 سنة ☐ 3) أكثر من 3 سنوات ☐

3. الجنس :

1) ذكر ☐ 2) أنثي ☐

4. العمر:

1) 20 - 30 سنة ☐
2) 31 – ☐
3) 41 – ☐
4) 51 – 60 سنة ☐
5) أكثر من 60 سنة ☐

5. الحالة الاجتماعية:

1) أعزب ☐
2) متزوج ☐
3) مطلق ☐
4) أرملة / أرمل ☐

6. المؤهل الأكاديمي:

1) دبلوم ☐
2) بكالوريوس ☐
3) ماجستير ☐
4) دكتوراة ☐

7. عدد سنوات الخبرة في مهنة التمريض:

1) أقل من 3 سنوات ☐
2) 3 – 5 سنوات ☐
3) اكثر من 5 سنوات ☐

8. السكن الحالي :

1) مدينة ود مدني ☐
2) ريفي ود مدني ☐
3) اخري.............. ☐

9. الراتب الشهري بهذه المستشفي:

1) 500 – 1000 جنيه ☐
2) أكثر من 1000 – 2000 جنيه ☐
3) أكثر من 2000 – 3000 جنيه ☐
4) أكثر من 3000 جنيه ☐

ب. خصائص العمل :

10. مكان العمل بهذه المستشفي:

1) وحدة العناية الوسيطة ☐
2) وحدة العناية المركزة ☐
3) غرفة الطوارئ ☐
4) وحدة الغسيل الدموي ☐
5) وحدة العناية التاجية ☐
6) اخري .... ☐

11. مناوبة العمل بهذه المستشفي :

1. الصباح
2. الظهر
3. الظهر/ المساء
4. المساء
5. Cyclic shift / غير ثابت

12. معدل عدد اصطاف التمريض / مقابل عدد المرضي في الوضع الطبيعي بهذه المستشفي:

1) 1 : 1
2) 1 : 2
3) أكثر من 1 : 3

13. كم عدد ايام عملك في الاسبوع بهذه المستشفي:

1) 3 أيام
2) 5 أيام
3) كل الاسبوع
4) أخري.................................

14. هل تعمل عمل اضافي غير الايام الرسمية في الاسبوع؟

1) نعم
2) لا

15. إذا اخترت الاجابة نعم , من فضلك أجب عن الآتي: هل العمل الاضافي ؟

أ.

1) تطوعاً
2) تحت ضغط الادارة

ب.

3) مدفوع الأجر
4) غير مدفوع الاجر

ج. مستوى الرضا عن الوظيفة:

16. ما هو تفكيرك وخطتك في الـ (1 – 3 سنة) القادمة حول عملك بهذه المستشفي :

1) أنوي البقاء في وظيفتك الحالية بهذه المستشفي
2) أنوي ترك وظيفتي الحالية بهذه المستشفي

17. في رأيك ، وجود وظيفة أخرى في مجال التمريض بمستشفى آخر.....

1) سهل
2) صعب

18. هل انت راضٍ عن التمريض كمهنة تعمل بها ؟

1) نعم
2) لا

19. إذا كنت تنوي ترك وظيفتك الحالية بهذه المستشفي ، من فضلك اختر اكثر من خيار لتصف خطتك بعد ترك هذه الوظيفة الحالية :

1) الانتقال لمستشفي آخر بالسودان
2) مغادرة السودان ، والهجرة للخارج للعمل في مجال التمريض
3) الاستمرار في الدراسة والتقدم العلمي في المجال
4) تغيير مهنة التمريض
5) تربية الأبناء ورعاية الاقارب (الوالدين)
6) أخري ، حدد ....

