Designing a Simulation Intervention to Reduce Stress among New Graduate Registered Nurses in the Intensive Care Units in Saudi Arabia: A Mixed Methods Design

Submitted by

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Abstract

Introduction: Health care professionals, including registered nurses are prone to stress, with new graduates experiencing high levels of stress in their graduate year. In Saudi Arabia many new graduates are expected to be placed in critical care units due to a range of contextual issues. These units are stressful; effective ways to assist these new graduates are required. Simulation learning is envisaged to be a novel strategy to overcome this issue. Reducing stress levels in new graduates assists them to transition to professional practice and has the potential to improve workforce demands by increasing retention. Thus, this research explored both stressors among new graduate registered nurses (RNs) in intensive care units (ICUs) and the potential use of a complex intervention using simulation to reduce these stress factors. For the purpose of achieving the aim of this study, the research was based in one hospital in Saudi Arabia, the King Saud Medical City- Riyadh (KSMC-R). It is also noteworthy that the complex intervention was designed and will be implemented and evaluated in future research.

Objective: This study aimed to design a simulation based learning exercise (SBLE) based on the specific stressors experienced by new graduate RNs working in the paediatric and adult ICUs at KSMC-R.

Methods: This research was based on an interventional mixed method design. The research involved the integration of three studies which incorporated both quantitative and qualitative approaches, whereby a sequential exploratory design was employed. Study 1: Survey of new graduate RNs in which 189 Saudi new graduate RNs were surveyed about their experiences of stress in their ICUs units using the Perceived Stress Scale (PSS) to measure the level of stress and the Expanded Nursing Stress Scale (ENSS) that measured the factors/frequency of stressors experienced by new graduate RNs in the ICUs. Study 2: Individual interviews of 10 new

graduate RNs further explored their experiences of stressors in ICUs. Study 3: a single group discussion with 5 nurse educators investigated the extent and type of educational support provided for new graduates and educators' views of and experience with simulation.

Results: The results from the three studies were integrated using complementarity and triangulation techniques. From the results a complex intervention based on SBLE was designed to potentially assist new graduates to better manage and overcome these stressors.

Conclusion: This research has contributed new knowledge regarding the level and nature of stressors that are experienced by Saudi new graduate RNs working in critical environments such as the ICUs. In addition the study offers a potential intervention to assist new graduates to deal with these stressors. The approach of using multiple data sources to inform the design of an SBLE has the potential to be used in other contexts.

Statement of Originality

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List of Acronyms

Glossary	
ADN	Associate Degree in Nursing
AACN	American Association of College of Nursing
ANA	American Nurses Association
ALS	Advanced life support
BLS	Basic life support
BSN	Bachelors Science of Nursing
BU	Burn Unit
CCU	Cardiac Care Unit
CCUs	Critical Care Units
CDSI	Central Department of Statistics and Information
CCNs	Critical Care Nurses
CPR	Cardio Pulmonary Resuscitation
CI	Confidence interval
CHSEH	Community Health Education & Simulation Center
DES	Debriefing Experience Scale
DMAC	Data Management and Analysis Centre
ENSS	Expanded Nurses Stress Scale?
ED	Emergency Departments
HREC	Human Research Ethics Committee
HUD	High Dependency Unit
HFS	High-Fidelity Simulation
ICU	Intensive Care Unit
IRB	Institutional Review Board
IIC-ICU	Infected and isolated Cases Intensive Care Unit

KSA	Kingdom of Saudi Arabia
KSMC-R	King Saud Medical City in Riyadh
KAMC-M	King Abdullah Medical City in Makkah
KKU-A	King Khalid University in Abha
KSU-R	King Saud University in Riyadh
HFSH	King Fahad specialist hospital
LFS	Low-Fidelity Simulation
MOH	Ministry of Health
MOE	Ministry of Education
MOHE	Ministry of Higher Education
MOEP	Ministry of Economy and Planning
M-ICU	Medical Intensive care unit
MSN	Master Science of Nursing
M	Mean
NCU	Neonatal Care Unit
NSS	Nurse Stress Scale
NRB	National Research Board
OB-ICU	Obstetric Gynecology
OHS	Occupational Health and Safety
PBUH	Peace be Upon Him
PSS	Perceived Stress Scale
PhD	Doctor of Philosophy
P-ICU	Paediatric Care Unit
%	Percentage
RCT	Randomised Control Trial
RNs	Registered Nurses
RAMHEC-R	Research Administration of the Minister of Health Ethics Committee

R-ICU	Respiratory- Intensive Care Unit
SCFHS	Saudi Commission for Health Specialties
SPSS	Statistical Package for Social Science
S-ICU	Surgical Intensive care unit
SD	Standard deviation
SBLE	Simulation-based learning exercise
SET	Simulation Effective tool
T-ICU	Trauma Intensive Care Unit
UOA	University of Adelaide
US	United States
USA	United States of America
UK	United Kingdom
V	Version
WHO	World Health Organization

CHAPTER 1

INTRODUCTION

1.1 Introduction

Since the 1950s, Saudi Arabia has relied on the recruitment of expatriate nurses in the healthcare sector, where they now forma large proportion of nursing staff in a number of health facilities. This is the result of a shortage of local nurses due to diverse social, cultural and educational factors in Saudi Arabia (Abu-Zinadah 2006; Miller-Rosser, Chapman & Francis 2006, 2009). Most of these expatriate nurses are employed from India, the Philippines, Malaysia, Australia, North America, the United Kingdom, South Africa and other Middle Eastern countries (Aboul-Enein 2002; Aldossary, While & Barriball 2008; Luna1998; Tumulty 2008). Many foreign workers have been attracted by the prospect of working in Saudi Arabia due to the employment benefits that are offered within the healthcare sector, primarily related to the high tax-free salaries and additional living benefits.

Although the employment of expatriates has resolved the shortage of nurses to some degree, a number of major concerns have arisen. For example, these nurses originate from professional and culturally diverse backgrounds, and most of them have limited knowledge of Middle Eastern cultures and religion (Aldossary, While & Barriball 2008; Abu-Zinadah 2006; Al Mutairet al. 2013; Tumulty 2001; Saudi Gazette 2013). There is also much variation in the standard of nursing care provided due to the different educational backgrounds of the multinational workforce (Alshahri 2002; Abu-Zinadah 2006; Miller-Rosser, Chapman &

Francis 2006, 2009).

To address these issues the Saudi Arabian government has moved to limit the recruitment of expatriate nurses in Saudi Arabia. The government has implemented a policy known as Saudisation (Ramady 2013). Saudisation refers to 'A policy that promotes Saudi nationals to be educated and/or trained in all areas of employment to replace expatriate workers' (Miller-Rosser, Chapman & Francis 2006, p. 4). Under this program, Saudi nationals are given high priority over foreign workers in terms of recruitment in both the healthcare sector and the educational system. Saudi nationals are provided with extensive training to meet and satisfy the needs of the healthcare system (Omer 2005). A number of other strategies have been implemented to further increase the number of local nurses. These strategies include an increase in the number of nursing colleges, providing higher quality education and training programs, and increasing the remuneration rates (Mufti 2000). As a result of this program, there has been a rapid increase in the number of Saudi nurses, increasing from a mere nine per cent of nurses employed in Saudi Arabia in 1996 to 52 per cent in 2011 (Ministry of Health [MOH] 2011).

Table 1 illustrates recent changes in the Kingdom's nursing workforce, showing a further increase in the number of Saudi nurses from 52 per cent in 2011 to 60.2 per cent 2015 and a corresponding decrease in the number of non-Saudi nurses, from 48 per cent in 2011 to 39.8 per cent in 2015 (Central Department of Statistics and Information [CDSI] 2015).

Table 1: Nationality of nurses in MOH by nationality (1432-1436)-(2011-2015)

Gregorian Year (Hijri, Islamic Year)	2011 (1432)	2012 (1433)	2013 (1434)	2014 (1435)	2015 (1436)
Saudi n (%)	40,437 (52.0)	45,875 (55.3)	48,495 (57.8)	54,785 (59.6)	57,358 (60.2)
Non-Saudi n (%)	37,509 (48.0)	37,073 (44.7)	35,367 (42.2)	37,069 (40.4)	38,021 (39.8)
Total (%)	77,946 (100)	82,948 (100)	83,8621 (100)	91,854 (100)	95,370 (100)

This growth in numbers of Saudi nurses employed has resulted in an inexperienced workforce with many new graduate nurses in hospitals. On entering the workforce, most of these new graduate nurses; lack experience, have received different levels of education, many experience language barrier problems, are exposed to heavy workloads, experience low levels of confidence and face gender issues (Gerrish 2000; Winter-Collins & McDaniel 2000). These issues are the primary causes of stress among new graduate nurses and will be discussed in detail in the following chapters of this thesis.

This chapter introduces a study that explores stress in a cohort of registered nurses and uses this data to design an intervention that could potentially reduce stress among new nursing graduates working in intensive care units (ICUs) in Saudi Arabia. It provides an overview of the main issues the project addresses. The purpose of the study is stated and the research questions are outlined. The significance of the study and research structure are discussed. The chapter concludes with an overview of the thesis structure.

1.2 Context of the Study

This research examines the nursing workforce in Saudi Arabia and the major causes of stress in new graduate RNs working in paediatric and adult ICUs in a major tertiary hospital KSMC-

R in Saudi Arabia. This issue is compounded by large numbers of inexperienced nurses now working in Saudi Arabia. Although the issue is contemporary, it is rooted in the historical development of the nursing workforce in Saudi Arabia. This study incorporates a SBLE as an intervention to overcome the stressors found among new graduate RNs.

1.2.1 Stress in Nurses

Stress is an inevitable factor of daily life and is often associated with being exposed to significant amounts of pressure, specifically in the working environment. The United States National Institute of Occupational Safety and Health has defined job stress as a harmful physical and emotional response when the employee's skills, resources and needs cannot fulfil the job requirements (Brunero et al. 2006; Nakasis & Ouzouni 2006; Nedd 2006; Welker-Hood 2006). One group greatly affected by work-related stress is healthcare professionals, with nurses being most affected by stress due to the nature of the job, the irregular shift work and the level of responsibility (Aiken et al. 2001; Amr et al. 2011; Andal 2006; Arikan, Koksal & Gokce 2007; Bhatia et al. 2010; Lambert V, Lambert C & Misae 2004; Lambert V, Lambert C & Ito 2004; Lambert V & Lambert C 2008; Lambert et al. 2004; Lasebikan & Oyeunde 2012). Many factors that cause stress among nurses include workplace relationships, communication between nurses and physicians, overload in tasks and responsibilities, conflicts among staff members, constant career development requirements, a disorganised professional organisational structure, and insufficient experience, workforce shortages and the occasional erratic working conditions (Chen-chung, Samuels & Alexander 2003; Wu et al. 2007).

Over the years, numerous studies have focused on studying the detrimental effects of workplace stress which not only affects nurses' physical and mental wellbeing but also their productivity and work efficiency (Gray-Toft & Anderson 1981, 1985; Kawano 2008; Vahey et al. 2004). Consequently, patient care may become compromised, resulting in patient

dissatisfaction and increased mortality rates (Vahey et al. 2004).

Despite these numerous studies, the issue of stress among nurses remains a challenge leading to a decrease in student enrolment in nursing programs as well as low retention rates of nurses within the first year of employment (Abu-AlRub & Al-Zaru 2008; Loquist 2002). In Saudi Arabia, an estimated 50 per cent of new graduates RNs leave their nursing careers within the first three years following their graduation (MOH 2006).

It is pivotal that strategies are developed to reduce the job stress among nurses in order to improve of the quality of patient care (Al-Sibai 2013).

1.2.2 Stress in New Graduate RNs

New graduate RNs are typically categorised as those within the first year of work following completion of a Diploma or Bachelor's Degree in Nursing (Hardin & Kaplow 2005; Kendall-Gallagher & Blegen 2009).These new graduate nurses that experience the most challenges in the workplace, specifically at the start of their nursing career. As new graduate RNs, they are assigned tasks and responsibilities based on their respective levels of qualification and experience and in line with their expected efficiency and competency in the workplace. Dealing with the transition from nursing school into the working environment can, however, be challenging and stressful due to the increased working responsibilities and erratic working schedules (Beecroft, Dorey & Wenten 2008; Chang & Hancock 2003; Duchscher 2001, 2003a, 2003b, 2007, 2008, 2009).

New graduate RNs are inexperienced and thus more susceptible to errors than other more qualified and experienced nurses (Murray & Simko 2008). Due to the shortage of nurses, particularly of experienced nurses, most hospitals in Saudi Arabia have an imbalance between

the number of experienced and inexperienced nurses and the number of patients requiring care in various units. This significant imbalance is a major issue in hospitals, specifically in ICUs and during emergency situations (Abu-Zinadah 2006). As a consequence, new graduate registered nurses are required to carry out complicated procedures and tasks that are beyond their capabilities, leading to stress. This situation causes new graduate RNs to experience a wave of negative emotions such as anxiety, depression, insomnia, and feelings of inadequacy, grief and cumulative loss. This often causes a lack of concentration, apathy and lack of motivation in the workplace, increasing their susceptibility to making errors and affecting the efficiency of patient care. Many of these new graduate RNs experience a rapid decline in their emotional state, mainly due to the increase in workload and the fear of making a mistake, which directly causes a decline in confidence levels (Casey et al. 2004; Gerrish 2000; Holland 1999; Moustaka & Constantinidis 2010; Wieland et al. 2007; Winter-Collins & McDaniel 2000).

To summarise, the three general stressors that are generally experienced by nursing students and then is followed through during the transition of becoming new graduate RNs are '*the fear of doing harm to patients', 'the sense of not belonging to the nursing team' and 'not being fully competent on registration'* (Shaban, Khater & Akhu-Zaheya 2012, p. 204; Chesser-Smyth 2005; Evans & Kelly 2004; Sheu et al. 2002; Sprengel & Job 2004; Timmins & Kaliszer 2002). These stressors arise mostly during the first year of employment due to the gap reported between nursing education and their actual workplace practice (Johnson & Cleary 2006).

1.2.3 Stress in New Graduate RNs in ICUs

Among all the areas in acute hospitals, ICUs are one of the most stressful. Nurses find working in ICUs particularly stressful. Patients are mostly in life-threatening situations, workloads are

very heavy and nurses are required to work with technological devices of high complexity. Nurses are often required to work with inexperienced peers and novice doctors and they may have insufficient training (Cronqvist et al. 2001; Su et al. 2009).

Multitasking is a key skill required, among others, as most patients are in critical conditions and require constant attention and care (Casey et al. 2004; Clark & Holmes 2007; Jackson 2005; Newton & McKenna 2007). Thus, despite being new to the workforce, new graduate RNs are expected to be competent and able to handle such situations, as well as being sufficiently skilled to operate the highly technological devices that are usually only present in ICUs. Such devices include mechanical ventilators, cardiac monitors, infusion pumps, pacemakers and others (Cronqvist et al. 2001; Encyclopaedia of Surgery 2008). Although nurses are usually provided with training prior to using these devices, it must be recognised that the capacity to understand and the proficiency of one nurse differs from the other (Cronqvist et al. 2001). This is an additional factor that contributes to stress among RNs, especially in ICUs.

There are a number of factors that contribute towards job stress among new graduate RNs in ICUs. Building a positive relationship between co-workers is a key factor in reducing stress in ICUs (Casey et al. 2004; Halfer & Graf 2006; Roberts, Jones & Lynn 2004). In addition, gaining the support of senior nurses and the other colleagues facilitates adaptation and provides comfort in anew working environment (Hayes et al. 2006). Studies have shown, however, that many new graduate RNs struggle with socialising with their co-workers and thus are unable to obtain assistance when required (Charnley 1999; Farnell & Dawson 2006; Healy & McKay 2000; LeSergenta & Haney 2005; Thomason 2006). Other factors include the insufficient resources within the ICUs to help them cope with the heavy workload (AbuAl-Rub 2006; Alotaibi 2008; Currid 2008; Greene2005; El-Jardali et al. 2008; Halfer & Graf

2006). Limited time management and management skills were other causes of stress among new graduate nurses working in ICUs (McKenna & Green 2004; Quinn 2000). New graduate RNs are exposed to challenging situations that require multiple tasks to be carried out simultaneously; for example, dealing with more than In Saudi Arabia, there are also additional issues related to language and gender. With gender segregation enforced even in the educational system, most female new graduate nurses are often reluctant to provide care for male patients and vice versa. The issue is often unavoidable because of the shortage of nurses in hospitals, but this creates stress among the new graduate RNs as they are not used to dealing with such situations that conflict with the Islamic law (Winter & Chevrier 2008). In terms of language, most hospitals in Saudi Arabia require new graduate RNs to have a good command of the English language as this is the language used within the healthcare system. The English language is now commonly used for teaching in Saudi colleges and universities; however, most new graduate RNs still have poor English language skills and this creates tensions with non-Arabic-speaking co-workers.

These issues make it apparent that the ICU is a highly emotionally and intellectually challenging environment. New graduates, in particular, suffer considerable stress in this environment thus requiring innovative strategies are required to address this issue.

1.2.4 Simulation

The various challenges and hurdles endured by new graduate nurses just as they enter the workforce are predominantly due to the distinct gap between their nursing education and clinical practice (Burns & Poster 2008; Duchscher 2008; Ellerton & Gregor 2003; Gallagher 2004; Landers 2000). The transition into practice is known to be challenging as the new graduate RNs are exposed to unfamiliar situations in the ICUs for which they lack coping skills (Steen 2011). Thus, it is important that these issues are recognised and adequate support

and guidance is provided as a step towards overcoming the problem.

Among the many methods used in the nursing sector to overcome various challenges of clinical practice, simulation is one method that has been well-developed and is considered as an efficient and effective training technique to improve clinical skills and increase confidence levels (Alinier 2007a, 2007b, 2007c, 2008b, 2011; Alinier et al. 2006). Simulation has been used in various new graduate RNs orientation programs and continuing healthcare education programs as an alternative to clinical practice to assist in teaching and to enhance learning experiences (Bearnson & Wilker 2005; Beyea & Kobokovich 2004; Johnson 2013; Nunn 2004; Rauen 2004). This can include the use of a virtual ICU and re-creation of a clinical environment to provide an opportunity for participants to practise and strengthen practical skills prior to being exposed to actual ICU scenarios (Rosen 2004). These training exercise encourage participants to discuss their experiences based on different perspectives, tasks and concepts and provides an opportunity to practice real procedures multiple times, with minimal risk (Brinkert 2010; Goble 1982; Mahon & Nicotera 2011; Nehring & Lashley 2009).

Thus, it is apparent that simulation has many uses and advantages, specifically in the healthcare sector, as a way to provide a route towards an effective and efficient teaching method to develop excellent clinical and practical skills, as well as to create opportunities for critical thinking (Engum & Jeffties 2012). Most importantly, it improves communication skills, and assists nurses in building their self-esteem and confidence levels (Jeffries 2005; Messmer 2009).

Thus, this research study aimed to design a simulation exercise based on the specific stressors experienced by new graduate RNs working in the ICUs in a major tertiary hospital in Saudi Arabia.

1.3 Purpose of the Study

The purpose of this study was to determine the factors that cause stressors among new graduate RNs working in the paediatric and adult ICUs at KSMC-R in a major tertiary hospital in Saudi Arabia. ICUs in Saudi Arabia and, based on those specific factors, to then design an SBLE that would reduce stress in these nurses. The need for this study was based on the considerable demand for qualified nurses to work in ICUs and the resultant influx of new graduate RNs working in this extremely challenging and stressful environment.

Working in ICUs within the first year of employment contributes to job dissatisfaction and eventually a low retention rate (Chang & Daly 2001; Chang & Hancock 2003). Although there have been numerous studies exploring related issues, the number of studies on this topic in Saudi Arabia is limited.

1.3.1 Aims of the Study

This study aimed to investigate both the level of stress and the stressors impacting on new graduate RNs in the ICUs and the potential use simulation to reduce stress in one hospital in Saudi Arabia. In addition, to design a simulation exercise based on the specific stressors experienced by new graduate RNs working in paediatric and adult ICUs in a major tertiary hospital in Saudi Arabia. The study also aimed at studying the potential use of SBLE as a strategy to reduce these identified stressors.

1.3.2 Statement of the Research Question

To achieve these aims, the study will answer the specific questions:

1. What are the factors contributing to stressors among new graduate RNs in ICUs?

2. What is the level of stress experienced by new graduate RNs in ICUs?

3. What impact does stress have on new graduate RNs working in the ICUs?

4. What strategies are currently used in ICUs at a major tertiary hospital, the KSMC-R in Saudi Arabia, to directly or indirectly reduce stress?

5. What is the current use of simulation in the ICU environment including the following:
   a) Experience of nurse educators?
   b) Available facilities?
   c) Access to simulation exercises by new graduates?

6. What role can simulation play in reducing stress among new graduates RNs in the ICUs?

1.3.3 Significance of the Study

This project is practically relevant at this time because of the rapid turnover of nurses, which results in staff shortages, often causing other hospital staff to feel stressed and unable to fulfil their duties accordingly. Most graduate nurses face many challenges during their first year of work. This time period is the most stressful period and it is therefore critical that the challenges are dealt with effectively. It is hoped that this research will contribute positively to nursing education practice in the ICUs at King Saud Medical City in Riyadh (KSMC-R) hospitals in Saudi Arabia.

1.4 Structure of the Thesis

This thesis is structured into seven chapters, as described below.

Chapter 1: The chapter provides the context for the study by describing aspects of the Saudi Arabian nursing workforce and stress among new graduate nurses working in Saudi ICUs and proposes a possible strategy to assist with this problem. The purpose of the research, research questions and key concepts are defined.

Chapter 2: This chapter provides an in-depth review of the geographical location of the study, and the religion and the culture with which it is associated. Based on a thorough review of the literature, the relevant aspects of the nursing workforce in Saudi Arabia are described and the reasons that the research was confined to the ICUs are established.

Chapter 3: This chapter set out to describe the overall research design and the chosen methodology for this study, namely an interventional mixed methods design. The reason for using a mixed methods approach with a sequential exploratory design is discussed. This chapter also discusses the research methods used and provides a detailed explanation of the quantitative and qualitative components of this research and how they are integrated to design the simulation intervention.

Chapter 4: This chapter comprehensively presents the analysis from the three studies, namely self-administered survey, individual interviews with new graduate nurses and group discussion with nurse educators.

Chapter 5: This chapter integrates the finding from the results obtained from the three studies. The integration of data is then used as a basis for developing and designing an SBLE

intervention to reduce stress among new graduate nurses working in ICUs.

Chapter 6: This chapter discusses the study's major findings of the individual studies and evaluates the design of an intervention using a SBLE. The chapter concludes by examining the strengths and limitations of this study.

Chapter 7: This chapter provides a discussion on the implication of the study findings, the conceptual framework, and proposes recommendations and suggestions for future research.

CHAPTER 2
BACKGROUND AND LITERATURE REVIEW

2.1 Introduction

This chapter provides an extensive background and literature review with a focus on specific areas closely related to the subject of the study. It will provide a general overview of the history of Saudi Arabia, its geographical location, the significance of culture to the lifestyle of the people, language and gender concerns, and the healthcare system. This will be followed by a comprehensive literature review on stress among nurses from various backgrounds, particularly among new graduate RNs. The chapter concludes with an examination of the literature addressing simulation as an intervention.

Literature searches were conducted primarily using electronic databases that included PubMed, Embase, Scopus, CINAHL, Cochrane library, Science Direct, Web of Science, and Nursing and Allied Health Science. The literature review was limited to the English and Arabic languages and to literature published and unpublished from the early1990s to 2018. This search used combinations of terms, including and not limited to ‘stress’, ‘new graduate nurses,’ ‘intensive care units’, ‘shortage of nurses’, ‘turnover’, ‘nurses’, ‘newly qualified nurses’, ‘critical care units’, ‘emergency department’, ‘nurse educators’, ‘education’, ‘Saudi nurses’, ‘shortage of staff’ and ‘stressors’.

2.2 Saudi Arabia

To orientate the reader to the context in which this research was conducted, a briefdescription of Saudi Arabia will now be presented. The Kingdom of Saudi Arabia (KSA), a country rich with Islamic culture and religious values, was founded by King Abdul-Aziz bin Saud (1882–1953) (Mufti 2000). The Al Saud's are monarchical rulers and govern according to by Islamic principles (Al-Rasheed 2013; Blanchard 2010; Mufti 2000). Saudi Arabia is the homeland of Islam and the Arab people. It is also known as the 'Land of the Two Holy Mosques'. Islam, the world's second-largest religion, was founded centuries ago by the Prophet Mohammed, peace be upon him (PBUH), and the holy Qur'an (the holy book of Islam) is written in the Arabic language. The Arabian Peninsula is the centre of the holy lands of Islam and houses the two main Islamic cities, 'Makkah al Mukarrama' (Mecca) and 'Al Madina Al Mnoura',where Islam was founded by Muhammad (PBUH) (Mufti 2000).

Islam has a significant impact on the lifestyle and culture of the people of Saudi Arabia (Vogel 2000). The Islamic calendar begun in 622, the year of the hegira based on Muhammad's flight from Makkah to Madinah. Islam has been the official religion of KSA since it was founded and it defines the key values and the moral laws of the country.

The KSA is located in the Middle East and lies on the Arabian Peninsula in the south-west of Asia (Central Department of Statistics and Information [CDSI] 2015). The home of many ancient civilisations and the cradle of divine messages, it is the largest of all Arab countries, occupying 80 per cent of the Arabian Peninsula and considered the 14th largest state in the world (Ministry of Economy and Planning [MOEP] 2013). Saudi Arabia shares borders with eight neighbouring countries: Jordan, Iraq, Kuwait, Qatar, the United Arab Emirates, the Sultanate of Oman, Yemen, and Bahrain. It has two water frontiers, the Red Sea in the west and the Arabian Gulf in the east (see Figure 1). Saudi Arabia occupies an area of 2,218,000

million square kilometres (CDSI 2015; MOEP 2013).

Figure 1: Map of Saudi Arabia

Riyadh is the capital city of the KSA, located centrally in the region of Najd. The Kingdom is divided into four other regions; the east, south and northern regions and the western region also known as Hijaz. The Hijaz region is located along the Red Sea where the holy cities of Makkah and Madinah, the port city of Jeddah and the summer capital of Taif are located (CDSI 2015).

The main challenge in Saudi Arabia is the rapid growth of its population (Gallagher & Searle 1985; Mufti 2000; Walston, Al-Omar & Al-Mutari 2010).Today, Saudi Arabia is home to more than 31,521,418 people, with males comprising 55 per cent of the total population while 45 per cent of the population are females (CDSI 2015).

2.2.1 Religion

Islam is the official religion in Saudi Arabia and the other Arabic nations (Mufti 2000). Islam has greatly influenced the culture and political views, and its policies and politics are ingrained within the Saudi leaders and the people in Saudi Arabia (Crang 2013; Gallagher & Searle 1985; Mufti 2000). The language of the Quran (Arabic) is the official language. Most of the population are Muslims with a small minority being non-Muslims, mainly comprising foreign workers. The 'Shariah' law as outlined in the Quran Islamic Jurisprudence, the 'Hadeeth' sayings of the Prophet Muhammad (PBUH) and the 'Sunnah' are the basis of the Saudi Arabia's constitution and governance (Achoui 2006; Mufti 2000). Shariah law promotes the authority and legitimacy of the Saudi state, and the main assembly is the 'Shura council', an Islamic Shariah ideological body run by Muslim scholars (Achoui 2006; Mufti 2000). This council is similar to the Western parliaments whereby the law is proposed by the Council of Ministers and changes are based on an Islamic perspective (Majlis Al Shura 2013).

Islam and Islamic roles and principles permeate every aspect of Saudi daily life and every other aspect of the Saudi Arabian state (Al-Saggaf & Williamson 2009; Majlis Al Shura 2013; Mufti 2000). Saudi law is based on the belief that the Islam religion is the last of the great monotheistic and Abrahamic religions sent to the people through the Prophet Mohammed (PBUH), who was called to become a prophet in the western Arabian city of Makkah (Al-Saggaf 2004).

2.2.2 Culture

Culture is defined as systems of shared beliefs, behaviours, values, customs and symbols that are passed on to succeeding generations (Daar & Khitamy 2001; Tschentscher 1992). Saudi culture has had approximately1400 years of Islamic influence and its traditional culture has

had a significant impact on neighbouring countries around the world. Despite this, Saudi Arabia still retains its uniqueness without compromising its rich culture, values and beliefs (Long 2005; Searle & Gallagher 1983; Vogel 2000). The culture in Saudi Arabia is a distinct blend of Arabic tribal traditions and customs within an Islamic worldview that shapes the mindset and behaviour of the Saudi people (Bjerke & Al-Meer 1993; Crang 2013).

Honour and shame are strong personal traits of the people in Saudi Arabia (Bjerke & Al-Meer 1993). Honour relates to one's personal reputation, respect and values and is held in high regard in society (Johnson & Lipsett-Rivera 1998; Maisel & Shoup 2009). If the honour of an individual is blemished, the individual and family will both fall into shame. It is believed that shame is caused predominantly through behavioural misconduct (Gannon & Pillai 2009).

One of the main personal characteristics of the Saudi people is their shyness, which refers to a behavioural trait manifested by exercising modesty and decency, especially in terms of personal appearance and the appropriate use of language. Shyness is more commonly exhibited in women than in men, especially unmarried women. It is typically demonstrated by modest dressing and being reserved in character (Al-Saggaf & Williamson 2009).

Communication in the Saudi culture is often indirect. For example, the use of verbal and non-verbal communication to convey messages is common, where the actual meaning of a message is embedded in the sociocultural context (Samovar, Porter & McDaniel 2009). Direct interaction between people is often avoided. Conflicts are usually handled with the practice of passive resistance using third-party interactions or using private discussions (Schein 2010). Due to cultural restrictions, most conflicts or disagreements are usually solved amicably to avoid public embarrassment and shame (Samovar, Porter & McDaniel 2009).

2.2.3 Language

Because Arabic is the official language of Saudi Arabia, itis commonly used in all written and spoken modes of communication; however, the use of English language is now becoming more commonplace. Previously, it was mainly the expatriates and government officials who used English (El-Gilany & Al-Wehady 2001; Mahfouz 2006). English has become a necessary mode of communication between expatriate nurses who are not proficient in Arabic and their co-workers. This has led to the language of healthcare being officially determined to be English, but many Saudi nationals are still unable to speak, read and write in English. This causes a language barrier, particularly between hospital staff and patients that affects the quality of patient care provided (Aboul-Enein & Ahmed 2006; Agger-Gupta, Wataki & Wang 2001; El-Gilany& Al-Wehady 2001; Mahfouz 2006).

This language barrier has been partly overcome by the use of translators and interpreters.

2.2.4 Gender

Religion, tradition and culture have greatly influenced the social attitudes and behaviours of the people in Saudi Arabia. Gender segregation is an important aspect of the Arabic culture and has been legally imposed by Shariah law through government structures (Aldossary, While & Barriball 2008; Bjerke & Al-Meer 1993). In most countries, men and women are differentiated based on their roles in society. Although this is similar in Saudi Arabia, the Islamic religion enforces stricter boundaries. For example, men and women must be segregated in public areas and close interaction between the genders is strictly prohibited. Men and women have distinct duties and responsibilities; for example, women are permitted to have positions in universities, banks, social work and in the healthcare professions but are not allowed to drive private vehicles and ride bicycles in public places. Saudi women must depend on a close male

relative such as a father, brother or a husband to transport them around (Abo-Shaiqah 2013; Aldossary, While & Barriball 2008). Conversely, men are responsible for shouldering the family's financial burdens and are usually the main financial contributors, although their spouses may provide additional financial support to the household. It is noteworthy that Saudi women are allowed to build their own businesses, invest their money, and own property (Aldossary, While & Barriball 2008; Kadri et al. 2000).

