



**BURNOUT AND PERCEIVED EFFECTS ON PATIENTS AMONG
NURSES WORKING IN CRITICAL CARE SETTINGS: A CASE OF
THE SELECTED TERTIARY HOSPITAL IN RWANDA**

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AMONG NURSES WORKING IN CRITICAL CARE SETTINGS:
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RWANDA**

by

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A dissertation submitted in partial fulfilment of the requirements for the degree of
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In the College of Medicine and Health Sciences

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August 2017

DECLARATION

I, CISHAHAYO UMUTONI Emeline, declare that this dissertation is my original work and has never been presented for a degree award or any other award in any University.

Signed Date.....

DEDICATION

I sincerely dedicate this work to the almighty God, to my lovely husband and my daughter, to my beloved parents, brothers and sisters, to my friends and relatives.

May God bless you all.

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I first of all thank the almighty God to give me the opportunity of this degree. In addition to this, I thank God for giving me strength and patience to work and reach to the end of this.

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ABSTRACT

Introduction

Intensive Care Unit (ICU) and Emergency Department are more stressful areas therefore nurses in those areas are prone to high level of burnout than others. In Rwanda, studies on prevalence of burnout among nurses are limited and there is no research targeting specifically nurses working in ICU and Emergency Department. Burnout among nurses had effects not only on nurses themselves but also patients receiving care. Therefore, this study aims to assess the level of burnout and perceived effects on patient care among nurses working in ICU and Emergency Department at the University Teaching Hospital of Kigali.

Methods

A mixed method approach was adopted. A sequential explanatory design was used. Sixty nurses were involved in the study and they were selected using a total population sampling. Purposive sampling strategy was used to select participants for the focus group discussions. A self administered questionnaire and Maslach Burnout Inventory Human Service Survey were used to collect quantitative data and two focus groups were conducted for qualitative data. Quantitative data were analysed using SPSS version 21.0 and qualitative data were analysed using a thematic analysis.

Results

The study found high level of burnout (61.7%) among the participants under study. High workload and intention to leave were associated with burnout ($P < 0.05$). Burnout was measured by high Emotional Exhaustion (EE) which rated at 29 (48.3%), high Depersonalization (DP) at 15 (25%) and low Personal Accomplishment (PA) at 30 (50%). Participants of this study agreed that burnout compromises patient care to a certain degree though they make great efforts to avoid affecting patients.

Conclusion

The high level of burnout identified among ICU and Emergency Department nurses is mainly associated with high workload and intention to leave the work within the next 12 months. Patients are affected when nurses are burned out therefore measures have to be put in place to manage and prevent burnout among nurses.

Key words: Level of burnout among nurses, level of burnout among nurses in ICU and Emergency Department, effects of burnout on patients care, management of burnout.

LIST OF ABBREVIATIONS

ANA: American Nurse Association

CMHS: College of Medicine and Health Sciences

DHS: Demographic Human Survey

DP: Depersonalization

EE: Emotional Exhaustion

ICU: Intensive Care Unit

INC: International Nurses Council

IRB: Institutional Review Board

MBI-HSS: Maslach Burnout Inventory -Human Service Survey

MOH: Ministry of Health

NIS: National Institute of Statistics

PA: Personal Accomplishment

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CHAPTER 1: INTRODUCTION

This section contains the background of the study, problem statement, objectives, research questions, significance of the study and subdivision of the study including definition of key terms of the study.

1.1. Background of the study

Burnout is characterized by loss of emotional strength, not valuing human being living together with or offering service and decreased of job performance and success due to lack of interest due to occupational stressors (Maslach and Leiter, 2016, p. 103). In addition, Maslach and Leiter (2016) stated that burnout was recognized as work related danger among human oriented professionals including health care since they are required to work many hours to help humans and face a challenge of high demand and low resources (Maslach and Leiter, 2016, p. 103). Burnout is due to prolonged work related stress that is not managed and in a work environment this lead to workers turnover, absenteeism, compromise of interpersonal relationship, reduced productivity and personal achievement (Tucker and Weymiller, 2012, pp. 292–293).

Worldwide, burnout was identified among all categories of health professionals (Klein *et al.*, 2010; Ishak *et al.*, 2013; Harolds *et al.*, 2016). A study conducted in Germany among clinicians in surgery on burnout and perceived quality of care found burnout among surgeons and the quality of care provided was low (Klein *et al.*, 2010, pp. 526–528). In addition, a systematic review on burnout among medical students found burnout among physicians and medical students (Ishak *et al.*, 2013, p. 243). Another study on burnout among radiologists found high level of burnout among radiologists and the it was was 54% for women and 47% for men (Harolds *et al.*, 2015, p. 2) and among nurses where long shift was a contributing factor and it was associated with the plan to leave their job. Bureau of labor statistics in America, found that nurses occupy the majority among other health care providers and the nature of nursing profession put nurses at great risk of burnout as they are directly dealing with patients to satisfy patients needs (Bureau of Labor Statistics, 2015, p. 3). Similar to this, burnout was found among health care professionals and it was highly prevalent among registered nurses (Alexander, 2014, p. 3). Different studies revealed high level of burnout among nurses. A study conducted among professionals working in Portugese ICUs found high prevalence of burnout at 10.1% and 55.4% were at risk of developing burnout (Ribeiro *et al.*, 2014, p. 6), 42% of nurses in England had

burnout and in Greece 44% nurses expressed job dissatisfaction and intention to leave the work (Ribeiro *et al.*, 2014, p. 1). In addition, a study on compassion fatigue among pediatric nurses found high level of burnout 70(29%) among nurses working in pediatric, medical and surgical wards and pediatric ICU (Berger *et al.*, 2015, p. 3).

High level of burnout was identified among nurses ICU and Emergency Department. A systematic review on burnout among ICU health professional found the prevalence to range from 6% to 47% (Chuang *et al.*, 2016, p. 11). Moreover, Chuang *et al.* (2016) found the following risk factors: age, gender, work experience, work load, ethical issues, shift work and making decision on patient at end stage. In addition, a study conducted in China among critical care nurses from 14 ICU found that sixty eight nurses equivalent to 16% had high level of burnout and those who worked in ICU from 5-10 years were the majority to have high level of burnout (Zhang, Huang and Guan, 2014, p. 2). Another study conducted in a Regional General Hospital in the Republic of Ireland found high level of burnout among emergency nurses with high level of depersonalization 20(46%) comparing to nurses working in medical unit (Harkin and Melby, 2014, p. 155)

In sub-Saharan Africa, a study conducted in Malawi referral Hospital among maternal health staff revealed high to moderate level of burnout among both physicians and nurses; 72% had Emotional Exhaustion (EE), 43% had Depersonalization (DP) and 74% experience low Personal Accomplishment (PA) (Thorsen, Tharp and Meguid, 2011). In addition, Thorsen (2011) and colleagues revealed that high level of burnout was mainly due shortage of staff and consequently lead to decrease quality of the work, illness, not attending the work and turnover and in turn affect patient quality of care. A study conducted in Nigeria on the prevalence of burnout and risk factors among nurses working in Nigerian hospital found factors associated with high level burnout in all dimensions of burnout old age ($P < 0.01$), female gender ($P < 0.01$), being single ($P < 0.01$), job title ($P < 0.01$) and many night duties ($P < 0.01$) (Lasebikan and Oyetunde, 2012, p. 2). Moreover, high workload and working many hours were reported by majority of nurses as a contributing factors to burnout (Chuang *et al.*, 2016, p. 11)

Burnout among nurses manifests with different signs and symptoms physically, social or interpersonal and psychological. Anger, depression, substance abuse difficult communicating with colleagues and family members and marital conflicts (Alexander, 2014, p. 8). Burnout among nurses affects not only nurses but also patients, colleagues and the organization in which they work (Chuang *et al.*, 2016, p. 11). High level of burnout among nurses causes job

dissatisfaction and lead to too much nurses turnover thus staff shortage (Oyeleye *et al.*, 2013, p. 1; Harolds *et al.*, 2016, p. 1). In addition, burnout among nurses was found to decrease quality of care provided (Poghosyan, 2010, p. 7) and increased rate of hospital acquired infections surgical and urinary tract (Cimiotti *et al.*, 2012). Strategies to manage burnout were identified and these contributed to the improvement of quality care. Maslach and Leiter (2016, p.109) the following strategies :improve working environment ,coping skills ,social support ,relaxation time and counselling .

In Rwanda there is no such studies done and as it is fast developing country, it needs evidence to base development decisions. This study aims to assess the level burnout among nurses working in ICU and Emergency Department at the University Teaching Hospital of Kigali.

1.2 Problem statement

Burnout is characterized by Emotional Exhaustion (EE), Depersonalization (DP) and reduced Personal Accomplishment (PA) (Maslach and Leiter, 2016, p. 103). Burnout among nurses is known all over the world and the World Health Organization has classified it in its “International Statistical Classification of Diseases and Related Health Problems” (Harkin and Melby, 2014, p. 153). High level of burnout was identified among nurses because nurses work in a stressful environment, caring for suffering people with different needs to be addressed which even require nurses to be involved emotionally (Ribeiro *et al.*, 2014, p. 1). The nursing profession in nature is stressful due to its work environment (Zhang, Huang and Guan, 2014, p. 1) therefore two areas ICU (Chitura and Chitura, 2014, p. 440) and Emergency department (Harkin and Melby, 2014, p. 155) were proven to be high stressful areas than others which make nurses working there to be prone to high level of burnout.

A systematic review on articles published from 1992 to 2014 about prevalence of burnout among healthcare professionals reported high level of burnout among ICU nurses to range from 0-70% and it was found to be associated with the stressful nature of ICU working environment where dying patients are being taken care and these patients need to be monitored time after time without stopping (Van Mol *et al.*, 2015, pp. 5–10). In addition, a systematic review on determinants and prevalence of burnout among emergency nurses revealed that burnout is high prevalent among them, due to the fact that emergency nursing is featured by many patients with different serious conditions and uncertainty of received cases (Adriaenssens, De Gucht and Maes, 2014, pp. 8–9). Furthermore, this review found that 25.9% had EE, 34.8% had DP and 27.2% had

low PA and it also revealed that 26% of emergency nurses among the studies reviewed suffered from burnout. Moreover, Adriaenseens (2014) and colleagues found that age, gender and seniority showed significantly related to 3 components of burnout.

Studies showed that burnout among nurses has consequences not only among nurses themselves but also patients receiving care, colleagues ,family members and the institution as whole (Wlodarczyk and Lazarewicz, 2011, pp. 454–458; Chuang *et al.*, 2016, p. 2) Moreover, burnout among nurses compromises patients quality care and safety (Qiao *et al.*, 2016).Moreover, patient become dissatisfied to health services delivered, work change over and absenteeism among nurses ,decrease productivity and quality of care delivered on the organization side(Alexander, 2014, pp. 16–18).

Although little is known on the level of burnout and perceived effects of burnout among nurses working in ICU and Emergency Department at the University Teaching Hospital of Kigali. There are no studies conducted before in this area.

1.3 Objectives

These include main objective and specific objectives

1.3.1 Main objective

To determine the level of burnout and perceived effects on patient care among nurses working in ICU and Emergency Department at the University Teaching Hospital of Kigali.

1.3.2 Specific objectives

The objectives of this study are to:

1. Determine the level of burnout among nurses working in ICU and Emergency Department at a University Teaching Hospital in Kigali.
2. Assess factors associated with burnout among nurses working in ICU and Emergency Department at a University Teaching Hospital in Kigali.
3. Determine associations between burnout, sociodemographic characteristics and factors associated with burnout among nurses working in ICU and Emergency Department at a University Teaching Hospital in Kigali.
4. To explore effects of burnout on patient care among nurses working ICU and Emergency Department at the University Teaching Hospital of Kigali.

5. To describe perceived management of burnout among nurses working in ICU and Emergency Department at the University Teaching Hospital of Kigali.

1.3.3 Research questions

The findings of this study answered the following research questions:

1. What is the level of burnout among nurses working in ICU and Emergency Department at a University Teaching Hospital in Kigali ?
2. What are the factors associated with burnout among nurses working ICU and Emergency Department at a University Teaching Hospital in Kigali ?
3. What are associations between burnout, sociodemographic characteristics and factors associated with burnout among nurses working in ICU and Emergency Department at a University Teaching Hospital in Kigali Kigali?
4. What are effects of burnout on patient care among nurses working ICU and Emergency Department at the University Teaching Hospital of Kigali ?
5. What is the management of burnout among nurses working in ICU and Emergency Department at the University Teaching Hospital of Kigali ?

1.4 Significance of the study

This study will have significance for practice, management, education and research, all of these to improve the quality of care.

Significance to practice:

The study findings could assist with awareness of factors contributing to burnout and consider those factors in preventing, early identification and management of stress and burnout towards improving patients' quality of care.

Significance in management:

The study would make the management aware of factors contributing to burnout and inform strategies that would be subsequently developed to prevent and manage burnout among nurses.

Significance in research:

After completion of this study, the findings will inform other researcher so that further study could be pursued to develop evidence based context driven strategies to prevent and or manage burnout among nurses.

Significance in nursing education:

As education should be based on research, this study could generate content on caring for the care givers to include in the curriculum.

1.5 Conceptual and operational definitions of key terms of the study

1. **Burnout:** Maslach and Leiter (2016) define burnout as a response to stress related to the job which has three parts: Emotional Exhaustion (EE), Depersonalization (DP), and decreased the ability to perform the work appropriately referring to reduced Personal Accomplishment (PA) (Maslach and Leiter, 2016, p. 103). In this study, burnout refers to presence of Emotional Exhaustion, Depersonalization and reduced Personal Accomplishment
2. **Emotional Exhaustion (EE):** is described as “wearing out, loss of energy, depletion, debilitation, and fatigue” (Maslach and Leiter, 2016, p. 103). In this study, Emotional exhaustion refers to feeling exhausted and no longer able to cope emotionally to stressors related to the work
3. **Depersonalization (DP):** Is defined as “negative or inappropriate attitudes towards clients, irritability, loss of idealism, and withdrawal” (Maslach and Leiter, 2016, p. 103). In this study, it means to not treat patients as humans .
4. **Reduced Personal Accomplishment (PA):** Maslach and Leiter (2016) defined it as ‘reduced productivity or capability, low morale, and an inability to cope (p.103). In this study, reduced Personal Accomplishment refers to inability to perform someone’s work and self evaluate negatively or as incapable toward job performance .
5. **High level of burnout:** Is high scores on Emotional Exhaustion (EE) and Depersonalization (DP) Subscales and low score on Personal achievement (PA) subscale Maslach and Jackson (1981) in Zhang, Huang and Guan (2014, p.2). In this study, high level of burnout refers to score of 27 or above on EE dimension; score of 13 and greater on DP dimension or 0-31 on PA dimension.
6. **The Maslach Burnout Inventory-Human Services Survey (MBI-HSS):** is a 22 items self administered questionnaire which has three dimensions: Emotional Exhaustion, Depersonalization and reduced Personal Accomplishment. It is scored on a 7 point response showing how often participant experienced the feeling related to the work from 0 = never experienced to 6 = experienced every day (Maslach, Jackson and Leiter, 1997, pp. 193–195). In this study, it refers to a standardized tool to assess the level of burnout on three dimensions of burnout .
7. **Critical care settings:** It is a setting where care of a patient in critical condition or not physiologically stable due to an injury, medical procedure or surgery is take care. In this study, critical care settings refers to ICU and Emergency Department .