ب. البيانات الاساسية للمرضى :

1. الجنس:

1) ذكر ☐ 2) أنثي ☐

2. العمر :

1) 20- 30 سنة ☐
2) 31 – ☐
3) 41 – ☐
4) 51 – 60 سنة ☐
5) اكثر من 60 سنة ☐

3. المستوي التعليمي :

1) غير متعلم ☐
2) الخلاوي ☐
3) التعليم الاساس ☐
4) التعليم المتوسط ☐
5) التعليم الثانوي ☐
6) التعليم الجامعي ☐
7) فوق الجامعي (دراسات عليا) ☐

4. مكان السكن :

1) ولاية القضارف ☐
2) ولاية كسلا ☐
3) ولاية النيل الازرق ☐
4) الولاية الشمالية ☐
5) ولاية الجزيرة :
   a) *مدينة ود مدني* ( )
   b) *ريفي ود مدني* ( )
6) أخري .... ☐

5. هل تم ادخالك لهذه المستشفي سابقا للعلاج (عدد مرات الرقاد) :

1) لا ☐
2) لأول مرة ☐
3) 2 – 3 مرات ☐
4) أكثر من ثلاثة مرات ☐

6. كم عدد الايام التي مكثتها (الرقاد الحالي):

1) أقل من 3 ايام ☐
2) 3 -7 أيام ☐
3) 8 – 15 يوم ☐
4) 16 – 21 يوم ☐
5) 22 – 30 يوم ☐
6) أكثر من شهر ☐

7. هل لديك تأمين صحي :

1) نعم ☐ 2) لا ☐

8. معدل دخلك الشهري:

1) أقل من 1000 جنيه ☐
2) اكثر من 1000 – 2000 جنيه ☐
3) اكثر من2000 – 3000 جنيه ☐
4) أكثر من 3000 جنيه ☐

رقم الاستبيان	المستشفي

ملحق رقم
(2)

مقياس ضغوط العمل بمهنة التمريض

	العامل الأول : عبء العمل	أبداً 0	أحياناً 1 اكثر من مرة / الشهر	كثيراً 2 أكثر من مرة / الاسبوع	كثير جداً 3 كل يوم
1	هل تحتاجون لتصنيف المرضي علي حسب نوع الرعاية المطلوبة لهم				
2	هل يتم توزيع جداول العمل والمناوبات المفاجئ / بدون إخطارك				
3	هل تقوم بأعمال كثيرة جدا غير المهام التمريضية الأساسية				
4	هل تواجه صعوبة لتقديم الدعم النفسي للمرضي (لا يوجد وقت كافئ)				
5	هل تواجه صعوبة في اكمال المهام التمريضية الخاصة بك (قلة الوقت)				
6	هل عدد الإصطاف غير كافي لتغطية العمل بالقسم				
7	هل تضطر للعمل حتي في زمن الراحة (break)				
8	هل تضطر لإتخاذ قرارات تحت الضغط (ضغط العمل)				
	العامل الثاني : إحتضار وموت المرضي				
1	هل تضطر للقيام ببعض الاجراءات التمريضية المؤلمة للمريض				
2	هل تشعر بالعجز في حالة عدم تحسن المريض وتدهور حالته الصحية				
3	**هل تستمع أو تتحدث مع المرضي عن تدهور حالتهم الصحية نحو الموت**				
4	هل تواجه موت المرضي اثناء الدوام				
5	وفاة مريض من الذين لك بهم علاقة وثيقة وقوية				
6	عدم حضور الاطباء عند موت المرضي				
7	هل تشاهد معاناة المرضي مع المرض				
	العامل الثالث : قلة الإستعداد النفسي				
1	هل تشعر بعدم الاستعداد الكافي للمساعدة في تلبية الاحتياجات العاطفية والنفسية لأسرة المريض				
2	هل يُطرح عليك سؤال من المريض، ليس لديك إجابة مرضية عليه				
3	هل تشعر بعدم الاستعداد الكافي للمساعدة في تلبية الاحتياجات العاطفية والنفسية للمريض				
	العامل الرابع : قلة الدعم من الزملاء				
1	**عدم وجود فرصة للحديث علناً مع زملاء التمريض حول مشاكل العمل هنا**				
2	**عدم وجود فرصة لتبادل الخبرات والمشاعر مع زملاء التمريض في هذه المستشفي**				
3	لا توجد فرصة لأعبر لزملائي عن مشاعري السلبية تجاه المرضي (الصراعات مع المرضي)				