Despite the above, it is frowned upon for women to carry out duties that require contact with men, potentially jeopardising their marital status and their honour in society (Al-Ahmadi 2013; Abo-Shaiqah 2013). Examples of such duties and responsibilities include having to interact with male medical staff and patients, and doing night-shift work with male staff and patients. Such gender segregation does, however, restrict women's career growth (El-Gilany & Al-Wehady 2001; Maben et al. 2010; Mobaraki & Soderfeldt 2010). Overall, even in most recent times, Saudi society is still struggling to accept working women but their efforts are being made to change this perception.

Thus, due to the abovementioned, there has been a challenge to attract female Saudis to work in the nursing field. However, in recent years, there has been a change in mindset with more young females entering the profession. Thus, in line with these rapid changes and the sudden issues of new nurses experiencing various stressors, there has been a need to fill this research gap of identifying the key stressors that are causing stress amongst the new graduate RNs and potential ways to overcome this.

2.3 Nursing in Saudi Arabia

The history of nursing can be traced back to antiquity. Fourteen centuries ago, at the time of the Prophet Mohammed (PBUH), Koaiba Bint Said Al-Asalmiya wassaid to be the first female

nurse working with the Muslim armies through the jihad (holy Islamic wars). She was better known as Rufaida Al-Asalmiya. Rufaida in Arabic simply means 'the female who delivers help and provides for others' (Almalki, Fitzgerald & Clark 2011). Rufaida's duties included providing tents to care for the wounded, setting up medical stations for first aid, emergency care and long-term healing, caring for the disabled and training fellow nurses (Al-Osami 1994, 2004; Kasule 2003; Lovering 2008; Mebrouk 2008; Mitchell 2009). After the war, she was responsible for healthcare, preventative care and promoting a healthy environment (Miller 2007; Miller-Rosser, Chapman & Francis 2006). With support from her fellow nurses, Rufaida begun the first Islamic clinic in Al Madina Al Mnoura (Al-Osaimi 2004; Mitchell 2009). She was granted permission by the Prophet Mohammad himself (PBUH) to care for and treat the Muslim casualties, regardless of their gender (Al-Osaimi 2004; Jradi, Zaidan & Shehri 2013).

The establishment of contemporary nursing and nursing education in the KSA is accredited to Lutfiyyah al-Khateebinthe 1940s. Her primary objective was to make the nursing profession acceptable for Saudi women. Lutfiyyah al-Khateeb, along with Samira Islam who was a pharmacology professor and an advocate of nursing, strived to develop an adequate and conducive Islamic nursing environment for patients and healthcare staff (Miller-Rosser, Chapman & Francis 2006).

2.3.1 Nurse Education

Since 1932, nurse education has been subject to much change with efforts to improve the quality and level of nurse education in Saudi Arabia within a context dominated by gender, culture and religion. The principle separate schools based on gender and this principle has been maintained throughout the education system, including education for health professionals in Saudi Arabia (Ministry of Health [MOE] 2001; Ministry of Education [MOE] 2002, 2004,

2005, 2008).

The different levels of nursing education typically include a 2-year Diploma, a 3-year Associate Diploma Degree, and a Bachelor Degree in Nursing (Abu-Zinadah 2004; Abu-Zinadah 2006; Kendall-Gallagher & Blegen 2009). Prior to 1976, the majority of nurses in Saudi Arabia only held a Diploma of Nursing qualification. More generally, other health institutes were establishing intermediate school (equivalent to Year 9) certificate-level education for both men and women (Al Thagafi 2006; Aldossary et al. 2008; Alhusaini 2006; Al Thagafi 2006; Alshmemri 2014). In1976 when the Ministry of Higher Education(MOHE) introduced the Bachelor of Science in Nursing followed by a Master's of Science in Nursing in 1987and a Doctor of Philosophy (PhD) scholarship program in 1996 (Abu-Zinadah 2004, 2006; Abu-Zinadah & Banjar 2006; Almalki et al. 2011b; Alshmemri 2014; Mebrouk 2008; Saudi Commission for Health Specialties [SCFHS] 2007; Tumulty 2001).

Besides the MOHE, other government agencies and private sector organisations affiliated with universities begin developed their own nursing programs. Many health institutes and nursing colleges were rapidly being established (Abu-Zinadah 2006; Alamri et al. 2006; Alhusaini 2006). To ensure that these and other health professional education programs were of sufficient quality, the Saudi Commission for Health Specialties, a professional and scientific body, was established in 1993(Almalki, Fitzgerald & Clark 2011; SCHS 2013; Tumulty 2001).

Although there were obvious efforts to develop the nursing education system in Saudi Arabia, it was a challenge to keep up with the demand for nurse graduates. Thus, the government began supporting privately based health education institutions to increase the number of graduates who could be accredited as professional nurses upon completing their bachelor's degree (Abu-Zinadah 2004; Al-Freihi 2009). These private institutions introduced various training courses,

comprehensive nursing examinations, organised more practical placements and provided students with additional supervision in order to increase the overall numbers of graduate nurses (Almalki et al. 2011a).

2.3.2 Nursing Workforce in Saudi Arabia

There have been two enduring issues in regard to the nursing workforce in Saudi Arabia, maintaining sufficient numbers of nurses and having an acceptable gender balance. There has been a high dependency on expatriate nurses who have comprised a significant percentage of the nursing workforce in Saudi Arabia for some time (Al-Ahmadi 2006; Aldossary, While & Barriball 2008; MOH 2008; Tumulty 2008; World Health Organization [WHO] 2006).

Due to the shortage of nurses, often nurses of one gender may need to care for the opposite sex, thereby resulting in direct interaction. To abide by and respect the law that established the importance of gender segregation there have been considerable efforts made to encourage more males to enter the nursing profession. This was intended to overcome the issue of female nurses having to have any close contact with male patients (MOH 2009, 2012).

The annual supply of Saudi nursing graduates has been insufficient to meeting the demands of the expanding healthcare services. This is due to factors such as the poor image of the nursing profession, lack of awareness about nursing opportunities, the high workload and long and irregular working hours, low remuneration, restricted professional growth and the lack of professional support (Abo-Shaiqah2013; Abu-Zinadah 2006; Al-Ahmadi 2013; Al-Sa'd 2007).

Table 2 illustrates the percentages of nurses working for the MOH in the KSA within the various divisions and based on nationality and gender. Based on these figures, the nurses employed throughout the Saudi MOH were 40.1 percent male and 59.9 percent female, with

non-Saudi nurses being 3.9 per cent male and 96.1 per cent females. The entire MOH is divided into three sectors: which includes the 'Headquarter and Regional Health Directorates, the MOH hospitals, and the MOH health centres' (CDSI 2015). Within the Headquarter and Regional Health Directorates division, the Saudi nurses are 80.8 per cent males and 19.2 per cent females, whereas the non-Saudi nurses are 11.4 per cent males and 88.6 per cent females. Within the MOH hospitals, 37.4 per cent of Saudi nurses are males and 62.6 per cent are females, while non-Saudi nurses are only 4.1 per cent males and 95.9 per cent females. Within MOH health centres, 39.4 per cent of Saudi nurses are males and 60.6 per cent are females, with only 0.8 per cent non-Saudi male nurses and 99.2 per cent female nurses (CDSI2015). The remaining statistics are described in detail in Table 2.

In summary, of the 60.1 per cent Saudi nurses and 39.9 per cent non-Saudi nurses working in the entire MOH, 74.3 per cent were females and only 25.7 per cent were males. From these figures, it was is apparent that there was is a significantly higher number of male nurses working in the Headquarter and Regional Health Directorates, and within the MOH hospitals and health centres there were is a higher number of female nurses.

Table 2: Total number of nurses in MOH sectors by gender and nationality from 1436H

Sector	Gender	Saudi n (%)	Non-Saudi n (%)	Total n	Saudi %	Non-Saudi %	Total %
MOH All	Male	22, 994 (40.1)	1478 (3.9)	24, 472	94.0	6.0	25.7
	Female	34, 364 (59.9)	36, 543 (96.1)	70 ,907	48.5	51.5	74.3
	Total	57, 358	38, 021	95, 379	60.1	39.9	
MOH Headquarter & Regional Health Directorates	Male	2280 (80.8)	14 (11.4)	2294	99.4	0.6	77.9
	Female	543 (19.2)	109 (88.6)	652	83.3	16.7	22.1
	Total	2823	123	2946	95.8	4.2	
MOH Hospitals	Male	14, 407 (37.4)	1442 (4.1)	15, 849	90.9	9.1	21.5
	Female	24, 137 (62.6)	33, 702 (95.9)	57, 839	41.7	58.3	78.5
	Total	38, 544	35, 144	73, 688	52.3	47.7	
MOH Health Centers	Male	6307 (39.4)	22 (0.8)	6329	99.7	0.3	33.8
	Female	9684 (60.6)	2732 (99.2)	12, 416	78.0	22.0	66.2
	Total	15,991	2754	18, 745	85.3	14.7	

2.3.3 Transition to Practice

While it is expected to be a time of excitement and euphoria, the transition from being a student to a professional nurse is considered one of the most stressful periods of a nursing career (Oermann & Garvin 2002; Steen et al. 2011). Particularly during the first 6 months of work it is common to experience a plethora of emotions such as feelings of doubt, uncertainty and being overwhelmed (Holland 1999; Johnson & Cleary 2006; Wieland et al. 2007). Difficulties during this transition period are in part due to the disparity between the ideological teachings in the classroom and the reality of clinical nursing practice (Evans, Boxer & Sanber 2008; Steen et al. 2011; Wheeler, Cross & Anthony 2000).

Besides dealing with role adjustment, new graduate RNs must deal with the increase in workload, the language barrier with co-workers, sexual and cultural discrimination, and having to deal with patients and their families (Duchscher 2009; Fathi, Nasae & Thiangchanya 2010;

Fleischer et al. 2009; Gauntlett & Laws 2008; Manojlovich, Antonakos & Ronis 2009; O'Hagan et al. 2014). Over time, these challenges have a significant physical and emotional impact and can affect competency in the workplace (American Nurses Association [ANA] 2000; McVicar 2003; Steen et al. 2011).

The literature describes this transition as a period of intense socialisation and adaption to the culture of the clinical world (Doelling, Levesque & Clifford 2010; Schipper 2011). This adaptation can include portraying appropriate behaviour to abide by the culturally prescribed rules and standards of the clinical environment (Doelling, Levesque & Clifford 2010; Schipper 2011). Also, during this period of transition whereby the new graduate RNs learn the actual role of a registered nurse, which generally includes appropriate patient assessments, diagnosis, interventions and the use of the various types of medical equipment. This transition period is often thought to be the most critical stage of one's nursing career, when one must accumulate the basic knowledge and build on this knowledge over time. New nurses may have different ways of dealing with this transition period, and this often depends on how predisposed they are to accepting change and dealing with the various responsibilities (Schipper 2011; Steen et al. 2011).

Having said that, the literature shows that a significant number of new graduate RNs are unable to adapt to this drastic change and the associated challenges, which leads to high attrition rates, not only in Saudi Arabia but also in many other countries. A rapid turnover rate is also frequently observed and is said to be related to insufficient exposure to clinical practice to obtain an appropriate level of confidence (Duchscher 2008, 2009).

2.3.4 Educational Support for New Graduates RNs

The term 'new' graduate RNs is used for those in their first year of employment. Studies suggest that adapting to a new job can take approximately 6–10 months and ideally, there should be complete adjustments to familiarity with the new environment after this time (Louis 1980; Saks & Ashforth 2000). New graduate RNs experience significant challenges during this transition period (Beecroft, Dorey & Wenten 2008; Duchscher 2001; Schipper 2011; Steen et al. 2011). As result, the majority of new graduate nurses take an average of 12 months to adjust and adapt to their new working environment, and to feel comfortable and confident practising independently (Casey et al. 2004).

Globally, numerous strategies and interventions have been implemented to facilitate the transition for new graduate RNs. In many cases new graduates RNs are able to undertake transition programs with various titles, such as: orientation programs (Duchscher 2008; Johnstone, Kanitsaki & Currie 2008; Marcum & West 2004; Romyn et al. 2009; Young, Stuenkel & Bawel-Brinkley 2008), residency programs (Goode & Williams 2004; Sharif & Masoumi

2005) and nurse internships (Beecroft, Kunzman & Krozek 2001; Beecroft et al. 2006). Within these programs, specific strategies include supervised clinical rotations, additional classroom learning and preceptorship or mentoring activities (McCarthy & Murphy 2008). Although these approaches have had some success, the lack of consistency and appropriate supervision mean that many of the new graduate nurses to still experience challenges, leaving them feeling frustrated and stressed (Baxter 2010; Lalani & Dias 2011; Levett-Jones & Fitzgerald 2005).

In terms of providing adequate educational support, most hospitals in Saudi Arabia have made a range of programs available for new graduates RNs to boost their confidence and competence, strengthen professional adjustment, and lengthen their stay in the nursing

workforce. However, the success rates of these programs are still rather unclear due to limited research in the area (Almalki, Fitzgerald & Clark 2011).

Nurse educators play a pivotal role in terms of providing the required educational support to the new graduates RNs. Their varied responsibilities and complex roles include being accountable for organising transition programs and delivering specific interventions to new graduates RNs to allow them to cope with the transition into clinical practice (Conway & Elwin 2007). It is noteworthy that many of the nurse educators who conduct transition programs are expatriates and thus would have expectations that are relative to training and experiences based in different parts of the world. Because graduate nurses RNs come from diverse educational backgrounds and have different levels of clinical experience, they tend to face many challenges related to cultural limitations and language barriers and this makes it stressful to cope and deal with these high expectations (Conway & Elwin 2007; Johnson & Puglia 2012).

The extent of educational support needed often differs from one graduate nurse RNs to another. Studies have established that the amount of support needed is highly dependent on where graduates completed their undergraduate program, the level of qualification (some with a diploma, others with a bachelor's degree), amount and type of clinical experience, and the quality of their programs (Kendall-Gallagher & Blegen 2009; Murray & Simko 2008).

In summary, it is noteworthy that the stated goal of transition programs in hospitals is to help graduate nurses to cope with and adapt to the working environment and the many challenges that come with it (Duchscher 2009; Fathi, Nasae & Thiangchanya 2010; Fleischer et al. 2009; Steen et al. 2011). In Saudi Arabia, the need for more efficient and effective programs has increased in line with the rapid changes to the nursing workforce, which include larger numbers of new graduate RNs and, in particular, the increase in the number of nurses working in ICUs.

2.4 Stress in Nurses

Stress can be defined in many different ways, depending on the discipline and the different perspectives and views on the subject (Vokic & Bogdanic 2007). In general, levels of stress are dependent on the exposure to a particular environment, situations that cause negative emotions, and also interactions with others (Glazer & Gyurak 2008; Gong & Buus 2011). Whether an interaction with others is stressful depends on how a person manages this interaction, and whether it is within their capabilities and capacity (Atkinson 1993; Lazarus & Folkman 1984).

Stress among nurses is often related to physical and emotional reactions in response to the demands of the job exceeding their capabilities and resources (Brunero et al. 2006; Nakasis & Ouzouni 2008; Nedd 2006).Nursing has been categorised as one of the most stressful occupations due to the demanding nature of the nursing profession, role conflict and ambiguity, disorganised organisational structures, lack of career development opportunities, and cultural and gender discrimination, all of which often result in illnesses and other emotional and psychological trauma (Al-Hosis, Mersal & Keshk 2013; Almalki, FitzGerald & Clark 2012;

Bhatia et al. 2010; El-Jardali et al. 2009; Flinkman et al. 2008; Gates, Gillespie & Succop 2011; Kamal et al. 2012; Lamadah & Sayed 2008; Mehta & Singh 2015; Zakari, Al Khamis & Hamadi 2010).

With the educational support provided in hospitals, there is often an assumption is that the nurses will cope with the working environment in any way they can. This is in terms of duties, responsibilities and patient care, thus ensuring patient care is maintained at a level deemed to be beyond satisfactory at all times (Kawano 2008). Although it is apparent that job stress has

had negative effects on the local nurses in Saudi Arabia, there has been limited research on ways to overcome this issue. It is pivotal that strategies are derived to reduce the job stress among nurses for the overall improvement of the quality of patient care (Al-Sibai 2013).

2.4.1 Intention to Leave

As previously discussed, many graduate RNs find it challenging to deal with the transition into clinical practice. When unable to cope and adapt to the new working environment, there is often an intention to leave the workforce, which eventually leads to high attrition rates in the nursing field. Studies have shown that the main factor that prompts the intention to leave among new graduate nurses is work pressure (Flinkman, Leino-Kilpi & Salantera 2010); for example, North America suffered a 33–61 per cent turnover of nurses who were in the first year of nursing practice (Bowles & Candela 2005). Although there has been an influx in the number of new graduate RNs, the high turnover rate is a major problem in many hospitals and this disrupts the patient–nurse ratio, thus affecting the quality of patient care (Chen 2013; El-Jardali et al. 2009). Studies have established that approximately 50 per cent of new Saudi graduate RNs show an indication of wanting to leave the workforce due to social and professional issues as compared to only 9 per cent of nurses in European countries (Alboliteeh 2015; Abu-Zinadah; 2006; Heinen et al. 2013).

Although there is a distinct difference in the number of nurses with an intention to leave the workforce globally and in Saudi Arabia, it is apparent that there is a need to improve the recruitment of graduate RNs and maintain a high retention rate in the nursing field (Buchan & Calman 2004). It is therefore important that appropriate strategies are derived to avoid new graduate RNs having this intention to leave. Plausible strategies could include salary increments relative to the high workloads, redesigning the job scope to improve working environments, and addressing the need to adjusting working shifts (Chen 2013).

2.4.2 Stress in New Graduate RNs in the ICUs

Intensive care units are classified as one of the most stressful working environments. There is a high turnover rate of new graduate RNs in ICUs and this has been said to be due to the many stressors that arise from working in such a busy and erratic environment (Buchan & Calman 2004; Duchscher 2008; Lampe, Stratton & Welch 2011; Su et al. 2009; Winter-Collins & McDaniel 2000). Studies have established a plethora of common work-related stressors experienced by new graduate nurses working in ICUs that primarily revolve around workload, role ambiguity due to inefficiency within the hospital administration, conflicts with peers, and high expectations with regards to career development (Abu-Al Rub 2006; Alotaibi 2008; Chen-chung, Samuels & Alexander 2003; Fukuda et al. 2008; Wu et al. 2007; Zaghloul 2008).

From these common stressors that have been observed, it is apparent that stress among new graduate RNs working in ICUs can be narrowed down to two key points, hierarchy and duties and responsibilities to the patients. Hierarchy issues often arise during disputes with superiors or other co-workers with new graduate nurses often feeling that they are provided with

insufficient support, which leaves them feeling incompetent in the job and cause their confidence to suffer (Abu-Al-Rub 2006; Alotaibi 2008; Currid 2008; Delvaux et al. 2004; El-Jardali et al. 2008; Escot et al. 2001). In addition to hierarchical issues, duties and responsibilities are another common stressor among new graduate nurses. This is mostly due to the complexity of care that patients require in the ICU, along with the use of complicated and highly technological equipment, the intense workload, and having to deal with dying patients and demanding relatives.

Other studies state that staff shortages in ICUs, specifically during peak hours, is another key

stressor faced by new graduate RNs as they are then expected to take on additional responsibilities beyond their capabilities (Janiszewski & Goodin 2003). This may include having to perform numerous tasks despite being fairly new in the role and lacking the experience to efficiently multitask (Cronqvist et al. 2001; Ekedahl & Wengstrom 2007; Loquist 2002; Nedd 2006).

The relationship between new graduate nurses and other staff has also been identified as a key stressor in ICUs (Rosenstein & O'Daniel 2005). Conflicts with physicians have been rated as one of the most commonly occurring issues for new nurses, which then leads to another key stressor as result of communication difficulties (Casey et al. 2004). New graduate RNs often feel that they have been provided with minimal support from their superiors and are often left feeling challenged as they find it difficult to communicate with physicians. Communication breakdowns are common when dealing with superiors. Most of the time new graduate RNs RNs feel that their voices are unheard or ignored by physicians and nurse managers and this worsens the issue (Erlen & Sereika 1997; Rosenstein 2002; Suzuki et al. 2004).

Adding to these problems, the increasing number of new graduate nurses working in ICUs with limited work experience and poor competency also exacerbates the problem leading to a significant impact on the quality of the service and care provided in ICUs (McCarthy, Tyrrell & Cronin 2002; McCarthy, Tyrrell & Lehane 2007; McGowan 2001). The situation usually worsens when the demand exceeds the supply (Kennedy 1999). This is the situation in Saudi Arabia and consequently ICUs are highly dependent on expatriate nurses (Al-Ahmadi 2006; Aldossary, While & Barriball 2008; MOH 2008; Tumulty 2008; WHO 2006).

Thus, with the wide use of simulation in a variety of context, it is envisaged that the potential use of simulation intervention could overcome this issue of assists the new graduate RNs with coping with these stressors that they are exposed to.

2.5 Simulation

Simulation can be defined as *"Simulation is a technique—not a technology—to replace or amplify real experiences with guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner"* (Gaba 2004, p.1). In healthcare education, specifically medical and nursing education, simulation is used to prepare clinicians for the clinical environment (Alinier 2011; Kakora-Shiner 2009). Simulation has been successful in building confidence levels among healthcare professionals, minimising the occurrence of medical errors, facilitating critical thinking, and building communication skills between co-workers and others (Bradshaw & Merriman 2008; Edwards, Throndson & Girardin 2012; Hamill 1995; McCallum 2007; Medley & Horne 2005; Jun, Jacobson & Swisher 1999). Most importantly, simulation training has been widely used to prepare participants to be able to identify problems and situations of crisis, as well as to build their problem-solving skills (Morgan et al. 2006). Simulation has been used in the past to address the issue of communication difficulties, specifically between patients and nurses and among nurses themselves (Edwards, Throndson & Girardin 2012; Moore et al. 2013).

2.6.1 Simulation Use Within Health Care Education

Simulation has been used for decades in the health care education. The first manikin-type simulator was used to teach and practise the cardiopulmonary resuscitation (CPR) (Nelson 2003). Since then, the use of manikins has been an effective and efficient method specifically to train physicians and nurses in basic life support (BLS) and advanced life support (ALS).

Simulators are typically categorised as low-fidelity, medium-fidelity and high-fidelity

simulators (Al-Elq 2010; Seropian et al. 2004; Maran & Glavin 2003). Low–fidelity simulators or 'task trainer' are basic simulators that partly mimic reality the least and are used to teach basic skills and procedures, for example the intravenous insertion arm and the Resusci-Anne. Moderate fidelity simulators are used for interventions that involve more complex procedures. Moderate fidelity simulators show a greater resemblance to reality specifically with subtle sounds and features such as pulse rate, heart beat rhythm and respiratory rate. An example of a moderate fidelity simulator is the "Harvey" cardiology simulator.

High fidelity not only refers to the implementation of high technology, for example, manikins, but also the realistic nature of the scenario which is the key criteria. High fidelity simulation very closely resembles a real-life scenario whereby computer software is used to control the movements and physical signs of the manikins so that they can breathe and respond during interventions. This enables students to be able to distinguish between normal and abnormal patient conditions (Wagner, Bear & Sander 2009). High-fidelity manikin simulators are particularly suited for disciplines such as anaesthetist training, pharmacology and physiology education (Morgan et al. 2006).

Examples of high fidelity simulators include the METI Human Patient Simulator (HPS) and the 'Noelle' obstetric simulator, which are model driven and instructor driven respectively. In the past decade, high-fidelity simulation has led to an increase in the use of simulation training, particularly in ICUs, EDs, paramedic training, and maternity and paediatric settings. Where experiential learning would carry a high risk of patient harm, simulation educational techniques eliminate that risk and are a more effective method of training (Eppich, Adler & McGaghie 2006; Lammers et al. 2009). Furthermore, simulation training provides a safe environment for the learner to practise and reduce the chance of error, thereby improving the quality of care for patients (Okuda et al. 2009). According to Beyea and Kobokovich (2004),

simulation provides an excellent opportunity for learners to receive exposure to a variety of clinical situations that require decision-making and management, without any negative consequences or mismanagement that may lead to real threats to patient care.

Patient safety and the prevention of medical error are primary goals of healthcare organisations (Morgan et al. 2006). Reducing stress among healthcare practitioners can also help to reduce medical and nursing errors (Beaubien & Baker 2004; Ziv A, Ben-David & Ziv M 2005). Simulation training, using advanced patient simulators, has been shown to improve diagnostic, resuscitation and technical skills among physicians and nurses. In critical care areas, increased stress can directly and indirectly affect the staff.

New graduates RNs experience stress due to communication barriers, needing to be competent and confident, and being unable to contribute to teamwork due to lack of experience (Morgan et al. 2006). Simulation has been used to improve communication and technical skills in other areas and thus has great potential to reduce stress among new graduate RNs. Therefore, in this study, the researcher will be exploring the use of simulation with specifically designed SBLE mimicking real-life situations to reduce stress among new graduate RNs.

2.6.2 Uses and Advantages of Simulation

The value of simulation is that it can mimic the real world but in an environment that is safe for the participant and will not harm patients (Morgan et al. 2006). Many organisations have used simulation as an alternative to clinical experience to assess clinical competency and efficiency among new graduate RNs (Bearnson & Wilker 2005; Beyea & Kobokovich 2004; Nunn 2004; Rauen 2004).

In the medical and nursing education sector, low to high technology and low to high fidelity are typically used in all combinations to create scenarios, depending on the outcome envisaged. As previously mentioned, fidelity in simulation reflects the ability to mimic real situations. For example, high-fidelity manikins can be of assistance by accurately reproducing patient physiology (Morgan et al. 2006). It is noteworthy, however, that most of the simulation techniques used in undergraduate and early postgraduate healthcare professional development are often high fidelity but use low technology for the ease of teaching purposes, but these are able to provide sufficient information and skill training (Bradly 2006). For example, the use of anatomical models, role-playing, games, standardised patients and virtual reality (Nehring & Lashley 2009). Although the use of high fidelity enables educators to mimic reality more closely, there is value in using both high and low fidelity simulation scenarios (Brady et al. 2006; Hravnak, Beach & Tuite 2007; Nagle et al. 2009).

Another advantage of using simulation is the incorporation of role-playing. Role-playing includes the re-creation of a clinical environment, creating dialogues between students portraying the nurse and the patient, and discussing student experiences (Brinkert 2010; Goble 1982; Mahon & Nicotera 2011). Role-playing is used by nurse educators in a variety of settings enabling discussions of tasks and concepts, as well as providing an opportunity for students to practise real procedures multiple times with minimal risk (Nehring & Lashley 2009). Usually, the protocol of a role-play in a training session includes the formation of a virtual ICU using recorded scenarios, a debriefing based on the recorded scenarios, and a discussion of both technical and non-technical skills that are scenario-specific (Rosen 2004).

Thus, simulation is considered to be advantageous, specifically in the nursing and medical sector. It can facilitate effective and efficient teaching methods, foster the development of excellent clinical and practical skills, provide opportunities for critical thinking and finally, and most importantly, provide an easy method to assess the clinical competency of graduate

nurses (Engum & Jeffties 2012). Additionally, it is also effective in improving communication skills, and building self-esteem and confidence among nurses prior to them being exposed to actual patient care (Jeffries 2005; Messmer 2009).It is noteworthy that emotional and stress responses are less likely to be the focus of the simulation (Al-Elq 2010; Maran & Glavin 2003;Ypinazar & Margolis 2006).

2.6.3 Disadvantages of Simulation

In addition to the many advantages of simulation, as discussed above, there are also a number of disadvantages and drawbacks that should be highlighted.

The major disadvantage of the use of simulation is the high cost involved. Although the technique exhibits high success rates, its use on a regular basis can incur a high expense (Baker et al. 2008; Jones & Hegge 2008). Fidelity is costly in terms of equipment and in personnel (simulated patients, facilitators etc.), as well as for scenario development (many trials may be needed to ensure a scenario works and to get it just right) (Department of Health 2011; Jeffries & Rogers 2007; Parker & Myrick 2009). Another major disadvantage is that the requirement for highly skilled facilitators are required not only to facilitate the process but also ease the students into accepting the validity of the technique. Most students are unprepared and take time to adapt to new techniques, which causes errors and reduced competence even with already established technique (Community Health Education and Simulation Centre [CHSEH] 2012).

2.7 Summary

The literature review provided the researcher with a better understanding of the extent of research done globally to date that related to this research. The literature review collated

information on the sources and consequences of stress among new graduate nurses in ICUs, information about the support provided by nurse educators, and the potential to use simulation to help to reduce stress among new graduates RNs. This has provided a pathway for the researcher to determine the most appropriate data collection instruments for the study.

From this comprehensive literature review, it is apparent that although there has been limited research done on exploring stress among new graduate RNs working in ICUs in Saudi Arabia in particular, the literature does provide an overview of related issues that are significant to this study. The literature review also showed that simulation has been used to address a number of issues related to nurses in other jurisdictions, thereby suggesting the potential for its use in this context.

Thus, to address this research gap, this study investigated the stressors experienced by new graduate RNs working in ICUs in KSA and the use of intervention techniques to minimise and eliminate these stressors to achieve high-quality patient care. This review has shown the importance of identifying key stressors so that strategies can be developed to assist these new graduate RNs to adapt to and cope with their working environment as a way to increase the retention rate of graduate RNs working in the ICUs.

CHAPTER 3 RESEARCH DESIGN

3.1 Introduction

The aim of this research was to investigate stress and its causes among new graduate RNs working in the ICUs at KSMC-R and to design an intervention that could potentially reduce stress or at least allow the graduate RNs to cope better with this stressful environment. Although there has been research into stress in new graduate RNs, there has been little in the context of Saudi Arabia and specifically in ICUs. This issue has been exacerbated because of the increasing numbers of new graduate nurses assigned to work in ICUs, one of the most stressful environments in a hospital.

A mixed methods research design including an intervention was chosen for this study as it enabled the researcher to address the research questions based on the perspectives of new graduate RNs and nurse educators. This chapter discusses the mixed methods design and then describes the methods used for each study and the integration that resulted in the development of a complex intervention using a SBLE.

3.2 Mixed Methods Research

Mixed methods studies have been widely used within the healthcare sector mainly due to the complexity and intricate issues that surface within the sector. Thus, using more than one approach within a minimal duration of time through a mixed methods design is favourable while ensuring study rigour (Plano Clark 2010).

Mixed methods research aims to draw out inferences from more than one approach, usually combining quantitative and qualitative elements. The process involves the collection, analysis and integration of data at one or more stages of a study to compare, validate or triangulate the findings to develop a complementary picture (Bryman 2004; Creswell et al. 2012; Creswell & Plano Clark 2007; 2011; Morgan 2007; Onwuegbuzie & Leech 2005; Ostlund et al. 2011; Plano Clark 2010; Tashakkori & Teddlie 2004, 2010).