8. **Intensive care Unit (ICU):** Also called Critical care unit. According to medical dictionary (2017) ICU is “a hospital unit in which is concentrated special equipment and specially trained personnel for the care of seriously ill patients requiring immediate and continuous attention and may be organized for the care of specific patient groups, for example, neonatal or newborn ICU, neurologic ICU, pulmonary ICU”.In this study , ICU refers to the unit where patients with life threatening conditions were taken care and being monitored continuously and this study focused on general adult ICU.
9. **Emergency Department:** Also called “accident and emergency department is a unit of the hospital where acute, severe conditions and injuries are treated” (Medical dictionary, 2009).In this study, Emergency Department is the department in the hospital where patients with severe conditions or injuries are received, stabilize and given emergency care before admission.
10. **Nurses characteristics:** In this study these refers to factors related to burnout and they include: Socio demographic factors which are age, sex, current marital status and current level of education level; personal risk factors which are, number of living children, job satisfaction perception, health status perception, quality of life perception, pursuing any study currently and intention to leave within the next 12 months and work related characteristics that include job title, work experience, duty shift, and workload.
11. **Perceived effects:** According to dictionary.com (2017) to perceive is “to recognize, discern, envision, or understand”. In this study, perceived effects of burnout on patients care are perceived consequences of burnout among nurses on patients care. In other words, how nurses or in which ways nurses thought their burnout affects patients care.
12. **Perceived management:** In this study, perceived management means how nurses thought burnout could be prevented or managed in their context.

1.6 Subdivision of the study

This study is composed of five parts chapters. The first chapter described above is the introduction and highlights the background of the study , the problem statement , the aim, objectives and research questions that were addressed in the study.The significance of the study, definition of the concepts which were used in the study are also discussed in chapter one. The next chapter is the literature review of relevant theoretical and empirical literature related to the study and identification of gaps in the literature as well as the conceptual framework which guided the study. The following will be chapter three and it discusses the methodology which was used in the study, the design and setting of the study, the population and the sample used in

this study. In addition, the data collection tool and procedure, data analysis and management and how data will be disseminated and ethical consideration are described in this chapter. Chapter four consists of analysis and presentation of results. Chapter five is about results discussion, conclusions and recommendations followed by references used in this study and appendix.

1.7 Conclusion of the Chapter

Chapter one has presented the operational definitions, background of the study, problem statement. The main objective, specific objectives of the study, research questions including the significance of the study. The following chapter is chapter two which presents the literature review to identify what has been done in the area of the study and deduce gaps that this study needs to address.

CHAPTER 2.LITERATURE REVIEW

2.1 Introduction

Literature review is the process of analyzing the information about the chosen area of study found in published article .It helps to be aware of previous studies on the topic and get updated information about the chosen topic. In addition, it allows to identify the gaps about the topic chosen.To understand and determine the level of burnout among nurses a literature review was done in order to familiarise the researcher with what have been done in the area and identify in the the literature on the topic. Databases that were used were Hinari, Pub med and Google scholar to find out relevant articles.The key words used to search the data in the literature were level of burnout among nurses, level of burnout among nurses in ICU and Emergency Department, effects of burnout on patients care, management of burnout.

2.2 Theoretical literature

This section presents how various authors conceptualise burnout, how it develops,its manifestations,theories related to it and conceptual framework adopted to guide this study.

2.2.1 Definition of burnout

Burnout is a response to stress related to the job which has three parts: emotional exhaustion, depersonalization, and reduced personal accomplishment. Emotional exhaustion refers to lack of energy and motivation for work and it is the main feature of burnout, Depersonalization is treating people who are beneficiaries of a given service indifferently and criticizing colleagues' attitudes and behaviors. Reduced personal accomplishment refers to inability to be competent and to be achievable that a person attributes to self after evaluating own performance (Leiter and Maslach, 2016)

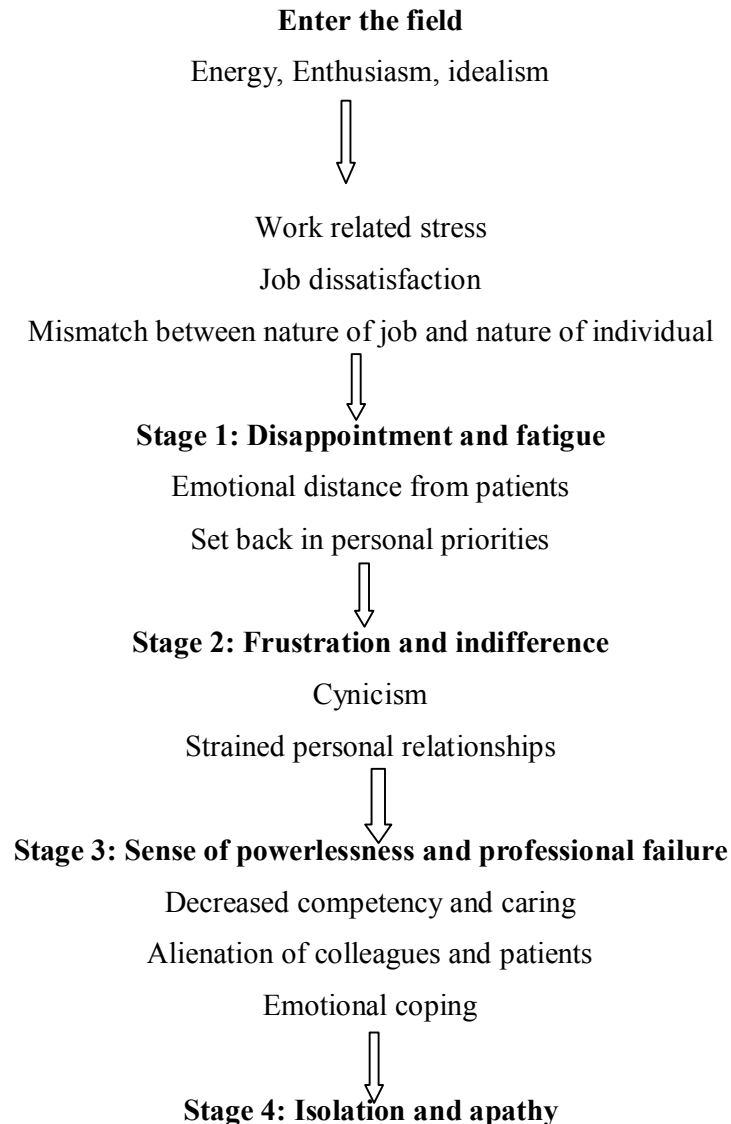
Burnout is not depression and this is explained that depression can be triggered by every domain of life: psychosocial factors, biological, spiritual including work related factors but burnout is job related only (Ahola *et al.*, 2014, pp. 29–30) . In addition to that, burnout differs from stress because stress is triggered by any circumstance whereas burnout is a result of prolonged stress as asserted by Maslach, 2003 in Alexander (2014, p.7) Furthermore, health related factors are associated with stress but job related factors are associated with burnout. The overall difference

with others is that burnout is characterized by emotional exhaustion, depersonalization and decreased personal accomplishment (Alexander, 2014, p. 7) .

2.2.2 Development of burnout

Burnout develops progressively as follows:at the beginning of the profession everyone is interested into it but if some challenges are met and expectations are not met disappointment starts (Maslach, 2003 in Alexander (2014,p.4) . Maslach (2003) further stated that after disappointment reduced performance can occur due to job dissatisfaction and when no answer to this, stress will accumulate and soon it will manifest. If physical symptoms occur with emotional problems this will be the first stage of burnout. If not managed other 4 stages will develop. See figure 2.1 below for the stages of burnout in nursing

Stages of burnout development in nursing



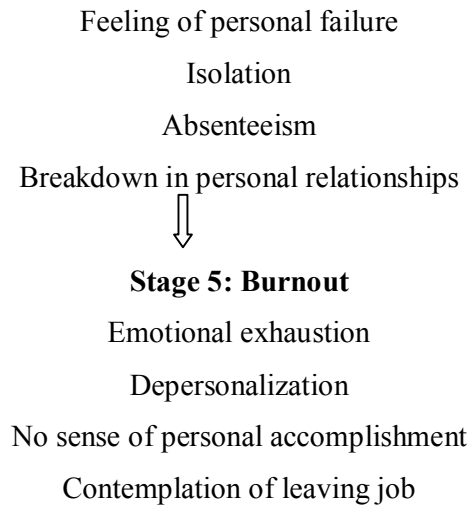


Figure 2.1: Stages of burnout in nursing

(Alexander, 2014, p. 4)

2.2.3 Manifestations of burnout

Stress is a precursor of burnout and according to Maslach et al. (1981), as stated in (Fares *et al.*, 2016, p. 78) burnout and stress have the same symptoms. The manifestations of burnout include physical, psychological, interpersonal/social symptoms (American Psychological Association, 2015, p. 10). Furthermore, in a survey conducted in the American population, the following physical symptoms were reported: headache, muscle tension, loss of appetite, dizziness, change in sexual activity and stomach upset. Fatigue was reported to be the most physical symptom. Psychological symptoms include: irritability and anger being the most common, nervousness, lack of energy and feeling a need to cry. Interpersonally and socially burnout can manifest by compromised communication with work colleagues, friends and family members distance, emotional exhaustion and cynicism which is characterized by suspecting and critiquing colleagues and be detached from the work Maslach 2003 cited in Alexander (2014).

2.2.4 Burnout theory

Maslach Theory on burnout was used in this study as it is highly linked with burnout.

2.2.4.1 The Maslach theory of burnout

Maslach burnout theory describes the occurrence of burnout, its three dimensions, the consequences of burnout and 6 risk factors that may lead to burnout (Maslach, Schaufeli and Leiter, 2001, pp. 413–418). All are described as follows:

Maslach, Schaufeli and Leiter (2001) stated that burnout will develop when job requirements outweigh the person who has to implement them. Therefore, a matching between job demands

and the individual responsible to them is paramount to prevent the occurrence of burnout(Maslach, Schaufeli and Leiter, 2001, pp. 413–415). Moreover, Maslach, Schaufeli and Leiter (2001) stated that this theory describes burnout as composed of 3 dimensions: Exhaustion, depersonalization or Cynicism and reduced personal accomplishment or inefficacy Exhaustion was found to be the main characteristic of burnout and it was the most reported by people who experienced burnout and it is the principal feature. Even though emotional exhaustion is very important, is not enough alone to confirm burnout(Maslach and Leiter, 2016, p. 103). Moreover, when job demands are high, emotional exhaustion will occur and is shown by unhappiness, anger and upset therefore the sufferer will not perform the job properly. The individual will create own ways to avoid high job demands as a defense mechanism to overcome the overload.

The second dimension is depersonalization characterized by not valuing human being working with and not enjoying the work done .Again this is due to high job demands that someone is unable to satisfy. The third dimension is reduced personal accomplishment or inefficacy characterized by a negative self-evaluation attributing ineffectiveness and incompetence in the job requirements. According to this theory, burnout affects the work negatively by reduced job performance, turnover, and impaired interpersonal relationship.

In this theory, six risk factors of burnout that can lead to lack of balance between the job demands and the person performing the job are outlined such as lack of involvement in the organizational decisions, high workload that a person is not fulfilling, not being recognized or rewarded which will lead to lack of motivation, unconducive working environment characterized by poor leadership style, lack of support and bad interpersonal relationship (Maslach, Schaufeli and Leiter, 2001, pp. 414–415).Furthermore, Maslach ,Schauffeli and Leiter (2001) stated other factors such as inequity in managing people ,not respecting others' values which will lead to frustration which lead to burnout because in an organization they are diversities with different characteristics which include different values to be be respected to prevent burnout.

2.3. Empirical literature

Empirical literature concerns studies that have been done on burnout and identification of gaps.This section includes: studies on risk factors, prevalence of burnout, effects of burnout, management of burnout, gaps identified.

2.3.1 Factors associated with burnout

Many studies revealed that burnout had its source not only in working environment which have predictor factors of burnout that include high workload, lack of control, lack of support, emotional instability related to the work, lack of motivation and poor leadership style (Canadas De-la Fuente *et al.*, 2014, p. 244; Chuang *et al.*, 2016, p. 11). Furthermore, these authors stated that personal variables that involve socio-demographic factors and personality contribute to the occurrence of burnout. Similarly to this, another study about burnout prevalence and risk factors in the nursing profession found two types of factors which may contribute to the occurrence of burnout which are socio-demographic and personality-related variables and organizational variables which include working environment related factors (Canadas De-la Fuente *et al.*, 2014, p. 241,242). Furthermore, personal variables were not found to be relevant than organizational ones but work overload which is an organizational variable can cause burnout depending on the personality exposed from that personality trait is a factor that has to be taken into consideration (Shimizutani *et al.*, 2008, pp. 329–333). This was proven in a study on the prevalence and risk factors of burnout in which a long term negative emotional state (neuroticism), kindness (agreeableness) and opening up easily (extroversion) were found to be best predictors of burnout (Canadas De-la Fuente *et al.*, 2014, p. 244)

Various studies found high workload to be the major cause of burnout among nurses. High stress, and high workload, that may be due to shortage of staff and higher patient nurse ratio cause high level of burnout among registered nurses (Aiken *et al.*, 2011, pp. 1050–1051; Toh, Ang and Devi, 2012a, p. 129; Tucker *et al.*, 2012, p. 283; McHugh and Ma, 2014, pp. 5–7; Wakim, 2014, pp. 635–637). According to Krausz and Kieslowski (1995 as cited in Chuang *et al.*, 2016, p. 11) stated that high work load of nurses is due to the unpredictability of their work, shortage of staff and non permanent shift duties which increase the likelihood of burnout among nurses. However, another study conducted in ICU on burnout prevalence and risk factors did not find any correlation between burnout and workload (Teixeira *et al.*, 2014, p. 4). Therefore, nurses job dissatisfaction which leads to high turnover and to shortage of nurses and can be associated with nursing errors and poor patient care outcome which can compromise quality of care (Poghosyan, 2010, p. 8; Vahey *et al.*, 2010, p. 2; Aiken *et al.*, 2011, pp. 1050–1051; Khamisa, Peltzer and Oldenburg, 2013, pp. 2218–2234). Moreover, a survey report among nurses revealed that nurses are not taking enough rest they are only resting for meal or break when they are on shift (Clarke, 2007, p. 44). Furthermore, research showed that nurses did not

find time to break during meals or break time because during this period they still provide cares to patients (Rogers, 2008, p. 514). All those factors also put nurses to the likelihood of developing burnout. Other factors were found to cause high workload among nurses. Those include: many hours to work in a week, long shifts and overtime, many consecutive days of work, rotating shifts, weekend work and when they are called to come to work while they were supposed to be off, inadequate nurse staffing, fear of not completing tasks, inadequate communication with physicians, job demands, job complexity and role conflict, insufficient or ambiguity and emotional demand of nursing (Alexander, 2014, pp. 4–5). Moreover, Khamisa (2013) and colleagues stated other working environment related factors for example inability to do things as someone wants, lack of advancement and acknowledgement in that work, lack or bad relationship with colleagues at work, poor leadership style, inequity and conflict of values.

The level of burnout was found to be different depending on specialties that nurses are working in (Poncet *et al.*, 2007; Toh, Ang and Devi, 2012b). Work shift, service area that included ICU and Emergency Department were found to be best predictors of EE ($P < 0.001$) (Canales De-la Fuente *et al.*, 2014, p. 244). Furthermore, high level of emotional exhaustion among oncology nurses was found to be caused by lack of resources, working overtime and shortage of staff (Toh, Ang and Devi, 2012b, p. 132). In ICU the high level of burnout was due to many factors like poor interpersonal relationship with colleagues, physicians and patients; high workload and poor involvement in decision making (Poncet *et al.*, 2007, p. 659). Moreover, Guntupulli (1996 as cited in Chuang *et al.*, 2016) added that ICU has unique stressors in the health care setting like caring for the severely ill patients, high job demands that mismatch resources, much task to accomplish and conflicts (P.2). Furthermore, a systematic review on burnout among ICU professionals also found younger age (P value=0.03) and for more than 36 years ($P < 0.05$), female as gender ($P=0.003$), marital status as single ($P=0.01$), neuroticism as personality trait ($P < 0.05$), work experience in ICU; ($P < 0.011$), work environment ($P < 0.05$), workload and shift associated with burnout ($P < 0.05$) (Chuang *et al.*, 2016, pp. 7–10). Concerning Emergency Department, a systematic review on determinants and prevalence of burnout among emergency nurses evidenced that nurses in Emergency Department are constantly receiving patients with different traumatism and wide ranges of diseases, they have patients to take care of and they are alert to receive an emergency case at any time and these contribute to the high level of burnout among them (Adriaenssens, De Gucht and Maes, 2014, p. 2).