				العامل الخامس : الغموض والشك بشأن العلاج	
				هل هناك معلومات غير كافية من الطبيب بشأن الحالة الطبية للمريض	1
				هل يوصف علاج من الطبيب علي مايبدو أنه غير مناسب للمريض	2
				عدم حضور الأطباء في حالات الطوارئ	3
				عدم معرفة ما يجب أن يقال للمريض وأسرته عن حالته الطبية والعلاج	4
				هل ترتاب وتتخوف بشأن تشغيل وآداء بعض الادوات والاجهزة المتخصصة	5
				هل تتعرض للاصابة بمخاطر الصحة و السلامة أثناء العمل	6
				هل تشعر بأنك غير مدرب بما يكفي لممارسة العمل هنا	7
				العامل السادس : الصراعات مع الأطباء	
				هل تتعرض للانتقاد من الأطباء	1
				هل تتعرض لصراعات مع الأطباء	2
				هل تواجه خوف من إرتكاب خطأ في علاج المريض	3
				هل تواجه خلافات فيما يتعلق بعلاج المريض	4
				هل تتخذ قرار بشأن المريض عند عدم توفر الطبيب	5
				هل تضطر لتنظم عمل الطبيب	6
				العامل السابع : الصراعات مع أصطاف التمريض	
				هل تواجه صعوبة في العمل مع اصطاف التمريض بهذا القسم	1
				هل تواجه صعوبة في العمل مع اصطاف التمريض في الاقسام الأخري	2
				هل تجبر علي التنقل في العمل من قسم لآخر نسبة لنقص الاصطاف	3
				هل تتتعرض لانتقاد من رئيس قسم التمريض/ الميترون	4
				هل تواجه صراعات مع رئيس قسم التمريض / الميترون	5
				هل تتعرض للمسائلة عن أمور ليست لديك السيطرة عليها	6

رقم الاستبيان	اسم المستشفي

ملحق رقم
(3)

مقياس ماسلاش للاحتراق النفسي

	الإرهاق النفسي / الاجهاد الانفعالي	أبداً 0	نادراً 1	من حين لآخر 2	أحياناً 3	كثيراً 4	اعتيادي 5	كل يوم 6
		ابدا	مرة / السنة	مرة / الشهر	اكثر من مرة/ الشهر	مرة/ الاسبوع	اكثر من مرة/ السنة	كل يوم
1	أتشعر انك مرهق نفسياً من عملك هنا (تعبان نفسياً)							
2	أتشعر أنك أستهلكت بنهاية الدوام (لكثرة العمل)							
3	هل تشعر بالتعب عندما تستيقظ في الصباح، لتواجه يوم آخر من العمل							
4	هل تشعر بالملل والتعب الفكري اثناء ساعات العمل بالمستشفي							
5	هل تشعر بالإحباط من عملك بهذه بالمستشفي							
6	هل تشعر بأن العمل شاق جداً بهذه المستشفي ويتطلب جهد كبير							
7	هل العمل في وجود المرافقين وأسر المرضي ، حقيقة يسبب لك التوتر							
8	هل العمل مع المرضي بصورة مباشرة يصيبك بالاجهاد والتعب الشديد							
9	اتشعر بان صبرك نفد ، وانك مخنوق واشرفت علي النهاية بسبب العمل هنا							
	فقدان الهوية الشخصية / تبلد المشاعر							
1	هل تشعر وأنت تقدم الخدمة العلاجية للمرضي كأنهم جمادات وليسو بأشخاص							
2	هل أصبحت أكثر قسوة تجاه الناس بسبب عملك بهذه المستشفي							
3	هل تخشي أن عملك بالتمريض هنا سيجعلك اكثر قسوة ويؤثر علي علاقاتك							
4	هل لا تهتم حقيقةً ولا تكترث لما يحدث من مشاكل ومضاعفات لبعض المرضي							
5	هل تشعر بأن بعض المرضي يلومونك علي مشاكلهم							
	الشعور بالانجاز الشخصي							
1	هل تستطيع أن تفهم بسهولة شعور المرضي تجاه المرض / المشاكل / العلاج							
2	هل تتعامل مع مشاكل المرضي بشكل فعال وإيجابي							
3	أتشعر بأنك تؤثر إيجاباً علي حياة الاخرين من خلال عملك بالتمريض هنا							
4	أتشعر بالنشاط والحيوية خلال عملك هنا							
5	هل يمكنك بسهولة خلق بيئة مرنة وأجواء مريحة مع المرضي							
6	أتشعر بالبهجة والسرور عندما تكون بجانب المرضي							
7	اتشعر بان عملك بالتمريض جعلك انسان ناجح وحققت اشياء قيمة من خلاله							
8	هل تتعامل مع الانفعالات والصراعات اثناء العمل بهدوء تام							