The sequence of the data collection is dependent on the nature of the research question. Data can be collected sequentially (one set followed by another) or concurrently (where all data is collected simultaneously) (Kroll et al. 2005). However, it is noteworthy that the data that receives priority might depend on the nature of the study. For example, in an exploratory study the qualitative elements are often prioritized, in contrast to an explanatory study (Andrew & Halcomb 2009).

Given the paucity of recent literature relating to the Saudi Arabian new graduate nursing workforce, it was anticipated that a self-administered survey, the quantitative aspect of the study, would provide the necessary overview of the major stressors experienced by the new graduate RNs. This was followed by collection of qualitative data through individual interviews with new graduate RNs, which provided a comprehensive understanding of the factors contributing to stress among the new graduates. A group discussion with nurse educators then provided insight into the educational support currently being provided to the new graduate RNs working in the ICUs and explored the feasibility of using simulation as an intervention to alleviate stress. Data from both these approaches were then integrated to provide an in-depth understanding of the experiences and the extent of challenges endured bythese new graduate RNs. In turn, these findings were used to design a trial SBLE intervention. It was important that the complex intervention was designed with a high degree of realism (fidelity) and that it particularly targeted the specific stressors experienced by new graduate RNs.

3.3 Alternative Mixed Methods Approaches

Mixed methods research has been well reported in the literature, accounting for approximately 40 mixed methods designs (Andrew & Halcomb 2009; Tashakkori & Teddlie 2003). The six most popular designs have been identified and divided into two groups: sequential and concurrent. These groups are divided into two levels: basic mixed methods and advanced or complex methods (Creswell et al. 2003; Creswell 2014).

3.3.1 Sequential Mixed Methods Designs

Sequential mixed methods research involves data being collected in multiple phases whereby the sequence of data collection is dependent on the purpose, objectives and the research questions. It is divided into exploratory sequential mixed methods designs and explanatory sequential mixed methods designs (Figure 2).

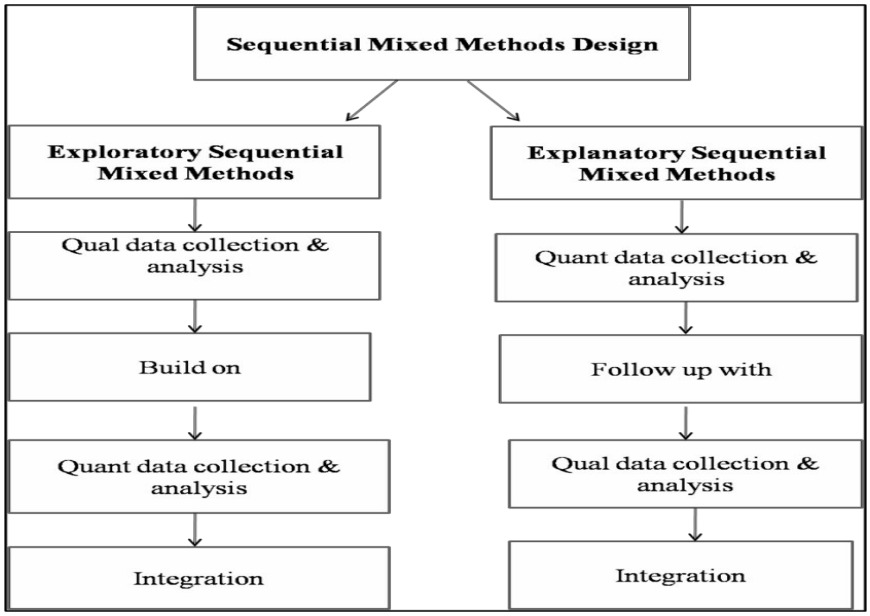

Figure 2: Comparison of sequential mixed methods design (Creswell 2014)

3.3.1.1 Exploratory Sequential Mixed Methods Studies

An exploratory sequential mixed methods design involves qualitative data being collected and analysed before the quantitative data. The results of the qualitative data analysis facilitate the collection and interpretation of the quantitative data. The data afforded from the qualitative approach informs the quantitative approach (Creswell & Plano Clark 2011; Teddlie & Tashakkori 2008; Onwuegbuzie, Bustamante & Nelson 2010). Data from both approaches are then integrated for analysis (Creswell & Plano Clark 2011). Although much easier to implement, it is time consuming and does not guarantee the participants full involvement in both approaches (Almalki 2016; Creswell & Plano Clark 2011).

3.3.1.2 Explanatory Sequential Mixed Methods Studies

An explanatory sequential mixed methods design is used when the quantitative data is collected and analysed, followed by the qualitative data. It uses a deductive and inductive approach whereby the former typically aims at testing a theory while the latter generates new theory from the data collected (Al-Busaidi 2008; Andrew & Halcomb 2009; Pope, Van Royen & Baker 2002). As described by Creswell and Plano Clark (2011), the quantitative data can provide a broad overview of the research problem and the qualitative data is required for a more in-depth analysis and description. The results of one set of data builds upon the other. As with an exploratory sequential design, the findings from both stages are then integrated in the final phase in line with the objectives of the study (Figure 3). An explanatory sequential design enables the focus of the research to be maintained, however, it can be a time-consuming approach (Almalki 2016; Creswell & Plano Clark 2011). It is noteworthy that conducting a mixed methods explanatory sequential study requires the implementation of the type of mixed methods design which best suits the research problem (Creswell 2003; Morgan 1998).

The sequential explanatory mixed methods design, was employed in this study particularly to address the aims and research questions. This design was utilised to guide the researcher during data collection and the analysis process as well as to present the results and findings from the three studies in this research.

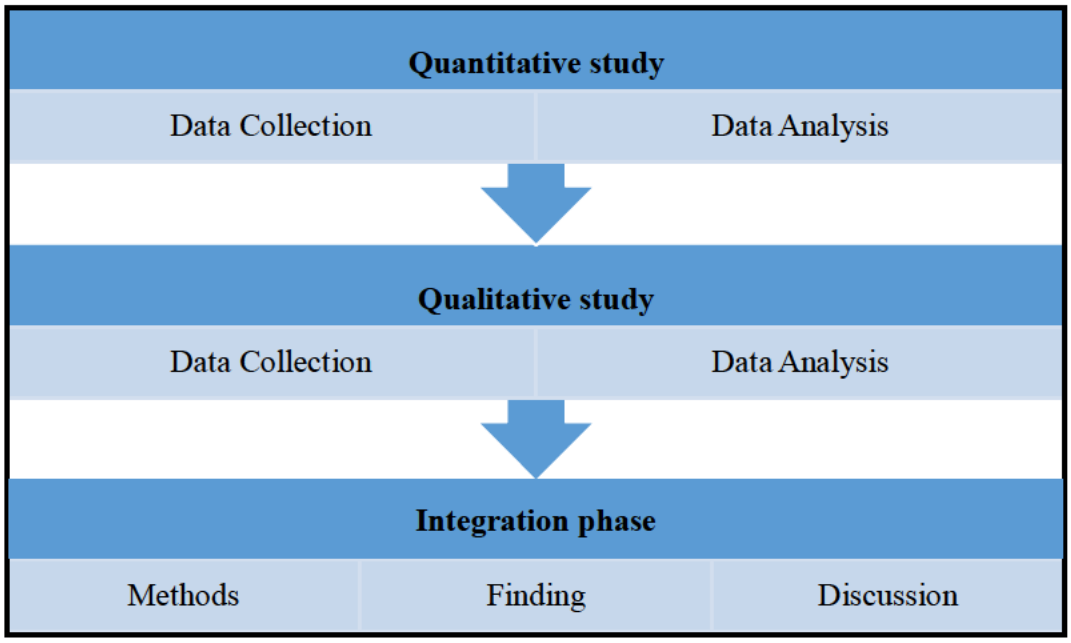

Figure 3: Sequential explanatory mixed method design

3.4 Mixed Methods Designs with Interventions

Mixed methods research, which is a combined use of the qualitative and quantitative approaches, has been widely used in the area of health services (Cox 2003; Moffatt et al. 2006; Oakley et al. 2006; Stacey et al 2005). These two approaches reciprocally provide a sequential and phased approach to an evaluation and thus are deemed most effective when dealing with complex interventions (Campbell et al. 2000; Medical Research Council [MRC] 2000; Protheroe, Bower & Chew-Graham 2007). Complex interventions are defined as those '*interventions that comprise multiple interacting components, although additional dimensions*

of complexity include the difficulty of their implementation and the number of organisational levels they target' (Moore et al. 2015, p. 1; Craig et al. 2008).

The complexity of an intervention is dependent on several factors and a range of possible outcomes or their variability (Moore et al. 2015). Key components that contribute towards complexity are the disparity in behaviours in an intervention, the different organisational levels involved, the number and variability of potential outcomes envisaged, and the degree of flexibility that is allowed for an intervention (Craig et al. 2008a, 2008b).

Quantitative and qualitative data complement one another as the quantitative method provides sufficient data, then the qualitative method provides better insights and a deeper understanding. Greater insight and understanding can inform all aspects of the design of a complex intervention including the components of the intervention, barriers to implementation, appropriate outcomes to be used and importantly the evaluation strategy to be used (Farquhar, Ewing & Booth 2011).

3.5 Overview of Research Design

The aim of the quantitative component of this research was to first identify the most significant stressors for new graduate RNs and to quantify the magnitude of stress being experienced. The qualitative phase then examined the stressors experienced from the perspectives of the new graduate RNs themselves and the educators in ICUs who were supporting the graduate RNs. Integrating these elements then facilitated the design of a simulation exercise.

The next section of this chapter will discuss the methods used to achieve the research aims of this project. The individual components of this study are set out in Table 3

Table 3: Description of the three studies

Studies	Self-administered survey of new graduate RNs	Individual interviews with new graduate RNs	Group discussion with nurse educators
Aim	To explore both the level and factors resulting in stress among new graduate RNs working in ICUs in Saudi Arabia	To further explore the experiences of stress among new graduate RNs in ICUs	To investigate the extent and type of educational support provided for new graduates and educators' views of and experience with simulation
Method	Questionnaire comprising demographic questions and two stress tools: PSS-10 and ENSS-57	Individual interviews	Group discussion
Setting	A major tertiary hospital in paediatric and adult ICUs (King Saud Medical City in Riyadh (KSMC-R) in Saudi Arabia		
Sample	189 new graduate RNs working in several ICUs	10 new graduate RNs working in several ICUs	5 nurse educators working in several ICUs
Recruitment	Through Head nurse and nurse educators	Through Head nurse and nurse educators	Nursing administration
Duration of data collection	3-8 weeks	3 weeks, interviews took approximately 45–60 minutes	40-60 minutes
Data analysis	Descriptive and inferential statistics using SPSS, v. 21 and SAS, v. 9.3	Content analysis	Content analysis

3.6 Study 1: Survey of New Graduate RNs

3.6.1 Introduction

The aim of the self-administered survey was to identify the level of stress and the key stressors experienced by new graduate RNs working in ICUs. Thus, specific questions were designed to achieve the aims of the study:

1. What is the level of stress experienced by new graduate RNs in ICUs?

2. What are the factors contributing to stress among new graduate RNs working in ICUs?

These specific questions were used to identify:

- The factors contributing to stress among new graduate RNs in ICUs.

- The level of stress experienced by the new graduate RNs in ICUs.

In addition, an analysis was conducted to determine if there were any significant differences in stress associated with demographic and work-related variables.

This section describes the self-administered survey component of this research. Self-administered questionnaires are commonly used as survey instruments as they are relatively cheap to employ, enable large quantities of data to be collected regardless of geographical location and protect the privacy of respondents, encouraging unbiased responses (DeVaus 2001; Gillies 2002; Gorard 2003).

Brevity and clarity are pivotal when utilising questionnaires and this assures a quick turnover and a higher response rate (Morley 1995). However, the most commonly observed disadvantages of self-administered questionnaires are the potential for a low return rate and the need for clarification (Polit, Beck & Hungler 2001). These issues can be avoided by the use of validated tools, peer review and piloting of the instrument (Andrew & Halcomb 2009; Borg, Gall & Gall 1993; Creswell 2009; Humbley & Zumbo 1996; Zohrabi 2013).

3.6.2 Setting

This study was conducted at KSMC-R, a government not-for-profit organisation managed by the MOH. It is the largest hospital in Saudi Arabia and its intensive care service has been rated as the second busiest intensive care unit in Saudi Arabia and the 4th busiest in the world, currently housing more than 140 beds (personal communication, 2014). KSMC-R contains 11 ICUs, which can be categorised into two groups: the adult ICUs and paediatric ICUs (Figure4). The adult ICUs consist of the Medical (M-ICU), Surgical (S-ICU), Trauma (T-ICU), Isolation and Infected Cases ICU, Burn Unit (BU), Obstetric Gynaecology (OB-ICU) and Cardiac Care Units (CCU). The paediatric ICUs include P-ICU-1, P-ICU-2, Respiratory (R-ICU) and Neonatal (N-ICU).

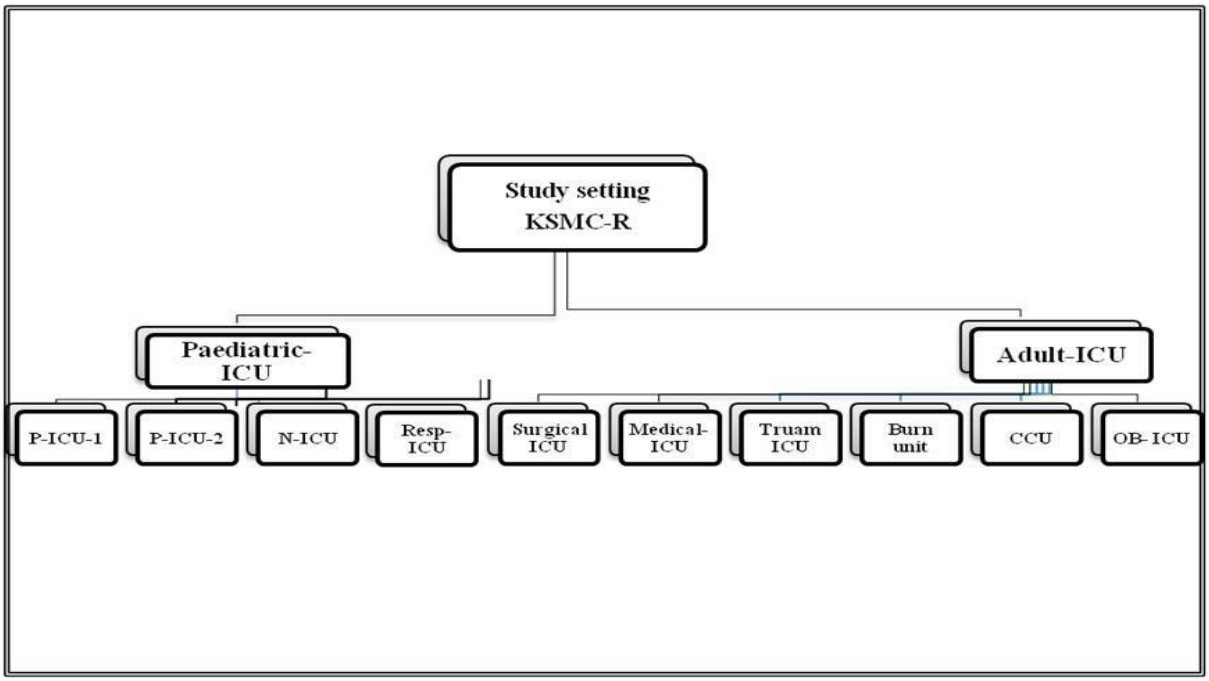

Figure 4: Study setting at King Saud Medical City- Riyadh (KSMC-R)

The self-administered questionnaire was distributed to the new graduate RNs working at the paediatric and adult ICUs in a major tertiary hospital KSMC-R in Saudi Arabia between March and April 2014. This time period was deliberately chosen to avoid the holiday season, which would impact on the return rate.

3.6.3 Population and Sample

The participants in the self-administered survey were a convenience sample of Saudi new graduate RNs working in the adult and paediatric ICUs in a major tertiary hospital KSMC-R.

3.6.4 Inclusion and Exclusion Criteria

The inclusion and exclusion criteria for the self-administered survey were:

- New graduate RNs of Saudi nationality
- Both genders
- 18 years of age and above
- Holding either a diploma or bachelor's degree
- Working full time or part time
- Less than one year's experience working as a RN
- Completed the orientation programs
- Have worked independently in regard to patient care
- New graduate RNs who had more than one year of working experience were excluded

3.6.5 Recruitment Strategies

The researcher first applied to the Human Research Ethics Committee (HREC) of the University of Adelaide to approve the study. Soon after obtaining ethics approval from the Institutional Review Board (IRB) at KSMC-R in Saudi Arabia, the researcher presented the study to the nursing department in the ICUs, which included all the nurse educators and the head nurses. This was important to allow the senior nurses to understand the aims of the study to assist with recruitment of the participants and to provide the new graduates with a detailed explanation of the aims of the study.

The questionnaire was distributed to the participants in sealed envelopes. Labelled collection boxes were left at the nursing stations in the adult and paediatric ICUs for the collection of the completed questionnaire. The participants were provided with a number of reminder notices in the form of brochures and regular announcements in the third and fourth weeks after the initial distribution of the questionnaire.

3.6.6 Ethical Considerations

This study was approved by the HREC of the University of Adelaide (Appendix 1) and the Research Administration of the Minister of Health Ethics Committee in Riyadh in Saudi Arabia (Appendix 2). Ethical approval was also sought from the IRB at KSMC-R (Appendix 3).

Consent for the self-administered survey was implied by the return of a completed questionnaire by the respondents. No data was collected that could identify respondents to ensure anonymity was maintained and protected. All data were kept locked and stored in a cabinet at the School of Nursing at the University of Adelaide. Surveys will be saved for five years and will be destroyed after this time.

3.6.7 Data Collection

The data collected from the self-administered survey was used to investigate the level of stress and the key stress factors experienced by the new graduate nurses in the ICUs.

3.6.7.1 Research Instruments (Questionnaire)

The self-administered questionnaire package consisted of three sections: background information, perceived stress scale (PSS-10items) and expanded nursing stress scale (ENSS-57 items). The PSS was employed to measure the level of stress while the ENSS measured the factors/frequency of stressors experienced by new graduate registered nurses in the ICUs. It was important that the study utilized tools that were able to measure stressors based on various aspects.

The background (Section A) was divided into three parts. The first part included demographic information such as age, gender, marital status and the number of children of the respondents. The second part was the respondents' education and employment history and the third part included questions describing the type of ICUs, shift work and working hours of the respondents.

Perceived Stress Scale (PSS-10) (Section B), the first instrument used for this study, is the most widely used instrument for measuring perceptions of stress. It contains 10 items and was used with no modifications apart from being translated into classical Arabic. The PSS, initially developed as a 14-item instrument, is a global measure of stress for the purpose of assessing how unpredictable, uncontrollable and overloaded a person considers their life or a particular situation (Cohen & Williamson 1988; Cohen, Kamarck & Mermelstein 1983). It was later updated to obtain more extensive information such as stress measures, self-reported health, health service and behaviour measures (Cohen & Williamson 1988). A 5-point Likert scale was used by respondents to rate their respective experiences and feelings *within the last month*. The frequency rating ranged between 0 = *Never*, 1 = *Almost never*, 2 = *Sometimes*, 3 = *Fairly often*, and 4 = *Very often*. The possible total scores were between 0 to 40, with higher scores indicating greater overall stress.

The 10 items of the PSS begin with the stem statement, *During the last month* … and conclude with the following:

1. *How often have you been upset because of something that happened unexpectedly*,
2. *How often have you felt that you were unable to control the important things in your life*,
3. *How often have you felt nervous and 'stressed'*,

4. *How often have you felt confident about your ability to handle your personal problems*,

5. *How often have you felt that things were going your way,*

6. *How often have you found that you could not cope with all the things that you had to do,*

7. *How often have you been able to control irritations in your life*

8. *How often have you felt that you were on top of things*

9. *How often have you been angered because of things that were out of your control*,

10. *How often have you felt difficulties were piling up so high that you could not overcome them.*

It should be noted that items 4, 5, 7 and 8 were phrased positively so the scores for these items are reversed in the analysis.

Expanded Nursing Stress Scale (ENSS-57) (Section C), the second instrument used for this study, contains 57 items and was used with no modifications apart from being translated into classical Arabic. The ENSS-57 is an updated version of the nursing stress scale (NSS) 34-item psychological model of stress (Gray-Toft & Anderson 1981; Lazarus & Folkman 1984; Lee & Holzemer 2007). It should be noted that some authors use 'extended' instead of 'expanded' nursing stress scale within the same version of the ENSS-57 (Alkrisat 2011; AbuAlRub 2004; Krušinskaitė et al. 2015; Lee & Holzemer 2007). In this study, the researcher used the expanded nursing stress scale which was developed by French et al. (2000). The ENSS-57 was used as the descriptive component of the different occupational stressors and the factors related to stress encountered by the new graduate nurses in the ICUs (French et al. 2000). The questionnaire was developed to allow the respondents to grade their responses using a 5-point scale; from 0 = *Does not apply*, 1 = *Never stressful*, 2 = *Occasionally stressful*, 3 = *Frequently stressful*, to 4 = *Extremely stressful*. Higher scores on the ENSS-57 indicated a more frequently experienced stressor. The 57 items are divided into 9 subscales: *death and dying*, *conflict with physicians*, *inadequate emotional preparation*, *problems with peer support*, *dealing with*

patients and their families, *uncertainty concerning treatment*, *problems with supervisors*, *workload* and *discrimination* (French et al. 2000; Gray-Toft & Anderson 1981).

- *Subscale 1: Death and dying (7 items):* Includes areas related to having to perform procedures that cause pain for patients, watching patients suffer, death of patients and feelings of helplessness towards patients who show no improvement after care.
- *Subscale 2: Conflict with physicians (5 items):* Relates to conflicts with other healthcare professionals, specifically physicians. Includes stress experienced due to conflicts with and criticism by physicians especially with regards to a patient's care/treatment, fear of making errors and having to make decisions in the absence of a physician.
- *Subscale 3: Inadequate emotional preparation (3 items):* Relates to stress due to being inadequately prepared to assist with the emotional needs of not only the patients but their families.
- *Subscale 4: Problems with peer support (6 items):* Relates to the working environment and communication between co-workers, for example, lack of communication and support from co-workers, disagreements with nursing supervisors and difficulty in working with nurses of the opposite gender.
- *Subscale 5: Patients and their families (8 items):* Involves stress due to having to deal with unreasonable demands, and physical and verbal abuse from both patients and their families, and being blamed for anything that goes wrong.
- *Subscale 6: Uncertainty concerning treatment (9 items):* Focuses on stress due to uncertainty about a particular treatment and inadequate information regarding a patient's medical condition, for example, being in charge with inadequate experience and fear of making a mistake when treating a patient.

- *Subscale 7: Problems with supervisors (7 items):* Involves stress due to conflict with and criticism by supervisors and lack of support from immediate supervisors and nursing administration.
- *Subscale 8: Workload (9 items):* Relates to insufficient time to complete nursing tasks and care for the needs of patients and their families.
- *Subscale 9: Discrimination (3 items):* Relates to stress due to an unjust or prejudicial distinction on the grounds of gender, race or ethnicity.

3.6.8 Delivering the Questionnaire Package

The English version of the questionnaire included a cover letter (Appendix 4), an information sheet (Appendix 5), and the questionnaire consisting of background information, PSS-10 and ENSS-57 (Appendix 6). The English version of the instrument was then translated into Arabic. A hard copy of the Arabic version of the questionnaire was distributed to all the new graduates working in the ICUs as they were unable to access the Internet. Each sealed envelope contained a cover letter (Appendix 7), an information sheet (Appendix 8) and the questionnaire (background information, PSS-10 and ENSS-57) (Appendix 9). The information sheet was important as it contained a more detailed description of the study and highlighted that the participants were under no obligation to participate and were allowed to withdraw at any point. The estimated time required to complete the questionnaire was approximately 10 to 15 minutes.

3.6.8 Issues of Validity and Reliability

The two types of validity that should be addressed when considering an instrument for data collection are face validity and content validity (Parahoo 2006). The PSS-10 and ENSS-57 have been widely used in diverse fields, which confirms their content validity (French et al. 2000; Frick et al. 2011; Gray-Toft & Anderson 1981a; Gupchup, Borrego & Konduri 2004;

Henning, Ey & Shaw 1998; LoBiondo-Wood & Haber 2002; Marshall et al. 2008; Moshin et al. 2010; Mimura & Griffiths 2004; Pinikahana & Happell 2004). Face validity on the other hand confirms the effectiveness of a questionnaire in meeting its aims. The face validity of the self-administered questionnaire in this study was confirmed using three postgraduate nurse colleagues to ensure the questionnaire content matched the research questions.

3.6.8.1 Expert Panel

In this study, an expert panel comprising of linguistic and content experts was used to validate the ENSS-57 and confirm content validity. The expert panel of three experienced Saudi nurses with postgraduate qualifications was used before and after the translation process. All feedback and comments were discussed and considered accordingly. A list of content validity criteria that were used in the self-administered survey of new graduate nurses:

- Questions were are clear
- Questions are easy to comprehend
- Questions are comprehensive and relevant to the purpose of the study
- Questions are appropriate in the context of the culture and religion of Saudi Arabia
- Length and ordering of the entire questionnaire is appropriate
- No redundancy in the questions
- Absence of bias in either direction

3.6.8.2 Translation

Translation of a survey instrument is a pivotal step in a study to avoid any misinterpretation of data and to ensure all participants are comfortable and thoroughly understand the instruments prior to use.

Initially, the researcher attempted to gain access to the ENSS-57 items that had already been translated into Arabic for the ease of data collection. However, after numerous attempts, the researcher was only able to gain access to the NSS tool containing 34 items that had already been translated into the Arabic language (Abu Al-Rub 2004). Thus, the researcher adapted 20 items from the NSS (Abu Al-Rub 2004). The remaining items of the ENSS-57 were then translated independently by the researcher. The researcher ensured the Arabic version of the ENSS-57 items were reviewed and verified by the expert panel to ensure clarity and brevity, as the Arabic language can differ significantly between the different tribes in the Middle East.

3.6.8.3 Reliability

A number of studies have reported using Cronbach's alpha coefficient to assess the internal consistency of the Arabic versions of both the PSS-10 and ENSS-57. Cronbach's alpha coefficient for the PSS-10 typically ranged between 0.7 and 0.8, while for the ENSS-57 items ranged between 0.7 and 0.9 (Abu-Al-Rub 2004, 2006; Al-Hassan & Wierenga 2000; Chaaya et al. 2010; Cohen et al. 1983; Hamdan-Mansour & Dawani 2007 2008; Hattar-Pollara & Dawani 2006; Hamaideh 2008; Kamal et al. 2012; Masa'Deh et al. 2013, 2017; Mohamed et al. 2011; Zaghloul 2008).

For the current study, the PSS-10 showed good reliability with a Cronbach's alpha coefficient of 0.83 while the ENSS 9 subscales afforded a Cronbach alpha coefficient ranging between and 0.89, as summarised in Table 4.

Table 4: Cronbach's alpha values for the PSS-10 and the ENSS-57 items (9 subscales)

Derived variable	Cronbach's alpha
PSS-10	0.83
ENSS 57 items (9 subscales)	
Death and dying	0.72
Conflict with physicians	0.80
Inadequate emotional preparation	0.73
Problems with peer support	0.83
Patients and their families	0.86
Uncertainty concerning treatment	0.82
Problems with supervisors	0.89
Workload	0.86
Discrimination	0.81

3.6.8.4 Pilot Testing

A pilot study was conducted to ensure the quality and efficacy of the self-administered survey. The Arabic version of the questionnaire was distributed to 5 Saudi nurses who were allocated 10–15 minutes to complete. The nurses confirmed the clarity and brevity of the survey. Therefore, no changes or amendments were made to the questionnaire in the actual study.

3.6.9 Data Analysis

The quantitative data was analysed using the Statistical Package for Social Science (SPSS) software (v. 21). All data was cross checked and compared with the hard copies numerous times. For the inferential analysis, SAS software (v. 9.3) was used by the researcher with assistance from the Data Management and Analysis Centre (DMAC) of the University of Adelaide.

The descriptive statistical analysis was carried out to compare the demographic variables with the outcomes of the PSS-10 and the ENSS-57. Each item from the PSS-10 and ENSS-57 was individually analysed, ranked using the 5-point Likert scale and scored independently. An inferential analysis was then carried out using multiple regression to explore the relationships between the demographic variables and the predicted outcome variables of the PSS-10 items and ENSS 57 items. The multiple regression analysis included a number of models which were used independently to determine the association between the PSS-10 and ENSS-57 outcomes and the demographic predictors.

The following section describes the individual interviews with new graduate nurses.

3.7 Study 2: Individual Interviews with New Graduate RNs

3.7.1 Introduction

The aim of the individual interviews was to obtain a better understanding of the factors contributing to stress from the viewpoint of the new graduate RNs themselves. The researcher used the results from the self-administered survey specifically focus on the PSS & ENSS results and construct the questions for the individual interviews among new graduate RNs in the ICUs. In this study the development of the scenarios in the simulation exercise based the results from study 1 and 2, ensuring the simulation will be high fidelity.

Specific research questions were designed to achieve the above-mentioned aim:

1. What are the factors contributing to stress among new graduate RNs in ICUs?

2. What impact does stress have on new graduate RNs working in ICUs?

This section describes the individual interviews component of this research.

There has been a relatively small number of qualitative research studies exploring stressors from the perspective of graduate nurses in ICUs (Hutchinson et al. 2010). Therefore, this study was designed to explore this problem by initially building a qualitative understanding of the experiences of graduate nurses working in ICUs and to provide a detailed elucidation of the nature of the problem.

Qualitative research provides access to people's understanding, judgements, perceptions and experiences in a concise manner (Byrne 2004; Taylor & Bogdan 1998).

Face-to-face interviews tend to generate information that is rich in data, and they allow both parties (interviewer and interviewee) to clarify and modify unclear responses at the time of the interview (Creswell 2008; Gillham 2005; Ryan, Coughlan & Cronin 2009). The most significant advantage of interviews is the high response rate. The disadvantage of individual interviews is the potential for bias and the relatively high costs involved.

Thus, this study is an introductory investigation into the experiences of workplace stressors as perceived by the new graduate nurses working in the ICUs within KSMC-R in Saudi Arabia.

3.7.2 Setting

All data were collected between May and June 2014 at KSMC-R. The details of the setting of the individual interviews are the same as for the self-administered survey of new graduate RNs previously described.

3.7.3 Population and Sample

The study used purposive sampling. Ten new graduate RNs were recruited from the adult and paediatric ICUs at KSMC-R at the time of the study.

3.7.4 Inclusion and Exclusion Criteria

The inclusion and exclusion criteria have been detailed in the description of the self-administered survey of new graduate RNs earlier in this chapter.

3.7.5 Recruitment Strategies

The new graduate RNs were recruited through the head nurses and nurse educators in the nursing department for the individual interviews. To facilitate the recruitment process, the researcher explained the research study in detail via a presentation. An information sheet was provided to all new graduates RNs working in the ICUs through their nurse educators and head nurses. A list of 25 new graduate RN's names and contact details were then presented to the researcher. The researcher contacted these new graduates and 15 agreed to participate. The researcher was then able to organise a convenient time and place within KSMC-R to carry out the interviews. The researcher provided the participants with the aims of the study and a consent form. From the 15 participants who agreed to be interviewed, only 10 continued on and 5 withdrew from the study soon after.