Personal risk factors which include demographic characteristics and personality traits have been found to be associated with burnout. Demographic factors that were studied in relation with burnout included age, gender, work experience, marital status and the level of education (Maslach, Schaufeli and Leiter, 2001, pp. 409–410). A study conducted among Iranian nurses identified that burnout is highly prevalent in young nurses aged from 24-30 years and less levels of burnout in old nurses more than 40 years (Khodadadizadeh, Ravari and Jafarinaveh, 2012, p. 106). This is similar to the findings of Maslach (2001) and colleagues who demonstrated that burnout level decreases with age due to the fact that old people are stable in the work and they have developed strategies to overcome job stressors (Maslach, Schaufeli and Leiter, 2001, p. 409; Alacacioglu *et al.*, 2009, p. 545). Moreover, another study done to identify burnout prevalence and risk factors, found age to be a predictor of depersonalization (Canadas De-la Fuente *et al.*, 2014, pp. 243–246). In addition, Maslach, Schaufeli and Leiter (2001) stated that the level of burnout becomes high with low experience in a career and it occurs early in the first 1 to 5 years of the career and these people are more likely to turnover. Similar to this, high level of burnout was identified among youngest academicians due to lack of strategies to cope with stress (Bilge, 2006, pp. 1155–1157). Furthermore, another study found low level of burnout among experienced nurses and the reason was that experienced nurses become more competent and familiar with the career and they know how to deal with work stressors (Myhren, Ekeberg and Stokland, 2013, p. 3). Contrary to this, in a study conducted in Spain among critical care nurses found high level of burnout among old nurses and low among younger ones (Losa Iglesias, Vallejo and Fuentes, 2010, p. 34). Moreover, another study conducted to determine the level of burnout among health workers caring for patients with chronic disorders found no association between age and level of burnout (Gosseries *et al.*, 2012, p. 1495).

Level of burnout is higher among single workers and workers without children than the married and workers who have children because those who have children are emotionally mature and they get emotional support from the family member (Maslach, Schaufeli and Leiter, 2001, p. 410; Teixeira *et al.*, 2014, p. 4). In addition, these authors asserted that single people are prone to high level of burnout than divorced ones. However, some studies found that married people and those who have children had high level of emotional exhaustion (Lin, 2009, p. 297; Al-Turki, 2010, p. 314). Similar to this, another study on burnout determinants in acute and critical care unit among military nursing personnel revealed that high EE was associated with having children ($P < 0.05$) and high DP was seen among single individuals than widowed, separated or divorced (Ayala and Carnero, 2013, p. 3).

The level of education was found to be related to the level of burnout. Maslach, Schaufeli and Leiter (2001) found that high level of education is associated with high level of burnout and this is because of expectations associated with high education level and job choices which will cause stress when those expectations are not met. Similarly to this, it was identified in a study done among Iranian nurses that high level of burnout was found among bachelor's degree holders and less prevalent in those with low level of education (Khodadadzadeh, Ravari and Jafarinaveh, 2012). In addition, a systematic review revealed that master's degree in nursing is a risk factor of burnout ($P=0.003$) (Chuang *et al.*, 2016, p. 8).

A meta-analysis was carried out and found that there is a difference in gender concerning burnout and it was found that women had high level of emotional exhaustion than men and men were found to be more likely susceptible to depersonalization because women react emotionally to work stressors than men (Purvanova and Muros, 2010, p. 170). This is similar to what was found by Khodadadzadeh (2012) and colleagues. However, no difference was found concerning gender and burnout. It may be high or low or not at all identified in both sexes due to the fact that sex differentially predominate occupations. For example men are found to dominate in policy while female dominate in nursing profession (Maslach, Schaufeli and Leiter, 2001, p. 410). This is similar to the findings of a study where no difference was found between gender in relation burnout (Myhren, Ekeberg and Stokland, 2013, p. 5). Moreover, another study which aimed to determine burnout among health care workers managing chronic patients with consciousness disorders did not find any association between age, gender and burnout ($P>0.05$) (Gosseries *et al.*, 2012, p. 1495). Gender was also not found to be a strong predictor of burnout because high level of burnout may be found either in female or male (Maslach, Schaufeli and Leiter, 2001, p. 410).

A study found EE to correlate negatively with health status perception ($\beta=-0.325$, $\alpha=0.004$) and quality of life perception EE ($\beta=-0.382$, $\alpha=0.001$) and DP ($\beta=-0.157$, $\alpha=0.001$). However PA correlated positively with quality of life ($\beta=0.0012$, $\alpha=0.003$). This shows that participants who perceived good quality of life experienced low level EE, DP and high PA (Beyene, 2015, p. 34). Moreover, Beyene (2015, p. 34) found that participants who perceived good job satisfaction showed low EE and High PA (Beyene, 2015, p. 34). All these showed that burnout among nurses affect them as well as patients quality care. In a review of current literature about understanding compassion fatigue in health care providers (Sorensen *et al.*, 2016), burnout was found to be an outcome of powerlessness and job dissatisfaction which cause progressively disengagement in employees (El-Bar *et al.*, 2013, p. 2).

All these described factors are common among nurses and other health professionals and in part this may explain high level of burnout among nurses.

2.3.2 Level of burnout

Burnout was detected in various professional areas and high level of burnout was found in health care professional or helping people professionals especially among registered nurses (Alexander, 2014, p. 3). Burnout was mostly studied among nurses because nurses work in a stressful environment where they care for suffering people with different needs (Ribeiro *et al.*, 2014, p. 1). Furthermore, Ribeiro *et al.*, (2014) stated that nurses are physically and emotionally involved in their work which leads to the increase in the likelihood of developing burnout .

Worldwide, several studies demonstrated high level of burnout among nurses (Khodadadzadeh, Ravari and Jafarinaveh, 2012; Tavares *et al.*, 2014; Vargas *et al.*, 2014): High level of burnout was identified among nurses working in Iranian hospital in a study conducted in 2012 as follows in different units :Medical surgical ward , ICU , Emergency Room, Neurology and 98% of nurses had some degree of burnout, only 2 nurses equivalent to 1.5% did not present with burnout and 85.9% of nurses experienced burnout monthly (Khodadadzadeh, Ravari and Jafarinaveh, 2012). In addition , a study conducted in public health centers in Spain, showed high prevalence of burnout among nursing personnel; 21% of nursing professionals presented Emotional Exhaustion, 30% had high levels of depersonalization and 44% of them had low levels of Personal Accomplishment (Vargas *et al.*, 2014, pp. 243–244). Another study conducted by Berger *et al.*, (2015) found high level of burnout among nurses working in pediatric, medical and surgical wards (Berger *et al.*, 2015, p. 4) .Furthermore, at University of Rio de Janeiro in Brazil, high level of burnout syndrome was also identified among resident nurses whereby 20.83% of them had alterations in Emotional exhaustion, Depersonalization and Personal Accomplishment and they were single, childless, female, young and graduated recently (Tavares *et al.*, 2014, p. 262). In addition, this study revealed that the majority of resident nurses who had burnout 40% of them had specialized in ICU.

A study conducted in Regional General Hospital in the Republic of Ireland that was comparing the level of burnout among nurses working in emergency and medical ward, high level of DP (46%) was found among emergency nurses than medical ward nurses(27.2%), high level of EE (38.4%) among emergency nurses and (54.8%) among medical nurses, low PA (46%) among emergency nurses and (27%) among medical nurses these were ,however not significant

($P > 0.05$) (Harkin and Melby, 2014, p. 155).. Moreover, other studies identified that more than 82% of emergency nurses had high level of burnout and this was due to lack of support from their authorities ,emotional stress and bad memories about patients they cared for (Hooper *et al.*, 2010, p. 424; Van der Wath, van Wyk and Janse van Rensburg, 2013, p. 2244; Hunsaker, Moughan and Heaston, 2014, p. 12)

Studies conducted in some sub-Saharan African countries like Malawi, Zimbabwe and Nigeria revealed high level of burnout among nurses and different factors contributing to that (Thorsen, Tharp and Meguid, 2011; Lasebikan and Oyetunde, 2012; Chitura and Chitura, 2014).In Malawian referral hospital , high and moderate level of burnout were identified among maternal staff in all subscales EE:72%,DP:43% and PA:74% of burnout according to Maslach (Thorsen, Tharp and Meguid, 2011, pp. 4–6).Moreover ,a study conducted in a general hospital in Nigeria found high level of burnout among nurses :39.1% experienced EE ,29.2% had DP and reduced PA among 40.0% and this was significant($\chi^2 = 8.4$ df (2) $P = 0.01$) (Lasebikan and Oyetunde, 2012, p. 3). Furthermore, this study also identified significant predictor factors on the three dimensions of burnout and those were conflict with the doctor, low doctor /nurse ratio, under staffing of nursingand long hours of night duty. In Zimbabwe,a study conducted in ICUidentified high level of burnout among ICU nurses and the three dimensions of burnout were revealed as follows: 40% had high level of EE,39% moderate EE and 21% low EE.However, 46.9% had high level of DP,35.6% moderate DP and 17.3% had low level of DP(Chitura and Chitura, 2014, pp. 451–452).

A further study conducted in Northern China in 14 hospitals in adult ICUs, reported high level of burnout among ICU nurses (16%) with high level of EE ;(43.2%)and high DP (26.1%)and low level of PA (42.6%)(Zhang, Huang and Guan, 2014, p. 2). Similarly to this,various studies identified high level of burnout in one third of nurses working in ICU due to the working environment of the ICU and life threatening conditions of patients managed there (Embriaco *et al.*, 2007, p. 483; Poncet *et al.*, 2007, p. 699; Liu *et al.*, 2013, p. 6; Teixeira *et al.*, 2013, p. 4). Moreover,according to Elkonin and Lizelle (2011) as cited in Van Mol *et al.*,(2015,p.15) burnout prevalence of 30% was identified among registered nurses in two ICUs in South Africa and this was due to non-specialized nurses working in ICU and shortage of staff which contributed to the stressful working environment and development of burnout (Mol *et al.*, 2015, p. 15).

Chuang *et al.*, (2016, p .10.) in a systematic review of burnout among ICU professionals in China revealed that burnout is highly prevalent in ICU than other units because in ICU patients are

critically ill and this involves their emotions and also they have to respond to family members' concerns regarding their loved one. In addition, according to Stone et al (1984) as cited in Chitura and Chitura (2014, p. 440), ICU was proven to be a stressful working environment than any other service in the hospital related to the following reasons. In ICU sophisticated equipment are used, constant noise of alarms and machines that require the nurse to be ready to respond to them. The noise may even follow up the nurse out of the working environment. Nurses in ICU mostly deal with patient in life threatening conditions and are prone to death. Furthermore, Chitura and Chitura (2014) stated that ICU nurses manage critically ill patients mostly which makes them to be alerted all the time to put all efforts to preserve life and this requires emotional involvement and if the patients die the nurses suffer. Shortage of staff also causes high workload and inadequate rest leading to stress. Inadequate training on ICU technologies and procedures, inadequate ICU materials and equipment also cause stress to ICU nurses. Moreover, nurses working in ICU manage continually severely ill patients with communication barriers whereby the nurse will need to communicate with family members who may be blaming the nurses not to put much effort to serve their patient. This is a source of stress for the nurse who is struggling to help the patient (Chitura and Chitura, 2014, p. 440). In addition, the work itself requires heavy lifting at times because the ICU patient is very ill and cannot help her/himself and nurses have to fully help patients especially during procedures like bed-bathing, changing linen or any other procedures that require lifting (Chitura and Chitura, 2014, p. 440). Conversely a census report on risk factors on burnout and fatigue among nurses revealed low prevalence of burnout (14.5%) in the ICU compared to other units ; oncology (21.9%), theatre (17.2%) and (15.9%) in the emergency Department therefore this study did not prove ICU to be a stressful working environment than other working units (Raftopoulos, Charalambous and Talias, 2012, p. 10,11).

2.3.3 Effects of burnout

Burnout among nurses has impacts on health care providers, the patient receiving care, colleagues, family members and the institution itself (Wlodarczyk and Lazarewicz, 2011, pp. 454–458; Chuang *et al.*, 2016, p. 2) It was found that burnout can have physical, psychological and interpersonal/social effects on nurses (Khamisa, Peltzer and Oldenburg, 2013; Alexander, 2014). A study conducted in China among HIV/AIDS health workers showed how burnout affects not only health workers but also patients. The following were identified effects of burnout on health care workers: poor quality of care, loss of empathy, increased turnover thus nurse shortage and job dissatisfaction. Emotional exhaustion causes non-attendance to work, decreased job performance thus low productivity (McHugh and Ma, 2014, p. 8; Qiao *et al.*, 2016, pp. 2–

3).Moreover, Qiao et al., (2016) stated that their health and wellbeing are affected too, physician patient relationship is disturbed and lives of patients are affected. Other consequences of burnout towards health professionals are unprofessional behaviors, thoughts of suicide, early retirement and inappropriate care provision (Harolds *et al.*, 2015, p. 1).Furthermore, a systematic review on risk factors of burnout and health outcome among nurses revealed that depression and burnout have a significant association among nurses who reported burnout (Khamisa, Peltzer and Oldenburg, 2013, p. 2227).Another study revealed that burnout decreases the service quality and care provided, causes job dissatisfaction, job turnover and absenteeism (Maslach, Jackson and Leiter, 1997, p. 193). Furthermore, participants reported that burnout causes familial and marital conflicts, increased use of alcohol and drugs, sleep deprivation and physical exhaustion.

Many studies identified that high level of burnout is associated with intention to leave the job within the next 12 months, job turnover, absenteeism,decreased performance and productivity (Maslach, Jackson and Leiter, 1997, p. 200; Embriaco *et al.*, 2007, p. 487; Liu *et al.*, 2013, p. 6; Alexander, 2014, p. 16; Teixeira *et al.*, 2014, p. 11).Another study revealed that 50% of ICU nurses who had high level of burnout had a plan to leave their job (Embriaco *et al.*, 2007, p. 487).Burnout among nurses affects patients as follows: it causes decrease in patients' trust of health care workers and compliance with health care. Quality and quantity of medical services delivered are also affected (Qiao *et al.*, 2016). In addition, Qiao(2016) and colleagues stated that when nursing staff are burned out patient, quality care and safety are affected and this causes increased errors in their work, patient dissatisfaction of service delivered and patient mortality rate also increases.(Alexander, 2014, p. 18).

More studies showed that burnout causes high mortality rate, low patient satisfaction, and increased risk of infection(Blegen *et al.*, 2011; Cimiotti *et al.*, 2012; Rogowski *et al.*, 2013, pp. 447–448; McHugh and Ma, 2014, pp. 5–7).A study done in Pennsylvania about nurse staffing and patient mortality, nurse burnout, and job dissatisfaction showed that when nurses are burned out, job dissatisfaction increases among nurses and the risk of infection increases including surgical siteand urinary tract infections (Cimiotti *et al.*, 2012, p. 488). Similar to this, a study conducted in neonatal intensive care unit, revealed that shortage of nurses which exposes nurses to develop high level of burnout increased the risk of hospital acquired infections in neonates born with low weight (Rogowski *et al.*, 2013).

2.3.4 Strategies to manage and prevent burnout

A systematic review on prevalence and intervention on burnout and compassion fatigue among ICU health professionals revealed the following interventions to prevent and manage burnout (Mol *et al.*, 2015, p. 11). Various studies stated organization related strategies that include dynamic and flexible schedule, improvement of work conditions, interchange the members who make the team, team working spirit and job rotation by allowing health professionals to work in different units (Ali *et al.*, 2011, pp. 804–805; Merlani *et al.*, 2011, pp. 1143–1144; Garland, Roberts and Graff, 2012, pp. 742–743; Liu *et al.*, 2015, p. 495). In addition, improving working environment conditions in terms of adequate staffing, materials and good leadership style all these will prevent burnout thus promote good patient conditions (Andolhe *et al.*, 2015, p. 61). Moreover, Epp (2012) emphasized that good nursing leadership involves nurse managers available to subordinates, assure good collaboration within the team and offer support to colleagues when needed, offer real information, resources and opportunities equally.