رقم الاستبيان	اسم المستشفي

مقاييس كارين لقياس جودة الرعاية التمريضية

ملحق رقم (4)

الرقم	مقياس كارين للمرضي	لا أوافق بشدة	لا أوافق	متردد	أوافق	أوافق بشدة
	رضا المريض					
1	تلقيت الرعاية والمساعدة التي احتاجها هنا بصورة جيدة					
2	يتم توفير الخدمات الصحية للمرضي بصورة جيدة					
3	كل شئ توقعته / تمنيته من رعاية وخدمة بهذه المستشفي وجدته					
4	أنا راضٍ عن وجودي / اقامتي بهذه المستشفي					
5	لقد تلقيت المساعدة من اصطاف التمريض للتعايش مع المرض					
6	هنا ألاصطاف قادر على معرفة المرض و تشخيصه ، ومعالجة الاخطاء					
7	لقد أصبحت أكثر صحة					
8	شعرت بالارتياح والعافية بسرعة من معاناة المرض					
9	أتلقى بعض المعلومات عن علاجي					
10	الآن يمكنني العودة إلى البيت وأن اواصل حياتي ونشاطاتي السابقة					
11	الآن يمكنني العودة إلى البيت وأن أعتني بنفسي					
12	أنا سعيد بالرعاية / العلاج هنا					
13	أتعلم ويتم تثقيفي عن حالتي المرضية بهذه المستشفي					
	التأثير (كينونة المريض)					
14	أشعر بأنني اشارك في قرارات الخدمة الصحية المقدمة لي					
15	أشارك الاصطاف جنباً الي جنب في وضع الخطة العلاجية لي					
16	قد شجعني اصطاف التمريض , واستطيع أن أتعايش مع مرضي					
17	اتلقي العلاج والمعاملة علي المستوي الفردي والشخصي					
	كفاءة الممرضين					
18	إنني أنام جيداً هنا					
19	الاصطاف هنا يساعد ويشجع المرضى علي الهدوء					
20	يوجد ترتيب ونظام بهذا القسم					
21	الاصطاف هنا ، عطوف ، ودود ، مبتهج ، و كريم					
22	الاصطاف هنا لديهم القدرة علي التحفيز ودعم المرضي					
	الاهتمام / عدم الاهتمام					
23	الاصطاف يعامل المرضي باحترام واعتبارية					
24	افراد الاصطاف ملتزمون بواجباتهم تجاه المرضي					
25	لديهم الرغبة الشديدة والاهتمام بعملهم					
26	لديهم الشفقة والرحمة					
27	تظهر عليهم عزة النفس ،الوقار، والبراعة في آداء مهامهم					
	النزاهة والاستقامة الاخلاقية					
28	البيئة هنا إيجابية وصالحة للعلاج					
29	الاصطاف هادئ وواثق من عمله					
30	الاصطاف هنا يعالجني بكل تقدير وإجلال					
	التنظيم / هيكلة الاصطاف					
31	الاصطاف هنا متفاوت بمختلف الدرجات العلمية والتخصصات					
32	اتلقي الرعاية من عدد كبير من الاصطاف بمختلف الدرجات					
33	لقد اصبحت لدي معرفة بالاصطاف هنا					
34	لدي ممرض خاص بي مسئول عن العناية بي					