3.7.6 Ethical Considerations

Details on the ethics approval are presented in the section describing the self-administered survey. The participants indicated their informed consent by signing the consent form prior to the interview. As the interview involved participants discussing their experiences of being stressed, there was a risk of anxiety or at least some discomfort. If any of the participants had become distressed they would have been allowed to withdraw from the interview. Assistance from a staff counsellor was to be provided and they would have been referred to the independent complaint form which was provided prior to the interview. The participants were also assured that all information provided during the individual interview would remain anonymous in the study.

3.7.7 Data Collection

The semi-structured interviews with the new graduate RNs were designed to explore and understand the different stressors from the outlook of the new graduate RNs themselves. The interview questions were based on the ENSS 57 items (9 subscales), which are: *death and dying, conflict with physicians, inadequate emotional preparation, problems with peer support, dealing with patients and their families, uncertainty concerning treatment, problems with supervisors, workload* and *discrimination.*

All the interviews were conducted in Arabic. The information sheet (Appendix 10), the consent form (Appendix 11) and an independent complaint form (Appendix 12) were provided to all participants in the Arabic language. The English version of all the above was also attached in the respective Appendix.

As previously mentioned, the interviewees were 10 new graduate nurses with varied levels of working experience in the nursing field (all less than 12 months).

The interviews were conducted by the researcher during working hours at a place and time convenient to all parties. The interviews were approximately 45 minutes to 1 hour in length. The interviews were digitally audio recorded so that all information could be documented and accessed repeatedly during analysis. A secondary recording device was used as a back-up.

Gender segregation and cultural sensitivity are factors to consider when carrying out research in Saudi Arabia. Therefore, the researcher ensured that all interviews were carried out during working hours at the hospital and sought permission from the male participants prior to the interviews to ensure they had no objections or concerns. However, in this particular study, the research had no issues related to gender segregation, allowing research data to be collected

smoothly and efficiently.

3.7.8 Trustworthiness

Trustworthiness is defined as the degree of confidence in a data set, giving credence to the findings and conclusions of a study (Law 2002; Polit & Beck 2008). Four criteria that confirm the trustworthiness of a study are credibility, dependability, transferability and conformability (Creswell & Miller 2000; Lincoln & Guba 1991; Onwuegbuzie, Jiao & Bostick 2004). It is important that all findings of a study are consistent, credible, rational and applicable to other research.

Credibility is best defined as confidence in the reliability and soundness of the interpretation of data. Credibility of qualitative research is usually warranted through prolonged engagement and persistent observation to minimise misinterpretation and misrepresentation that might creep into the data. To ensure the credibility of this study, the researcher, prior to the interviews, engaged closely with the new graduate nurses, RNs, nurse educators and the interns to familiarise herself with and understand the ICU protocols which could differ between hospitals. This also enabled the researcher to establish a good rapport, build a mutually beneficial relationship and gain the trust of the participants and other co-workers at the hospital.

The credibility of the data was also enhanced with the use of member checking with the participants from which corrections were solicited.

Dependability is generally related to a combination of the research methodology, the intended procedure and the stability of data over a period of time under various conditions, allowing replication of the research (Shenton 2004; Polit & Beck 2008). To increase the dependability

of the study, the researcher clarified all steps and techniques through extensive discussions with her supervisors.

Transferability is defined as the ability to implement or transfer an approach into a different context or setting. In this study, transferability of the data was enhanced using the purposive sampling method. A thick description and a robust data set which comprised a wide range of information was able to provide thorough, detailed and accurate descriptions of the experience of the participants working in the ICUs. The digital audio-recorded data were meticulously transcribed. During the analysis phase, extensive efforts were taken to ensure even minute details were documented, coordinated methodologically and analysed. The analysis included categorising and ordering information in such a way as to make sense of the data, ensuring the final report was true and accurate (Merriam 1995). After the transcribed data was categorised and made sense of, all efforts were exhausted to illuminate themes and descriptors as they emerged.

Conformability is achieved once credibility, dependability and transferability of a study have been established. It focuses on the objectivity of the research process, ensuring that all information and interpretations are accurate (Polit & Beck 2008).

The researcher achieved conformability by working under the guidance of expert supervisors throughout the research process. The researcher took some quiet time to document additional perceptions and recollections from the interviews that could have been previously overlooked. This allowed the researcher to be attentive and conscious of her own perceptions and opinions, avoiding the research findings and conclusions being tainted.

3.7.9 Data Analysis

Transcripts from the individual interviews with new graduate RNs were subjected to a content analysis. This method was deemed appropriate to describe the data and provide an in- depth analysis in a systematic and efficient manner (Dixon et al. 2008; Polit & Hungler 1997; Silverman 2006).

Similar to the group discussion, the transcripts from the individual interviews with new graduate RNs were analysed using content analysis. The data collected was in the form of digital audio recordings and was transcribed using a personal laptop computer with confidentiality maintained. The entire process took approximately 6 weeks, with an average time of 6–8 hours, affording 5–7 pages, per interview. The researcher used pseudonyms during the transcription and data analysis process to protect the identity of the participants. The transcripts were discussed and cross checked with the supervisors prior to being sent back to the participants for review and clarification to confirm that the transcriptions represented the interviewees' statements. This was important to confirm the credibility and validity of the research. An important aspect of the content analysis method was the distillation process whereby the data collected was categorised then valid inferences were derived (Bowling 2002).

These are the steps that were undertaken to analyse the data afforded from the individual interviews:

- The digital audio recordings were transcribed manually in Arabic, and entered into Microsoft Word.
- The researcher used pseudonyms during the transcription and data analysis process as an alternative to the actual names to protect participants' identities.
- All transcribed interviews were checked repeatedly against the voice recordings to

avoid any possible errors.

- Transcripts were read several times and important points highlighted. This process was useful for identifying initial themes from the raw data.
- The process of the interpretive analysis of data rests with the researcher. This process was repeated many times, thereby ensuring immersion in the data, with the researcher gradually becoming familiar with the transcripts from the individual interviews.
- Based on the transcription, open codes were derived.
- Codes with similar meanings were grouped together into sub-themes.
- Sub-themes with similar meanings were combined.
- Major themes were then developed from the sub-themes.

During this time, codes and sub-themes were added and modified every time a new concept emerged from the data set. To minimise the risk of losing the actual meaning of the interviews, only the sub-themes, themes and appropriate illustrations from the transcripts were translated into English.

The translations were sent to two Saudi nursing academics to ensure their accuracy. All findings were supported with quotations to ensure the study's rigour.

The following section describes the group discussion with nurse educators.

3.8 Study 3: Group Discussion with Nurse Educators

3.8.1 Introduction

The group discussion with nurse educators aimed to investigate the extent and nature of educational support currently provided in the ICUs and the potential of using simulation to reduce stress among new graduate nurses. In particular, the nurse educators' insights and viewpoints on traditional and non-traditional teaching methods were sought. Nurse educators play a significant role in the ICUs and are considered role models in terms of professional values and responsibilities.

Specific questions were designed to achieve the abovementioned aim:

1. What strategies are currently used in the ICUs in major tertiary hospital (KSM-R) Saudi Arabia to directly and/or indirectly reduce stressors?
2. What is the current use of simulation in the ICU environment including the following?
    a) Experience of nurse educators?
    b) Available facilities?
    c) Access to simulation exercises by new graduates?
3. What role does simulation play in reducing stress among new graduates RNs in the ICUs?

This section describes the group discussion element of this research. Group discussions can be an excellent data collection technique as they are relatively low in cost and provide the opportunity to gather detailed data based on diverse perspectives for a given context within a short period of time. However, the effectiveness of a group discussion is dependent on the facilitator/interviewee being sufficiently skilled in facilitating an efficient interaction between

the participants. In addition, bringing together an appropriate well-balanced team can be challenging. The more outspoken participants tend to dominate in group discussions, causing biased responses (Coenen et al. 2012; Creswell & Plano Clark 2007; Tausch & Menold 2016; Palomba & Banta 1999). Thus, group discussions are more successful if carried out in smaller groups (Morgan 1998, 2009).

3.8.2 Setting

All data was collected in April 2014 at paediatric and adult ICUs KSMC-R a major tertiary hospital in Saudi Arabia. KSMC-R. The details of the setting for this study are the same as for the self-administered survey of new graduate RNs.

3.8.3 Population and Sample

The participants in a single group discussion were selected using purposive sampling based on the aims of the study. Five nurse educators were recruited from the adult and paediatric ICUs to participate in the group discussion. The purpose was to explore the nurse educators' perceptions of the extent of education support provided, the types of stress that new graduate nurses are potentially exposed to and the feasibility of using SBLE to overcome this issue.

3.8.4 Inclusion and Exclusion Criteria

The inclusion criteria for the group discussion with nurse educators were:

- Nurse educators of any nationality
- Both genders
- 30 years of age and above,
- A minimum working experience of two years in their respective fields
- Experience in providing educational support to graduate nurses
- Fluency in the English language.

The exclusion criteria were:

- Not fluent in the English language
- Uncomfortable being interviewed in English
- Reluctant to be recorded.

A single group discussion of nurse educators was conducted in English as the common language as there were a mix of nurse educators from different nationalities within the group discussions. There were no Saudi nurse educators that participated in the discussions.

3.8.5 Recruitment Strategies

Nurse educators were recruited through recommendations from the executive nurse at KSMC-R Although Saudi nurses were preferred, due to the limited number working in the ICUs some expatriate nurse educators were included in the study. The researcher provided a thorough and detailed presentation to the nurse educators and head nurses from all the ICUs on the desired outcomes of the study. Once consent was received from the nurse educators, the group discussion was conducted.

3.8.6 Ethical Considerations

Details of the ethics approval were presented in the self-administered survey section of this chapter. Informed consent was confirmed with a consent form signed by the participants prior to the discussion. It was anticipated that participants would not be at any risk; however, if any of the participants had become distressed they would have been allowed to withdraw from the group. Participants would also have been referred to an independent complaint form if necessary. Participants were also assured that all information provided during the discussion would remain anonymous and confidential.

3.8.7 Data Collection

Data collection from the group discussion were was primarily aimed at investigating the extent of educational support currently provided in the ICUs to assist the new graduate nurses to cope with the stressors and the use of any form of simulation as an intervention in particular.

The researcher organised a short briefing prior to the group discussion to reiterate the purpose of the study and the importance and relevance of their responses.

An information sheet (Appendix 13), a consent form (Appendix 14) and an independent complaint form (Appendix 15) were distributed to the participants prior to the group discussion. A digital audio recording device was used to record the group discussion of nurse educators (with consent from the participants). A second recording device was used as a back-up. The transcript resulting from the discussion was stored in a Microsoft Word file. The group discussion was conducted during working hours and at a place and time convenient to both the participants and the researcher. The group discussion was in English, was consistent in tone and method, and was conducted for a duration of approximately 45 to 60 minutes. As English

was an additional language for all the nurse educators, it was noted at transcription that there were a number of grammatical errors. However, the data analysis was carried out with no grammatical corrections made to avoid any possible distortion of the original content of the interview. Punctuation marks were inserted in certain sections of the transcript to enable an easier read and to make the content more logical and understandable. This method was to ensure a concise data analysis while maintaining the integrity of the data.

3.8.8 Trustworthiness

Issues in relation to trustworthiness were discussed in the section describing the individual interviews with new graduate nurses in this chapter.

3.8.9 Data Analysis

Data analysis for the group discussion used the same process as for the new graduate RNs interviews, previously described, with the exception that no language translation was required as the discussion was conducted in English. Themes were generated based on the extent of support and education currently provided to assist the new graduate nurses to deal with stress in the ICUs and the potential to use simulation to overcome the issue.

The following section provides a description of the integration of the data afforded from both the qualitative and quantitative approaches in this study.

3.9 Integration

3.9.1 Integration in Mixed Methods Research

The integration of the results of the quantitative and qualitative data in mixed methods research is the most pivotal step as it provides a better, more in-depth understanding of the research problem while offsetting the weaknesses inherent in using each approach by itself. Combining the results allowed the researcher to gain a more comprehensive understanding of the source of stressors from the perspectives of the new graduate nurses themselves and thus to design a simulated scenario to best suit the research problem. In this project, the results from the self-administered survey, individual interviews with new graduate nurses and the group discussion with nurse educators were integrated to create a fuller, more complete understanding of the factors causing stress among the new graduate nurses, which then assisted in designing an intervention (a simulation based learning exercise) to address the issue.

The integration of quantitative and qualitative results can enhance the value of mixed methods research and offers several advantages (Bryman 2006; Creswell & Plano Clark 2011; Tashakkori & Teddlie 1998). Quantitative data allows the researcher to measure and analyse the data collected, and test hypotheses, while qualitative data is typically employed at the early stages of a study, where the researcher has the leeway of allowing the study to unfold naturally without a strict structure. This allows for a broader range of data to be collected that is rich in detail. Although there are many potential gains from data integration, the extent to which mixed methods studies implement integration remains limited and it is considered the most challenging step in mixed methods research design (Bryman 2006; Lewin, Glenton & Oxman 2009). This is because data can be integrated, analysed and collected in numerous ways (O'Cathain, Murphy & Nicholl 2007; Lewin, Glenton & Oxman 2009; Morag, Ewing & Booth

2011). To overcome these challenges, three techniques have been established to achieve a more consistent integration of the results: triangulation, following a thread and the mixed methods matrix (O'Cathain et al. 2007). Nevertheless, there are specific approaches to integrating qualitative and quantitative research procedures and data (O'Cathain, Murphy & Nicholl 2010; Creswell & Plano Clark 2011). This study used an explanatory sequential design with the intent of having one phase build on the other (Fetters et al. 2013; Ivankova, Creswell & Stick 2006). The researcher first collected and analysed the quantitative data, which was then able to inform the qualitative data collection and analysis.

There are different ways in which a mixed methods design can contribute to the development and evaluation of interventions, including triangulation, complementarity, development, initiation and expansion. The approaches that are implemented depend on the complexity of the intervention (Greene 2007; Farquhar, Ewing & Boot 2011).

Thus, for this study, the first three elements – development, complementarity and triangulation were considered appropriate and were implemented to integrate the results.

Development is the process by which the results from one approach are used to inform another approach, resulting in the development of an instrument or a schedule of questions for an interview (Greene et al. 1989). In this project, *development* occurred when the results of the self-administered questionnaire were used to guide the individual interviews with the new graduate nurses. The survey provided a quantitative ranking of the factors that most frequently caused stress in new graduates. This information was then used to focus the discussions during the individual interviews with new graduate nurses.

Complementarity is the process which pursues elaboration, intensification and exemplification to explore and investigate an issue from different outlooks to establish conclusions (Greene et

al. 1989). In this study, *complementarity* was achieved by considering the results of all three studies, bringing together the perspectives of both the new graduates and the nurse educators. This technique provided the researcher with a more elaborate understanding of the situations that cause new graduate nurses stress, the current approaches used to assist these graduate nurses in coping with the stress and the experiences of the educators in using simulation as an intervention.

Triangulation is when more than one method or approach is used to measure a particular phenomenon to provide confidence in the consistency of the data and the conclusion derived. In this study, different methods (in a mixed methods design) were used to determine the stress factors among new graduate nurses to then design an intervention. The self-administered survey and individual interviews with new graduate nurses and the group discussion with nurse educators all explored the factors that resulted in stress for new graduate nurses. The self-administered survey of new graduate nurses provided objective measures of a broad range of stressors that could then be ranked, while the individual interviews with the new graduates explored the same phenomena but the interviews allowed for a deeper understanding of what was stressful from their perspective. The group discussion with nurse educators investigated the same issue but through the lens of those educators who were there to support the new graduates, and they also provided feedback and their views on the potential use of simulation to overcome stressors experienced by new graduate nurses.

Intervention as part of a mixed methods study allows the design of a complex intervention using multiple data sources. The integration of the results of the three studies aimed to inform the design of a SBLE that was meaningful (addressing significant issues that cause stress), contextually realistic (increasing the fidelity of the simulation) and feasible (considering the experience and resources available).

3.10 Summary

In this chapter, the use of a mixed methods research design incorporating an intervention was described in detail. The intervention was designed based on results obtained from the three studies: a self-administered survey, individual interviews of new graduate RNs, and a group discussion of nurse educators. This was the most appropriate approach to explore the research question, and address the aims of the study explaining both the quantitative and qualitative components. This chapter described methods used in the self-administered survey, individual interviews with new graduate RNs, and a group discussion with nurse educators. In addition, the chapter also described the importance of integrating the results of the mixed methods to design a complex intervention in the form of a SBLE as a strategy to reduce the identified stressors. This chapter provided rich information which has guided the researcher in designing a scenario to be used for a SBLE with the potential to reduce the identified stressors from this study.

The next chapter will present the analyses of the three studies.

CHAPTER 4 DATA ANALYSIS

4.1 Introduction

This chapter will present the data analysis from the three components of the project. As data collected were both quantitative and qualitative in nature, this chapter is divided into three sections. The first section reports on the self-administered survey of new graduate RNs, exploring both the level of and factors contributing to stress among new graduate RNs working in ICUs. The second section presents findings from the individual interviews with new graduate RNs to gain a deeper and more detailed understanding of their experiences. The third section analyses the group discussion with nurse educators to determine the extent of educational support currently provided to new graduates and whether there has been a focus on the use of simulation interventions.

4.2 Study 1: Survey of New Graduate RNs

4.2.1 Introduction

This section of the chapter provides a comprehensive analysis of the descriptive and inferential statistics derived from the data collected in the self-administered survey. The descriptive statistics were used to analyses demographic information, the PSS-10 to measure the level of stress, and the ENSS-57, divided into 9 subscales, was used to determine the factors that cause stress (see Appendix 6). Inferential statistics were then used to determine relationships between the demographic information and work characteristics, and the PSS-10 items and ENSS-57

items.

The self-administered survey was distributed to all new graduates working in the ICUs at the KSMC-R. The aim of the survey was to determine the level of stress and identify the key stressors experienced by new graduate nurses working in the ICUs. Thus, the primary questions designed to achieve the aim of the study were:

1. What is the level of stress experienced by the new graduate nurses in the ICUs?
2. What are the factors contributing to stress among new graduate nurses working in the ICUs?

In addition, analysis was conducted to determine if there were any differences in stress related to the demographic and work-related variables.

4.2.2 Findings

4.2.2.1 Response Rate

All new graduates RNs working in the ICUs received a survey. From a total of 261 surveys that were distributed to all new graduates working in the ICUs, 19 surveys (7.2 per cent) were not returned, 29 respondents (11.0 per cent) did not meet the inclusion criteria and 24 surveys (10.0 per cent) were incomplete. Therefore, 189 surveys were included in the analysis, representing an effective response rate of 72.4 per cent.

4.2.2.2 Demographic Characteristics

The demographic characteristics of the sample are summarised in Table 5. The majority of the respondents were female (n=145, 76.7 per cent), fall within the first age group category of 19–25 years of age (n=101, 53.4per cent), were single (n=102, 54.0per cent) and did not have any children (n=116, 61.4per cent). The remainder of the statistical analysis is presented in Table

5.

Table 5: Demographic characteristics of the sample (n=189)

Demographic variables	Frequency =n	Percentage (%)
Gender		
Male	44	(23.3)
Female	145	(76.7)
Total	189	(100.0)
Age groups		
19–25	101	(53.4)
26–35	71	(37.6)
36–45	12	(6.3)
46–55	5	(2.6)
Total	189	(100.0)
Marital status		
Single	102	(54.0)
Married	78	(41.3)
Divorced	9	(4.7)
Total	189	(100.0)
Dependents		
No child	116	(61.4)
1–2 children	52	(27.5)
>2 children	21	(11.1)
Total	189	(100.0)

Education and Employment History

The level of education and employment history of the respondents are presented in Table 6. Most of the respondents had completed a three-year Diploma of Nursing Science (DNS) (n =119, 63.0 per cent) and had been employed as RNs for 4–6 months (n= 57, 30.2 per cent). Approximately one third of respondents indicated having worked in an ICU setting for 4–6 months (n=65, 34.0 per cent) and the majority worked full time (n=170, 89.9 per cent). The remainder of the statistical analysis are is presented in Table 6.

Table 6: Educational and employment history (n=189)

Education &employment history	Frequency =n	Percentage (%)
Level of education		
DNS	119	(63)
ADN	39	(20.6)
BSN	31	(16.4)
Total	189	(100.0)
Employment as RN		
0–3 months	30	(15.9)
4–6	57	(30.2)
7–9	47	(24.9)
10–12	55	(29.0)
Total	183	(100.0)
Working in ICUs		
0–3 months	37	(20.0)
4–6	65	(34.0)
7–9	39	(20.6)
10–12	48	(25.4)
Total	183	(100.0)
Time commitment		
Part time	19	(10.1)
Full time	170	(89.9)
Total	189	(100.0)

ICU Setting, Shift Type and Hours Worked

The KSMC-R contains 11 ICUs categorised into two groups: the adult-ICUs (n =110, 58.1 per cent) and the paediatric-ICUs (n=79, 41.9 per cent). Details of the different types of ICUs are described in Table 7. The percentage of respondents working in each of the ICUs was reasonably evenly spread, with a range of 6.3 per cent to 12.8 per cent. A significant percentage of respondents worked rotating shifts (n=76, 40.2 per cent) followed by morning shifts (n=63, 33.3 per cent).From the analysis of the data, a high frequency of respondents worked between 41 and 45 hours per week (n=77, 40.7 per cent) and nearly a third of the respondents worked more than 45 hours per week (n=56, 29.7 per cent). The remainder of the statistical analysis is presented in Table 7.

Table 7: ICU setting, shift type and hours worked (n=189)

Type of ICU	Frequency =n	centage (%)
Adult-ICUs		
Medical-ICU	13	(7.0)
Surgical-ICU	22	(11.6)
Trauma-ICU	22	(11.6)
Isolation and Infected-ICU	20	(10.6)
Burn Unit (BU)	12	(6.3)
CCU	21	(11.0)
OB-ICU	15	(8.0)
Paediatric-ICUs		
P-ICU-1	14	(7.4)
P-1CU-2	14	(7.4)
R-ICU	12	(6.3)
N-ICU	24	(12.8)
Total	189	100.0
Shift type		
Morning	63	(33.3)
Afternoon	6	(3.2)
Night	7	(3.7)
Split shift	37	(19.6)
All shifts	76	(40.2)
	189	100.0
Hours work/week		
20–30 h	22	(11.6)
31–40 h	34	(18.0)
41–45 h	77	(40.7)
>45 h	56	(29.7)
Total	189	100.0

4.2.2.3 Perceived Stress Scale (PSS-10)

The PSS-10 instrument was used to quantify the levels of stress experienced by the respondents in the month prior to being surveyed, using the mean score and SD. A 5-point Likert scale using a frequency rating of 0=Never, 1=Almost never, 2=Sometimes, 3=Fairly often, and 4=Very often was used. Items 4,5,7 and 8 were positively phrased and therefore their scores were reversed in the analysis.

From the analysis of the PSS-10 items, the highest mean and SD corresponds to PSS-3, *Felt*

nervous and 'stressed' (mean= 3.27, SD=1.24), followed by PSS-4, *Felt confident about your ability to handle your personal problems*(mean= 3.21, SD=1.27).PSS-8, *Felt that you were on top of things*, was ranked the third highest (mean =3.17, SD=1.19) and PSS-10, *Angered because of things that were out of your control*, was ranked the fourth highest (mean= 3.02, SD= 1.40). PSS-2, *Felt that you were unable to control the important things in your life*, was ranked as the lowest level of stress (mean= 2.77, SD= 1.51). The total perceived level of stress for the PSS-10 items was calculated using the overall total mean and the SD (mean=29.80, SD= 5.02). As the total possible score for all items is 40 this represents a global result of stress rated as *fairly often*. The remainder of the statistical analysis is presented in Table 8.

Table 8: Level of stress associated with PSS-10 items (n=189)

PSS-10 items	Never(0) n=(%)	st never (1) n=(%)	netimes (2) n=(%)	ly often (3) n=(%)	Very often (4) n=(%)	Mean	SD
PSS-1. During the last month, how often have you been upset because of something that happened unexpectedly?	20 (10.6)	39 (20.6)	57 (30.2)	45 (23.8)	28 (14.8)	2.95	1.41
PSS-2. During the last month, how often have you felt that you were unable to control the important things in your life?	24 (12.7)	45 (23.8)	50 (26.5)	41 (21.7)	29 (15.3)	2.77	1.51
PSS-3. During the last month, how often have you felt nervous and 'stressed'?	8.00 (4.2)	43 (22.8)	56 (29.6)	46 (24.3)	36 (19.0)	3.27	1.24
PSS-4. During the last month, how often have you felt confident about your ability to handle your personal problems?*	11 (5.8)	37 (5.8)	67 (35.4)	39 (20.6)	35 (18.5)	3.21	1.27
PSS-5. During the last month, how often have you felt that things were going your way?*	10 (5.3)	52 (27.5)	67 (35.4)	42 (22.2)	18 (9.5)	2.98	1.16
PSS-6. During the last month, how often have you found that you could not cope with all the things that you had to do?	18 (9.5)	50 (26.5)	64 (33.9)	40 (21.2)	17 (9.0)	2.84	1.29
PSS-7. During the last month, how often have you been able to control irritations in your life?*	13 (6.9)	43 (22.8)	59 (31.2)	52 (27.5)	22 (11.6)	2.98	1.26
PSS-8. During the last month, how often have you felt that you were on top of things?*	11 (5.8)	33 (17.5)	68 (36.0)	55 (29.1)	22 (11.6)	3.17	1.19
PSS-9. During the last month, how often have you been angered because of things that were out of your control?	14 (7.4)	39 (20.6)	53 (28.0)	56 (29.6)	27 (14.3)	2.97	1.32
PSS-10. During the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	18 (9.5)	40 (21.2)	55 (29.1)	45 (23.8)	31 (16.4)	3.02	1.40

*Scores for items 4,5,7 and 8 have been reversed positively.

4.2.2.4 Expanded Nursing Stress Scale (ENSS-57)

The ENSS-57 items were scored using a 5-point Likert scale ranging from 0= Does not apply, 1= Never stressful, 2=Occasionally stressful, 3=Frequently stressful and 4= Extremely stressful. In order to determine the most frequently occurring stressors, both the individual items (57) and then the subscales (9) have been ranked using means.

ENSS-57Subscales

The 9 ENSS-57subscales were ranked based on the highest to lowest mean and SD. As the subscales have different numbers of items, the means are calculated as an overall mean for items in each subscale rather than means of subscale totals. Based on the ranking, the highest stressor was the subscale *Discrimination* (mean= 3.12, SD= 0.99), the second highest subscale was *Problems with supervisors* (mean=3.03, SD=0.80) and the third highest subscale was *Workload* (mean= 2.90, SD= 0.78). The subscale with the lowest frequency was *Conflict with physicians* (mean=2.48, SD= 0.88).The remainder of the statistical analysis is presented in Table 9.

Table 9: Rank of 9 ENSS-57 subscale (n=189)

Subscale	Frequency			
	No. of subscale items	Mean	SD	Rank
Death and dying	7	2.52	0.75	7
Conflict with physicians	5	2.48	0.88	9
Inadequate emotional preparation	3	2.66	0.82	6
Problems with peer support	6	2.80	0.84	4
Patients and their families	8	2.50	0.74	8
Uncertainty concerning treatment	9	2.74	0.63	5
Problems with supervisors	7	3.03	0.80	2
Workload	9	2.90	0.78	3
Discrimination	3	3.12	0.99	1

ENSS-57Items

The 57 individual items used to measure stress experienced by the new graduate nurses in the ICUs were then ranked using the mean and SD. The higher the score, the more frequently the stressors occurred. The results for the individual items are grouped in their respective subscales.

Table 10 presents the respondents' responses to the *Discrimination* subscale, the highest ranked subscale. Respondents state that *Being sexually harassed* was the most frequent stressful situation and *Experiencing discrimination because of race or ethnicity* was the least frequent for this subscale. They were ranked fifth and twelfth overall.

Notably more than 70 per cent of respondents rated all three items as occasionally to extremely stressful. The remainder of the statistical analysis is presented in Table 10.

Table 10: Rank of items with ENSS-57 Discrimination subscale (n=189) (n=189)

Discrimination	Does not apply= (0)	Never stressful =(1)	Occasionally stressful=(2)	Frequently stressful=(3)	Extremely stressful=(4)	Mean	SD	Rank in ENSS-57 items
	n= (%)	n= (%)	n= (%)	n= (%)	n= (%)			
Being sexually harassed	17 (9.0)	29 (15.3)	64 (33.9)	44 (23.3)	35 (18.5)	3.17	1.38	5
Experiencing discrimination on the basis of sex	19 (10.1)	36 (19.0)	44 (23.3)	64 (33.9)	26 (13.8)	3.12	1.40	7
Experiencing discrimination because of race or ethnicity	25 (13.2)	31 (16.4)	52 (27.5)	46 (24.3)	35 (18.5)	3.05	1.53	12

Table 11 presents the respondents' views on stressful events within the *Problems with supervisors* subscale, the second most frequent subscale. *Lack of support by nursing administration* was rated as the most frequent item in this subscale followed by *Lack of support from immediate supervisor* (ranked 3 and 4 respectively for all items). The respondents stated that the least frequent event in this subscale was *Being held accountable for things over which I have no control*. The remainder of the statistical analysis is presented in Table 11.

Table 11: Rank of items ENSS-57 Problem with supervisors subscale (n=189)

Problems with supervisors	Does not apply= (0)	Never stressful =(1)	Occasionally stressful=(2)	Frequently stressful=(3)	Extremely stressful=(4)	Mean	SD	Rank in ENSS-57 items
	n= (%)	n= (%)	n= (%)	n= (%)	n= (%)			
Conflict with a supervisor	33 (17.5)	15 (7.9)	46 (24.3)	53 (28.0)	42 (22.2)	3.14	1.38	6
Lack of support from my immediate supervisor	37 (19.6)	10 (5.3)	50 (26.6)	50 (26.6)	42 (22.2)	3.27	1.29	4
Criticism by a supervisor	29 (15.3)	26 (13.8)	43 (22.8)	59 (31.2)	32 (16.9)	2.80	1.53	29
Lack of support by nursing administration	39 (20.6)	9 (4.8)	41 (21.7)	51 (27.0)	49 (25.9)	3.32	1.36	3
Being held accountable for things over which I have no control	14 (7.4)	15 (7.9)	59 (31.2)	62 (32.8)	39 (20.6)	2.78	1.22	31
Lack of support from other health care administrators	12 (6.3)	1 (0.5)	49 (25.9)	62 (32.8)	36 (19.0)	3.0	1.35	15
Criticism by nursing administration	28 (14.8)	20 (10.6)	57 (30.2)	56 (29.6)	28 (14.8)	2.83	1.40	27

Table 12 presents the respondents' responses to items in the *Workload* subscale, ranked as the third most frequent subscale. The respondents rated *Not enough staff to adequately cover the unit* as the most frequent event (ranked second overall), followed by *Not having enough time to complete all nursing tasks* and *Having to make decisions under pressure*. However, *Not enough time to provide emotional support to the patient* was ranked as the least stressfulevent (ranked 52nd overall). The remainder of the statistical analysis is presented in Table 12.