Individual oriented strategies regarding practical and personal aspects were also found effective. On the practical aspect, provision of education programs or seminars on stress management, sessions on communication skills (Loiselle *et al.*, 2012, p. 38; Quenot *et al.*, 2012, p. 6; West *et al.*, 2014, p. 531; Zhang, Huang and Guan, 2014, p. 16) and relaxation techniques that include yoga and mindfulness also proved to be effective (Mehrabi *et al.*, 2012, p. 8). Moreover, social support and individual coping, personality coping, career counseling and life coaching were found effective on the personal aspect in the prevention of burnout (Epp, 2012, p. 15; Fares *et al.*, 2016, p. 77). In addition, self-care strategies that include adequate diet, physical exercise, adequate sleep and seeking health care at a regular basis were found to decrease the level of burnout among nurses (Epp, 2012, p. 27). Similar to this, in a study conducted among preclinical medical students about coping strategies of burnout and stress found that sleeping hours is a protector for burnout and 7 hours are required for adequate sleep to allow the body to recover from exhaustion of the work and regain its organic function to promote individuals' health (Andolhe *et al.*, 2015; Fares *et al.*, 2016). Furthermore, this study revealed that activities involving music and physical exercises can contribute to the control of stress and burnout.

Job life balance is also important to mitigate burnout. This is assured by setting priorities among work, home, leisure and vacation and to decide the time to spend on each activity accordingly (Galinsky, 2012, pp. 2–3). Furthermore, Galinsky (2012) stated that people who spent equal time for work and family issues are free of stress and are more productive at work

than those who concentrate either on the work or the family. Moreover, strategies were also identified to assure that balance, such as, finishing work at the work place. If challenged by the work, took time to resolve that, set priorities, socialize and participate in other non-professional activity to relax, like sport.

To prevent burnout nurses have to reinforce interpersonal and social relationships and be connected to family, friends and colleagues (Alexander, 2014, p. 21). Moreover, creating other relations outside the profession and exchanging the work with other activities like stretching, reading, making personal freinds out of the work have proved to be helpful. This improves job productivity rather than working without taking some breaks because these expose a person to the occurrence of burnout (Galinsky, 2012, p. 3).

2.4. Critical review and research gap identification

According to literature review, there are quite a few studies done to evaluate the effectiveness of strategies to prevent and manage burnout and how nurses can be helped to cope with working in a stressful environment. In addition, even though high level of burnout is high in ICU and Emergency Departement, few studies were conducted in this area in Africa. Furthermore, more researches are needed in Africa to identify deeply why burnout is high in ICU and Emergency Departement. In Rwanda, no study has been conducted on the level of burnout among nurses which motivated this research on the level of burnout among nurses working in ICU and Emergency department to improve Rwandan health system though improved quality of care provided.

2.5 Conceptual framework

The aim of this study is to determine the level and perceived effects of burnout on patients care among nurses working in ICU and Emergency Department at the University Teaching Hospital of Kigali. The conceptual framework in figure 2.3 below illustrates the factors associated with burnout which include sociodemographic factors, personal risk factors and work related characteristics. Sociodemographic factors incude age, gender, marital status and educational level. The personal risk factors depict health status perception, quality of life perception, satisfaction with work, intention to leave work within 12 months. Finally work related characteristics include job title, area of work, duty shift and work overload.

This conceptual framework was developed by Beyene, 2015.

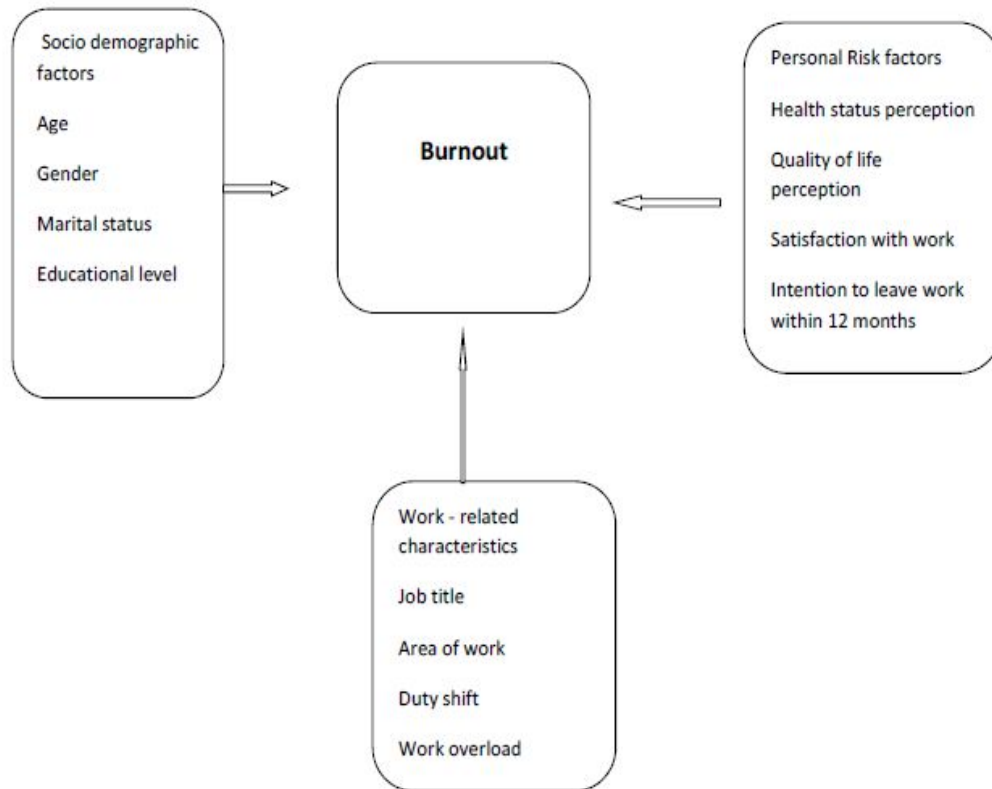


Figure 2.2: Levels of burnout and its associated risk factors

(Beyene, 2015)

The conceptual framework above assisted in responding to the research question of this study. Moreover, the conceptual framework above presents burnout as far as the contributing factors only yet other literature take burnout further to its measurement using three dimensions such as Emotional Exhaustion (EE), Depersonalization (DP) and reduced Personal Accomplishment (PA) or inefficacy (Maslach, Schaufeli and Leiter, 2001, pp. 402–403). The conceptual framework above does not illustrate this claim. Furthermore, burnout can also be seen in the light of how it affects patients care and its perceived management. Therefore this framework is adapted hereunder in Figure 2.3 to accommodate the aspects that are not included.

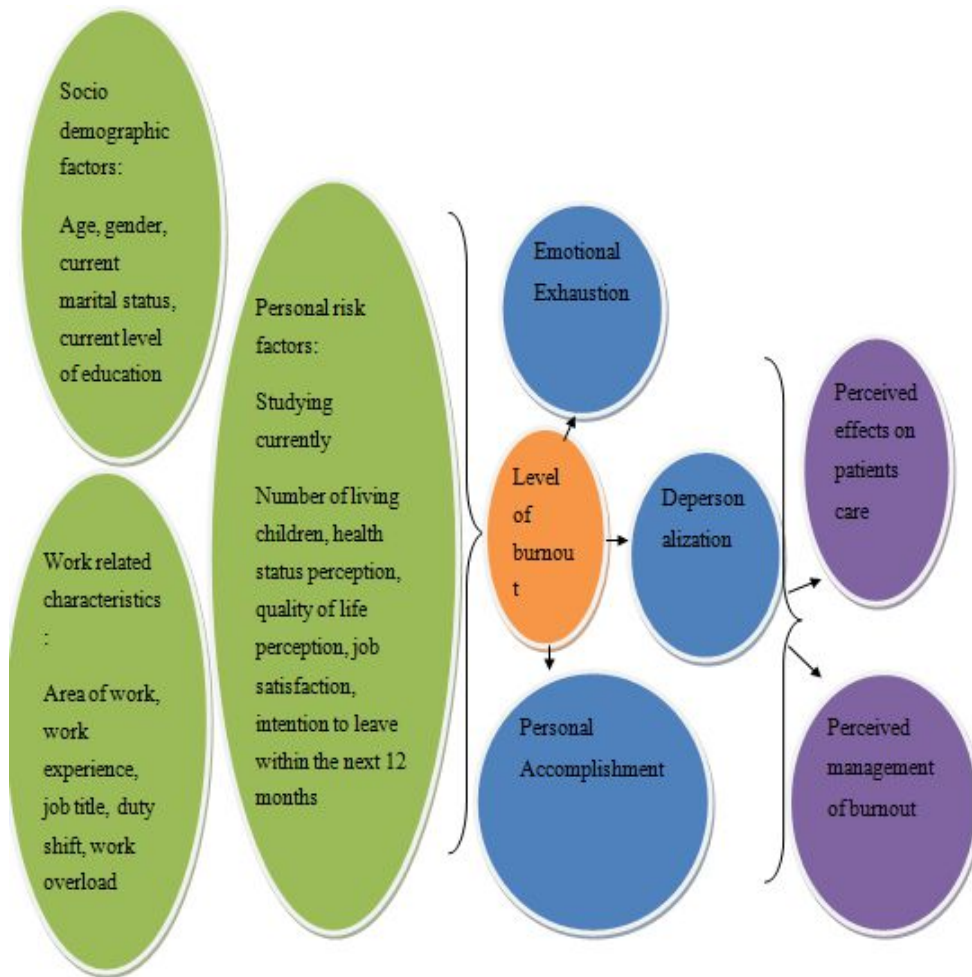


Figure 2.3: Factors related to burnout, level of burnout, perceived effects of burnout on patients care and perceived management of burnout

Literature presents dimensions to measure burnout which this study aspires to do also. These include Emotional Exhaustion, Depersonalization, and Personal Accomplishment (Maslach, Schaufeli and Leiter, 2001, pp. 402–403) and they described them as follows: EE as characterized by being emotionally exhausted and feeling unable to overcome job demands. DP having negative reaction toward patients and do not consider them as humans and reduced PA as characterized by feeling of unsuccessful at work and negative self evaluation in terms of job accomplishment

It was also evidenced that burnout impacts on nurses, patients and the institutions as well (Chuang *et al.*, 2016, p. 2). Therefore, perceived effects on patients care among nurses were also explored in this study. In addition, considering consequences of burnout, actions have to be undertaken towards burnout therefore perceived management of burnout was determined in this study.

Hence the adapted conceptual framework in figure 2.3 was adopted to ensure coverage of all the aforementioned aspect of burnout which tended to be a gap in the original framework in figure 2.2.

2.6 Conclusion of the chapter

This chapter described the theoretical literature including the conceptual framework that guided this study. In addition, it outlines the empirical literature review about factors associated to burnout, level of burnout, effects of burnout and strategies to manage or prevent burnout. Chapter three will outline the methodology used to carry out this study.

CHAPTER 3 METHODOLOGY

3.1 Introduction

In this chapter is described the methodology undertaken to conduct this study. In addition, ethical consideration, limitations of the study and data management and safety will also be described.

3.2 Study area

.This study was conducted at University Teaching Hospital of Kigali. This is one of Rwandan referral hospital. It is located in Nyarugenge District, Kigali City, in Rwanda country. This study was conducted in ICU and Emergency Department in this hospital. Critical Care Unit department (ICU) has 10 doctors including 4 anesthetists and 6 generalists (resident); 31 nurses and 6 beds. Emergency Department has 34 nurses.

3.3 Study Approach

In this study, a mixed method approach was used. The paradigm for this study is the pragmatic worldview. "Pragmatism paradigm is not committed to any one system of philosophy and reality and this applies to mixed methods research in that inquirers draw liberally from both quantitative and qualitative assumptions" (Creswel, 2009, p. 10). Furthermore Creswel (2009) stated that mixed method approach "use both quantitative and qualitative data because they work to provide the best understanding of a research problem and many approaches for collecting and analyzing data rather than subscribing to only one way" (P.11). In this approach, quantitative and qualitative methods were used in data collection and analysis (Creswell and Tashakkori, 2007, p. 330)

3.4 Study Design

A sequential explanatory design was used. This design starts with the collection and analysis of quantitative data and follows with a qualitative phase that develops from and connects to the results of the quantitative phase (Creswel, 2009, p. 211). In addition, the emphasis of this design is usually on quantitative data.

This study aimed to assess the level of burnout and explore perceived effects of burnout on patients care. In this study, the initial phase used a self administered questionnaire to gather demographic factors, personal risk factors and work related characteristics. In addition, another

validated tool the Maslach Burnout Inventory Human Service Survey (MBI-HSS) was used to gather data on the level of burnout .Data analysis of the quantitative phase identified factors related to burnout and the level of burnout among nurses .The sequential explanatory design is useful when the research problem is more quantitatively oriented , the researcher has the time and ability to conduct the study in 2 phases ,and the researcher develops new questions that arise from quantitative results (Creswell and Plano Clark, 2011, p. 82).In this study,considering the data obtained in quantitative phase which were factors related to burnout and the level of burnout , after finishing the analysis of quantitative data ,semi structured interviews in a form of focus groups were conducted to explore perceived effects of burnout on patients care and perceived management of burnout . The adopted tool focuses on the level of burnout but does not pursue the effects of burnout on patients care.Therefore,the researcher decided to make a follow up exploration of the effects of burnout and management while participants have a vivid memory of burnout level and issues contributing to it,having been asked about these issue in the initially of the research.A non experimental descriptive cross sectional method was used for quantitative data and explorative qualitative survey for qualitative data . By triangulating the designs the researcher hoped mitigate the weakness of one design with the other .The figure below (3.6) illustrates the Sequential explanatory design

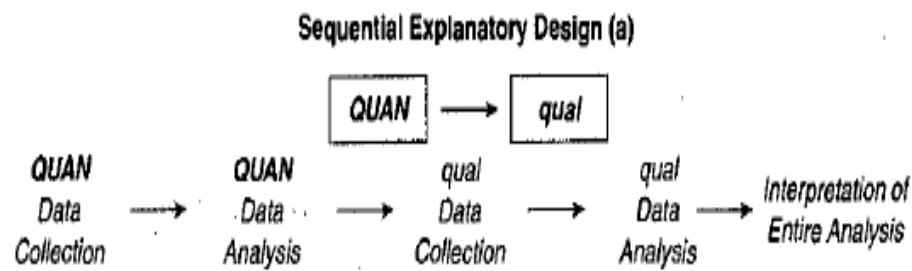


Figure 3.4: Sequential explanatory design (Creswel, 2009,p.209)

3.5 Study population

This study selected all registered nurses working in ICU and Emergency Department at the University Teaching Hospital of Kigali, a Rwandan referral hospital.

3.6 Study sample size

All nurses working in ICU and Emergency Department at the University Teaching Hospital of Kigali were selected.The sample size was 60 nurses.

3.7 Sampling strategy

A total population sample was used to select participants for quantitative components of the study because the size of the population under the study was small. The sampling strategy for qualitative data was purposive sampling. In this type of sampling, participants were chosen according to their characteristics and the purpose of the study. For example the researcher chose nurses with not less than a year working in ICU and Emergency Department.

3.7.1 Inclusion criteria

The following were included in the study; nurses

1. Working in ICU and Emergency Departments of the selected hospital.
2. With at least 1 year or more experience.
3. Who consented willing to participate in this study by way of signing consent form.

3.7.2 Exclusion criteria

The following nurses were excluded from the study; nurses.

1. Who did not consent to participate in the study.
2. Who were not available in the period of the study.
3. Who had not worked in the service for 1 year or more.
4. Students nurses in clinical placement.

3.8 Data collection techniques

Data collection was done using self - reported data collection techniques using a self-administered questionnaire for quantitative data and interview using a semi-structured interview guide for qualitative data.

3.9 Data collection instruments

These include instruments for quantitative data and qualitative data .

Data collection was done using self - reported data collection techniques using a self-administered questionnaire.