الرقم	مقياس كارين للممرضين	لا أوافق بشدة	لا أوافق	متردد	أوافق	أوافق بشدة
	العلاقة / العمل الجماعي					
1	يمكننا الحديث مع بعضنا البعض					
2	علاقتنا مع بعض البعض علاقة حميمة أخوية (كلنا ايد واحدة)					
3	الاصطاف متعاون تعاوناً تاماً					
4	بيئة العمل هنا إيجابية محفزة					
5	لا يوجد حسد بيننا					
6	يتلقي المرضي العناية والرعاية بصورة فردية					
7	الزملاء هنا ، لطفاء ، ودودين ، مبتهجين ، و طيبون					
8	المرضي هنا يتعرفون علي افراد الاصطاف وقادرون علي التواصل معهم					
	الالتزام					
9	أعضاء الاصطاف هنا يجدون متعة في المهنة					
10	أعضاء الاصطاف هنا ملتزمون بواجباتهم					
11	أعضاء الاصطاف هنا يهتمون برعاية المرضي					
12	أعضاء الاصطاف هنا لديهم الشفقة والرحمة					
13	أعضاء الاصطاف هنا يشجعون ويحفزون المرضي					
	الرضا الوظيفي					
14	مهنتي هنا تطورني كإنسان ناجح					
15	المهنة تقدم لي الكثير كإنسان وحققت من خلالها اشياء قيمة					
16	أشعر بالانسجام والوئام في العمل هنا					
17	العمل هنا يشعرني بالرضا والراحة					
18	يوجد ترتيب ونظام بهذا القسم					
19	الاصطاف قادر علي معرفة ماهو الخطأ ، وتشخيصه ، ومعالجته					
	الانفتاح / التقارب بين الممرضين					
20	نعتبر بعضنا البعض					
21	الاصطاف هادئ وواثق من نفسه					
22	نتفاكر ونتحدث في مشاكل العمل					
23	أننا نستمع لأرآء بعضنا البعض					
24	عملنا بشكل جماعي أثر إيجاباً علي صحة المرضي					
	تطوير وزيادة الكفاءة					
25	نحن نتعلم أشياء جديدة					
26	المريض يشارك في وضع الخطة العلاجية					
27	كل فرد من الاصطاف يعتبر مسئولاً					
28	المريض له الحق في التحدث وابداء رأيه					
29	المهام والأعباء تؤدي وتنفذ بشكل روتيني					
	الأمن / انعدام الأمن					
30	أشعر بالآمان في عملي هنا					
31	يوجد العديد من فئات التمريض بمختلف الدرجات العلمية والتخصصات					
32	أشعر بروح الزمالة في العمل هنا					
33	لدي القوة والرغبة لأداء العمل التمريضي					
34	يوجد تواصل شخصي مع المرضي					
35	الاصطاف له القدرة علي تهدئة المرضي					

THE REPUBLIC OF THE SUDAN
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جمهورية السودان
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كلية الدراسات العليا والبحث العلمي

ملحق (5)

٢٠١٦/٨/٤م

لمن يهمهم الأمر

تفيد كلية الدراسات العليا والبحث العلمي بأن الطالب/ **محمد صالح العبيد النعيم** تم قبوله وتسجيله بتاريخ ٢٠١٦/٥/٢٤م لنيل درجة الدكتوراه في التمريض الباطني الجراحي.

وهذا منا للمعلومية

صورة مرفق مع اعطائي
* الاصعاد
* مكتب العقوق
* الملف
المدير العام.

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جامعة ابو هشوش
المدير العام
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