Table 12: Rank of items with ENSS-57 Workload subscale (n=189)

Workload	Does not apply= (0)	Never stressful =(1)	Occasionally stressful=(2)	Frequently stressful=(3)	Extremely stressful=(4)	Mean	SD	Rank in ENSS-57 items
	n= (%)	n= (%)	n= (%)	n= (%)	n= (%)			
Unpredictable staffing and scheduling	37 (19.6)	23 (12.2)	50 (26.5)	56 (29.6)	23 (19.6)	2.77	1.42	34
Not enough time to provide emotional support to the patient	25 (13.2)	24 (12.7)	41 (21.7)	58 (30.7)	41 (21.7)	2.24	1.75	52
Not enough time to complete all my nursing tasks	32 (16.9)	16 (8.5)	49 (25.9)	52 (27.5)	40 (21.2)	3.13	1.37	8
Too many non-nursing tasks required, such as clerical work	24 (12.7)	26 (13.8)	48 (25.4)	56 (29.6	35 (18.5)	2.77	1.46	33
Not enough staff to adequately cover the unit	35 (18.5)	13 (6.9)	52 (27.5)	54 (28.6)	35 (18.5)	3.34	1.40	2
Not enough time to respond to the needs of patients' families	23 (12.2)	16 (8.5)	45 (23.8)	65 (34.4)	40 (21.2)	2.96	1.30	17
Demands of patient classification system	21 (11.1)	15 (7.9)	46 (24.3)	69 (36.5)	38 (20.1)	2.78	1.31	32
Having to work through breaks	34 (18.0)	19 (10.1)	45 (23.8)	51 (27.0)	40 (21.2)	3.00	1.45	14
Having to make decisions under pressure	31 (16.4)	14 (7.4)	48 (25.4)	59 (31.9)	37 (19.6)	3.07	1.36	10

Table 13 presents the respondents' responses to the *Problems with peer support* subscale, the fourth most frequently stressful subscale. The respondents indicated that *Difficulty in working with a particular nurse (or nurses) in my immediate work setting* was the most frequently stressful situation (ranked 18 overall), while *Difficulty in working with nurses of the opposite sex* was the least frequent (ranked 44 overall).The remainder of the statistical analysis is presented in Table 13.

Table 13: Rank of items within ENSS-57 Problem with peer support (n=189)

Problems with peer support	Does not apply= (0)	Never stressful =(1)	Occasionally stressful=(2)	Frequently stressful=(3)	Extremely stressful=(4)	Mean	SD	Rank in ENSS-57 items
	n= (%)	n= (%)	n= (%)	n= (%)	n= (%)			
Lack of opportunity to talk openly with other personnel about problems in the work setting	14 (7.4)	30 (15.9)	62 (32.8)	59 (31.2)	24 (12.7)	2.87	1.28	21
Lack of opportunity to share experiences and feelings with other personnel in the work setting	16 (8.5)	31 (16.4)	59 (31.2)	61 (32.3)	22 (11.6)	2.82	1.30	28
Lack of an opportunity to express to other personnel on the unit my negative feelings towards patients	17 (9.0)	28 (14.8)	64 (33.9)	64 (33.9)	16 (8.5)	2.70	1.24	38
Difficulty in working with a particular nurse (or nurses) in my immediate work setting	12 (6.3)	34 (18.0)	57 (30.2)	60 (31.7)	26 (13.8)	2.94	1.27	18
Difficulty in working with a particular nurse (or nurses) outside my immediate work setting	13 (6.9)	37 (19.6)	42 (22.2)	63 (33.3)	29 (15.3)	2.93	1.33	20
Difficulty in working with nurses of the opposite sex	32 (16.9)	24 (12.7)	52 (27.5)	61 (32.3)	20 (10.6)	2.50	1.47	44

Table 14 presents the respondents' responses to the *Uncertainty concerning treatment* subscale, the fifth most frequent subscale. The respondents rated *Fear of making a mistake in treating a patient* as the most frequent event (ranked 9 overall), followed by *Being in charge with inadequate experience* (ranked 11 overall).The respondents identified that *A physician not being present in a medical emergency* was the least frequent event. The remainder of the statistical analysis is presented in Table 14.

Table 14: Rank of items within ENSS-57Uncertainly concerning treatment (n=189)

oncerning treatment	Does not apply= (0)	Never stressful =(1)	Occasionally stressful=(2)	Frequently stressful=(3)	Extremely stressful=(4)	Mean	SD	Rank in ENSS-57 items
	n= (%)	n= (%)	n= (%)	n= (%)	n= (%)			
ormation from a physician regarding the ion of a patient	20 (10.6)	14 (7.4)	71 (37.6)	50 (26.5)	34 (18.0)	2.63	1.29	39
dering what appears to be an inappropriate patient	8 (4.2)	22 (11.6)	62 (32.8)	73 (38.6)	24 (12.7)	2.49	1.22	46
; a mistake in treating a patient	6 (3.2)	29 (15.3)	71 (37.6)	42 (22.2)	41 (21.7)	3.11	1.29	9
ɔt being present in a medical emergency	22 (11.6)	12 (6.3)	69 (36.5)	47 (24.9)	39 (20.6)	2.25	1.43	51
uately trained for what I have to do	17 (9.0)	4 (2.1)	68 (36.0)	64 (33.9)	36 (19.0)	2.60	1.13	40
vhat a patient or a patient's family ought to he patient's condition and its treatment	11 (5.8)	20 (10.6)	63 (33.3)	64 (33.9)	31 (16.4)	2.86	1.19	24
to health and safety hazards	22 (11.6)	28 (14.8)	46 (24.3)	59 (31.9)	34 (18.0)	2.84	1.48	26
e with inadequate experience	10 (5.3)	31 (16.4)	57 (30.2)	56 (29.6	35 (18.0)	3.07	1.29	11
garding the operation and functioning of ıipment	22 (11.6)	19 (10.1)	52 (27.5)	62 (32.8)	34 (18.0)	2.78	1.35	30

Table 15 presents the respondents' responses to the *Inadequate emotional preparation* subscale, the sixth most frequent subscale. The respondents expressed that *Being asked a question by a patient for whom I do not have a satisfactory answer* was the most stressful event, while *Feeling inadequately prepared to help with the emotional needs of a patient* was the least stressful event. None of the items in this subscale ranked higher than 35. The remainder of the statistical analysis is presented in Table 15.

Table 15: Rank of items within ENSS-57 Inadequate emotional preparation (n=189)

Inadequate emotional preparation	Does not apply= (0)	Never stressful =(1)	Occasionally stressful=(2)	Frequently stressful=(3)	Extremely stressful=(4)	Mean	SD	Rank in ENSS-57 items
	n= (%)	n= (%)	n= (%)	n= (%)	n= (%)			
Feeling inadequately prepared to help with the emotional needs of a patient's family	12 (6.3)	16 (8.4)	50 (26.5)	34 (18.0)	77 (40.7)	2.75	1.20	37
Being asked a question by a patient for whom I do not have a satisfactory answer	10 (5.3)	19 (10.1	57 (30.2)	25 (13.2)	78 (41.3)	2.76	1.17	35
Feeling inadequately prepared to help with the emotional needs of a patient	23 (12.2)	15 (7.9)	60 (31.7)	16 (8.4)	75 (39.7)	2.48	2.48	47

Table 16 presents the respondents' responses to the items in the *Death and dying* subscale, which was ranked as the seventh most frequent subscale by respondents. The respondents stated that *Watching patients suffer* was the most frequently stressful event, and not only for the subscale: it was the most frequent of all items. This was followed by *Feeling helpless in the case of a patient who fails to improve* (ranked 25 overall). However, the respondents also stated that *Listening or talking to a patient about his/her approaching death* was the least frequent event (ranked 56 overall). The remainder of the statistical analysis is presented in Table 16.

Table 16: Rank of items within ENSS-57 Death and dying subscale (n=189)

Death and dying	Does not apply= (0)	Never stressful =(1)	Occasionally stressful=(2)	Frequently stressful=(3)	Extremely stressful=(4)	Mean	SD	Rank in ENSS-57 items
	n= (%)	n= (%)	n= (%)	n= (%)	n= (%)			
Performing procedures that patients experience as painful	17 (9.0)	21 (11.1)	49 (25.9)	70 (37.0)	32 (16.9)	2.75	1.31	36
Feeling helpless in the case of a patient who fails to improve	14 (7.4)	23 (12.2)	66 (34.9)	60 (31.7)	26 (13.8)	2.84	1.26	25
Listening or talking to a patient about his/her approaching death	8 (4.2)	19 (10.1)	33 (17.5)	45 (23.8)	84 (44.4)	1.61	1.61	56
The death of a patient	22 (11.6)	32 (16.9)	53 (28.0)	46 (24.3)	36 (19.0)	2.58	1.56	42
The death of a patient with whom you developed a close relationship	15 (9.0)	13 (6.9)	36 (19.0)	69 (36.5)	56 (29.6)	1.97	1.54	54
Physician(s) not being present when a patient dies	13 (6.9	27 (14.3)	42 (22.2)	79 (41.8)	28 (14.8)	2.41	1.35	48
Watching a patient suffer	33 (17.5)	33 (17.5)	56 (29.6)	60 (31.7)	40 (21.2)	3.43	1.01	1

Table 17 presents the respondents' responses to items in the *Patient and their families* subscale, the eighth most frequently stressful subscale. The respondents expressed that *Being the one that has to deal with the patients' families* was the most frequent item (ranked 13 overall), followed by *Having to deal with abuse from patients' families* (ranked 16 overall).The respondents confirmed that *Patients making unreasonable demands* is considered the least stressful event. This item was ranked last overall. The remainder of the statistical analysis is presented in Table 17.

Table 17: Rank of items within ENSS-57 Patient and their families (n=189)

Patients and their families	Does not apply= (0)	Never stressful =(1)	Occasionally stressful=(2)	Frequently stressful=(3)	Extremely stressful=(4)	Mean	SD	Rank in ENSS-57 items
	n= (%)	n= (%)	n= (%)	n= (%)	n= (%)			
Patients making unreasonable demands	2 (1.1)	8 (4.2)	39 (20.6)	71 (37.6)	69 (36.5)	1.59	1.33	57
Having to deal with violent patients	10 (5.3)	16 (8.5)	46 (24.3)	58 (30.7)	59 (31.2)	1.94	1.52	55
Patients' families making unreasonable demands	10 (5.3)	35 (18.5)	53 (28.0)	71 (37.6)	20 (10.6)	2.59	1.25	41
Being blamed for anything that goes wrong	9 (4.8)	26 (13.8)	75 (39.7)	61 (32.3)	18 (9.5)	2.86	1.12	22
Being the one that has to deal with the patients' families	12 (6.3)	38 (20.1)	63 (33.3)	49 (25.9)	27 (14.3)	3.03	1.26	13
Having to deal with abusive patients	22 (11.6)	25 (13.2)	47 (24.9)	40 (21.4)	55 (29.1)	2.28	1.71	49
Having to deal with abuse from patients' families	8 (4.2)	36 (19.0)	64 (33.9)	60 (31.7)	21 (11.1)	2.96	1.15	16
Not knowing whether patients' families will report you for inadequate care	19 (10.1)	16 (8.5)	79 (41.8)	51 (27.0)	24 (12.7)	2.72	1.25	23

Finally, Table 18 presents the respondents' responses to the items in the *Conflict with physicians* subscale, the lowest ranked of the ENSS-57 subscales. The respondents expressed that *Criticism by a physician* was the most frequent event in the subscale (19 overall), followed by *Conflict with a physician*. The lowest-ranked event within this subscale was *Making a decision concerning a patient when the physician is unavailable*. The remainder of the statistical analysis is presented in Table 18.

Table 18: Rank of items within ENSS-57 Conflict with physician (n=189)

Conflict with Physicians	Does not apply= (0)	Never stressful =(1)	Occasionally stressful=(2)	Frequently stressful=(3)	Extremely stressful=(4)	Mean	SD	Rank in ENSS-57 items
	n= (%)	n= (%)	n= (%)	n= (%)	n= (%)			
Criticism by a physician	13 (6.9)	31 (16.4)	55 (29.1)	61 (32.3)	29 (15.3)	2.94	1.31	19
Conflict with a physician	20 (10.6)	27 (14.3)	38 (20.1)	78 (41.3)	26 (13.8)	25.2	1.41	43
Disagreement concerning the treatment of a patient	7 (3.7)	19 (10.1)	47 (24.9)	90 (47.6)	26 (13.8)	2.28	1.20	50
Making a decision concerning a patient when the physician is unavailable	7 (3.7)	22 (11.6)	31 (16.4)	97 (51.3)	32 (16.9)	2.16	1.27	53
Having to organise doctors' work	26 (13.8)	31 (16.4)	37 (19.6)	53 (28.0)	42 (22.2)	2.49	1.65	45

4.2.2.5 Relationship between PSS-10 Items, and Demographics and Work Characteristics

A relationship between PSS-10 items, demographics and work characteristics were analysed using inferential statistics with multiple regression analysies that, which included the Univariate, Multivariable Model and Hierarchical Linear Mixed-Effect Regression Models. These models were used to identify the relationships and the differences between the study variables, the level of stress by PSS-10 items, factors of stress based on the 9 ENSS-57 subscales and the demographic variables using the mean differences, 95% confidence interval (CI) and the comparison of the p-values.

Table 19 presents the results from the Univariate Linear Mixed-Effects Regression which was used to understand the level of stress by PSS-10 items versus the demographic variables. There is a statistically significant difference in the mean PSS-10 total scores between males and females (p-value=0.0044). The mean difference of PSS-10 for males compared to females was-2.4 (estimate=-2.4, 95% CI: -4.1, -0.8), indicating a higher frequency of stress in female respondents. There were no other significant differences associated with the mean total PSS-10 and the rest of the demographic variables.

There was also a statistically significant difference in the mean PSS-10 total scores between full- time and part-time respondents (p-value=0.0323). Part-time respondents have a mean difference of -2.6 compared to full-time respondents (estimate=-2.5, 95% CI: -5.0, -0.2), indicating higher stress levels in full-time respondents than in part-time respondents.

The only other statistically significant difference in the meanPSS-10totalscores was between respondents working 31–40 hours per week and those working 41–45 hours per week (p-value=0.0465).The mean difference was -3.3(estimate=-3.3, 95% CI: -6.0, -0.62), indicating higher stress levels in respondents who worked longer hours.

Table 19: Relationship between PSS-10 items versus demographic and work-related variables

Outcome	Predictor	Comparison value	Reference value	Estimate	Lower 95% CL	Upper 95% CL	Global p-value
PSS-10	Demographic variable: gender	Male	Female	-2.4475	-4.1217	-0.7733	0.0044
PSS-10	Education & employment history: time commitment	Part time	Full time	-2.5969	-4.9723	-0.2215	0.0323
PSS-10	ICU setting, shift type & hours worked: hours worked	31–40h	41–45h	-3.2995	-5.9762	-0.6227	0.0465

4.2.2.6 Relationship between ENSS-57 Subscales and Demographic Variables

Table 20 illustrates the relationship between the ENSS-57 subscales and the demographic variables. There was a statistically significant difference in the mean *Uncertainty concerning treatment* subscale scores in regards to gender (p-value=0.0361). The mean difference of *Uncertainty concerning treatment* for females in comparison to males was 2.04 (estimate=2.04, 95% CI: 0.13, 3.9), indicating a higher frequency of stress in female respondents. There were no other statistically significant results with the mean scores for *Uncertainly concerning treatment* and the rest of the demographic variables within this category.

There was also a statistically significant difference in the mean *Workload* subscale scores in regards to gender (p-value= 0.0280). The mean difference of the *Workload* scores for females compared to males was 2.6 (estimate= 2.6, 95% CI: 0.3, 5.0), indicating a higher frequency of stress in female respondents. There were no other statistically significant results for *Workload* and the rest of the demographic variables within this category.

There was a statistically significant difference in the mean *Workload* scores with age groups (p-value= 0.0123). The mean difference for *Workload* for the age group 19–25 compared to the 26–35 age group respondents was 1.4 (estimate= 1.4, 95% CI:-0.6, 3.4), indicating a higher frequency of stress among respondents within the19–25 age group. There were no other statistically significant differences for *Workload* and the rest of the demographic variables within this category. There was also a statistically significant difference in the mean *Workload* scores with regards to the type of ICU setting (p-value=0.0125), with a mean difference of 3.5 for the respondents in the adult compared to the paediatric ICUs (estimate= 3.5, 95% CI: 0.8, 6.3). This indicates a higher frequency of stress in the respondents working in the adult ICUs. There were no other statistically significant results for the mean scores for *Workload* and the rest of the demographic variables within this category.

There was a statistically significant difference in the mean for the *Inadequate emotional preparation* scores with regards to age groups (p-value= 0.0004). The mean difference for this subscale for the 19–25 age group in comparison to the age group 26–35 was 0.068 (estimate= 0.068, 95%CI: -0.65, 0.8). This indicates a higher frequency of stress amongst respondents within the19–25age group, although the difference is notably small. There were no other statistically significant differences with the mean *Inadequate emotional preparation* scores and the rest of the demographic variables within this category.

There was a statistically significant difference in the mean *Death and dying* scores with marital status (p-value=<.0001). The mean difference for married respondents compared to those who were single was 2.8 (estimate= 2.8, 95% CI: 1.0, 4.5), indicating a higher frequency of stress in the married group. There were no other significant differences associated with the mean *Death and dying* scores and the rest of the demographic variables within this category.

There was also a statistically significant difference in the mean *Death and dying* scores with

the type of ICU setting (p-value= <.0001). The mean difference for respondents working in the adult compared to paediatric ICUs was 3.8 (estimate= 3.8, 95% CI: 2.3, 5.4), indicating a higher frequency of stress among respondents in the adult ICUs.

There was a statistically significant difference in the mean *Death and dying* scores within the different types of ICUs (p-value= <.0001). The mean difference for respondents in the trauma-ICU compared to the medical-ICU was 2.0 (estimate= 2.0, 95% CI:-0.3, 4.3), indicating a higher frequency of stress among respondents working in the trauma-ICU. There were no other significant differences associated with *Death and dying* and the rest of the ICU settings, shift types and hours worked within this category.

There was a statistically significant difference in the mean *Patients and their families* scores with marital status (p-value= 0.0277). The mean difference for respondents who were single compared with the married group was-0.32 (estimate= -0.32, 95% CI: -2.1, 1.5), indicating a higher frequency of stress among respondents in the married group. There were no other significant differences associated with the *Patients and their families* and the rest of the demographic variables within this category.

There was also a statistically significant difference in mean *Patients and families* scores within the type of ICU setting (p-value= <.0001).The mean difference for the *Patients and families* scores in the adult compared to paediatric ICUs was 7.4 (estimate= 7.4, 95% CI: 5.9, 8.9), indicating a higher frequency of stress in adult ICU respondents. There were no other significant differences associated with *Patients and families* and the rest of the ICU settings, shift types and hours worked within this category.

There was a statistically significant difference in the mean *Discrimination* scores with the number of months the respondents have been working in the ICUs (p-value= 0.0496). The mean difference for the respondents who have worked 0–3 compared to 4–6 months was -1.8

(estimate= -1.8, 95% CI: -3.5, -0.2), indicating a higher frequency of stress among respondents who have worked for 0–3 months. There were no other significant differences associated with *Discrimination* and the rest of the ICU types, shift types and hours worked within this category.

There was a statistically significant difference in the mean *Problems with peer support* scores with the number of months the respondents have been working in the ICUs (p-value=0.0385). The mean difference for the respondents who have worked 0–3 compared to 4–6 months was -1.5 (estimate= -1.5, 95% CI: -3.5, 1.4), indicating a higher frequency of stress among respondents who have worked 0–3 months. There were no other significant differences associated with *Problem with peer support* and the rest of the ICU types, shift types and hours worked within this category.

There was also a statistically significant difference in mean *Problem with peer support* scores with number of dependents (p-value= 0.0024). The mean difference for the respondents with children compared to no child was 2.3 (estimate= 2.3, 95% CI: 0.7, 3.9), indicating a higher frequency of stress for respondents who have 1–2 children. There were no other significant differences associated with *Problem with peer support* and the rest of the demographic variables within this category.

Table 20: Relationship between 9 ENSS-57 subscales versus demographic information

Outcome	Predictor	Comparison value	Reference value	Estimate	Lower 95% CL	Upper 95% CL	Global p-value
Uncertainly concerning treatment	Gender	Female	Male	2.0431	0.1342	3.9520	0.0361
Workload	Gender	Female	Male	2.6675	0.2921	5.0429	0.0280
Workload	Age	19–25	26–35	1.3910	-0.6495	3.4315	0.0123
Workload	Type of ICU	Adult- ICU	Paediatric-ICU	3.5470	0.7732	6.3208	0.0125
Inadequate emotional preparation	Age	19–25	26–35	0.06846	-0.6572	0.7942	0.0004
Death and dying	Marital	Married	Single	2.8222	1.0742	4.5702	<.0001
Death and dying	Type of ICU	Trauma-ICU	Medical-ICU	1.9753	-0.3340	4.2846	<.0001
Death and dying	Type of ICU	Adult-ICU	Paediatric ICU	3.8649	2.3331	5.3966	<.0001
Patients and their families	Marital	Married	Single	-0.3250	-2.1474	1.4975	0.0277
Patients and their families	Type of ICUs	Adult ICU	Paediatric ICU	7.3824	5.8862	8.8786	<.0001
Discrimination	Time working in ICUs	4–6months	0–3months	-1.8439	-3.4911	-0.1968	0.0496
Problems with peer support	Time working in ICUs	4–6months	0–3months	-1.5417	-4.4599	1.3766	0.0385
Problems with peer support	Dependents	1–2 child	No child	2.2951	0.6884	3.9018	0.0024

4.2.3 Summary

The results from the survey comprise demographic variables, and the PSS-10 and ENSS-57 items. The aim of the survey was to provide a more global view of the levels of stress and identify the key stressors experienced by new graduate nurses working in ICUs.ThePSS-10 was employed particularly to focus on measuring the level of stress while the ENSS-57 items

were used to measure the factors that cause stress. The self-administered survey afforded results that were able to inform the next components of the project, namely the individual interviews with new graduate RNs and the group discussion with nurse educators.

In particular, the survey highlighted a wide range of issues from the perspective of a group of respondents who were reasonably homogeneous, consisting of mainly females who were young and who work long hours. These nurses have limited experience working in extremely challenging and stressful environments such as ICUs. The survey showed that the major factors that caused stress among the new graduate nurses were discrimination, problems with supervisors, workload, problems with peer support, uncertainty concerning treatment, and dealing with patients and their families.

The following section will look at the results from the individual interviews with new graduate RNs.

4.3 Study 2: Individual Interviews with New Graduate RNs

4.3.1 Introduction

This section of the chapter will describe the findings from the individual interviews with new graduate RNs working in the ICUs at KSMC-R. The semi-structured individual interviews aimed to gain a deeper understanding of the experiences of the new graduates RNs working in the ICUs, specifically those experiences that were most stressful. To illustrate the findings, direct quotations are provided from the interviews. Specific information and details have been removed from the direct quotations in order to protect the anonymity of participants.

The individual interviews aimed not only to confirm the issues that were the major stressors for new graduates RNs but also to gather descriptions of experiences that could form the basis of scenarios for a simulation intervention.

Thus, specific research questions were used to achieve the above-mentioned aims:

1. What are the factors contributing to stress among new graduate RNs in ICUs?

2. What impact does stress have on new graduate RNs working in ICUs?

4.3.2 Participant's Demographic Information

The interviewees comprised eight female and two male graduate RNs recruited from the adult and paediatric ICUs at KSMC-R. The majority of the participants were single, aged between 22 and 28 years and were of Saudi origin. The participants had various qualifications: two participants had an Associated Degree of Nursing, four participants had a Diploma of Nursing Science and four participants had a Bachelor of Nursing Science. The participants also had varied amounts of working experience ranging between 3 and 12 months. The interviews were conducted for approximately 45 to 60 minutes. Table 21 provides the demographic information of the ten participants.

Table 21: Demographic variables of new graduates RNs interviewees

Participant	Type of ICU Adult and Paediatric	Gender	Age	Qualifications	Experience
Ranna	Medical-ICU	Female	22 years	Diploma	3 months
Rasha	CCU	Female	26 years	ADN	6 months
Amal	Surgical-ICU	Female	24 years	Diploma	9 months
Reem	Isolation-ICU	Female	28 years	Diploma	10 months
Mesfer	Trauma-ICU	Male	23 years	BNS	3 months
Shariffa	Burn Unit	Female	24 years	Diploma	4 months
Sahhar	N-ICU	Female	26 years	BNS	6 months
Hajerry	OB-ICU	Female	23 years	ADN	5 months
Salma	P-ICU	Female	26 years	BNS	5 months
Mousa	Medical-ICU	Male	24 years	BNS	3 months

4.3.3 Findings

The findings based on a content analysis of the data from the interviews are presented as themes, and where appropriate sub-themes, derived from codes identified that best answered the specific research questions to achieve the aims of the study. All the participants preferred to be interviewed in the Arabic language and agreed to the use of digital audio recording. Eight themes were extracted from the transcribed text of the individual interviews.

4.3.3.1 Theme One: Dealing with Patients in Pain

A key stressor among the new graduate RNs was dealing with patients in pain. The new graduates were very concerned that their actions were the *cause* of pain and it was stressful for them not to be able to manage their patients' pain sufficiently. This theme is described in detail under two sub-themes: *causing pain* and *feeling helpless*.

Causing Pain

The new graduate RNs described as stressful having to perform many procedures that cause pain for the patients. For example, inserting intravenous cannula, performing different types of suction, especially via mouth or nasally, or through an endotracheal tube/ tracheotomy, or even moving the patient can cause pain. The stress is exacerbated when the patients are conscious and when relatives are present. It is also particularly stressful when the patient is a child.

The new graduate nurses constantly keep an eye on all their patients, trying to make sure they are comfortable and experiencing minimal pain. However, one participant felt that there are times when what they do adds to their patients' suffering:

> *Working in the ICU is physically and emotionally very challenging and stressful. Patients are constantly in a lot of pain. Sometimes it feels like we are adding to that pain while trying to treat them. (Amal)*

The participants highlighted that certain procedures are more stressful than others:

> *Most of the time I feel like interventions cause a lot of pain for the patients. Specifically when I am transferring a patient from the ICU to other departments for particular procedures or even when I'm transferring them between beds. The patient is in a lot of pain and there's really nothing I can do to reduce the pain, although I try to ensure they are comfortable. (Ranna)*

> *One procedure in particular that causes a lot of pain for patients is when taking blood from the artery, I mean taking arterial blood gas, which is a common technique in the ICU. I get very stressed every time I have to carry out this procedure, especially when the patient starts getting*

agitated due to the unbearable pain.(Mesfer)

Two participants spoke specifically about dealing with patients' reactions to pain:

When changing or reapplying dressing on a patient's bed sore wounds, the patients are conscious or sometimes semi-conscious and so they are able to feel pain.
Sometimes, while the procedure is being performed, change in their facial expression and tears in their eyes can be very emotional to watch.(Mousa)

I realise that the interventions we carry out on the patients do cause a lot of pain. I often see changes in their facial expressions, their voice and body language due to the excruciating pain.(Reem)

Participants indicated that performing procedures on children particularly is emotionally challenging and this is sometimes more difficult when the relatives are present:

It is difficult especially when we are performing a procedure on a child patient that is conscious. As some of the procedures can be quite painful, the children tend to scream and cry, making it very difficult for us to perform the intervention. (Sahhar)

The presence of the respective parents in the procedure room makes our tasks extra challenging as most of the parents stop us from performing our duties as soon as the child starts to cry. (Salma)

Feeling Helpless

The new graduate RNs agreed that working in the ICUs and dealing with patients in pain causes a constant feeling of helplessness and this in turn creates further stress. The participants said the feeling mainly arose due to working in an emotionally challenging environment while being fairly inexperienced. The participants agreed that, although they try to ensure the patients are provided with the best care and feel comfortable at all times, they are still unable to completely alleviate the pain and suffering endured:

Working with critically ill patients, we are constantly trying our best to ensure the patient is comfortable and in minimal pain. We try and create a conversation with conscious patients as

a form of distraction. However, most of the time it is beyond our control. (Rasha)

4.3.3.2 Theme Two: Dealing with Death and Dying

One of the major issues for the new graduate RNs is dealing with death and dying patients, a scenario that is inevitable in the ICUs because so many of the patients admitted to the ICUs are terminally ill. The participants expressed that the situation can be emotionally draining, as they not only have to deal with dying patients but are also expected to find the right words to comfort the grieving family and relatives of the patient. Particularly stressful are situations where relatives assert the staff in some way contributed to a loved one's death. Although training related to dealing with dying patients is provided in nursing schools, the lack of practical experience exerts intense pressure on the new graduate nurses, causing them to feel greatly stressed.

This theme is described in detail under four sub-themes: *emotional and psychological impacts*, *dealing with relatives of dying patients*, *blame for patient deaths*, and *cultural considerations following death.*

Emotional and Psychological Impacts

Participants explained that experiencing the death of a patient can be emotionally and psychologically traumatic:

> *During my internship, I had my first experience dealing with a dying patient. I was emotionally and psychologically affected by the experience and have not been able to recover from it since.(Mousa)*

> *Dealing with dying patients is still something I'm finding hard to deal with. It is a very painful experience as we are not emotionally prepared to deal with such a situation. (Shariffa)*

> *It's always difficult dealing with a dying patient especially in the maternity ICU as this rarely happens. We had a patient who within an hour of a caesarean suffered severe vaginal bleeding,*

cyanosis and tachycardia. The physician on call and the senior nurses started CPR on the patient but unfortunately she died. (Hajerry)

The participants found dealing with terminally ill children particularly stressful. One participant mentioned the impact of having to watch a child suffer:

I feel emotionally disturbed which causes a lot of stress when having to deal with children of different ages who are terminally ill. Besides providing them with the special care that they need, I feel like there is no other sort of assistance that I could provide to help comfort them. (Sahhar)

One participant compares every experience of a dying patient to her own personal experience and thus finds it challenging to deal with most situations:

The first time I ever experienced death was the passing of my mother. So now every time I experience a patient dying, I seem to recall the memories of my mother. (Ranna)

Dealing with Relatives of Dying Patients

Graduate nurses often have to deal with grieving relatives, be it while a patient is dying or in the aftermath of the death of a patient. This has to be dealt with and different people deal with grief differently. This elevates stress among the new graduate nurses as they are not adequately prepared to counsel and console grieving families, which without training can be difficult and demanding:

Dealing with relatives of dying patients is very stressful. I remembered a situation when a 60-year-old patient died, the son of the patient was in an emotional state screaming and crying after the loss his father. It was saddening to watch but the supervisor was able to comfort him to a certain extent and keep him calm. (Ranna)

When I was working in the ICU, I watched a mother grieve after the death of her only son. She was in hysterics and started blaming us for her son's death although he died due to a severe head trauma from a car accident. (Mesfer)

Blame for Patient Deaths

One participant shared an experience of being held accountable for a patient's death:

> *Dealing with dying children is definitely one of the most stressful situations we have to experience in the paediatric-ICUs. Most parents we encounter tend to deal with the death of their children very badly and as a coping mechanism they usually lash out and blame us as a nurses and doctors for wrongdoing, causing the death of the children. (Salma)*

Another participant shared an experience in the ICU whereby a patient died due to a medical error that could have been avoided:

> *I experienced my first dying patient after just 3 months of working in the ICU. The patient had died due to a medical error as the doctor assigned to the case had inadequate experience. He was required to perform a central line insertion but due to the being unable to perform it efficiently the patient died. I have been unable to recover from this particular scenario as the patient could have been saved.(Amal)*

Cultural Considerations Following Death

The participants also agreed that dealing with after-death procedures is another cause of stress. Besides having to abide by the strict Islamic protocol while performing these procedures, having to deal with foreign nurses and their lack of understanding of the Islamic culture and religion exacerbates the stressful atmosphere:

> *After the death of a patient, having to disconnect all the tubes and the process of cleaning the body is very stressful as it is important that it is done following the strict Islamic protocol. (Shariffa)*

> *It is also stressful when we have to work with foreign nurses who are not respectful of our culture and religion and fail to follow the appropriate rules and regulations. (Ranna)*

4.3.3.3 Theme Three: Dealing with Patients' Families/Friends

Dealing with patients' families and friends was a significant stressor for the new graduate nurses. They expressed the inability to adequately support relatives and spoke of the stress arising from what they perceived to be families' unreasonable demands, including blaming the nurses when things went wrong. Therefore, this theme is divided into two sub-themes: *inability to provide support to relatives* and *dealing with abusive relatives*.