3.9.1 Quantitative data

Data were collected using a self-administered questionnaire to gather characteristics of nurses and those ones included socio demographic factors, personal risk factors and job related characteristics(Appendix 3 part I) adopted from (Beyene, 2015,P.50) and an adopted tool (MBI-HSS (Maslach Burnout Inventory Human Service Survey) on the level of burnout (Maslach and Jackson, 1981, pp. 99–113). Data collection tools were in English and French versions to allow participants to answer in the language they were comfortable with because some nurses had background in French

3.9.1.1 The questionnaire:

The questionnaire had 2 parts:

1. Part I was about participants characteristics comprising of questions on socio demographic factors, personal risk factors and job related characteristics of participants
2. Part II concerned MBI-HSS that comprises questions on the three dimensions of burnout, namely, Emotional Exhaustion (EE), Depersonalization (DP) and Personal Accomplishment (PA). The MBI-HSS is described as follows:

The MBI-HSS tool is a 22 items questionnaire that relates to three components of burnout, namely, Emotional Exhaustion(EE):9 items, Depersonalization(DP):5 items and Personal Accomplishment(PA):8 items(Maslach, Jackson and Leiter (1997,p.193-194).Moreover, Maslach, Jackson and Leiter (1997) stated that every feature of the MBI is measured on a 7 point Likert-type scale showing the extent to which the feeling is (0=Never to 6=every day). Each dimension score is considered separately for each participant and scores are not combined into a single total score(Maslach and Jackson, 1981).This self-administered questionnaire is filled in 10 to 15 minutes (Maslach, Jackson and Leiter, 1997, p. 195).In this current study,participants used the same time to fill it.

According to Maslach and Jackson (1981), the results from MBI –HSS were classified as followi: on the dimension of EE: 0-16 score was low-level of EEbetween 17 and 26: moderate EE; score of 27 or above high-level of EE. On the dimension DP: 0-6: score was low-level of DP; score between 7 and 12: moderate DP and the score of 13 and greater: was high-level of DP. For PA feature: 39 or over was high level of PA, 32-38 was moderate PA and 0-31 was low PA. Therefore, it was stated that high scores on EE and DP subscales correspond to high level of burnout however for PA subscale low scores correspond to high degree of experienced burnout (Maslach, Jackson and Leiter, 1997, p. 194). Moreover, according to Maslach and (colleagues

(1997) a moderate degree of burnout is reflected in moderate scores on the three subscales. A low degree of burnout is reflected in low scores on Emotional Exhaustion and Depersonalization subscales and in high scores on the Personal Accomplishment subscale.

3.9.2 Validity

MBI – HSS convergent and discriminant validity was established (Maslach, Jackson and Leiter, 1997) and it was found that feelings of rated participants matched with score for MBI subscales (p.198) and concerning discriminant validity burnout was found not to be related to some concepts like depression and dissatisfaction (p.202).

Content validity

In this study, the content validity was established in the table below matching the objectives with the conceptual framework and the questionnaire items to establish if all the objectives were addressed.

Table 3.1: Content validity

Objectives	Conceptual framework	Items on the questionnaire
Objective 1: Assess socio demographic factors	Sociodemographic factors : -Age -Gender -Current marital status -Current level of education	Part I: Nurses characteristics
Objective 2: Level of burnout	EE, DP, PA	Part II: MBI-HSS
Objective 3:	Sociodemographic factors :	Part I:

<p>Assess factors associated with burnout</p>	<ul style="list-style-type: none"> -Age -Gender -Current marital status -Current level of education Personal risk factors : - Number of living children - Perception of health status -Quality of life perception -Job satisfaction perception - Intention to leave within 12 months Work -related characteristics: - area of work - Work experience - job title -duty shift -work overload 	<p>Nurses characteristics</p>
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3.9.1.3 Reliability

The internal consistency was measured and the following Cronbach's coefficient alpha for three MBI components were reported 0.90 for EE, 0.79 for DP and 0.71 for PA and the standard error of measurement was 3.80 for EE, 3.16 for DP and 3.73 for PA (Maslach, Jackson and Leiter, 1997, p. 198). Furthermore, Maslach (1997) and colleagues revealed that a test retest reliability of the MBI was measured and it was found to be significant at less than <0.001 level and it extended between 0.50 to 0.82 for the three dimensions.

The reliability of MBI was established over many years ago and it was cited in huge studies, the same tool was used to study burnout in different health professionals involving different countries (Thorsen, Tharp and Meguid, 2011, p. 3). In addition, its factorial stability was evaluated in different cultures and countries and it was identified that it is useful in different nations with different languages and within different professions and occupations. Therefore, this tool was used in this study without much rigorous testing especially because a translated version to French was also provided when permission was granted. Only a pilot study that involved three critical care nurses was conducted to exclude contextual issues. The pilot study did not show any discrepancy.

3.9.2 Qualitative data

Qualitative data were collected by conducting a focus group discussion and a semi structured interview guide was used. The questions to be asked in a focus group were chosen basing on the objectives of the study .

3.9.2.1 Interview

Interview guide was used during focus group discussions to explore the perceived effects of burnout on patient care and perceived management among nurses working in ICU and Emergency Department. Two focus group discussions of six nurses were conducted using a semi-structured interview guide (Appendix 3 part III) to gather data on the perceived effects on patient care and perceived management of burnout. Participants were tape recorded with permission. The purpose of the focus group discussion and the whole process were explained to them. Probing was done during the focus group depending on how participants were responding to questions. In addition, a written consent for participating was obtained. They were aware that to participate in the focus group was voluntary and that they could withdraw at any time.

3.9.2.2 Trustworthiness

Trustworthiness is an effort to make the research study authentic and credible (J Houser, 2008, pp. 308–309). Qualitative researchers advocate for use of specific vocabulary in describing qualitative studies, such as trustworthiness. Hence dimensions for demonstrating trustworthiness are credibility, dependability, transferability and confirmability (Janet Houser, 2008, p. 309).

Credibility is a qualitative dimension to demonstrate authenticity or authentic value of the research study (Janet Houser, 2008, p. 527; Creswel, 2009). This is achieved through prolonged engagement in the study field to collect data. Furthermore, it involves giving thick description of

the study which is a detailed description of the study and the study field for readers to judge the authenticity. In this study, credibility was achieved by spending a month while collecting data. Quantitative data were collected first then qualitative data after. The study was reported in detailed form of a thesis that will be kept in the public domain. Furthermore, transcripts were checked by the supervisors to make sure that there is no mistake made during transcription. The definitions of codes also were checked by supervisors during the process of coding. This was assured by checking constantly if the data matches the code through writing a memo about the code and their definitions including excerpts from the participants' responses to support the presentation of data.

Dependability is the consistency with which the data is gathered from different sources, approaches and methods (Houser, 2008; Creswel, 2009). In this study, dependability was ensured by triangulation of two approaches, quantitative and qualitative, various methods like using questionnaire and interview guide for the focus group discussion.

Confirmability is a qualitative dimension in which data or findings are taken back to the participants to verify if the data and interpretation match what they intended to say (Houser, 2008; Creswel, 2009). In this study, the researcher visited the participants of the focus group discussion to verify data. The participants were also given opportunity to comment on the findings.

Transferability is a form of generalization in qualitative research where by the prospective researchers have to make a judgement whether they can apply the study in their own context (Houser, 2008; Creswel, 2009) Furthermore, to facilitate this judgement, the researcher must give detailed information on the study. Transferability is the responsibility of the prospective researchers if to use the study in his/her own setting. In this study, transferability was ensured by giving all details of the study from background to problem statement, motivation of the study, purpose and objectives, literature review, methodology, data collection process study findings, discussion and interpretation of findings including recommendations. to allow the researchers to make informed judgment to apply this study in their contexts.

3.10 Data collection process

After getting the written approval from Institutional Review Board (IRB), the researcher presented it to the research committee of the University Teaching Hospital of Kigali in order to be given data collection permission. After getting the permission from the research committee of the hospital, it was presented to the Director of Nursing, matrons and unit managers of ICU and

Emergency Department who were provided with information on the purpose and the procedures of the study. Moreover, nurses eligible to the study were met and explained to them the purpose, objectives and process of the research study, their rights in the study like voluntary participation and right to withdraw without any services withheld or punishment, the risks (their time) involved how they were mitigated and obtained informed consent. Furthermore, every participant completed the questionnaire individually. After all of those, data collection process took place using self-administered questionnaire to gather data on nurses' characteristics that included socio-demographic factors, personal and job related factors and MBI-HSS tool was used for the level of burnout. Two focus groups of nurses between six and twelve persons (Janet Houser, 2008) were conducted using interview guide where participants were audio recorded. Before the focus group discussion the permission for tape recording was requested from the participants and participants consented in written form. The researcher found a facilitator for the focus group discussions, while she operated the tape recorder and observed the participants and took notes which became useful during data analysis and interpretation.

Quantitative data were collected first using a self administered questionnaire to assess factors related to burnout and a validated tool the MBI-HSS to gather data on the level of burnout. Secondly, qualitative data were collected by conducting a focus group discussion. One focus group among ICU nurses another one among Emergency nurses. In this study, the researcher visited the participants of the focus group discussion to verify data. The participants were also given opportunity to comment on the findings.

3.11 Data analysis

Data analysis was done in two phases. Quantitative and qualitative data analysis. Quantitative data were analyzed first as follows: Data were analysed by SPSS version 21.0. A significance was considered at $p < 0.05$ level. Fisher's Exact test was used to examine associations between categorical variables because the expected frequency in any cell of the contingency table analysis of the association of variables was more than 25%. Completed questionnaires of MBI-HSS data were analysed. Each subscale score was determined. High scores on EE and DP subscales correspond to high level of burnout however for PA subscale low scores correspond to high degree of experienced burnout Maslach and Jackson (1981) in Zhang, Huang and Guan (2014, p.2).

Qualitative data were transcribed verbatim from different focus group discussions and organized by putting together respective questions with answers from the participants. After that data were

coded using inductive coding approach where codes emerged from data and thematic analysis was done. Initial coding was done through structural coding which consisted of labelling data based on the research question (Saldana, 2009, p. 67). A pattern coding took place where the researcher organized the labels given to data in the initial coding into categories then subcategories. A thematic analysis was carried out and it consists of developing themes from categories that emerged from the data and not predetermined; then thereafter they were put together for interpretation (Saldana, 2009, p. 140). Furthermore, subcategories were illustrated using themes emergent from the data.

3.12 Ethical considerations

The study was conducted according to the ethical guidelines of CMHS and the ethics clearance to conduct the study was offered by IRB. Participants provided informed consent in a written form (see Appendix 2 for consent form). In addition, tools were in both French and English to assure better understanding because participants understood French and English. Moreover, Confidentiality is observed by privacy when conducting interviews and promise not to divulge the information including keeping the data under lock and password controlled personal computer so that no other person has access to the data except the researcher and supervisor.

In addition, the researcher began the focus group by asking the participants to agree to the importance of keeping information discussed in the focus group confidential and this was reminded to participants at the end of the focus group. In addition, privacy was observed by allowing participants to fill the questionnaire individually and their filled questionnaire was handled deposited in a sealed box with a hole and emptied daily. Focus groups were conducted in safe, not noisy environment that allowed participants to express themselves and being tape recorded without interferences.

Necessary information about the study was given participants which are the purpose, objectives and process of the research study, their rights in the study like voluntary participation and right to withdraw without any services withheld or punishment. Participants were also informed of the risks involved in the study like encroaching on their time and ward routine and this was handled by allowing them to fill the questionnaires at leisure or in the comfort of their homes to avoid disruption of ward routine and their comfort breaks (see Appendix 1 for information sheet document). In addition, they were informed that no incentive involved but they would get

indirect benefit because the results would be used in the future to improve their profession. Furthermore, data storage and management safety was observed.

3.13 Data management and data dissemination

Soft data were managed safely and kept in a computer locked with a personal password while the hard copies were locked in a cupboard. Moreover, data were kept on my personal email. The work of this research was only accessed by the researcher and supervisors of this research.

The findings of this study will be shared with authorities of the University Teaching Hospital of Kigali, participants (nurses working in Intensive Care Units and Emergency Department. Data were presented in front of the panel during dissertation oral presentation. Additionally, the dissemination of the study was done through poster presentation of an abstract in the conference and will be published in a scientific journal. The completed thesis (hard and soft) will be deposited in the CMHS library to be accessed by those who might need it for future studies.

3.14 Limitations and problems of the study

The findings of this research cannot be generalized to all Rwandan nurses because only nurses working at the University Teaching Hospital of Kigali were included in the study and the sample size was small.

It was not possible to establish causal relationships, because burnout can be caused by many factors that were not emphasized in this study.

Recruitment process was not easy as nurses work in shifts and they seemed to be always busy.

Sampling was not random therefore sampling bias may have occurred. With all the limitations listed, the researcher attempted to mitigate by triangulating the approaches and methodology. It was hoped that the weakness of one method would be lifted up by the strength of the other.

3.15 Conclusion of the chapter

This chapter has outlined the study setting, study design and approach. Moreover, the study population, sample size and sampling strategy were presented. Inclusion and exclusion criteria of participants in this study were also addressed. Data collection methods and procedures, data analysis for both quantitative and qualitative data were described above. Limitations and problems of the study, ethical consideration as well as safety and data management were also addressed. The next chapter four will present and interpret findings of this study.

CHAPTER 4: RESULTS PRESENTATION

4.1 Introduction

This chapter presents the findings of this study .The findings of this study are presented in 2 parts: the first part is a quantitative data presentation which focuses on results from the questionnaires and the second one is a qualitative data presentation which bases on findings from the focus group discussions. A total of sixty (60) nurses from ICU and Emergency Department completed self-administered questionnaires.Sixty questionnaires were distributed and 100% were returned. Each unit was represented at 50% .In addition; two focus groups of 6 nurses were conducted.Each focus group comprised 6 nurses.

4.2 Quantitative Results

Quantitative section presents sociodemographic characteristics of participants, level of burnout of nurses, factors associated with burnout and associations between burnout , sociodemographic characteristics and factors associated to burnout .

4.2.1 Participants sociodemographic characteristics

Table 4.1 below illustrates sociodemographic characteristics of participants. The majority of the participants were female [36 (60%)] and [24(40 %)] were male.In addition ,this study revealed that the majority of the participants [42 (70%)] fell on the range 30-39 years, 10(17%) at a range 40-49 years and only 8 (13.3%) of them were in range 20-29 years.

The majority of the participants [48 (80%)] were married, fewer of them were widowed [2 (3.3%)] and 10 (16.7 %) were single.Moreover, most of the participants [51 (85%)] hold diploma in nursing and 9 (15%) have bachelor's degree in nursing.

Table 4.1 Participants sociodemographics

(N=60)

Sociodemographic characteristics	Frequency	Percent
Gender		
Female	36	60
Male	24	40
Age		
20-29 years	8	13.3
30-39 years	42	70.0
40-49 years	10	16.7
Marital status		
Single	10	16.7
Married	48	80
Widowed	2	3.3
Level of education		
Diploma	51	85
Bachelor's degree	9	15
TOTAL	60	100

4.2.2 Level of burnout

Level of burnout among participants is shown in Table 4.2 below .Most of the participants [37 (61.7%)] had high level of burnout, 5 (8.3%) moderate level and 18 (30.0%) low level of burnout.

Table 4.2 Level of burnout
(N=60)

Level of burnout	Frequency	Percent
Low level	18	30.0
Moderate level	5	8.3
High level	37	61.7
Total	60	100

4.2.3 Maslach Burnout Inventory (MBI) subscales scores

Table 4.3 below shows how nurses scored on three dimensions of burnout using the MBI-HSS. The study revealed that the majority of participants [29 (48.3%)] had higher level of Emotional Exhaustion (EE); the lower level of Depersonalization (DP) [32(53.3%)] and low level of Personal Accomplishment (PA) [30(50%)].According to Maslach and Jackson (1981)“high level

of burnout is reflected in high scores on EE and DP subscales and in low PA subscale”. Moderate scores on the three subscale shows moderate degree of burnout, low degree of burnout is reflected in low scores on Emotional Exhaustion and Depersonalization subscales and high scores on the Personal Accomplishment subscale.

Table 4.3: Maslach Burnout Inventory subscales scores (N=60)

Burnout dimensions		Count	Percent
Emotional Exhaustion	Low	13	21.7
	Moderate	18	30.0
	High	29	48.3
Depersonalization	Low	32	53.3
	Moderate	13	21.7
	High	15	25.0
Personal Accomplishment	Low	30	50.0
	Moderate	16	26.7
	High	14	23.3

4.2.4 Factors associated with burnout

These include personal risk factors and work related factors.

4.2.4.1 Personal risk factors

Table 4.4 shows that 22(36.7%) of the participants were pursuing studies and almost 38 (63.3 %) were not. In this study, 13 (21.7%) of the participants perceived their health status as “poor”. Only 11(18.3) % of them perceived it as good. For majority of them [36(60.0%)] it was perceived as fair.

Participants ‘perception of their quality of life is also illustrated in the (Table 4.4) below .This study reveals that 10 (16.7%) of participants perceived their current quality of life as “poor “and 41 (68.3%) perceived it as “fair” .Only 9 (15.0%) of them perceived it as “good”.In addition , 28(46.7%) of the participants perceived poor work satisfaction .Only 32(53.3%) of them perceived it as fair.

This study found that 22 (36.7%) of participants had a plan to leave the current work within the next 12 months and 38 (63.3%) did not plan it.

**Table 4.4 : Personal risk factors of participants
(N=60)**

	Frequency	Percent
Pursuing studies currently		
Yes	22	36.7
No	38	63.3
Plan to leave the work within the next 12 months		
Yes	22	36.7
No	38	63.3
Number of living children		
1-5 children	46	76.7
More than 5	3	5
None	11	18.3
Perception of current health status		
Poor	13	21.7
Fair	11	18.3
Good	36	60
Perception of current quality of life		
Poor	10	16.7
Fair	41	68.3
Good	9	15.0
Perception of work satisfaction		
Poor	28	46.7
Fair	32	53.3

4.2.4.2 Work related characteristics

Work related characteristics of participants are shown in Table 4.5 below. In this study, the majority of participants [20(33.3%)] had work experience of 3-5 years, followed by 31.7% with 6-10 years work experience, then (26.7%) working experience of 2 years or less, 6.7% working experience of more than 15 years and a fewer 1 (1.7%) of them had 11-15 years' experience.

Most of the participants [58(96.7%)] were bedside nurses and only 2 (3.3%) were unit managers.

In this study, the majority of the participants [50 (83.3%)] reported to work both night and day duty. Moreover, the majority of the participants [56 (93.3%)] reported the presence of high workload in their work.

**Table 4.5 : Work related characteristics
(N=60)**

	Frequency	Percent
Working experience		
2 years or less	16	26.7
3-5 years	20	33.3
6-10 years	19	31.7
11-15 years	1	1.7
Greater than 15 years	4	6.7
Job title		
Bedside nurse	58	96.7
Unit manager	2	3.3
Duty shift		
Day duty	5	8.3
Night duty	5	8.3
Both	50	83.3
Presence of high workload		
Yes	56	93.3
No	4	6.7

4.2.5 Associations between burnout , sociodemographic characteristics and factors related to burnout .

4.2.5.1 Association between level of burnout and sociodemographic characteristics

Table 4.6 below shows that high level of burnout was identified among female 19 (51, 4%) than male. Female were in the majority than male in this study (Table 4.1). However, the association between gender and the level of burnout was not statistically significant as the P value was $> .05$. Furthermore, this study revealed that 13.5 (70.3%) of the participants who had high level of burnout had age ranging from 30-39 years old (Table 4.6) and the majority of participants was ranging in this age category (Table 4.1). The statistical test did not show any association between age and level burnout ($P > 0.05$) (Table 4.6).

The majority of participants [32 (86.5%)] with diploma in nursing were found to have high level of burnout (Table 4.6). However, this study did not find any association between the levels of education and burnout ($P > 0.05$) (Table 4.6). Moreover, high level of burnout was identified among married participants 31 (83.8%) but this was not statistically significant as ($P > 0.05$) (Table 4.6).

Table 4.6 :Association between level of burnout and sociodemographic factors (P <0.05)

Sociodemographic factors	Level of burnout			Exact Sig. (2-sided)
	Low level	Moderate level	High level	
Gender Female Male	13(72.2%) 5(27.8%)	4(80.0%) 1(20.0%)	19(51.4%) 18(48.6%)	.250
Age 20-29 years 30-39 years 40-49 years	2(11.1%) 12(66.7%) 4(22.2%)	1(20.0%.) 4(80.0%) 0.0%	5(13.5%) 26(70.3%) 6(16.2%)	.902
Marital status Single Married Widowed	5(27.8%) 13(72.2%) 0(0.0%)	1(20.0%) 4(80.0%) 0(0.0%)	4(10.8%) 31(83.8%) 2(5.4%)	.423
Level of education Diploma Bachelor's degree	14(77.8%) 4(22.2%)	5(100%) 0(0.0%)	32(86.5%) 5(13.5%)	.525

4.2.5.2 Association between the level of burnout and personal risk factors

High level of burnout was found among both participants pursuing and not pursuing any study as shown in (Table 4.7). But this study did not show any association between burnout and pursuing any study while working (P >0.05).

High level of burnout was mostly identified among participants having 1-5 living children 31(83.8%) as illustrated in (Table 4.7) but this was not proven to be statistically significant (P value = .291) in this study.

This study found high level burnout to be associated with a plan to leave the current work within the next 12 months (Table 4.7) and this was statistically significant (P <0.05).The majority of the participants [18 (48.6%)] with a plan to leave within the next 12 months had high level of burnout (Table 4.7) .

Table 4.7 : Association between the level of burnout and personal risk factors (P<0.05)

Personal risk factors	Level of burnout			Exact Sig. (2-sided)
	Low level	Moderate level	High level	
Pursuing studies currently Yes No	6(33.3%) 12(66.7%)	2(40.0%) 3(60.0%)	15(40.5%) 22(59.5%)	.917
Number of living children 1-5 children More than 5 children None	11(61.1%) 2(11.1%) 5(27.8%)	4(80.0%) 0(0.0%) 1(20.0%)	31(83.8%) 1(2.7%) 5(13.5%)	.291
Plan to leave the current work within the next 12 months Yes No	2(11.1%) 16(88.9%)	2(40.0%) 3(60.0%)	18(48.6%) 19(51.4%)	.016

4.2.5.3 Association between the level of burnout and work related characteristics

Table 4.8 below shows high level of burnout among the participants who reported the presence of high workload (Table 4.8).The association between burnout and presence of high workload was statistically significant as (P<0.05).Moreover,this study revealed high level of burnout among the participants who had working experience of 3-5 years and 6-10 years and each was 13 (35.1%).This study did not find any association between burnout and working experience (P>0.05)(Table 4.8).

The participants who worked both night and day duty had high level of burnout than others 33 (89.2%). However, the association between level of burnout and duty shift was not statistically significant (P <0.05) (Table 4.8).Moreover,Table 4.6 depicts that the majority of the participants [19 (51.4%)] who had high level of burnout worked in Emergency Department (Table 4.8) .However, this study did not find any association between burnout and service area (P>0.05).

Table 4.8 : Association between level of burnout and work related factors (P<0.05)

Work related factors	Burnout			Exact Sig. (2-sided)
	Low level	Moderate level	High level	
Presence of high workload				
Yes	14(77.8%)	5(100%)	37(100%)	.011
No	4(22.2%)	0(0.0%)	0(0.0%)	
Work experience				
2 years or less	6(33.3%)	2(40.0%)	8(21.6%)	.583
3-5 years	4(22.2%)	3(60.0%)	13(35.1%)	
6-10 years	6(33.3%)	0(0.0%)	13(35.1%)	
11-15 years	0(0.0%)	0(0.0%)	1(2.7%)	
Greater than 15 years	2(11.1%)	0(0.0%)	2(5.4%)	
Duty shift				
Day duty	3(16.7%)	0(0.0%)	2(5.4%)	.095
Night duty	1(5.6%)	2(40.0%)	2(5.4%)	
Both	14(77.8%)	3(60.0%)	33(89.2%)	
Service area				
Emergency departement	9(50.0%)	2(40.0%)	19(51.4%)	1.000
Intensive care unit	9(50.0%)	3(60.0)	18(48.6%)	

4.3 Qualitative Results

Perceived effects of nurse burnout on patient care and perceived management of burnout among the participants were also explored using a qualitative approach. More detailed information on how people think; feel and what they know are expected from this approach. The data of this section were obtained from 2 focus group discussions made of 6-12 participants.

4.3.1 Participants Characteristics

Table 4.9 below shows characteristics of the participants who participated in focus group discussions. Most of the participants (7out of 12 participants) were female; their age was ranging from 26-46 years .In addition, their work experience was ranging between 2-17 years. The participants came from both ICU and Emergency Department(ED).

Table 4.9: Participants characteristics (Focus group discussion)

N° of participants	Participants characteristics			Unit
	Age	Gender	Work experience	
1	39	Male	2	Emergency Department
2	36	Female	10	Emergency Department
3	33	Male	7	Emergency Department
4	35	Female	8	Emergency Department
5	26	Female	2	Emergency Department
6	38	Male	8	Emergency Department
7	31	Female	2	ICU
8	34	Female	7	ICU
9	41	Female	15	ICU
10	33	Male	7	ICU
11	46	Male	17	ICU
12	34	Female	6	ICU

4.3.2. Themes and categories

Table 4.10 below illustrates themes and categories that emerged from the data based on the conceptual framework and objectives of the study.

Table 4.10: Categories and themes

Categories	Themes
Multifactorial of burnout	Unpredictable workload
	Unique workload
	Unrelenting work
	Lack of recognition
Experience of burnout among nurses	Experienced level of burnout
Negative effects of burnout on patients care	Detrimental /harmful effects
Comprehensive management of burnout	Stress management strategies
	Improving work environment
	Promoting education and training

4.3.2.1 Multifactorial of burnout

The participants described the factors related to burnout according to unpredictable workload, unique workload, unrelenting work and lack of recognition .

4.3.2.1.1 Unpredictable workload

The participants described the factors contributing to added burnout out in their environments as follows:

We are the ones to receive patients, we face them first and stabilize them and from that we are required to work harder than others , they just complete what is remaining .We don't have a fixed number of beds for our patients we keep receiving patients (Partic.no.1ED) .

You take care of many patients,you don't work planned hours, you work extra hours,you cannot know the time for work or not,you work, work without resting (Partic. no.2ED) .

4.3.2.1.2 Unrelenting work

The participants also mentioned the acuity or complexity of patients, type of delegation or allocation and hours of work in their contexts as contributing to burnout, as expressed in the following excerpts:

Here we have high level of burnout than them because a nurse does a comprehensive management of the patient you are like the patient relative to do everything for the

patient...we do bed bath to our patients ,tooth brushing, we are the ones to change their positions (Partic.no.7ICU).

Patients are many. They are manynormally in ICU it should be 1 patient for 1 nurse so that she could given fully needed care.due to many hours we work from 7 am to 7 pm you get exhausted (Partic. no. 8ICU) .

We work many hours and you always have 2 patients to take care of and they are in critical condition and from hat you get exhausted (Partic. no.6ICU).

Patients are many .They are manynormally in ICU it should be 1 patient for 1 nurse so that she could given fully needed care.due to many hours we work from 7 am to 7 pm you get exhausted (Partic. no. 8ICU) .

..... a nurse does a comprehensive management of the patient you are like the patient relative to do everything for the patient.....we do bed bath to our patients ,tooth brushing ,we are the ones to change their positions (Partic. no.7ICU).

.....you take care of many patients ,you don't work planned hours, you work extra hours ,you cannot know the time for work or not ,you work work without resting(Partic.no.2 ED)

We work many hours and you always have 2 patients to take care of and they are critical condition and from that you get exhausted (Partic.no.6 ICU).

4.3.2.1.3 Unique workload

The participants view their workload as unique from others as expressed in the following excerpts:

.....others just complete what is remaining,.....others have stable patients to take care of....., they have a fixed number of patients to take care of (Partic. no.1ED).

High level of burnout than them because a nurse does a comprehensive management of the patient you are like the patient relative to do everything for the patient. Which is different from other unit where the nurse administers drugs (Partic. no.7ICU).

Others just complete what is remainingothers have stable patients to take care of, ., they have a fixed number of patients to take care of(Partic.no. 1ED).

Here we have high level of burnout than them because a nurse does a comprehensive management Which is different from other units where the nurse administers drugs (Partic. no.7ICU).

4.3.2.1.4 Lack of recognition

The participants felt that they are not being valued recognized for the work and the stressful circumstances they are working under. This they expressed in the following way:

Those worked extra hours we work, are not recognized and they don't even consider the high workload nurses have to even give them a tea break (Partic. no.9ICU)

4.3.2.2. Experience of burnout among nurses

The participants were asked to describe how much they perceive their burnout was and they expressed it as follows:

Prevalence of burnout here is high (Partic.no.2ED).

.....the level of burnout becomes very high. ...there is high level of burnout, Very much (Partic. no1ED)

The level of burnout is high (Partic. no.7ICU).

4.3.2.3 Negative effects of burnout

Participants expressed the negative effects of burnout on patients care .:

4.3.2.3.1 Detrimental /harmful effects

.....the patient can even die. You can't serve all of them at the same time.though some can lose their lives (Partic. no.3ED).

.the patient can develop bedsores; the patient can develop malnutrition (Partic.no.7ICU).

..... suffer from problem of airway obstruction and even develop asphyxia (Partic.no.9ICU).

4.3.2.4 Comprehensive management of burnout

Participants expressed their perceived management of burnout as stress management strategies ,improving the work environment , promoting education and training in the following excerpts:

The first solution I can propose is to work recommended hours this time we can have time for rest and time to do sport., increase the number of staff.we receive patients without stopping so the staff to manage those patients should be increased. In few words: increase the number of staff and work recommended hours”(Partici. no.1ED).

Decrease the number of shift hours because it is too long, If they could increase the number of shift as they say if one team is tired another one should come and continue the work that time the outcome of our work will be good (Partic.no.2ED).

The number of staff is increasedsecondary give motivation to nurses and recognize worked extra hours. Provide all material and equipment that works properly, do screen of patients as early as possible so that precaution should be taken to prevent disease transmission from patients to nurses (Partic.no.9ICU) .

To improve the situation, the first thing is that each nurse in ICU and High Dependent Unit should have one patient to take care of.; hours of work should be respected. Another thing to add is to give us trainings because to come and work here in ICU we just arrange ourselves. They give us training on Basic Life Support but really someone who did critical care and trauma nursing should be the one to work here in ICU (Partic.no.7ICU).

Create a time for nurses like once or two times a year for people to meet and exchange and manage that burnout for instance people can get out in picnic, organize visit for them to share issues faced at work for them to change the environment, staff motivation like getting out and offering airtime(Partic.no.3ED).

4.4 Conclusion of the Chapter

This chapter presented the findings of the study .In this study quantitative data and qualitative data were presented. Chapter five will discuss the results, limitations and recommendations for practice, education, management and policy including further research.

CHAPTER 5: DISCUSSION OF RESULTS

5.1 Introduction

This chapter discusses the findings of this study .Findings will be presented according to the adopted conceptual framework. The conceptual framework encompasses factors related to burnout (socio demographic factors, personal risk factors and work related characteristics); level of burnout, perceived effects on patient care and perceived management of burnout.