Inability to Provide Support to Relatives

The nurses indicated that when they are working in the ICUs they are always occupied, dealing with critically ill patients or sorting out administrative duties, and thus are unable to provide adequate support to the patients' families:

With the rapid turnover of patients in the ICUs, we usually don't have the time to stop and to provide comfort and support to families. (Mesfer)

Dealing with Abusive Relatives

Another key source of stress was dealing with abusive family and friends. Although the new graduates try to meet and accommodate the demands of the patients and their relatives, this is sometimes not possible. The nurses believed that there is insufficient time to tend to theindividual needs of all the patients and their families. This sometimes leads to verbal and physical abuse from the relatives and friends, leaving the new graduate nurses feeling psychologically distressed, lacking in self-confidence and experiencing a plethora of other negative emotions.

One of the participants mentioned that a patient's relative threatened to report her for providing inadequate care to the patient:

> *I have experienced dealing with abusive family members in my unit. The patient's relative was violent and verbally very abusive, leaving me standing there in fear. I refuse to say a word thinking that it might aggravate the situation. I was lucky security was notified and the individual was escorted away. (Shariffa)*

> *Dealing with abusive relatives is something we deal with on a daily basis. It usually is due to misunderstandings and personal problems. Most of the time relatives are abusive because they are not attended to as much as they would like. (Hajerry)*

> *Most of the time, we are advised to remain silent until appropriate support to deal with such situations is provided. (Rasha)*

One participant stated that new graduate nurses are often accused of being responsible for a decline in a patient's condition:

> *I try not to deal with the families as much as I can but sometimes it is unavoidable especially during visiting hours. I've had a family member verbally abuse and accuse me for the patient's condition not improving. (Amal)*

4.3.3.4 Theme Four: Gender and Race

Discrimination in any context is likely to result in heightened levels of stress. All participants voiced that discrimination is part of their daily work life, takes many forms and comes from a number of sources including physicians, patients and relatives. This theme will be described under three sub-themes: *difficulty working with the opposite gender*, *sexual harassment* and *racial discrimination*.

Difficulty Working with the Opposite Gender

In Saudi Arabia in particular, gender plays a pivotal role in everyday life. Socio-cultural and religious practices restrict social and physical contact between men and women. In the health system, this causes difficulties when resource considerations result in nurses of one gender being required to work with colleagues or care for patients of another gender. At a minimum, this can result inconsiderable discomfort for the new graduates. One of the participants highlighted the difficulties endured by female nurses, especially when having to complete administrative duties with no other female staff present:

> *As a female nurse, sometimes it is difficult when we have to carry out administration duties which is usually dominated by male staff. (Amal)*

> *Due to gender segregation, it's sometimes a challenge having to deal with the male staff at administration. To avoid embarrassment and to quicken the process, we sometimes have to succumb to getting a superior to help with the paperwork. (Sahhar)*

The ICU environment is one area where it is more difficult to apply gender segregation and this brings with it a good deal of discomfort. The male participants emphasised that they have to constantly ensure that their body language and conduct around female nurses is within cultural boundaries:

> *I find it very stressful working with female nurses in the same shift. I have to constantly watch my mannerisms, be aware of my body language and my conduct when I am working with them. (Mesfer)*

The majority of the female participants also clearly stated that it tends to be uncomfortable working in the same unit with the opposite gender. However, they also said that it does become easier with time:

> *At the beginning, I would feel shy and embarrassed when around the male nurses but the situation becomes slightly more manageable as time passes. (Reem)*

In addition to this discomfort the situation can escalate to gender harassment. One participant

pointed out that most of the time the allocation of nurses to patients of the same gender is preferred; however, the shortage of staff makes this difficult to do. This can lead to nurses being treated disrespectfully:

> *Due to shortage of staff, often Saudi female nurses are required to attend to the male patients. Due to gender segregation, these female nurses are often treated with disrespect by a number of patients and their respective relatives.(Mousa)*

Sexual Harassment

Many participants agreed that sexual harassment is inappropriate behaviour in the workplace particularly when dealing with staff of the opposite gender. The participants believed that in Saudi Arabia sexual harassment is very much related to cultural and religious values and therefore it is defined significantly differently than in other countries. Experiencing sexual harassment is a stress factor among the new graduate nurses in the ICUs.

The participants explained that sexual harassment usually occurs very subtly, it happens more often than people think and it can occur in many different situations. Two participants shared their experiences of being sexually harassed by a superior:

> *Sexual harassment in the hospital is quite common but is something that occurs on the quiet. I can't seem to count the number of times I have been sexually harassed by a physician. There's nothing I could do about it as there were no witnesses. (Amal)*

> *A patient sensed inappropriate body language and expressions from the physician on rounds towards me and was kind enough to raise his concerns. (Ranna)*

One participant agreed that sexual harassment within the ICUs occurs very often as staff are not segregated based on gender:

> *Sexual harassment occurs quite frequently in the ICUs just because the males and females are not separated based on gender. (Shariffa)*

> *There was once I was approached by a female nurse colleague who was being sexually harassed by a patient's relative. She was scared and was not sure how to make a complain. I understood what she had to endure, interfered and helped resolve the situation. (Mousa)*

However, one participant pointed out that sexual harassment should not always be blamed upon the male staff. From his observations on several occasions, the female staff choose to attract undesirable attention with inappropriate attire and additional beauty accessories during working hours:

> *Sexual harassment is a major issue and is often pinpointed towards the male staff. However, in my experience. I think sometimes it is the fault of the female nurses with the inappropriate choice of attire and the use of extravagant make up and perfume during working hours. This would consequently attract the attention of the male staff. (Mesfer)*

The participants claimed that they have been sexually harassed by patients as well, sometimes repeatedly by one specific patient. One participant mentioned that the nursing administration does address the issue but the most that is done is making sure female staff are not rostered on to provide care to that particular patient:

> *There have been times where patients tend to touch me inappropriately. From what I understand, most of the nurses working in the ICUs have experienced a similar situation. Unfortunately, lodging a complaint does not solve the problem as he is a patient. To ensure the problem does not escalate, a male nurse was placed in charge of the patient. (Rasha)*

Racial Discrimination

The participants also identified racial discrimination in the ICUs as an issue of concern. The participants experience racial discrimination from both patients and their relatives and other co-workers, which makes the working atmosphere very stressful and challenging. For example, some patients refuse treatment from nurses who are not of their preferred racial type. Other co-workers make undesirable racial remarks that can be considered discriminatory. This leads to feelings of hostility, hurt and confusion for these new graduate nurses who are just trying to get accustomed to their new role.

Most of the participants strongly agreed that racial discrimination should be eliminated:

> *Racial discrimination is also a major issue faced in the hospital and is most commonly from the patients and their relatives. Nurses are discriminated based on their respective tribes and the colour of their skin. (Ranna)*

> *In my opinion, the discriminative society should be diminished as it should be understood that the extent of nursing care provided is not dependent on race, tribe or the colour of one's skin. (Hajerry)*

> *Some of the patients especially the aged tend to prefer specific Saudi nurses to care for them. At times, when there is a situation whereby the nurse other than the one of preference attends to them, these patients tend to be discriminative towards them. (Reem)*

4.3.3.5 Theme Five: Feeling Inadequate

The new graduates spoke often about not being able to undertake all of the work that is expected of them. They felt that they were inexperienced and not well prepared. This was manifest in the *fear of making a mistake.* It was exacerbated by criticism from both physicians and their own supervisors.

Fear of Making Mistakes

Most of the new graduate nurses that commence work in the ICUs feel like they lack sufficient experience and are constantly fearful of making mistakes that could jeopardise a patient's health. This fear is often heightened when there is a lack of supervision:

> *I often feel extremely nervous and scared when having to treat a patient on my own. I have this constant fear of making a mistake as I am not very experienced with carrying out many of the procedures.(Salma)*

> *I think another very stressful event is having to deal with the patients families and having to brief them on the patient's condition. (Sahhar)*

> *When I administer of medication to a patient is also very stressful especially when I am not*

supervised. (Mousa)

The ICU is constantly filled patients that are critically ill, I still do feel very fearful when having to deal with emergency cases without supervision. (Mesfer)

One of the participants highlighted that sometimes it is necessary to make immediate decisions on a patient's care. This can be extremely stressful especially in the absence of supervision as the nurse has to ensure that the decision being made is the most appropriate and effective for the patient:

It is very stressful when the patient's condition is critical and I am responsible in making an appropriate on the spot decision on the patients care. (Reem)

One of the participants expressed a general feeling of a lack of preparedness for the new role, which is exemplified in the following statement:

I am excited of starting this new role as a staff nurse in the neonatal-ICU but the excitement also comes along the feeling of stress due to expectations it brings. (Sahhar)

The participants constantly fear that they are unable to perform certain tasks to match the expectations of the senior nurses. The participants raised concerns regarding the high expectations when they were still fairly new in the role and still required training before being able to perform all of the complicated procedures required in the ICUs. The participants believed that with more time and adequate support they would be able to fulfil this new role and perform these tasks and responsibilities independently and competently:

On occasions, I am assigned to critically ill patients that require the appropriate administration of medications. I often feel nervous and fearful when assigned to these patients as I am still not confident. (Mesfer)

Criticism by Physicians

Three participants indicated that they are often criticised by physicians. The criticisms are

sometimes subtle but create a certain level of anxiety, particularly when it happens in front of other staff and patients:

> *The physicians sometimes tend to interfere and criticise our work and tasks, questioning the procedures and treatments that we perform. This often creates an embarrassing situation especially in front of the patient. It is very embarrassing as our integrity is being questioned. (Mesfer)*

> *There was situation once where a female physician criticised me in front of the other nurses and patients. She was insulting me on my Englishs peaking skills. I was so embarrassed but there was nothing I could do. I was advised by the other staff members to be patient and not create a conflicting situation. (Shariffa)*

> *Criticism by the physicians is a common situation in the ICUs, there are quite a few nurses who have complained about such situations that have occurred. (Rasha)*

> *If the nurses are unable to provide an adequate report of the patient's conditions, the nurses are insulted and criticised in front of patients and staff members. (Reem)*

Criticism by Supervisors

Supervisors and nurse managers are often the two most challenging superiors to build a positive relationship with. Although they are key people who can impart significant knowledge and experience, the new graduates indicated they could be unapproachable. They explained that, based on the various training sessions that are provided, the new graduate nurses are expected to be highly efficient and proficient. When this is not the case, supervisors can be very harsh and cynical. The participants agreed that the training sessions were very effective; however, they highlighted that it is extremely challenging and nerve racking to carry out the actual tasks especially in the early stages. Two participants recalled being criticised by their superiors:

> *Once we have completed the various orientation programs, we are expected to carry out procedures with no room for errors. Some errors are sometime inevitable and beyond our control, but it doesn't refrain them from criticising us.(Ranna)*

We carry out procedures based on the training that has been provided. However, I was criticised and insulted on my performance as it was inaccurate although it was how I was taught by the senior nurse. (Shariffa)

It is well understood that new graduate nurses have just begun learning the procedures and the routines in the ICUs and are still in the process of working towards achieving the best understanding and accumulating experience. One of the participants stated that most of the criticism is due to them having inadequate experience and knowledge:

Criticism by our superiors is something that happens all the time. Most of the time the criticism we get is because we are lacking enough experience and knowledge in the field. (Mesfer)

4.3.3.6 Theme Six: Conflict

Conflict with Physicians

Interactions between physicians and nurses are extremely important as they have an impact on the service provided to patients. However, a key stressor identified in this study is the conflicts that occur between nurses and physicians. The participants agreed that such conflicts arise mostly due to the new graduate nurses having inadequate knowledge and experience in the field, which frustrates the physicians. The new graduate nurses on the other hand tend to hold back from being outspoken due to their lack of knowledge and experience.

One participant highlighted that conflict with physicians also sometimes occurs due to miscommunication. The physicians tend to feel authoritative and make administrative decisions prior to consulting with the new graduate nurses. One participant shared an experience related to this theme:

I was assigned to a child patient in the paediatric ICU. As I was just starting my shift, the nurse on duty was in a rush and failed to provide me with sufficient information on the patient's condition. While attempting to go through the file on my own to get up to speed, the physician

walked in and made the assumption that I was incompetent as I was unable to provide him with the information he needed on the patient's condition. Clearly, this was an effect of miscommunication and the physician being impatient to understand what was actually going on. (Salma)

Miscommunication between us nurses and the physicians happens quite often in the ICU. On one occasion, the physician in charge started requesting for a number of procedures to be carried out on the patient. As he was speaking in English and fairly quickly I was finding it very difficult to understand him and asked if he could repeat himself. He got very annoyed and demanded to a more senior nurse to work with him. (Mousa)

Conflict with Supervisors

The widespread occurrence of nurse–supervisor conflict, the factors that cause it and its effects on stress have been well established and addressed in a number of research studies. The factors that commonly cause conflict with supervisors include misunderstandings, language barriers and incompetency due to differences between theoretical and practical approaches.

One participant described supervisors as being dictatorial and taking advantage of the hierarchy. Such strong dictatorial attitudes make nurses fearful of approaching their supervisors when needed. Adding to that, the new graduates suggested supervisors tend to be arrogant and temperamental, making them less approachable. This causes the new graduate nurses to feel stressed due to not being able to consult a superior in times of need, leaving them feeling unsupported and fearful.

I am unable to approach my supervisors about important problems in matters of procedure because of the fear of my supervisors, because of the apparent inapproachability of my supervisors. (Reem)

Besides that, although they are new in the role, there are times when the new graduate nurses provide effective suggestions for patient care based on experiences gained throughout nursing school and placements. However, they felt supervisors tend to not trust them and are not open

to suggestions from a complete novice in the field. One participant highlighted that this is regardless of the appropriateness of the suggestion and the high probability it could be of benefit to the patient:

> *Any suggestions or propositions put forward is usually rejected by the supervisor. Our suggestions are usually not even considered regardless if it could potentially be of benefit to the patient. (Amal)*

> *I proposed a method from a previous experience which had resulted in a positive outcome. Unfortunately, my suggestion was immediately declined as I was only a junior nurse. (Mousa)*

One of the participants described the behaviour of supervisors as disrespectful and demoralising and having a significant impact on her self-confidence:

> *I have been humiliated and criticised by the negative comments of my supervisors. (Shariffa)*

Relationship with Other Nurses

Relationships between nurses is another key stressor, as the participants explained the difficulties and challenges of trying to build significant relationships with other nurses.

Some participants said it comes down to cultural differences, where effective and efficient communication can be a challenging task especially with nurses of different nationalities, with language being a constant barrier. Some nurses are just unwilling to compromise and speak a common language that is well understood by all:

> *Most of the nurses that work here are of different nationalities and thus they tend to form groups and speak their own language. This creates a barrier between us as we don't fit into some groups as we are unable to fit into the conversations. This causes difficulties when trying to carry out a procedure or trying to deal with a doctor. (Hajerry)*

Other participants explained that new graduate nurses sometimes have strained relationships with other nurses as they do not feel like they have been treated with fairness and they are not acknowledged despite being able to make a substantial contribution to the working environment. This strained relationship leaves them feeling stressed as issues with other nurses could jeopardise the working environment. Thus, the participants agreed that, just to avoid conflict, they perform tasks based on orders from the senior nurse.

> *I have to do exactly as I'm told by the senior nurses regardless of my thoughts and opinions just to avoid conflict. (Ranna)*

Most of the participants have also observed segregation based on hierarchy in the ICUs. Some senior nurses tend not to trust the knowledge of the new graduate nurses as well as nurses from different units and only allow them to treat simple conditions and carry out basic procedures:

> *We are sometimes transferred between units when required due to shortage of staff but we are often not allowed to carry out any complicated procedures. (Sahhar)*

> *There is often inequality in patient distribution depending on the nurse in charge. The senior staff attends to most of the patients that are in critical conditions and only allow us to deal with patients that require minimal care and attention. Some senior staff are also disrespectful towards the graduate nurses and do not trust our capabilities. (Salma)*

Communication and Language Barriers

Communication between doctors, between doctors and nurses, and between nurses is important to be able to relate a patient's condition, describe the possible treatment needed and provide the appropriate care. However, the majority of the participants stressed that there is often a language barrier and this occurs mostly between doctors and nurses of different nationalities. The language barrier results in conflicts and disputes due to miscommunications and misunderstandings, which can be time consuming and frustrating. Miscommunication occurs for example during the handover of shifts, where the nurse at the end of the shift does not

provide sufficient information to the new graduate nurses. The participants highlighted that getting used to the handwriting of physicians and other nurses on patient charts and other notes can be quite challenging:

> *Language barrier is a major problem especially when trying to pass on duties and tasks. (Mousa)*

> *Miscommunication usually occurs between nurses who are between shifts and physician is trying to explain a procedure. (Reem)*

I also find it extremely difficult at times to read the patients charts and documentations as some of the doctors and nursing staff have poor, unreadable handwriting.(Rasha)

> *During handover at the start of my shift, the particular nurse that I was dealing with did not provide sufficient information on the patient's history and his current condition. I had to read the patients file from the beginning when questioned by the physician and this created a conflict with the physician as it appeared like I was unprepared. (Sahhar)*

> *As new graduate nurses, understanding and knowing all the medical terminologies is still a challenge. I find it difficult especially during handover at the end of a shift to understand specific terminologies with regards to the patient's condition. (Ranna)*

Dealing with Violent and Abusive Patients in the ICU

Dealing with violent and abusive patients is another stressful situation experienced bythe new graduate nurses. A number of the participants expressed feeling fear when patients are physically and verbally abusive. Such situations can be especially difficult to handle without adequate experience:

> *I find it quite stressful having to deal with physically and verbally abusive patients. I tend to be constantly fearful when treating these patients. (Shariffa)*

4.3.3.7 Theme Seven: Lack of Support

New graduate nurses are new to the working environment and tend to require constant supervision especially during the early stages. However, the participants emphasised that the nursing administration

and supervisors appear arrogant and unapproachable. This causes the new graduate nurses to feel like there is insufficient support. This theme is described in detail under three sub-themes: *lack of support from supervisors*, *lack of support from nursing administration* and *lack of opportunity to share experience and discuss problems in the work unit.*

Lack of Support from Supervisors

Support and cooperation from supervisors is vital as part of the intellectual and personal growth of new graduate nurses. It is also important in terms of providing new graduate nurses with the opportunity to feel a sense of belonging with a team of co-workers. Support from supervisors can come in various ways, including administration support, workload support, training support as well as personal support. However, most of the participants agreed that there is little

opportunity to ask questions or to approach a supervisor when required, for example, when they need to express concerns or share experiences to ensure work progress is achieved. The participants agreed that there is also a lack of positive feedback which as new graduate nurses is pivotal to help them excel in the new working environment as well as contributing towards career growth.

The participants alleged that the majority of the supervisors in the ICUs are unsupportive, uncooperative and disrespectful towards them:

> *My supervisor has not been very supportive in terms of scheduling work shifts. I have mentioned numerous times that working the evening or night shift would be very difficult as I have 2 children to take care of and I don't have family that lives close by to help me with the kids. He seems very unsupportive and does not take our circumstances into consideration.(Reem)*

> *My husband is not in favour of me working the night shift and so I have requested to be scheduled to work only on the morning shifts. I have tried explaining this to my supervisor but it seems like she doesn't want to be cooperative. She just doesn't quite care. Unfortunately, I have to choose*

to be absent when scheduled to do the night

shift. It does reflect back on my work ethics but I don't seem to have a choice.(Hajerry)

Most of the participants indicated that a major issue for them was the lack of support from the administration. As new graduate nurses, they are still trying to adapt to the new, often erratic working environment. However, the irregular work schedules, long shifts and frequent changes in the rosters cause significant dissatisfaction and frustration among the participants as they directly affect their work–life balance. The majority of the participants agreed that the lack of support from their supervisors in terms of work schedules is another cause of conflict:

> *We find that there is lack of support from our supervisors especially when it comes to administration. Conflicts mainly arise when we are dissatisfied with the irregular and frequent alteration in the rosters and long shifts. (Shariffa)*

Lack of Support from Nursing Administration

Besides the supervisors who deal most frequently with the new graduates, the nursing administration of a hospital is considered the next point of contact that should be providing support to these new graduate nurses. The extent and effectiveness of the support provided by the administration is vital and reflects on the nursing work environment and the reputation of the hospital. However, two participants commented on the lack of support that is provided by the nursing administration to assist new graduate nurses to adapt to their new role in the ICUs:

> *We are definitely lacking support from the nursing administration in the ICUs. (Shariffa)*

> *Clearly, as we are still new to the role, any sort of training would help us cope with the new role. We have noticed that the administration only sends out memos to the senior nurses regarding any training sessions that are held. It seems like we have been left out when it is us that require these training sessions and not the senior nurses. (Ranna)*

Another participant accentuated the limited support provided by their respective supervisors and the nursing administration to cope with death and dying patients in the ICUs:

> *There has been no support from the nursing administration to assist us in coping with such situations. (Rasha)*

In regard to training sessions, it has become apparent that the new graduate nurses are also unaware of the availability of external training sessions other than the hospital training sessions. This also reflects on the competency of the administration who are responsible for advertising such training sessions, specifically to the new graduate nurses. One of the participants stated that the external training sessions are pivotal as they provide new graduate nurses with extensive practical training to supplement what has been taught in the hospital:

> *Training sessions and workshops are often held by external centres as additional training tools to assist us as new graduate nurses to expand our knowledge and gain more experience. (Sahhar)*

The participants highlighted that favouritism within the hospital has also been observed, with only certain nurses being made aware of the various internal and external training sessions held:

> *There seems to be favouritism that occurs within the hospital with only particular nurses being aware of these sessions. (Reem)*

The participants stated that the administration is not sufficiently organised to ensure all the new graduate nurses complete all the required training programs. On many occasions, the training sessions are cut short to accommodate the shortage of staff, thus compromising the education of the new graduate nurses:

> *It can be quite stressful for us when our training sessions are shortened to accommodate to the administration issues that the hospital is undergoing. We are expected to show excellence with limited training. (Mousa)*

After completing the orientation training program, I was only scheduled to 2 weeks of fulltime training instead of the usual 3 months before. This was unusual and was because ICU was suffering from a shortage of staff. I was extremely stressed as I was not prepared and still required more training to be ready and confident.(Ranna)

The participants explained that, regardless of the limited support provided by the nursing administration, they do feel a sense of belonging and feel responsible for being diligent with the duties and tasks carried out, constantly ensuring that the patients are given their primary attention and the best care. However, it is unfortunate that their efforts, determination and diligence are not acknowledged.

We work very hard and often have to work long hours. Although all this is still new, we understand it's just part of the role. It would be nice if our hard work was acknowledged by the administration. It feels like we are taken for granted. (Amal)

We sometimes express our concerns and problems but they are very rarely taken into consideration. (Shariffa)

Lack of Opportunity to Share Experience and Discuss Problems in the Work Unit

With the erratic and busy working environment, new graduate nurses have limited opportunity to share their experiences and discuss their problems with their co-workers. Most staff are either busy attending to a patient, consulting with a physician or completing administrative paperwork. Most of the participants agreed that, due to the back-to-back duties and tasks, the nurses have no opportunity to discuss their issues or even exchange their thoughts with their colleagues:

We are unable to share our experiences, good or bad, with other staff members as everyone is tied down to an extremely busy schedule, working around the clock to ensure the patients' needs are attended to.(Reem)

We barely have any opportunity for us to chat, exchange experiences or even have a moment to discuss our problems. (Amal)

Although the heavy workload and busy schedules are key factors that deprive the nurses of time to socialise, most of the participants emphasised that there is an obvious barrier between the nurses of different nationalities who tend to form socialising groups based on their nationality. The participants stressed that, although they understood that it is a way ofcreating a comfort zone as a coping mechanism, it prevents most of the others from engaging and sharing their thoughts:

> *I find that it is difficult to share experiences or have discussions with my co-workers as the majority of the nursing staff tend to congregate and work in groups based on their respective nationalities. There does not seem to be integration among the staff or working together.* (*Sharifa)*

4.3.3.8 Theme Eight: Workload

Dealing with Workload

Workload along with long and irregular work schedules is as a key stressor, as evidenced in a large number of participants' statements. The participants stated that the major transition from being a student nurse to the actual working environment can be extremely stressful and the stress is exacerbated when a high workload is forced upon them along with irregular working schedules. The participants believed that the stress from this compromises the quality of patient care. Most of the participants mentioned that, with back-to-back patient care and constant administrative paperwork, they barely have sufficient time to take a break and physically rest:

> *I think basically the bottom line is there is a lot of frustration and tiredness from the heavy workload and erratic and irregular work schedules. (Reem)*

> *I think most of the nurses will agree that the main issue that causes stress is the long and irregular work schedules. Sometimes we don't have sufficient time to physically rest which increases anxiety and increases levels of stress.(Salma)*

> *We work really long hours with back-to-back patient care and procedures but we are only given a short lunch break during the day. This is not sufficient rest as we are physically tired. (Rasha)*

The participants also mentioned that it gets worse when they take over extra shifts and duties due to shortage of staff and when there is absenteeism:

As new graduate nurses, we find it stressful enough firstly dealing with the transition from being a student nurse to being an actual ICU nurse. In addition, when we begin work in the ICU, most of the time we are forced into a situation where we have to multitask, attending to more than one patient at a time, due to absenteeism, carry out back-to-back procedures and many others. (Mousa)

One participant agreed that the irregular and long working hours can be frustrating and it becomes worse when days off redenied:

It is very frustrating when I get called in on my day off. I use my days off to catch up on sleep and spend time with the family. (*Hajerry)*

The participants described that working with complex equipment in the ICU significantly increases their workload as well. Having to understand and competently use such complicated machinery in addition to all the other duties and tasks causes stress among the new nurses:

Dealing with high-technology equipment can be very stressful especially when we are required to understand and use more than one machine on a patient. These machines are sometimes not user friendly and require a certain amount of experience to fully understand and be efficient in using them.(Ranna)

Health Issues

Many of the new graduate nurses felt that the working environment and the long hours and rotational shifts have a negative impact on their health. One participant mentioned that it took quite some time to adapt to the constant change of shifts which resulted in many health issues. They also believed that, if the stress is prolonged for various reasons, it could eventually be detrimental to their health:

The long hour shifts has definitely caused a negative effect on my health. Due to the 12hour rotational shifts, my body system has yet to adapt to the frequent change in timings. I often experience loss of appetite, have anxiety attacks and feel lethargic.(Mousa)

Before my body can recuperate and heal, I'm scheduled for my next shift. So basically my body has insufficient time to physically rest. (Ranna)

The new graduates were also concerned about the long-term health consequences of their work. One of the participants stated that, although there are specific rooms and areas where x-rays are carried out, they are still exposed to a certain amount of radiation and over time it could be detrimental:

Working in the ICUs exposes us to various health hazards such as radiation, which sometimes is unavoidable. (Amal)

The majority of the participants also mentioned that they are constantly putting themselves physically at risk. The nurses are sometimes required to lift patients and move them from bed to bed without any assistance:

Some of us have to manually move our patients regardless of the size and weight of the patient. In time, this does cause most of us to develop back pain which can be excruciating.(Reem)

4.3.4 Summary

The individual interviews were focused on extending information on individual experiences of stress of new graduate nurses working in ICUs. Themes and sub-themes were derived from the individual interviews in attempt to draw a cohesive picture and provide a better understanding of the causes of the stress experienced by these new graduate nurses. The eight themes covered a range of issues that resulted in stress, in particular, issues related to managing difficult and complex care, communication, language barrier problems, low levels of confidence due to inexperience in the working field, gender and racial issues, and the heavy workload. These were coupled with criticism from senior nurses and physicians and a lack of support.

The following section of this chapter will integrate the results from the three studies, namely the self-administered survey of new graduate nurses, the group discussion with nurse educators and the individual interviews with new graduate nurses. The results from the integration of the data will then be used to aid in the design of a simulation intervention to reduce stress among new graduate nurses working in ICUs.

The next section will present the results from the group discussion with nurse educators.

4.4 Study 3: Group Discussion with Nurse Educators

4.4.1 Introduction

This section will present one of the qualitative components of the study, a group discussion with nurse educators. The group discussion was focused on exploring nurse educators' perceptions of the types of stressors that new graduate nurses are potentially exposed to, the extent and nature of the support that is provided to overcome the stressors and the use of simulation as a means of education and support.

Specific questions were designed to achieve the abovementioned aim:

1. What strategies are currently used in the ICUs in major tertiary hospital (KSM-R) Saudi Arabia to directly and/or indirectly reduce stressors?
2. What is the current use of simulation in the ICU environment including the following?
    a) Experience of nurse educators?
    b) Available facilities?
    c) Access to simulation exercises by new graduates?

3. What role does simulation play in reducing stress among new graduates RNs in the ICUs?

4.4.2 Participants' Demographic Information

The five participants recruited for the group discussion were from different cultures and backgrounds, from Jordan and India, working in both the adult and paediatric-ICUs in KSMC-

R. The participants were between 32 and 45 years of age, had attained different levels of education and had 3–10 years of working experience as nurse educators at KSMC-R. Each participant was provided with a pseudonym to be used instead of their actual names during transcription, data analysis and reporting. Table 22 provides the participants' demographic data.

Table 22: Demographic information of the nurse educator's participants in the group discussion

Participants	Gender & age	Highest education level	Experience as a nurse educator	Country
Brenda	Female 35 years+	Masters	• Head nurse in an ICU for 2 years • Nurse educator in an ICU for 2 years	India
Lily	Female 40 years+	Masters	• Educator for 10 years	India
Hassan	Male 40 years+	Masters	• RN in an ICU & ED for 3 years • Nurse educator for 3 years	Jordan
Omer	Male 35 years+	Masters	• RN in an ICU for 6 years • Nurse educator for 4 years	Jordan
Khalid	Male 35years+	Masters	• Nurse educator for 5 years	Jordan

4.4.3 Findings

The findings presented here are based on a content analysis. Themes and sub-themes were derived from codes identified from the group discussion that best answered the specific research questions (for details see the discussion of group discussion of nurse educators in Chapter 3). Five main themes were extracted from the transcribed text of the group discussion and they will be discussed in this section of the chapter.

4.4.3.1 Theme One: Stressors for New Graduate Nurses

The nurse educators believed that the busy and fast-paced working environment in hospitals is a key cause of stress among new graduate nurses. This theme is discussed in more detail under three sub-themes: *communication, workload issues* and *feelings of inadequacy*.