5.2 Level of burnout among ICU and Emergency Department nurses

The findings of this study revealed high prevalence of burnout [37(61.7%)] among ICU and Emergency Department nurses. In addition, all dimensions of burnout were affected as follows: The majority of the participants [29(48.3%)] had higher level of Emotional Exhaustion (EE); twenty five percent had high level of Depersonalization (DP) and low level of Personal Accomplishment (PA) was experienced by 30(50%) of the participants .According to Maslach and Jackson (1981) high level of burnout is reflected in high scores on EE and DP subscales and in low PA subscale”. Furthermore, in this study participants expressed the extent of burnout qualitatively and they expressed to experience it as very high level of burnout .Similar to this ,a study conducted in Northern China in 14 hospitals in adult ICUs reported 16% of high level of burnout among ICU nurses , with high level of EE at 43.2%, high level of DP at 26.1% and 42.6% low level of PA (Zhang, Huang and Guan, 2014, p. 2). Similar to this, various studies identified high level of burnout in one third of nurses working in ICU due to the working environment of ICU and life threatening conditions of patients managed there (Embriaco *et al.*, 2007, p. 483; Poncet *et al.*, 2007, p. 699; Liu *et al.*, 2013, p. 6; Teixeira *et al.*, 2013, p. 4).Moreover,according to Elkonin and Lizelle (2011) burnout prevalence of 30% was identified among registered nurses in two ICUs in South Africa and this was due to non specialized nurses working in ICU and shortage of staff which contributed to the stressful working environment. Chuang *et al.*, (2016, p .10.) in a systematic review among ICU professionals revealed that burnout is highly prevalent in ICU than other units because in ICU patients are critically ill and this involves their emotions and also they have to respond to family members concerns regarding their loved one.However a census report on risk factors on burnout and fatigue among nurses revealed low prevalence of burnout 14.5% in the ICU compared to other units; oncology 21.9%, theatre 17.2% and 15.9% in the emergency department therefore ICU was not proven to

be a stressful working environment than other working units (Raftopoulos, Charalambous and Talias, 2012, p. 10, 11).

A study conducted in the Regional General Hospital in the Republic of Ireland that was comparing level of burnout among nurses working in emergency and medical ward, high level of DP (46%) was found among emergency nurses than nurses medical ward (27.2%), high level of EE (38.4%) among emergency nurses and 54.8% among medical nurses, low PA (46%) among emergency nurses and 27% among medical nurses these were not significant ($P>0.05$) (Harkin and Melby, 2014, p. 155). Moreover, other studies identified that more than 82% of emergency nurses had high level of burnout and this was due to lack of support from their authorities ,emotional stress and bad memories about patients they cared for (Hooper *et al.*, 2010, p. 424; Van der Wath, van Wyk and Janse van Rensburg, 2013, p. 2244; Hunsaker, Moughan and Heaston, 2014, p. 12).

High level of burnout was identified among nurses working in ICU and Emergency Department in this study due to the fact that these nurses work in a stressful working environment as it was proven by various studies that ICU is a stressful work place (Chitura and Chitura, 2014; Mol *et al.*, 2015; Chuang *et al.*, 2016) and Emergency Department as well (Harkin and Melby, 2014). In addition, participants expressed the high work load and the work environment that expose them to burnout. A study found that heterogeneity of the sample make the prevalence of burnout not to be too high (Ribeiro *et al.*, 2014, p. 4). In this study current, the sample was not heterogeneous. This current study targeted only nurses working ICU and Emergency Departement which made the sample to be small. This might have contributed also to the high level of 61.7%.

5.3 Factors associated with burnout

Factors associated to burnout include sociodemographic factors, personal risk factors and work related factors.

5.3.1 Sociodemographic factors

In this study, the participants were predominantly female in keeping with dominance of females in nursing profession (Rappleye, 2015). This is similar to the findings of others studies conducted among nurses where females were also predominant (Ayala and Carnero, 2013, p. 3; Liu *et al.*, 2015, p. 491). A study conducted in acute and critical care military personnel on

determinants of burnout the majority of the participants were females amounting to 94.6% (Ayala and Carnero, 2013, p. 3). Another study done in China on Job satisfaction and work related variables in critical care nurses revealed the same about gender where female were 98.6% (Liu *et al.*, 2015, p. 491)

In this current study nurses were predominantly younger below 50 years. This is in line with the findings of Rwanda demographics survey that revealed that age range 15-49 years which reflected that Rwandan population is young (NIS, MOH and DHS, 2015, p. 7). Conversely, in America 53% of nurses are mostly aged over fifty years (ANA, 2014, p. 14). This is similar to what ICN reported that nursing workforce is older in developed countries than developing countries (ICN, 2015, p. 1). The majority of the participants [51(85.0%)] in this study were holding diploma in nursing. In Rwanda, the majority of nurses holding a diploma in nursing (Harelimana *et al.*, 2015, p. 6). Therefore this may explain why the majority in this were holding predominantly diploma in nursing.

The findings of this study found high level of burnout among married participants, female, aged 30-39 years, and holding diploma in nursing, however, it was not statistically significant $P > 0.05$. Another study aimed to determine burnout among health care workers managing chronic patients with consciousness disorders did not find any association between age, gender and burnout $P > 0.05$ (Gosseries *et al.*, 2012, p. 1495). Gender was also not found to be a strong predictor of burnout because high level of burnout may be found either in female or male (Maslach, Schaufeli and Leiter, 2001, p. 410). This is similar to the findings of a study where no difference was found between gender in relation burnout (Myhren, Ekeberg and Stokland, 2013, p. 5). However, other various studies found age, gender, level of education, marital status to be associated with burnout (Losa Iglesias, Vallejo and Fuentes, 2010; Tavares *et al.*, 2014; Chuang *et al.*, 2016). Significant associations between age and emotional exhaustion $P = 0.004$ was found among critical care nurses in a study conducted in Spain to determine the relationship between experiential avoidance and burnout (Losa Iglesias, Vallejo and Fuentes, 2010, p. 34). Furthermore, a systematic review on burnout among ICU professionals also found associations among younger age ($P = 0.03$) and for more than 36 years ($P < 0.05$), female as gender ($P = 0.003$), single marital status ($P = 0.01$), neuroticism as personality trait ($P < 0.05$), work experience in ICU ($P < 0.011$), work environment ($P \text{ value} < 0.05$), workload and shift associated with burnout ($P < 0.05$) (Chuang *et al.*, 2016, pp. 7–10). Similar to this, concerning marital status a study among resident ICU nurses found also high level of burnout among single individuals (Tavares *et al.*, 2014, p. 263). Conversely, in this study high level of burnout was found among married

participants but it was not significant association between marital status and burnout ($P > .05$). In addition, it was found that having a partner to share with, helps to overcome psychological issues which explains low level of burnout among married individuals (Franco *et al.*, 2011, pp. 13–16).

High level of burnout is associated with advanced level of education due to high expectations of those who hold high levels of education which will cause distress if expectations are not achieved (Maslach, Schaufeli and Leiter, 2001, p. 410). Similar to this, a systematic review revealed that the degree of masters in nursing is a risk factor of burnout $P=0.003$ (Chuang *et al.*, 2016, p. 8). However the majority of participants [51(85%)] in the current study held diploma in nursing qualification which may explain the lack of association ($P > 0.05$) between the level of education and level of burnout in the current study

5.3.2 Personal risk factors

The findings of this study revealed that most of (36.7%) of the participants had a plan to leave within the next 12 months and this was statistically significant ($P < 0.05$). This may be due to that high prevalence of burnout [37 (61.7%)] found among the participants in the current study and various studies revealed that burnout causes turnover among nurses (McHugh and Ma, 2014, p. 8; Qiao *et al.*, 2016, pp. 2–3). This assertion is similar to the findings of many studies (Maslach, Jackson and Leiter, 1997, p. 200; Embriaco *et al.*, 2007, p. 487; Liu *et al.*, 2013, p. 6; Alexander, 2014, p. 16; Teixeira *et al.*, 2014, p. 11). Another study revealed that 50% of ICU nurses who had high level of burnout had a plan to leave their job (Embriaco *et al.*, 2007, p. 487).

This study found high level of burnout among the participants who have 1-5 living children. However the current study did not find any association between the level of burnout and number of living children $P > 0.05$. Conversely, in a systematic review having children was found to be associated with burnout $P=0.03$ (Chuang *et al.*, 2016, p. 8). In addition, another study found that married people and those who have children had high level of Emotional Exhaustion and this was significant $P=0.01$ but not no significant on DP and PA (Al-Turki, 2010, p. 314). However other studies revealed that the level of burnout is higher among single workers and workers without children than married and workers who have children this being because those who have children are emotionally mature and they get emotional support from the family member and even single people are prone to high level of burnout than divorced ones (Maslach, Schaufeli and Leiter, 2001, p. 410; Teixeira *et al.*, 2014, p. 4).

The findings of this current study showed that most of participants (21.7%) perceived current health status as poor, only 16.7% perceived current quality of life it as poor. In addition, only 15% of the participants perceived current quality of life as poor and 46.7% of the participants perceived poor work satisfaction. Moreover, EE was not found to be associated with work satisfaction, current perception health status ($P>0.05$). In contrast, EE was found to be associated with perception of current quality of life ($P<0.05$). Furthermore, DP was not found to be associated with current health status perception, current quality of life perception and perception of work satisfaction. PA was also not found to be associated with work satisfaction, current quality of life perception but it was significantly associated current health status perception ($P<0.05$).

Thirty percent of participants who had high level of EE perceived poor current quality of life only 6.7 % with EE perceived it as good ($P = 0.026$). This means that participants who perceived poor current quality of life experienced high EE. In this study, the majority of participant [29 (48.3%)] had high EE. Moreover, this study shows that 30.8 % of participants had high level of PA and perceived good current health status ($P=0.048$) which means those who perceived current health status as good experienced high PA. Whereas 19.4% had low PA and perceived health status as poor. Similar to this, another study found EE to correlate negatively with health status perception ($P=-0.325$, $\alpha=0.004$) and quality of life perception EE ($P=-0.382$, $\alpha=0.001$) and DP ($P=-0.157$, $\alpha=0.001$). However PA correlated positively with quality of life ($P=0.0012$, $\alpha=0.003$), which shows that participants who perceived good quality of life experienced low level EE, DP and high PA (Beyene, 2015, p. 34). Moreover, Beyene (2015, p.34) found that participants who perceived good job satisfaction showed low EE and High PA

5.3.3 Work related characteristics

The findings of this study revealed that the majority of participants 56(93.3%) reported the presence of high workload and it was associated with high level of burnout $P<0.05$. This is similar to the findings of other studies which found high workload to be a predictor of burnout (Aiken *et al.*, 2011, pp. 1050–1051; Toh, Ang and Devi, 2012, p. 129; Tucker *et al.*, 2012, p. 283; McHugh and Ma, 2014, pp. 5–7; Wakim, 2014, pp. 635–637).

In the current study participants expressed their high workload to be related to the context in which they were working in. This is similar to other factors found to be related to high workload among nurses. Those factors are working many hours in a week, long shifts, inadequate nurses

staffing and job demands (Alexander, 2014, pp. 4–5). Contrary to this, a study conducted in ICU on prevalence of burnout and risk factors did not find correlation between burnout and workload (that included working hours per week ($P = 0.330$), number of night shifts per month ($P = 0.113$) and no compensation for overtime) (Teixeira *et al.*, 2014, p. 4). Furthermore, participants in this current study expressed the unpredictability of their work situation to expose them to burnout.

A systematic review on determinants and prevalence of burnout among emergency nurses evidenced that emergency nurses constantly keep receiving patient and being alert to receive a patient in life threatening condition expose them to burnout (Adriaenssens, De Gucht and Maes, 2014, p. 2). In addition, Krausz and Koslowsky cited in Chuang *et al.* (2016, p. 11) stated that the unpredictability of the job of nurses is due to shortage of staff, rotating shifts which increase the workload thus burnout. Moreover, the presence of high workload was expressed by participants in the current study and it was related to the context they were working in. However, another study conducted in ICU on burnout prevalence and risk factors did not find any correlation between burnout and workload (Teixeira *et al.*, 2014, p. 4).

The findings of this study did not reveal burnout to be associated with working experience, duty shift and area of work $P > 0.05$. This may be to the fact that there are other factors causing them to burn out that were not explored in this current study like personality trait that was found to be the best predictor of burnout by (Chuang *et al.*, 2016, p. 11). However, a systematic review among ICU professionals work experience in ICU, work environment and type of shift were associated with burnout ($P < 0.05$) (Chuang *et al.*, 2016, pp. 9–10). A study conducted among Iranian nurses showed that higher level of burnout was found among less experienced (1-5 years) nurses than more experienced (worked more than 20 years) $P = 0.05$ (Khodadadizadeh, Ravari and Jafarinaveh, 2012). The reason is that the experienced in the career are stable, become skilled and competent and have become more familiar with the profession though they know how to deal with stressors faced at work (Myhren, Ekeberg and Stokland, 2013, p. 3).

A study on risk factors and prevalence of burnout in the nursing profession found emergency department, critical care unit and type of work shift to be predictors of EE ($P < 0.001$) (Canadas De-la Fuente *et al.*, 2014, p. 244). This is similar to the findings of others studies that revealed ICU (Chitura and Chitura, 2014, p. 440) and Emergency Department (Harkin and Melby, 2014, p. 155) to be more stressful work environments which make nurses working there to be prone to

high level of burnout than others. Similar to this, in this current study, the participants view their work environment as different from others which exposes them to high level of burnout.

5.4. Perceived effects of burnout on patients care

Based on the shared view from nurses who participated in the focus group discussion in the current study, the following effects of burnout on patients were identified: not doing the work properly, delayed care, and missed care, occurrence of errors, development of potential complications and patient death. Similar to this, a study found that burnout among nurses affects patient quality of care, cause errors in their work, patient dissatisfaction with service given and increase of patient mortality rate (Alexander, 2014, p. 18). Moreover, a study conducted in China on prevalence and factors associated with occupational burnout among HIV/AIDS healthcare workers found that burnout among nurses will cause patients to lose trust towards nurses providing care, decrease of compliance with health care including poor quality and quantity services of delivered (Qiao *et al.*, 2016). However the current study did not find this. Moreover, patients get affected because burnout among nurses causes disengagement, job dissatisfaction, job turnover, absenteeism (Maslach, Jackson and Leiter, 1997, p. 193) and inappropriate provision of care (Harolds *et al.*, 2015, p. 1) and all of these affect patients quality of care.

5.5 Perceived management of burnout

This study revealed the following strategies to manage burnout among nurses: work recommended hours, increase the number of staff, provide adequate material and equipment, nurse-patient ratio to be 1:1, training of nurses and provide relaxation time for nurses. Similar to this, a study evidenced that improving conditions in the working environment such as, adequate staffing, materials and good leadership style, will prevent burnout thus promote good patient conditions (Andolhe *et al.*, 2015, p. 61). Furthermore, another study revealed that high level of burnout among ICU nurses is due to working many hours and relaxation exercises that include yoga of 8 hours and mindfulness were revealed to be effective in the management of burnout among ICU nurses (Mehrabi *et al.*, 2012, p. 8).

5.6 Limitations to the study

The researcher advises the readers to judge the study within the context of the limitations encountered as will be presented in this section.

A small sample size that limits the generalization of the findings.

Sampling was not random therefore sampling bias may have occurred. With all the limitations listed, the researcher attempted to mitigate by triangulating the approaches and methodology. It was hoped that the weakness of one method would be lifted up by the strength of the other.

Burnout was not fully assessed among ICU and Emergency Department nurses in this context because this study was conducted only in one hospital therefore further research using a large sample size is recommended.

5.7 Conclusion

According to this study, the participants in the area of the study have high level of burnout 61.7% which predominantly related to high workload and intention to leave the job within the next 12 months. High level of burnout is reflected in high scores on Emotional Exhaustion (EE) and Depersonalization (DP) and low Personal Accomplishment (PA). The majority of the participants [29(48.3%)] experienced high EE; twenty five percent had high DP and 30 (50%) low PA. Burnout among nurses affects patient care by compromising quality of care and causing potential complications to patients. Strategies to manage burnout among nurses were identified and these will contribute to the promotion of good patient care.

5.8 Recommendations

The recommendations will be addressed on different areas namely practice, management and policy makers, education and research

Recommendations into practice:

- ❖ Accommodate in work schedule debriefing sessions in ICU and Emergency Department for nurses to exchange issues being faced in their work and test shared solutions.
- ❖ Organize staff development programs for nurses to get opportunity for self advancement.
- ❖ Offer relaxation time for nurses like organize excursions

Recommendations to management and policy makers

- ❖ Develop programs that promote staff development like debriefing sessions and career counseling to prevent burnout.
- ❖ Adequate staffing by determination of norms and standards for staffing in ICU and Emergency Department based on best practice or benchmarking in other countries

- ❖ Promote a conducive work environment that promote staff retention and reduce high workload of nurses working in ICU and Emergency Department by recognizing extra hours worked, offer refreshments and time of break at work, provide necessary equipment and materials.