Communication

The nurse educators emphasised that communication is a key factor that causes stress among new graduate nurses. They believed this was because most new graduate nurses have completed their education in the Arabic language with limited English resources and thus are not proficient in communicating in the English language. Two of the participants described new graduate nurses feeling challenged particularly when dealing with English-speaking physicians and co-workers, creating a language barrier and sometimes miscommunication:

> *The proficiency in the English language is very much a problem for the Saudi graduate nurses. Most of them are unable to complete documentations in English. (Brenda)*

> *The lack of communication between graduate nurses and senior staff or physicians causes a lot of trouble. (Hassan)*

The problem is exacerbated by the influx of new graduates recruited to ICUs annually, resulting in an imbalance of new graduates to educators, and thus educators can only provide limited support. The other participants were also in agreement with this view:

> *We have not less than 75 new graduates annually working in the ICUs requiring internal training. This creates an imbalance ratio of graduate nurses to nurse educators during training in the ICUs. (Brenda)*

Workload Issues

The participants stated that most graduate nurses are overwhelmed by the workload and responsibilities in the ICUs. Although they have successfully completed various training sessions and competency programs provided by the hospital prior to starting work, new graduate nurses still find it stressful to deal with the heavy workload in the ICUs and often consider moving to other units in the hospital:

> *Dealing with critical patients requires specific medication and care. We find that, even after*

successfully completing the competency program, the graduate nurses are still unable to deal with the stress and responsibilities in certain units and choose to move to other units. (Khalid)

The participants stated that new graduates also find it difficult dealing with critical patients, especially ones that are unconscious or bedridden. Due to the insufficient number of male nurses in ICUs, Saudi female new graduate nurses in particular find it stressful having to attend to the needs of male patients.

Some of the graduate nurses find that working in the ICUs can be very stressful, not only because of the heavy workload and long shifts, but also because they are responsible for taking care of unconscious and bedridden patients. (Khalid)

The female nurses find it rather uncomfortable to take care of the male patients in the ICUs, specifically when the patient conscious. (Omer)

The participants also highlighted the expectation that nurses will work extended hours and take on extra shifts due to the shortage of staff. The participants believed that this could be one of the main reasons for the increase in absenteeism, as the nurses become fatigued due to working long hours and the immense responsibilities:

We find that most graduate nurses tend to leave the unit due to the heavy workload, schedule issues and the shortage of nursing staff. This is because Saudi nurses prefer to work the morning shift rather than rotation or night shifts. (Brenda)

They also prefer the 8-hour working roster and are not willing to work overtime when required by the ICU. (Hassan)

Common problems we face among the new graduate nurses are mostly absenteeism during training and orientation programs. We have also observed times when nurses leave during working hours without prior notice. (Omer)

Due to shortage of staff, there are times when rosters have to be reshuffled without notice. However, this is often not accepted by most of the graduate nurses with them refusing to be placed in other units. (Lily)

Graduates Feeling Inadequate

The participants also agreed that, albeit exhibiting theoretical competence, most new graduate nurses feel overwhelmed due to their lack of practical clinical knowledge and appropriate mannerisms especially when working in a critical environment such as an ICU. The participants believed that the lack of competency goes back to fundamental problems in the process of teaching, which are reflected in inefficiencies in the workplace:

> *I feel that the graduate nurses that work with us experiences stress due to have had insufficient amount of knowledge and prior experience dealing with patients. For example, I feel the need to go back to basics all the time, having to teach them simple methods such as bedside training and recognising fatal vital signs.(Hassan)*

As a consequence, the participants are hesitant about allowing new graduates nurses to handle patients without supervision:

> *We find that most of the graduate nurses lack competence and experience in many areas and with dealing with many procedures. So, we find it difficult to fully trust them with dealing with patients on their own without supervision. (Lily)*

4.4.3.2 Theme Two: Non-Simulation Education and Support Activities

The participants agreed that the KSMC-R does provide a support system and organises non-simulation activities for the new graduate nurses. These activities are carried out on a frequent basis to allow for an easier transition into the working environment. The participants stated that the non-simulation activities that have been organised include a range of training methods to improve practical and clinical skills, various facilities that are available to assist in the learning process, and management of policies and procedures. Therefore, this theme is divided into three sub-themes: *training methods*, *facilities* and *management skills*.

Training Methods

The participants stated that it is compulsory for new graduate nurses to complete the various training programs that are made available in the hospital prior to commencing work in the ICUs. The participants said that these training programs are important to enable a better understanding of the different procedures and techniques that are used in the ICUs which could differ significantly from other units:

> *Actually we have a variety of training for graduate nurses and general nursing staff which includes annual training and internal and outside hospital training in collaboration with other public and private hospitals. (Khalid)*

The participants mentioned that the hospital administration has tailored the training methods to incorporate both theoretical and practical approaches. This provides a better theoretical understanding of procedures as well as an opportunity for hands-on experience. The participants believed that it is important practice to expose new graduate nurses to a combination of lectures, case study discussions and demonstrations of procedures, as well as the opportunity to practise this knowledge on patients. However, this is usually dependent on the facilities available:

> *During the orientation program, the graduates are provided with theoretical information and guidelines of procedures through lectures. They are also able to practice some of these procedures on patients under supervision. This will help progressively build their confidence. (Lily)*

> *Our graduate nurses are theoretically and practically trained depending on the type of procedure and the availability of resources.*

> *We have found that a combination of different methods affords the best outcome. Our protocol usually commences with a detailed explanation of the procedure, a demonstration of the procedure and then we provide an opportunity for the graduate nurses to implement what has been taught by allowing them to carry out the procedure independently. (Hassan)*

We have also observed that group discussions are important soon after so that both we as educators and graduate nurses are able to reflect and provide appropriate feedback. (Brenda)

Although most procedures and techniques are usually explained in detail, we often try and encourage the graduate nurses to use the internet and research on other methods and techniques that are available. (Khalid)

Facilities

The participants also emphasised that the combination of theoretical and practical teaching is an essential tool for training graduate nurses. The availability of appropriate facilities for these training programs is essential:

Our hospital is sufficiently equipped with the necessary training facilities to ensure the graduate nurses are able to attain a better theoretical and practical understanding of procedures and techniques. (Omer)

The main facilities that is available in our hospital are conducive lecture halls and training rooms equipped specifically for different procedures such as CPR and BLS. (Hassan)

Having said that, sometimes training programs have to be altered based on the availability of equipment and facilities. The quantity of equipment available has not always kept pace with the influx of new graduate nurses:

Although procedures and protocols are in place, there are times when we have had to change training schedules and programs based on the availability of facilities/equipment. (Omer)

The participants stressed that, although the hospital is equipped with most of the essential facilities, there is still a lack of important equipment that could be beneficial in the training of new graduate nurses:

Our hospital consists of a diverse range of facilities, it still lacks a number of equipment that could be used in training modules. (Khalid)

Management, Guidance and Support

The participants emphasised the importance of guidelines and policies for the different procedures required in the ICUs. Appropriate guidelines and policies ensure that all procedures are followed based on the standard protocol, which avoids errors during patient care. The participants accentuated that these guidelines and policies also assist new graduate nurses when they are performing complicated procedures and techniques on patients and prevents errors:

> *Most of our procedures follow a procedure checklist and has to be based on the guidelines and policies of the hospital. (Lily)*

> *Even for simple procedures, there is a detailed guideline that needs to be followed at all times. For example, the procedure of inserting the cannula and connected to the Intravenous line for the transfusion of fluid or blood has to be based on the standard policy of the hospital. (Brenda)*

4.4.3.3 Theme Three: Integrated Support

The participants emphasised the importance of an integrated approach to support for new graduate nurses. All the participants stated that new graduate nurses require a lot of support from the administration and their superiors especially during the first years of their careers. It is important to provide a comfortable working environment even with such challenging responsibilities and tasks. Currently, the types of integrated support provided involve both formal and informal support systems, with a focus on orientation programs. There have also been efforts to create a more conducive working environment to suit the nurses' capabilities and increase socialisation activities among the staff. This theme can therefore be described based on four sub-themes: *providing support*, *improving orientation*, *support for rostering needs* and *socialisation*.

Providing Support

Having endured similar experiences as new graduate nurses, the participants agreed that the physical and emotional hurdles endured during nurses' early careers can be very challenging. Thus, the participants provide new graduate nurses with as much formal and informal support as possible, for example, one-to-one or group counselling sessions, mentorship programs and feedback sessions to ease stress and to assist in developing coping mechanisms:

> *We understand that many of the graduate nurses that start working in the ICU find it difficult to cope with the stress and sudden workload. As educators, we have been in a similar position and understand that it can be quite challenging and thus we have provided the graduate nurses with a number of support programs. (Khalid)*

Two participants also stated that they believe that it is important for them to be patient and understanding as mentors to assist new graduate nurses to cope with the various challenges:

> *Patience and understanding is key towards helping these graduate nurses. This is because, unlike the senior nurses, graduate nurses are more emotionally vulnerable due to the lack of experience and knowledge. (Lily)*

> *We know that is important that we are considerate of their emotions and so we try and be as understanding, patient and supportive. (Hassan)*

Improved Orientation

The participants stated that the ICUs have implemented various ongoing orientation programs as part of a support system. Orientation programs include general nursing and also unit-specific orientation programs with competence evaluations. Other programs include weekly group discussions on patient case studies, which were felt to be an effective and efficient learning process ensuring new graduate nurses are well on track with the most current case studies and the different methods and procedures that need to be undertaken. The participants agreed that

the knowledge gained during these weekly discussions helps to build confidence among the nurses:

> *We provide a number of different orientation programs to the graduate nurses. In my opinion, the most rewarding program is the weekly case study discussion where the graduate nurses have in-depth discussions on the current procedures, treatments and techniques that are available. (Omer)*

Support for Rostering Needs

The participants understood that the ICU is a challenging working environment and the long and rotational working shifts can be a stress factor for new graduate nurses. Therefore, the participants made numerous efforts to ensure that the scheduling had minimal impact on these new graduates. However, the participants stressed that reshuffling the roster and long working hours are inevitable due to the shortage of staff, especially during the evening and night shifts:

> *We increased the ratio of patients to graduate nurses due to the lack of staff nurses during the evening and night shifts. (Brenda)*

> *Sometimes we consult with graduate nurses and re-arrange the roster to fit in with their schedule. We find this quite challenging due to the lack of nursing staff. (Lily)*

Socialisation

The participants felt it was important for new graduate nurses to become familiar with their co-workers in the ICUs. Hence, a number of socialisation activities were organised within the ICUs to help build a stronger and more comfortable relationship between the staff and the new graduates:

> *One of the our responsibility as educators is to ensure that the new graduate nurses are familiar with the other co-workers in their respective units.(Khalid)*

4.4.3.4 Theme Four: Knowledge/Understanding and View of Simulation

As the aim of this study was to design a simulation intervention it was important to determine the views of the nurse educators about the use of simulation as they would be required to assist with the intervention. The participants believed that adequate knowledge, understanding and positive perceptions of the use of simulation and its benefits is important in order toovercome the issue of stress among new graduate nurses. Firstly, from the examples the participants gave it was evident that they believed that simulation could be of benefit especially during the early training of new graduate nurses and that it had the potential to reduce stress levels. However, some participants stated that they had concerns about their lack of detailed knowledge about simulation. Also, they had always perceived simulation as being resource intensive. They were also concerned there had been insufficient guidance and support for simulation to be used as an intervention. This theme is divided into three sub-themes: *benefit of simulation*, *lack of simulation understanding* and *resources*.

Benefits of Simulation

The participants were supportive of simulation as a teaching method in the ICUs, bridging the gap between the education previously received and the real-life scenarios new graduates face. The participants recognised that the use of simulation has the potential to enhance the competence and to boost the confidence of new graduate nurses. The participants believed that new graduate nurses would be able to cope better with caring for patients in a fast-paced critical environment such as ICUs and they could learn without the risk of harm to patients, which in turn may also reduce stress among them:

> *I think simulation would be advantageous in terms of assisting the graduate nurses to cope with real life scenarios from what has been learnt theoretically thus far.*
> *Simulation will allow the graduate nurses to practice practical skills on manikins for example prior to dealing with patients. (Hassan)*

I think simulation is important in training highly skilled and competent nurses. It will be able to increase theoretical and practical knowledge of these nurses, but will also be able to boost their confidence. (Lily)

Lack of Simulation Understanding

Although the participants believed that the use of simulation has the potential to reduce stress among new graduate nurses, they were somewhat reluctant to move away from the traditional education and support methods they currently use. The participants explained that, despite their positive views on the method, they felt their knowledge and understanding of simulation as a teaching method was inadequate:

If the method was understood in more in-depth, it could most definitely assist in reducing stress among the graduate nurses. (Lily)

Most of our teaching includes traditional training methods. As educators, we never deal with the preparation of simulation scenarios. (Brenda)

I have limited information with regards to the advantage of simulation. I think it would be a good idea if the hospital could provide training programs for the educators dealing with simulation and specific scenarios in related to critical care units. (Hassan)

Resources

The participants were also concerned about the availability of appropriate resources within the hospital for simulation to be carried out efficiently and effectively. They felt the availability of resources including highly qualified trained educators and high-technology equipment would improve the skills and competence levels of nurses working in the ICUs. However, the participants also agreed that such resources require a high budget allocation:

In my view, simulation requires a variety of resources to improve the skills and competence of the nurses. Such resources would require a higher budget allocation for equipment and to obtain the appropriate expertise. (Omer)

It would be a great advantage to us if we have more resources, such as simulation in our hospital. This is because from experience I think it is a better teaching method if the nurses are first exposed to the various scenarios and case studies before they are able to manage the real patients. It will give the graduate nurses more confidence when dealing with real scenarios and therefore will be able to reduce the stress levels among them. (Lily)

4.4.3.5 Theme Five: Use of Simulation

It was apparent that the use of simulation in the hospital was not widespread and, although the participants believed that simulation was used in both adult and paediatric ICUs, this experience was quite variable. The nurse educators stressed that, if they were to be involved in simulation as an intervention to reduce stress, it would be important to have adequate knowledge and to establish what simulation activities were currently being conducted. This theme is divided into two sub-themes: the *current use of simulation* and *unit-specific experience*.

Current Use of Simulation

In order to consider the feasibility of the current use of simulation within the hospital, the participants agreed that, although there has been some use of simulation for training purposes in both the adult and paediatric ICUs, it has not been fully implemented within the hospital. Currently, simulation has only been implemented in the basic training programs. For example, the hospital currently has a training centre for CPR and BLS. The training centre is equipped with a variety of manikins. The hospital also uses simulation particularly in the paediatric ICU, whereby scenarios are created, a procedure is demonstrated and finally a debriefing session is conducted.

The policy of the hospital requires the graduate nurses to undergo the BLS &CPR training before starting work in the ICUs. This is just mainly to ensure they are qualified and competent to work in the adult or paediatric ICUs. (Khalid)

For training purposes, low to high fidelity simulation is often used as we have found that it has been the most efficient training method. (Lily)

Due to lack of certain equipment, for teaching purposes, we have had to create techniques from simple things that are available in our units. One in particular was carrying out a procedure using a normal saline bottle as if it was a bag of blood. (Omer)

Unit-Specific Experience of Simulation

According to the nurse educators, simulation is only being used in certain units in the hospital, in particular the paediatric ICU. This is mainly because it is well equipped with the necessary facilities and resources such as manikins and lecture rooms to facilitate the training. Actual scenarios and debriefing sessions using the manikins are used to demonstrate the different frequently utilised procedures such as gavage and lavage. These training methods are considered indirect simulation as they are conducted outside a simulation lab and have been carried out for many years with just the use of manikins.

In my opinion, the hospital lacks training and simulation labs, manikins and has limited internet access. (Khalid)

Although we don't have a simulation lab in our hospital, but we do have a room fully equipped with manikins to be used by junior and senior staff. This facility has been used for many years now in the paediatric unit. (Lily)

In the paediatric unit, we are well equipped with manikins, and lecture rooms and so we are able to train the graduate nurses using actual scenarios. (Lily)

The participants explained that, although simulation has been historically used in the paediatric ICU, it is yet to be applied in the adult-ICU due to the lack of resources such as manikins. The participants also find that, with the imbalance in numbers of educators and new graduate nurses in the adult ICU, the use of simulation is not ideal for training purposes:

> *Simulation is not used in the adult ICU because we don't have the resources required for it. We don't have a simulation lab or a skills lab in the adult ICU for us to be able to run simulation exercises. (Omer)*

> *At this stage, we don't think it's practical to implement simulation exercises in the adult ICU just because we don't have sufficient nurse educators to train the graduate nurse ratio. The number of graduate nurses we get differs all the time, sometimes ranging from 1 nurse to 15 nurses. (Brenda)*

> *It is difficult to run simulation exercises in the adult ICU just because we don't have manikins in the unit and so the nurses have to be trained on real patients. (Hassan)*

4.4.4 Summary

A group discussion with nurse educators was carried out to determine the extent of support and education currently being provided to the new graduate nurses working in the ICUs at KSMC-R. They identified what they felt were some of the major stressors for the new graduates and discussed what was currently done to assist with this. They felt that simulation was a potential mechanism to address stress in new graduates but most were concerned about the lack of experience in and resources for simulation.

CHAPTER 5 INTEGRATION

5.1 Introduction

The previous chapter presented the results from the, self-administered survey and individual interviews of the new graduate nurses and group discussion of nurse educators. This chapter presents the integration of these results; the integration is used to inform the design of a randomised control trial (RCT) and the complex intervention it is intended to evaluate. The complex intervention is a simulation based learning experience (SBLE) in which the scenario is derived from the integrated results from the previous chapter.

The scenario has been designed to place the new graduate nurses in a situation that is stressful, but in a psychologically safe and controlled SBLE, thereby enabling them to develop strategies to deal with these stressors.

The chapter is not intended to describe all of the elements of the trial in detail but will focus on the aspects that are informed by the integration process. This will include the trial components such as the SBLE, which includes the pre-brief, the scenario and debrief. The evaluation methods to determine the effectiveness of the SBLE and ethical considerations are also addressed.

5.2 Trial Design Components Arising from Integration

5.2.1 Overview of trial design

The trial design is a crossover randomised controlled trial. New graduates who have completed

their orientation to the intensive care unit will be randomised to receive either the intervention, an SBLE (Group A) or no intervention (Group B). At recruitment both groups will complete the PSS-10 and the ENSS-57. Following the SBLE there will be a period of four weeks to allow for wash-out. Both groups will complete the two stress scale tools. The groups will then crossover, with the Group B undertaking the SBLE and Group A undertaking work as usual. After a further 4 weeks the stress tools will be completed again.

5.2.2 Complex Intervention: SBLE

SBLE is a training and learning platform to assist in resolving practical difficulties. It can be applied in a diverse range of fields as a structured learning experience to achieve the expected competency and learning objectives. A simulated environment is typically used to develop and enhance skills, knowledge and characteristics to deal with real life dilemmas (Pilcher et al. 2012). This SBLE aims to provide new graduate nurses working in ICUs, in a very specific context, with the skills and strategies to manage stress. The SBLE has three components including the pre-brief, scenario, and debrief (Rhodes & Curran 2005).

Pre-brief

The pre-brief, is a preparatory information session conducted by the co-ordinator prior to the start of an SBLE. It sets the scene, introduces the scenario by developing the context and creates a safe learning space (Deering, Johnston & Colacchio 2011; Fowler-Durham & Alden 2007).The main components in a pre-brief will include reviewing the objectives of the scenario, describing the setting of the intervention, the time allotment for carrying out the scenario, an orientation of the equipment that will be used during the intervention, information on the facilitator's role and the extent of guidance to be expected (Rudolph, Raemer & Simon 2014; International Nursing Association for Clinical Simulation and Learning [INACSL]

2016). Creating a safe learning space is necessary for any SBLE.As the survey and new graduate interviews have been used to construct a scenario that is primarily designed to be stressful, the importance of the pre-brief creating a safe environment is amplified.

Scenario

The scenario was designed based on a systematic analysis of the information gathered from the survey and individual interviews of new graduate nurses and the group discussion with educators. In the previous chapter, the researcher ranked both the ENSS-57 subscales and the individual items from highest to the lowest. The subscales provide a more global view of key stressors but it was also important to consider individual items. For example, the subscale for *death and dying* was only ranked 7th of the 9 sub-scales, but the individual item within this subscale - *watching a patient suffer* ranked as the highest individual item. The individual interviews then provided a more comprehensive understanding from the perspective of the new graduate nurses themselves. This was important to confirm which stressors had a significant impact but also provided context and a more detailed description of what occurs in their practice. Additionally, the educators' views of what was stressful for the new graduates was also confirmatory. In deciding which stressors would be represented in the scenario, all of these sources were considered. To only consider the top ranked subscale or the top 5 individual items of the ENSS-57 would be naïve. Clearly from the interviews with new graduates, issues that caused stress did not occur in isolation. A blend of stressors that may naturally arise in practice needed to be considered.

These stressors included: patients and their relatives exercising gender discrimination by insisting on a same gender nurse, patient dissatisfaction with the service provided, patient consistently demanding attention from the nurses, dealing with abusive families and their misogynistic remarks, unsupportive supervisors burdening the new graduate nurses with a

heavy workload due to the shortage a staff resulting in irregular work shifts, and co-workers who do not speak the Arabic language, hindering the new graduate nurses ability to comprehend the information they are providing. On a more practical note the educators provided information about their experience with simulation and the resources available in their units to conduct simulation. This informed issues around where the simulations would occur, what equipment was available and their capacity to act as simulation coordinators.

***Setting*:** The scenario was designed to be conducted in an adapted single room, so that the setting will closely resemble an ICU setting with one bed. The single room would be equipped with one cardiac monitor, a vital signs machine, an ECG machine, an infusion pump, oxygen facility, a face and nasal mask, suction tubes, an emergency bell, a crash cart and a phone. The room would be close to the nursing station. The decision to adapt a single room with a reasonable level of technical equipment was based on the discussions with the educators.

***Participants*:** The participants that will be involved in the SBLE are female new graduate nurses who have just started working in an adult ICU. The choice of participants was a consequence of the results identifying that the population was predominantly female and the high ranking of the discrimination subscale.

The scenario description:

Aspects of the scenario will be described (**Scene**), followed by the source of data used to inform what will occur (**Source**).

Scene: The scenario commences with a new graduate nurse working in the ICU being given her patient allocation for the shift by the nurse manager. The allocation is particularly heavy and she is told she will have to assist another new graduate because of a critical shortage of staff.

Source: The decision to begin the scenario with the allocation of a very heavy workload for the shift arose from multiple sources. Inadequate staffing ranked very highly in the survey, but this was strongly re-enforced by interviews with new graduates and the educators.

ENSS-57 subscale '*workload*' ranked third and item 'not enough staff to adequately cover the unit' ranked second overall.

> *.... there is a lot of frustration and tiredness from the heavy workload and erratic and irregular work schedules. (Reem, new graduate)*

> *We find that most graduate nurses tend to leave the unit due to the heavy workload, schedule issues and the shortage of nursing staff. (Brenda, nurse educator)*

Scene: The new graduate receives handover from an expatriate nurse outside of the room of the patient she is allocated to. The handover was poorly structured, and the nurse emphasised how busy she was and how demanding patients and relatives were, particularly the son of the patient she is allocated to. The new graduate is joined by the nurse she is supposed to assist during the shift and they enter the room. The patient begins to complain about the care he has been given and makes it clear that he wants to be cared for by a male nurse. He then screams at the nurses to go away.

Source: Although the survey did not specifically address the issues of language (expatriate nurse handing over) or being given limited or inadequate information by a nurse colleague, these issues were very apparent from the new graduate interviews. In regard to gender discrimination this was highly ranked in the survey and emphatically supported in the interviews.

> *During handover at the start of my shift, the particular nurse that I was dealing with did not provide sufficient information on the patient's history and his current condition. I had to read the patient's file from the beginning when questioned by the physician and this created a conflict*

with the physician as it looked like I was unprepared. (Sahhar, new graduate)

ENSS-57, item '*Being the one that has to deal with the patients and families'* ranked 13 overall.

ENSS-57, item '*Experiencing discrimination on the basis of sex'* ranked 7 overall

At times, when there is a situation whereby the nurse other than the one of preference attends to them, these patients tend to be discriminative towards them. (Reem, new graduate)

Scene: Soon the patient's son arrives. His manner is very aggressive. He is shouting at the nurses that he wants his father looked after by a male nurse or at least an expatriate nurse. He complains about the care that has been provided, particularly in regard to pain management. The father then starts screaming that he is in pain. The nurse manager arrives to investigate the situation and begins to criticise the nurses, without seeking their explanation in front of the patient and relative.

Source: The final part of the scenario deals with abuse from relatives, the patient in considerable pain and the criticism and lack of support by senior staff. These issues were all highly ranked in the ENSS-57 but of equal importance was the level of distress described by the new graduates when interviewed.

ENSS-57 item, '*having to deal with abuse from patients' families*', ranked 16th overall.

I find it quite stressful having to deal with physically and verbally abusive patients. I tend to be constantly fearful when treating these patients. (Shariffa, new graduate)

….The patient is in a lot of pain and there's really nothing I can do to reduce the pain although I try to ensure they are as comfortable. (Ranna, new graduate)

ENSS-57 subscale, '*problems with supervisors*' ranked second, ENSS-57 items, '*lack of support from my immediate supervisor*' ranked fourth and '*criticism by a supervisor*' ranked

29th overall

> *…no support from the nursing administration to assist us in coping with such situations. (Rasha, new graduate)*
>
> *I have been humiliated and criticised by the negative comments of my supervisors. (Shariffa, new graduate)*

Once the design of the scenario was completed, the scenario was run using Arabic speaking nurses to act as patient, son, supervising staff member and the new graduates. Non-Arabic speaking nurses played the roles of expatriate nurse and nurse manager. The aim of the test was to obtain feedback from the participants and co-ordinators on the feasibility of the scenario. After the testing, the feasibility of the SBLE was confirmed to have high fidelity.

Debrief

A debrief session immediately after the completion of a scenario is another key step in an SBLE (Van Heukelom, Begaz & Treat 2010).Upon completion of the SBLE, the participants will be given a debriefing session by the simulation coordinator. The objective of the debriefing is to review the SBLE, clarify thought processes, release emotional tension, reinforce specific teaching points by discussing new stress reduction strategies, and correcting misconceptions if any. It is during the debrief where the participants would explore and analyse their actionsand thought processes, emotional states, with the goal of improving their performance in real situations. Thus the aim of the debrief is for participant new graduate nurses to discover from each other and through guided reflective questioning how they performed, what they learnt and how they could use strategies to deal more effectively with the stressors they encountered (Dieckmann et al. 2012; Fanning & Gaba 2007; McCaughey & Traynor 2010; Shinnick et al. 2011).

In this study, it is important that the debriefing session is conducted in Arabic, the language of the participants. This is more likely to give the participants opportunity to feel free and share emotions, reflect on thoughts, and discuss solutions without hesitation. During the de-briefing, participants will be given the opportunity to discuss and determine possible solutions to manage and reduce stress resulting from conflict and communication difficulties. The participants will explore and analyse their actions, thought processes, and emotional states, with the aim of finding solutions through a process of guided questions. If the participants are unable to achieve the objectives of the scenario, the simulation coordinator will step in and propose three potential strategies. Table 23 describes the communication and conflict management strategies, the DESC script and other Team-STEPPS strategies which will be employed as stress reduction tools in the pilot test. These three strategies have been chosen as they specifically address issues of improving communication and collaboration with peers, senior staff and patients and their families.

Table 23: Communication and conflict strategies

Effective Strategies	Stressors
Conflict management style (Black & Mouton 1964; Thomas & Killman 1975; Rahim 2002; Rahim & Psenicka 2002) (Appendix 17)	To create solutions that resolve differences when dealing with relatives and families specifically: Angry relatives, demanding constant attention to be provided and the use abusive and misogynist remarks.
DESC (Brook 2010) (Appendix 18)	To resolve differences in opinion between supervisors, co-workers, and participants for example: To express opinions and provide feedback with confidence and respect.
TeamSTEPPS Strategy (National Council of State Boards of Nursing 2011). (Appendix 19)	To use the communication strategy as described in Team-STEPPS to deal with patients and their relatives. Dealing with senior nurses: Poor handover

5.3 Ethical Consideration

Ethical considerations can relate to many aspects of trialling an intervention however, for this particular study preventing harm to the participants is a fundamental consideration. In this study, the SBLE is specifically designed to place the participants in a situation that is stressful and thus exposing them to an obvious risk of psychological trauma. The results of the survey and interviews have informed the combination of stressors that will feature in the scenario. We know from the results that these issues are stressful for the new graduates. What is uncertain is the impact of combining a number of these stressors. It is logical that this will increase stress levels. Therefore, a number of strategies will be used to address these risks and they will be discussed in detail in the Discussion chapter.

5.4 Evaluation

The evaluation process is an essential part of designing and trialling a complex intervention. There are several stages to the evaluation process which includes the evaluation of the delivery of the intervention (process) and then evaluating the outcomes of the intervention (Dane & Schneider 1998; Dusenbury et al. 2003; Linnan & Steckler 2002; Griffin et al. 2014). The effectiveness of the process of evaluation relies on the method of delivery and how the complex intervention is implemented. One of the most commonly used frameworks to assist in the evaluation of complex interventions was defined by Baranowski and Stables (2000) and later refined by Linnan and Steckler (2002). The framework includes: "*Context* (environment aspects of the intervention setting), *Reach* (the proportion of participants who received the intervention), *Fidelity* (whether the intervention is delivered as planned), *Does delivered and received* (the amount of the intervention delivered and the extent to which participants responded to it), *Implementation* (a composite score of reach, does and fidelity), and *Recruitment* (method used to attract the participants)" (Griffin et al. 2014, p.2).

As Farquhar and colleagues (2011) suggest evaluation of a complex intervention should include whether the intervention is; effective and if not why it wasn't effective and addresses the 'fidelity' of the intervention, how it was delivered. In considering the effectiveness of an intervention to reduce stress the PSS would be used measure the level of stress pre and post intervention. The ENSS-57 will measure any changes in the particular stressors on new graduate nurses in the ICUs. Although both the PSS-10 and ENSS-57 were validated in English and Arabic and have been tested for reliability and validity prior to being used in this study, this had not occurred with this specific population. The Cronbach's alpha confirmed the reliability of the survey. The results of the ENSS-57 correlated with the qualitative data from

the interviews indicating which stressors were of importance to this particular group. Finally the response rate indicates the feasibility. All of these then confirm the appropriateness of the survey tools for use in the trial.