Recommendation in nursing education

Develop a curriculum in nursing education that accommodates a subject on burnout among nurses to ensure caring for the care givers.

Recommendation to research

Based on the findings of this study, further research is recommended to be undertaken using a country wide sample and take necessary steps based on a larger sample.

5.9 Conclusion of the chapter

In summary this chapter discussed the findings of this study referring on the conceptual framework that guided this study. Moreover, study limitations, conclusions and recommendations to practice, management and policy, education and research were described in this section.

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APPENDICES

APPENDIX 1: INFORMATION SHEET- ENGLISH VERSION

I am a student at the University of Rwanda, College of Medicine and Health Sciences. I am a student in the masters program. One of the requirements in this program is to do research. My study is about the level of burnout and perceived effects on patients care among nurses working in ICU and Emergency Department at University Teaching Hospital of Kigali. The main aim of this study is to determine the level of burnout and perceived prevalence and effects of burnout on patients care among nurses working in ICU and Emergency Department at University Teaching Hospital of Kigali .My research involves 60 sampled nurses filling a questionnaire.

You are being asked to take part in this study and to respond genuinely. This questionnaire focuses on assessing your feelings related to your work .Your cooperation and willingness is greatly helpful in identifying problems related to burnout in your work area and proposing solutions. Your name will not be written in this questionnaire and will never be used in connection with any information you provided. This questionnaire may take 15 to 20 minutes to complete. There is no possible risk associated with participating in this study except the time spent for completing the questionnaire. All information given by you will be kept strictly confidential. Your participation is voluntary and you are not obligated to answer any question you do not wish to answer. If you feel discomfort with any of the questions, it is your right to drop it any time you want. If you have questions regarding this study or would like to be informed of the results after its completion, please feel free to contact the principal investigator.

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In the event of any problem or concerns/questions you may contact the researcher or the

CMHS/UR Research ethics Committee, Prof .Gahutu Jean Bosco

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If you are willing to participate in the study, please proceed to the consent form on the next page.

APPENDIX 2: CONSENT FORM- ENGLISH VERSION

In signing this document, I am giving my consent to participate in the study titled “ Burnout and perceived effects among nurses working in ICU and Emergency Department at University Teaching Hospital of Kigali”. I have been informed that the purpose of this study is to assess the level of burnout and perceived prevalence and effects of burnout on patient care among nurses in ICU and Emergency Department at University Teaching Hospital of Kigali. I have understood that participation in this study is entirely voluntarily. I have been told that my responses to the questions will not be given to anyone else and no reports of this study ever identify me in any way. I have also been informed that my participation or non-participation or my refusal to answer questions will have no effect on me. I understood that participation in this study does not involve risks. I understood that Cishahayo Umutoni Emeline is the contact person if I have questions about the study or about my rights as a study participant. The following is her contact address.

Address of principal investigator:

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Participant's signature and date: _____

APPENDIX 3: QUESTIONNAIRE- ENGLISH VERSION

University of Rwanda, College of Medicine and Health Sciences

Questionnaire prepared to collect data on nurses characteristics including sociodemographic characteristics, personal and job related factors of nurses working in ICU and Emergency Department.

PART I: NURSES' CHARACTERISTICS (PERSONAL INFORMATION).

Instruction: Please circle the number in front of the option you choose.

1. Sex: 1. Male 2. Female
2. Age: 1. 20-29 years 2. 30-39 years 3. 40-49 years 4. ≥ 50
years
3. Current marital status: 1. Single 2. Married 3. Divorced 4.
Widowed
4. Service area: 1. Emergency care unit 2. Intensive care unit
5. Service years in emergency or intensive care unit:
1. 2 years or less 2. 3-5 years 3. 6-10 years 4. 11-15 years 5. Greater
than 15 years
6. Current educational level: 1. Diploma nurse 2. Bachelor's nurse 3. Other

7. Are you currently pursuing any study: 1. Yes 2.No
8. Job title: 1. Bed side nurse 2. Unit manager 3. Other 4. Other

9. Current duty shift: 1. Day shift 2. Night shift 3. Both
10. Presence of work overload: 1. Yes 2. No
11. How do you perceive your current health status? 1. Poor 2. Fair
3. Good
12. How do you perceive your current quality of life? 1. Poor 2. Fair
3. Good
13. How do you perceive satisfaction with your work? 1. Poor 2. Fair 3.
Good
14. Do you have a plan to leave working at your current unit within the next 12 months?
1. Yes 2. No

15. Which of the following health problems have you experienced in relation to your work? (Circle all that apply) 1. Headache 2. Backache 3. Depression 4. Insomnia

5. Hypertension

6. Other _____ (mention here if not in the list)

15. Which one of the following medication or activities do you use to treat those health problems related to your work? (Circle all that apply)

1. Anxiolytics/sleeping pills 2. Analgesic 3. Smoking 4. Physical activity

5. Other _____ (mention here if not in the least)

16. How many living children do you have :

1.1 -5 children 2. More than 5 children 3. None

APPENDIX 3: Part II.MBI-HSS (Maslach Burnout Inventory –Human Service Survey)

APPENDIX 3 : PART .III. 1 CONSENT TO PARTICIPATE IN A FOCUS GROUP

The purpose of this focus group is to explore the perceived effects of burnout on patients care and perceived management of burnout. The information gathered in this focus group will be used to improve the quality of care by putting in place strategies to prevent burnout. The participation in the focus group is voluntary and you can withdraw at any time. The focus group discussion will be tape recorded with your permission and your answers will remain confidential and no names will appear in my study. In a focus group, all provided answers are of value. Different points of view are needed and I would like everyone to be involved. Within a group, mutual respect is important and every ones' idea must be respected. Everything discussed in a group should be kept confidential and people should speak one after another and raise up the hand before speaking.

I commit myself to participate and I accept provided conditions.

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Participant's signature and date: _____

Appendix 3: 2. FOCUS GROUP

INTRODUCTION

Thank you for participating in my focus group. I would like to hear your point on perceived effects of burnout on patients care and perceived management on burnout. You will make a group of 6 to 12 nurses, your responses will be kept confidential. The discussion will take between 30min -1 h1/2

APPENDIX 4: INTERVIEW GUIDE ON PERCEIVED EFFECTS ON PATIENTS CARE AND PERCEIVED MANAGEMENT

1. How would you rate burnout level among nurses working in the unit? Why do you think so?
2. How would compare burnout here and other units? Why? What do you think expose nurses to burnout here comparing to other units?
3. How do you think burnout of nurses will affect patients care?
4. How would you like this situation to be improved?
5. Is there something else you would like to add?

ANNEXE: French Version

1. FICHE D'INFORMATION - VERSION FRANÇAISE

Je suis étudiante à l'Université du Rwanda, au Collège de médecine et de sciences de la santé. Je suis un étudiant dans le programme de maîtrise. L'une des exigences de ce programme est de faire de la recherche. Mon étude porte sur le niveau de l'épuisement et les effets perçus sur les soins des patients parmi les infirmières travaillant dans les soins intensifs et le service des urgences à l'hôpital universitaire de Kigali. L'objectif principal de cette étude est de déterminer le niveau et les effets perçus d'épuisement professionnel sur les soins des patients parmi les infirmières travaillant dans les soins intensifs et le service des urgences à l'hôpital universitaire de Kigali. Ma recherche implique 60 infirmier(ères) sélectionnés pour remplir un questionnaire.

On vous demande de participer à cette étude et de répondre sincèrement. Ce questionnaire se concentre sur l'évaluation de vos sentiments liés à votre travail. Votre coopération et votre volonté est très utile pour identifier les problèmes liés à l'épuisement professionnel dans votre zone de travail et de proposer des solutions. Votre nom ne sera pas inscrit dans ce questionnaire et ne sera jamais utilisé en relation avec les informations que vous avez fournies. Ce questionnaire peut prendre entre 15 et 20 minutes. Il n'y a aucun risque associé à participer à cette étude, sauf le temps passé à remplir le questionnaire. Toutes les informations fournies par vous seront strictement confidentielles. Votre participation est volontaire et vous n'êtes pas obligé de répondre à une question que vous ne souhaitez pas répondre. Si vous ressentez de l'inconfort avec l'une des questions, il est de votre droit de le laisser tomber quand vous le souhaitez. Si vous avez des questions concernant cette étude ou si vous souhaitez être informé des résultats après son achèvement, n'hésitez pas à communiquer avec l'investigateur principal.

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Si vous souhaitez participer à l'étude, veuillez consulter le formulaire de consentement à la page suivante.

ANNEXE 2

2. FICHE DE CONSENTEMENT - VERSION FRANÇAISE

En signant ce document, je donne mon consentement à participer à l'étude intitulée «Le niveau de l'épuisement professionnel et les effets perçus aux soins des patients chez les infirmières travaillant en soins intensifs et les services d'urgence à l'Hôpital Universitaire de Kigali».

Je suis informé que le but de cette étude est de déterminer le niveau et les effets perçus d'épuisement professionnel sur les soins des patients parmi les infirmières travaillant dans les soins intensifs et le service des urgences à l'hôpital universitaire de Kigali. Je comprends que la participation à cette étude est entièrement volontaire.

On m'a dit que mon identité à ce questionnaire d'enquête ne sera pas donnée à quelqu'un d'autre et aucun rapport de cette étude jamais ne m'identifiera en aucune façon. On m'a également informé que ma participation ou non-participation ou mon refus de répondre à des questions n'auront aucun effet sur moi.

J'ai compris que la participation à cette étude ne comporte pas de risques. J'ai compris que Cishahayo Umutoni Emeline est la personne à contacter en cas de questions au sujet de l'étude ou sur mes droits en tant que participant à l'étude. Ce qui suit est son adresse de contact

Adresse du chercheur principal:

Cishahayo Umutoni Emeline

Téléphone portable: +250788865066/0722865363

E-mail: emelicis@yahoo.fr

Superviseurs:

1. Mrs.Nankundwa Evelyn: E-mail: nankeve@yahoo.fr; Tél: +250788528683

2. Mme Ruth Sego: E-mail: ruth.sego2000@gmail.com Tel: +0782333726

3. Prof. Busisiwe Rosemary Bhengu: E-mail :Bhengub2@ukzn.ac.za; +27836615563

En cas de problème, vous pouvez contacter le chercheur ou le Comité d'éthique de la recherche CMHS / UR, Prof. Gahutu Jean Bosco

Directeur de la recherche, de l'innovation et des études supérieures

E-mail: j.b.gahutu@ur.ac.rw, jbgahutu @ yahoo.com, gahutu @ hotmail.com

Tél: +250783340040

Date et signature du participant: _____

ANNEXE 3

QUESTIONNAIRE- FRANÇAIS

Université du Rwanda, Faculté de médecine et des sciences de la santé

Questionnaire préparé pour recueillir des données sur les caractéristiques des infirmières, y compris les caractéristiques sociodémographiques, les facteurs personnels et liés au travail des infirmières qui travaillent aux soins intensifs et aux urgences

PARTIE I: LES CARACTERISTIQUES DES INFIRMIERES/INFIRMIERS (RENSEIGNEMENTS PERSONNELS).

Instruction: S'il vous plaît encrer le numéro en face de l'option que vous choisissez.

1. Sexe: 1. Homme 2. Femme
2. Age: 1. 20-29 ans 2. 30-39 ans 3. 40-49 ans 4. \geq 50 ans
3. Etat civil actuel: 1. Célibataire 2. Marié 3. Divorcé 4. Veuf
4. Service : 1. Unité de soins d'urgence 2. Unité de soins intensifs
5. Ancienneté dans l'unité d'urgence ou de soins intensifs:
1. 2 ans ou moins 2. 3-5 ans 3. 6-10 ans 4. 11-15 ans 5. plus de 15 ans
6. Niveau d'études actuel: 1. infirmière A1 2. Infirmière A0 3. Autres

7. Vous n'étudiez pas à présent : 1. Oui 2.No
8. Titre/Fonction: 1. Infirmière soignant(e) 2. Chef de Service
3. Autre : _____
9. Actuel horaire de service: changement 1. Jour 2. Nuit 3. Tous les deux
10. Présence de surcharge du travail: 1. Oui 2. Non
11. Comment percevez-vous votre état de santé actuel? 1. Mauvais 2. Bien
3. très bien
12. Comment percevez-vous votre qualité de vie actuelle? 1. Mauvais 2. Bien 3. très bien
13. Comment percevez-vous la satisfaction de votre travail? 1. Mauvais 2. Bien 3. Très bien
14. Avez-vous un plan pour laisser travailler à votre unité actuelle dans les 12 prochains mois?
1. Oui 2. Non

15. Lequel des problèmes de santé suivants avez-vous vécu par rapport à votre travail?
(encercler toutes les causes) 1. Maux de tête 2. Douleur lombaire 3. Dépression

4. Insomnie

5. Hypertension

6. Autres _____ (mentionner ici si pas dans la liste)

15. Lequel des médicaments ou des activités suivantes utilisez-vous pour traiter les problèmes de santé liés à votre travail? (encercler toutes les cases)

1. Anxiolytiques / somnifères 2. Analgésique 3. Fumer 4. L'activité physique

5. Autres _____ (mentionner ici, sinon le moins)

16. Combien d'enfants vivant vous avez:

1.1 -5 enfants

2. Plus de 5 enfants

3. aucun enfant

Partie II.Le MBI-HSS

ANNEXE 3

PARTIE .III.

CONSENTEMENT A PARTICIPER A UN GROUPE DE DISCUSSION

Le but de ce groupe de discussion est d'explorer les effets perçus de l'épuisement professionnel sur les soins aux patients et le management perçus de l'épuisement professionnel. L'information recueillie dans ce groupe de discussion sera utilisée pour améliorer la qualité des soins en mettant en place des stratégies pour prévenir l'épuisement professionnel. La participation au groupe de discussion est volontaire et vous pouvez vous retirer à tout moment. La discussion de groupe sera enregistrée avec votre permission et vos réponses resteront confidentielles et aucun nom n'apparaîtra dans mon étude. Dans un groupe de discussion, toutes les réponses fournies sont utiles. Différents points de vue sont nécessaires et j'aimerais que tous soient impliqués. Au sein d'un groupe, le respect mutuel et obéir à l'idée de chacun sont important. Tout ce qui est discuté dans un groupe devrait être gardé confidentiel et les gens devraient parler l'un après l'autre et lever la main avant de parler.

Je m'engage à participer et j'accepte les conditions prévues.

Adresse du chercheur principal: Cishahayo UMUTONI Emeline

Téléphone portable: +250788865066/0733865066/0722865363

E-mail: emelicis@yahoo.fr

Superviseurs:

1. Mrs.Nankundwa Evelyn: Courriel: nankeve@yahoo.fr; Tél: +250788528683

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En cas de problème, vous pouvez contacter le chercheur ou le Comité d'éthique de la recherche CMHS / UR, Prof.GAHUTU Jean Bosco

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Tél: +250783340040

Date et signature du participant: _____

LE GROUPE DE DISCUSSION

INTRODUCTION

Merci de participer à mon groupe de discussion. J'aimerais connaître votre point de vue sur la prévalence perçue et les effets d'épuisement professionnel des infirmières sur les soins des patients. Vous ferez un groupe de 6 à 12 infirmières, vos réponses seront gardées confidentiellement. La discussion prendra entre 30min -1 h1 / 2.

GUIDE D'INTERVIEW LES EFFETS PERCUE SUR LES SOINS DES PATIENTS ET LA GESTION PERCUE D'ÉPUISEMENT PROFESSIONNEL

Comment évaluez-vous le niveau d'épuisement professionnel chez les infirmières travaillant dans l'unité (Soins Intensifs, Service des urgences)? Pourquoi pensez-vous ça?

Pensez-vous que vous avez plus d'épuisement professionnel ici que d'autres unités? Pourquoi?

Comment pensez-vous que l'épuisement des infirmières affectera les soins des patients?

Comment voulez-vous que cette situation soit améliorée

Y at-il autre chose que vous aimeriez ajouter?