5.5 The SBLE Scenario

The SBLE was designed based on a systematic analysis of the information gathered from both the survey and individual interviews of new graduate nurses. It was important to the construct the scenario with an appropriate level of fidelity and complexity and to consider the evidence base (Waxman 2010). It is also important that the scenario is designed to effectively achieve the objectives of the SBLE, reflecting both the needs of the learner and their current experience. Waxman (2010) describes the critical elements when developing a scenario includes; (a) learning objectives defined based on the learners need. For this study the PSS-10 and ENSS- 57 was used to quantify the magnitude and the stressors of most importance, (b) identify the level of fidelity. As Waxman indicates, if the aim of the simulation is to enhance critical thinking, communication and specific skills a high fidelity simulation is called for, (c) the level of complexity should be well defined which should be based on the learner's knowledge and skill level. In this study, the level of complexity was informed by all of the data collection methods, (d) Use evidence-based references. Here is somewhat of a departure in that Waxman calls for reference to the literature. In this study there was little in the way of an evidence base sufficiently specific to this population. The mixed methods approach allows for the development of a very contextually specific evidence base. The practicalities of this level of data collection of course must be considered, (e) Incorporate instructor prompts and cues and (e) Allow adequate time for debriefing or guided reflection. These final two are important in all scenarios but the risk to the new graduates here calls for heightened vigilance. This study was informed by a number of data collection methods. The mixed methods

approach allows for the development of a very contextually specific evidence base. The practicalities of this level of data collection of course must be considered. The researcher analysed both the ENSS-57 items and 9 subscales independently and then combined the results. In Chapter 4, the researcher ranked the ENSS-57 items from highest to the lowest subscale to provide a broader understanding of the stressors experienced by new graduate nurses. The individual interviews then provided a more comprehensive understanding of the issue from the perspective of the new graduate nurses themselves. The researcher considered all stressors from both the approaches, integrated the results and constructed a SBLE in the form of a complex intervention. The key stressors that were selected include: patients and their relatives exercising gender discrimination by insisting on a same gender nurse, patients dissatisfied with the service provided, patients consistently demanding attention from the nurses, dealing with abusive families and their misogynist remarks, unsupportive supervisors burdening the new graduate nurses with high expectations, shortage of staff resulting in irregular work shifts and a heavy workload and communication barriers arising from being unaccomplished in the English language. Accordingly, a SBLE was designed based on key stress factors afforded from the survey and individual interviews of the new graduate nurses and is envisaged to provide the participants with the various skills to overcome these issues, specifically for conflict resolution and to build communication skills to address these issues. High fidelity is achieved through the use of actors specifically chosen to mimic the stressors that were considered the key stress factors experienced by the new graduate nurses based on the results from the survey and individual interviews of new graduate nurses. The researcher deliberately chose male actors to be included in the scenario to take into consideration the stressor that involves gender discrimination whereby the female nurses struggle to deal with the opposite gender in the workplace. The combination of stressors provides the necessary complexity while also addressing the reality of practice. Fidelity in a simulation scenario

refers to the degree to which the simulation replicates a real life situation by being able to mimic interactions, conversations and expressions. However, the levels of fidelity is dependent on the research aim. Simulation can be designed using technologically savvy equipment or it could consist of just the very basic instruments (Sadideen et al. 2012). It is noteworthy to state that a high level of fidelity is not required to achieve a successful simulation intervention (International Nursing Association for Clinical Simulation and Learning 2013; Meakim et al. 2013). The type of fidelity that are taken into consideration in a simulation intervention includes environmental and psychological. Environmental fidelity covers a variety of areas, for example the setting where the simulation is carried out, manikins and the various medical and non-medical equipment available while psychological fidelity would consider emotions and beliefs (Dieckmann, Gaba & Rall 2007; Kozlowski & DeShon 2004; Macfarlane 1997). In this study, the SBLE was designed based on a high fidelity and low technology scenario.

5.6 Summary

This chapter described the process of integration of results from different data sources in order to inform the design of the trial of a complex intervention. The aim of the intervention is to encourage new graduate nurses to develop strategies to assist them to deal with the stressors identified in this study. The complexity of the intervention indicates that data drawn from a variety of sources is required and this is best served by a mixed methods study. The data from these multiple sources was integrated to inform both the overall design of the trial and the SBLE which is the intervention to be evaluated.

The next chapter will discuss the main results, including issues arising from the individual components of data collection and the design of the trial of the SBLE. Strengths and limitations of the study will also be addressed.

CHAPTER 6 DISCUSSION

6.1 Introduction

This research project employed an interventional mixed methods design to develop a complex intervention that would assist new graduate nurses in dealing with the stressors of their work environment; ICUs at the KSMC-R in Saudi Arabia. Integrating the findings from a self-administered survey, individual interviews of new graduate nurses and a group discussion of nurse educators resulted in the development of an SBLE.

The influx of new graduate nurses recruited to work in the ICUs to compensate for the shortage of staff necessitated this study. The new graduates are being exposed to a plethora of stressors working in such a challenging and stressful environment very early on in their careers. Although the main objective of the study was to inform the design of an SBLE the data collected provides some unique findings in regard to stress within this population. Therefore, the findings from the individual components of the study will be discussed and then the SBLE to address the key stressors will be explored. The chapter will be concluded with strength and limitations of the study.

The overall aim of this project was to answer the research question: What is the potential of SBLE to reduce stress among new graduate nurses in the ICUs in Saudi Arabia?

6.2 New Graduate RNs Working in ICUs in Saudi Arabia

A total of 261 self-administered survey packs were distributed to all the new graduate nurses working in the ICUs at the KSMC-R. The response rate for the survey was 72.4 per cent representing a good response rate for the specific population chosen for this research. The response rate gave the researcher confidence that the study design was suitable and the data collected would be representative of nurses within this population (Coomber et al. 2002; Pryjmachuk & Richards 2007).

The majority of the respondents were female (77%).This is somewhat above the 60.5 per cent of the RNs that are Saudi nationals working in the MOH (MOH 2015).

As expected the majority of the new graduate nurses were relatively young and inexperienced. A large proportion of the respondents were within the age group of 19-25 years (53.4 per cent), followed by those between ages of 26-35 (37.6 per cent). Thus, it is fair to say that the average age of nurses working in Saudi Arabia are between the ages of 19-35 years (CDSI 2015). In countries such as the United States, the United Kingdom, Canada, Australia, Singapore and New Zealand, the average age of nurses were 35 to 47 years (American Association of College of Nursing [AACN] 2010; Australia Institute of Health and Welfare 2013; International Council of Nurses 2013; Nickell et al. 2004).

Another significant characteristic from the sample was the levels of education. 63 per cent of the respondents have a 3 years diploma in nursing science while 16.4 per cent held a bachelor degree in nursing. These statistics were compared with other studies globally showing a similar trend, with majority of the respondents with diploma qualification and a small percentage with a bachelor degree in nursing (Amr et al. 2011; Alboliteeh 2015).

6.3 Stress in New Graduate RNs

6.3.1 Magnitude of Stress for New Graduates

In considering the results of this study related to the magnitude of stress in new graduates, there are very few studies that allow for comparison. Those that do examine stress in new graduates have not used the PSS-10. Previous studies have established that working in critical care units, specifically the ED and the ICU, results in nurses having much higher levels of perceived stress compared to nurses that work in the other wards (McCarthy, Power & Greiner 2010; Mrayyan 2009; Subih et al. 2013 Singh et al. 2011). From the result of this study, the PSS-10 items revealed that the overall mean of perceived stress was 29.80 (SD= 5.0) showing that the respondents perceived stress was high. This finding was in agreement with a number of studies in the literature based on the overall mean of perceived stress determined using the PSS tool.

Other studies have utilised other tools other than the PSS-10 to measure stress among nurses such as the Casey-Fink Graduate Nurse Experience tool, the Health Professions Stress Inventory (HPSI) tool and the Clinical Stress Scale (CSS). These studies show that the two factors that cause high level of stress among nurses is working in the ICUs and during the first 6-12 months of employment (Casey et al. 2004; Cheng et al. 2015; Sayed & Ibrahim 2012; Shader et al. 2001; Wu et al. 2012).

Bhandari (2012) reported an overall mean perceived stress among 130 Nepalese nurses working in South Korea of 26.5 (SD= 8.00). However, there have been a number of studies reporting an overall mean of perceived stress moderate to lower than the findings in our study. A study carried out among Saudi nursing students afforded an overall mean of perceived stress of 23.3 (SD= 4.7) (Eswi, Radi &Youssri 2013).

In this study, the results afforded from the PSS-10 was able to show that the female nurses experience a higher level of stress compared to the male nurses. This is potentially because females are believed to be more emotionally expressive and thus are more prone to feeling susceptible to the different external environment factors (Gibbons, Dempster & Moutray 2011; Sheu, Lin & Hwang 2002; Singh et al. 2013). The results also showed that working full-time (respondents who worked 41-45 hours) having a higher stress level.

6.3.2 Significant Stressors for New Graduates RNs

The integration of the results of the self-administered survey and individual interviews of the new graduate nurses allowed the researcher to identify the key stressors that were experienced by new graduate nurses. In considering the results of the ENSS-57 both subscales and individual items were ranked. Notably the 4 highest ranked subscales were; discrimination, problems with supervisors, workload, and problems with peer support. When considering the top ten ranked individual items, the majority were from these subscales. Only two of the top ten items, *Fear of making a mistake in treating a patient* (ranked 9th) and importantly *Watching a patient suffer* (ranked 1st) were from lower ranked subscales. The following discussion arises from considering the results of all of the data collection methods.

6.3.2.1 Discrimination

The highest group of stressors was the discrimination subscale with an overall mean = 3.12. The results from the individual interviews corroborated this result with the theme gender and race appearing as important stressors.

Discrimination is defined as an individual's perception of being treated with biasness or being mistreated resulting in negative emotions (Ellen et al. 2001). It remains a problem specifically in countries that have strict cultural and religious beliefs such as in Saudi Arabia.

Discrimination is typically experienced by the females regardless of professional hierarchy and it hinders professional development (Al-Tamimi 2004; Mobaraki & Söderfeldt 2007, 2010; Mohamed et al. 2011). A study conducted at the King Fahad specialist hospital using the ENSS tool showed that discrimination was indeed the highest subscale experienced by the nursing staff, with the mean=3.47 (Saleh A, Saleh M & AbuRuz 2013).

There are a number of studies where discrimination was ranked as the least stressful event. A study conducted at the Taif Governmental Hospitals showed that the staff nurses perceived experiencing discrimination on basis of sex and being sexually harassed as the least stressful event based on the mean (N= 148, Mean= 2.21) (Kamal et al. 2012). Another studyconducted in Brunei Darussalam hospitals among RNs working in speciality unit and RNs working in the general ward also afforded discrimination as the least stressful event based on the overall mean = 1.30 (Damit 2007). In addition, a study conducted among new graduate nurses at the Narayana Medical College and Hospital, Nellore also showed that the nurses ranked discrimination as the least stressful based on the overall mean score 1.2 (Rajeswari & Sreelekha 2017).

For individual items within this subscale, Sexual Harassment was ranked 5th overall with 76.7 per cent of the female new graduate nurses experienced discrimination on the basis of sexual harassment. In general, many females see sexual harassment as a very challenging situation in the workplace as it creates an uncomfortable working environment, makes a person feel offended, humiliated and intimidated especially when working with the opposite gender (Goodner & Kolenich 1993; Bronner, Peretz&Ehrenfld 2003). Bullough (1990) states that cultural and religious believes put aside, sexual harassment in the workplace is inevitable and there has been yet an effective strategy in place to overcome the issue (Goodner & Kolenich 1993, Kettl et al. 1993; Mrkwicka 1994; Knox 1995; Kaye 1996; Williams 1996). A particular study conducted among 455 female registered nurses in Malaysia showed that sexual

harassment was experienced by 51.2 per cent of the nurses within the first year of practice, sexual harassment were verbal (46.6 per cent), visual (24.8 per cent), psychological (20.9 per cent), physical (20.7 per cent) and non -verbal (16.7 per cent) (Suhaila & Rampal 2012). Racial Harassment; Racial harassment was another significant result from this study with discrimination on the basis of race or ethnicity ranked 12 from the ENSS-57 items.Racial discrimination arises when there are nurses from different ethnicity, tribes and race working within the same unit. It is often observed from both patients and their relatives and other co-workers. For example, patients refuse treatment from nurses who are not from their preferred racial type and exchange of undesirable racial remarks which causes the feeling of hostility, hurt and confusion for these new graduate nurses who are just trying to get accustomed to the new role. Other studies have established that nearly 40 per cent of ethnic minority nurses experience racial harassment in the workplace while more than 64 per cent suffer from racial harassment from patients resulting in job dissatisfaction and low retention rates (Shields & Wheatley Price 2002).

6.3.2.2 Problems with Supervisors

Problem with supervisors was the second highest ranked subscale rated by new graduate nurses in the self-administered survey and this was supported by the individual interviews. The new graduates indicated that poor relationships had been established with supervisors stemming from their inability to cope with the high demands and expectations of supervisors. Other studies support that new graduate and nurses in general experience lack of support and the supervisors being unapproachable (Damit 2007; Gemberling et al. 2011; Huang 2004; Maben 1996; Mehta et al. 2014; Riggio 2015; Tsai 2011; Wu et al. 2010).

6.3.2.3 Workload

Problems with workload featured prominently in this study. The workload subscale was ranked the third by the new graduate nurse and this was strongly re-enforced by the individual interviews. Workload has been identified as a major source of stress, particularly in a fast paced and complex working environment such as the ICU (AbuAlRub 2006; Al-Kandari & Thomas 2008; Bianchi 2004; Chang et al. 2007; Ditzel 2009; Escot et al. 2001; El-Jardali et al. 2008; Edwards & Burnard 2003; Emilia & Hassim 2007; Healy & McKay 2000; Lambert et al. 2007; Lee 2003; Martens 2009; McVicar 2003; Parikh et al. 2004; Purcell et al. 2011; Pinikahana & Happell 2004; Pal & Saksvik 2008; Rheaume et al. 2011; Rout, 2000; Sveinsdottir et al. 2006; Wheeler 2010; Zaghloul 2008). The new graduate nurses indicate that it is infuriating when they are overloaded with responsibilities due to the shortage of staff. They there was always insufficient time to complete tasks resulting in the nurses having to make decisions under these stressful circumstances. The irregular working schedules and the expectations to work long hours on a regular basis exacerbates the issue. In the group discussion, the nurse educators agreed that the new graduates are exposed to a heavy workload but this is mainly due to shortage of staff and an influx in patients.

Santos et al. (2003) agree that the added responsibilities, especially extra non-nursing tasks have a negative impact on the new graduates. Blay et al. (2002) also stated that approximately 60 per cent of nurses within the ICU spend their time on administration and non-nursing tasks which does not require the use of skilled nurses and thus causes less time for patient care. Thus, it is apparent that workload is a common stressor and is often faced by nurses regardless of the level of experience and culture (Arnold et al. 1998; Cotrell 2001; Nolan & Ryan 2008; Dewe 1989; Lambert et al. 2004; Lee 2003; Tyson Pongruengphant 2004).

6.3.2.4 Problems with Peer Support

Dealing with peer support was ranked the fourth subscale from the self-administered survey. Being fairly new to the working environment, the new graduate nurses tend to feel inferior and inadequate and thus feel reluctant to express their feelings/emotions with the other fellow nurses. From the perspective of the nurse educators in the group discussion, this issue emanates from a communication problem. The nurse educators believe that it is the lack of confidence that causes the reluctance to communicate with the other co-workers. From the individual interviews, the nurse graduates themselves agree that communication is a major challenge especially when having to deal with the expatriate nurses and thus causing difficulty in sharing experiences and socialising. The majority of the nurses working in the ICUs are English speaking expatriates and with most of the new graduate nurses still being somewhat challenged working in the English language, this results in a significant language barrier that comes to existence (Abualrub 2004; Hamaideh et al. 2008; Lee 2003). Thus, the new graduates tend to feel reluctant to approach the expatriate nurses, whether it's to seek advice or to share experiences (Kelly, Simpson & Brown 2002).

6.3.2.5 Dealing with Patient in Pain

Dealing with patients in pain was another significant stressor among new graduate nurses that arose from the interviews. The graduate nurses were concerned that their actions were inflicting pain on the patients. In the ENSS-57 issues of pain and suffering are found within the death and dying subscale (ranked 7 of 9). The item *performing procedures that patient experience as painful* only ranked 36, but *watching a patient suffer* ranked highest of all individual items. However, other reported studies have established that *Death and dying* was a prominent source of occupational stressor experienced by the nurses in other countries (Fathi, Nasae &Thiangchanya 2010; Mohamedkheir et al. 2016; Qiao, Li & Hu 2011; Andal 2006).

6.3.2.6 Patients and their Families

Dealing with patients and their family/friends was another significant stressor that emerged from the individual interviews. The new graduate nurses indicated that dealing with abusive and demanding patients and their respective families is another major stressor they are left dealing with. The dealing with patient and their families subscale however was ranked number 8, with the lowest individual item, *patients making unreasonable demands* ranked 57. It is a common occurrence in the ICU for families of patients to have unreasonable demands, being verbally abusive and constantly blaming the nurses for anything that goes wrong (Damit 2007). The situation is usually worsened when dealing with abusive patients with the likeliness of psychological distress (Damit 2007). The nurses also say that such abusive behaviour allows for self-doubt and the feeling a loss of respect (Michael & Jenkins 2001). Studies have shown that verbal violence in most critical care units usually occurs due to misunderstandings and a communication barrier (Gerberich et al. 2004; Liu 2005; Spector, Zhou & Che 2014). This result was in agreement with a study conducted at the Taif Governmental Hospitals showing that the staff nurses find *Dealing with Patients and their families* as the most stressful event *based on the* mean (N= 148, Mean= 2.87), (Kamal et al. 2012).

6.4 Trial of a Complex Intervention: Stress related SBLE

For some time there has been a call to ensure that that when constructing a scenario for an SBLE that the process is evidence based (Seropian et al. 2004; Jeffries 2007; Waxman 2010). The scenario should be designed in manner that achieves the objectives of the SBLE being met effectively. The scenario should therefore reflect both the needs of the learner and their current experience. Indeed the needs of the learner must be evaluated and defined to be able to set the

objectives of the SBLE. Waxman (2010) describes the critical elements for the development of an SBLE incorporating the following in Table 24;

Table 24: Evidence-based guidelines for clinical simulation scenario development (Waxman 2010)

Evidence-Based Guidelines for Clinical Simulation Scenario Development

Critical Element	Rationale
Ensure that the learning objectives are defined. Develop clear, concise learning objectives.	Need a tool that guides learning. Objectives should be broad based. Should be based on the level of the student. Should reflect intended outcome of the experience. Should ask "what competencies are being trained?" Should allow student to integrate and use the theory they were taught in class. After simulation, objectives should be referenced in the debriefing.
Identify the level of fidelity (The extent to which a simulation mimics reality). There are three levels of sophistication (Seropian, Brown, Gavilanes, & Driggers, 2004): high, moderate, and low.	The extent to which simulation mimics reality. Should be high-low; task trainers, and so on. If the purpose of the simulation is task training (e.g., intramuscular injection, nasogastric tube insertion), then a low-fidelity simulation should suffice. If the purpose of the simulation is to enhance critical thinking, communication, and certain skills, then high-fidelity should be used.
Define level of complexity (problem solving).	Scenario needs to be appropriate to the experience level of the learner. Should be based on the knowledge and skill level of the learner. Try not to overload the scenario. Should this scenario be multidisciplinary?
Use evidence-based references.	Evidence drives practice. List all key references that serve as the theoretical foundation for the learning objectives. Scenarios should be peer reviewed.
Incorporate instructor prompts and cues.	Instructor should know when support and assistance should be provided by the facilitator. Assistance should be in the form of cues or prompts and guide learners to the path of discovery.
Allow adequate time for debriefing or guided reflection.	Needs to occur immediately after the scenario is completed. Try not to break sense of realism; timing and location are important. Adequate time needs to be allocated and should be at least as long as the scenario, if not twice as long. Session should be guided by an educator skilled in facilitation.

These critical elements are further explored in the discussion of aspects of the design of the SBLE.

6.4.1 The Need for an Intervention

The results from the self-administered survey and individual interviews of new graduate nurses and group discussion with nurse educators confirmed that new graduate nurses were significantly stressed. Based on the results afforded, a complex intervention using SBLE was designed. SBLE was employed as it has been previously established to be effective in diverse fields (Cant & Cooper 2009; Wildman & Piccolo 2009). Waxman (2010) states that learning

objectives must be well defined. In this study, the objectives were defined in terms of the magnitude and types of stressors the new graduates were dealing with.

6.4.2 Participants

As the survey and individual interviews were strongly focused on addressing the issue of gender and stress in the workplace, the decision was made that participants for the proposed trial would be female new graduates and the SBLE would feature this issue in the scenario. There is a greater percentage of females in the new graduate cohort and they were observed to experience a higher level of stress compared to the male nurses, suggesting potentially a greater need. However, there is the possibility of designing the SBLE intervention with the reverse of gender roles to tailor the SBLE for male participants. For example, the patient and relative would both be females.

Participants in the crossover RCT will be assigned randomly to two sequence groups A–B and B–A (A–intervention and B–control group). This means that in the first instance participants in group A will undergo the SBLE intervention while participants in group B will be the control group. It is important that the stress scales are filled out by the participants in the intervention and control group to assess, compared and separate the effects by a washout phase (Black et al. 2010; Chung et al. 2010; Ganesan et al. 2011; Davis, Westhoff & Stanczyk 2011; Wellek & Blettner 2012). In this study, the wash out period will be 4 weeks later to prevent any carryover effect. Thus, 4 weeks later, this process will be reversed whereby group B will undergo the SBLE intervention while group A is the control group. Both groups will fill the stress scales, the PSS and ENSS prior the trial and 4 weeks later. The timing of the trial must also be considered in relation to transition over the first 12 months of practice. As the new

graduates gain confidence and competence throughout the first year of practice many will develop communication and coping skills as a matter of course (Casey et al. 2004; Halfer & Graf 2006; LeSergenta & Haney 2005; Roberts, Jones & Lynn 2004; Thomason 2006). It is therefore planned to conduct the trial with participants in the first half of their graduate year.

6.4.3 Nurse Educators to Act as Simulation Coordinators

The group discussion with the nurse educators as an approach in this study allowed the researcher to gain a better understanding on the extent of the use of simulation in the healthcare sector and its potential benefits. The nurse educators do believe that simulation would be an effective method of implementation for training purposes and would be able to produce more efficient and competent nurses in the future. However, it was made apparent that the lack of support and detailed understanding along with the mindset that it involves a high cost has caused reluctance to use simulation as a training tool. As a result, although there has been some use of simulation for training purposes in the adult and pediatric ICUs, it has not been fully implemented within the entire hospital. Despite this, being the most experienced individuals in this context, it was decided that the nurse educators would be used as simulation coordinators.

There seems to be a general consensus among nurse educators with regards to the extent of educational support required to achieve an effective teaching and learning atmosphere (Hyland & Hawkins 2009; Jeffries 2008). To be able to integrate simulation learning into the nursing curriculum, it is essential that the nurse educators are well equipped with the theoretical knowledge and practical skills in regards to simulation interventions (McGaghie et al. 2010). This is because the advantages of simulation learning can only be extracted if a thorough understanding on the benefits and limitations is provided to the nurse educators (Bentley & Seaback 2011; Kaakinen & Arwood 2009; Keskitalo 2011; Keskitalo et al. 2011).

For example, the implementation of workshops, nurse educators provided with extensive reading resources on simulation and practical labs in order for simulation learning to be trialled prior to being used (Anderson et al. 2012; Jeffries et al. 2013; Taibi & Kardong-Edgren 2014).

SBLE in particular, requires a far broader range of competencies beyond designing and implementing the scenario, and debriefing. Nurse educators would need to draw on extensive knowledge, behaviours, skills and demonstrate comportment acquired from both nursing and education. For example, most educators of nursing would not have envisaged mastering the operation of high-fidelity equipment as part of the skill set of an educator. The ability to resolve technical malfunctions was particularly valued by students. Along with the expectation that effective SBLE required nurse educators to manage complex group dynamics, create authentic contexts within artificial environments, utilise diverse resources and integrate this way of learning into existing curricula.

It has been emphasized that clinical expertise is not enough for a simulation instructor to be effective (Boese et al. 2013; LaFond & Blood 2016; McGaghie et al. 2010). Yet, only 26 per cent of nurses report a formal simulation instructor training program at their organization (Anderson et al. 2012). Successful implementation of simulation requires knowledge and skills specific to this teaching methodology, including an understanding of the pedagogy behind simulation, strengths and limitations of simulation modalities, actions to promote fidelity, and methods to facilitate debriefings (Boese et al. 2013). To this end considerable preparation of the nurse educators would be required for then to act as simulation coordinators however the group was clearly enthusiastic about the possibility.

6.4.4 Evaluation

There has been criticism that the design and conduct of SBLEs in nursing has occurred without rigorous evaluation. For this trial a number of evaluation elements have been planned. In the first instance a testing of the scenario has already been conducted. The intention is to next pilot a crossover RCT as a Post-doctorate study. Although it was originally intended to conduct the pilot as part of this PhD resources particularly time did not allow this. In evaluating the pilot there are two aspects; evaluating the processes, the delivery of the intervention and the outcomes that the intervention aims to achieve.

Prior to implementing the SBLE it was important to test this complex intervention in conditions as close to those that would be used in the trial (Chen et al. 2017; Graham et al. 2006 ; Jeffries 2005; Munroe et al. 2016; Waxman 2010). The scenario was developed based on a setting that closely resembled an ICU environment. The aim of the test was to obtain feedback from the participants and co-ordinators on the feasibility of the scenario. After the testing, the feasibility of the SBLE was confirmed with high fidelity and using low technology.

The evaluation of complex interventions is dependent on the aims of the evaluation and are dealt with based on its practical effectiveness in everyday practices and the envisaged outcomes.

For the quantitative component of a crossover RCT, power analyses and sample size justification remain paramount. The utilization of crossover RCTs as a trial design in this study has been chosen for variety of reasons. Realistically, recruitment of large numbers of participants is not feasible and thus using the crossover RCT, the researcher would be able to increase the statistical power of the trial with a smaller number of participants (Du Prel, Röhrig & Blettner 2009; Röhrig et al. 2010). The crossover RCT would also enable different

components to be dealt with in a systematic manner and the methodological challenges that come alongside to be addressed using specific adaptations to ensure an effective and consistent evaluation (Gueron 2002; Oakley et al. 2006). The new graduates are also expected to feel less anxious and better deal with stress over time and thus a cross over design would provide information on the effect of the intervention at two time intervals (over a period of time). Using the crossover RCT, participants take part in both the control and in the intervention group with different periods of time in the last phase of intervention and the first phase of the next intervention called the washout. This effectively means that each participant acts as his/her own control.

The scenario design was initially tested for feasibility prior to the actual simulation intervention. Once a simulation intervention has passed the multiple feasibility studies and the actual intervention is successful, the researcher would then be able to scale up with the aim of achieving long term benefits within the healthcare sector. The strategies used in the simulated scenario to reduced stress among the new graduate nurses can then be implemented on a large scale in the ICUs to start with and then progress to the other critical care units in hospitals. The strategies designed should be reproducible over a wider context, for example, in a variety of settings, populations and time period (Griffin et al. 2014).

Thus, the purpose of the pilot study is to establish the feasibility of conducting a crossover RCT to evaluate the effectiveness of the intervention of a SBLE to reduce stress among new graduate nurses in the ICUs. The use a complex intervention simulation is growing in nursing education; however, the expansion of its use has largely preceded research on education of learner experience. While it is apparent that there has been an expanding need for identifying potential evaluation tools to determine effectiveness and to measure clinical reasoning, there has been a lack of reliable and valid instruments. Most current tools utilised did not report reliability and validity (Elfrink Cordi et al. 2012; Kardong-Edgren, Adamson & Fitzgerald

2010; Lapkin et al. 2010). Thus, it is important that effectiveness is tested using standardised instruments that have been psychometrically tested in multiple settings with different types of participants.

In this study, the Simulation Effective tool (SET) (Appendix 27) will be used to measure the effectiveness of the SBLE scenario. For the pilot study, two questionnaires will be used to measure the outcomes pre and post-test of the SBLE. The questionnaires will be completed by both groups of participants, the intervention and control group. The first questionnaire consisted of three parts which included the demographic information, the PSS-10, and ENSS-57 items (Appendix 6). Both the PSS and ENSS tools were deemed suitable to be used for the evaluation process in the pilot trial. As previously discussed in Chapter 3, the PSS is a global measure of the level of stress for the purpose of assessing how unpredictable, uncontrollable and overloaded a person considers a particular situation, while the ENSS-57 was designed to measure the factors of stress experiences by nurses in the ICUs . Both the PSS-10 and ENSS-57 items were validated in English and Arabic and tested for reliability prior to being used, affording a good response rate. It is noteworthy to mention that these tools, both the PSS-10 and ENSS-57 items were also employed for the data collection step earlier in this study, which has been explained in detail in Chapter 3.

In terms of process the Debriefing Experience Scale (DES), an additional evaluation tool which will be employed after the pilot test to analyse thought processes and will allow the researcher to obtain more specific feedback from the participants about the conduct of the intervention (Appendix 20).

6.5 Risk of Psychological Harm

It is important for the researcher to reinstate the potential psychological safety that the new graduates will exposed to in the pilot test. The research will ensure the participants are aware of the risks associated with participation and are permitted to withdraw from the study any time. An information sheet will be provided to participants along with consent form and a prebrief prior to the SBLE will be conducted to ensure the participants that the SBLE will take place in a safe enviromnent. The risk of exposing the participants to psycholigical harm is an important factor to be taken into consideration in a research study. Its important that participants are well protected, mimizing the risk of clinical errors and allowing them to be able to express feelings and emotions devoid of hesitation and reluctance due to negative external factors (Calhoun et al. 2014; Dieckmann & Krage 2013; Edmondson 2004; Gaba 2013; Marshall et al. 2011; Rudolph, Raemer & Simon 2014; Willhaus et al. 2014; Yanchus et al. 2014). Despite efforts to minimize psychological harm, it is sometimes inevitable and may cause participants to feel distressed which could have a direct effect on the participant's performance during the study (Cheng et al 2013; Kolbe; Dieckmann et al. 2009; Dismukes, Gaba & Howard 2006; Fanning & Gaba 2007; Grande & Spahn 2015; Gardner 2013; Rudolph et al. 2006; Rudolph et al. 2008). Recognizing that, our SBLE scenario was deliberately designed to expose the participants to psychological distress and thus the researcher has a plan in place to prevent, detect and mitigate this occurrence in any event. The researcher will collaborate with the nurse educators at the ICUs at KSMC-R to create a simulation psychological safety plan that aims to keep SBLE participants as safe as possible. In addition, a session will be conducted with the nurse educators that includes a presentation and a short discussion on the concept of psychological safety, and to clarify objectives of the SBLE (Fung et al. 2015; Ostergaard, Dieckmann & Lippert 2011). It was important that the participants

were provided with a pre-briefing to reinstate that the intervention will be conducted with psychological safe space taking into account psychological stress that is associated with the scenario itself. To help the nurse educators detect and mitigate psychological distress among participants, the researcher will use a Simulation Participant Psychological Safety Algorithm (Appendix 26). The algorithm is to assist the nurse educators understand the plethora of reactions that can be encountered during the SBLE.

6.6 Strengths of the Study

One of the main strengths of this study is the use of a mixed method approach to investigate a very complex topic. The combination of breadth and generalisability of the quantitative self-administered survey along with the depth provided by qualitative interviews and group discussion provided study rigour. The results obtained from the quantitative approach was able to inform the direction of the qualitative approach. The results afforded were tested for reliability and the researcher was then able to form a conclusion using convergence and corroboration. Another strength of this study was the quantitative approach which incorporated a large sample size, which was deemed representative of all participants working in all the ICUs at the KSMC- R. The choice of the large sample size was deliberate to provide a high level of confidence and raises the power of statistical tests (Robson 2002). The qualitative approach provided rich and meaningful information about the new graduate nurses experiences with stress and related concepts. It also provided a detailed and extensive understanding of how the new graduate nurses perceive their stress and how they were affected by the stress. To prevent the testing effect as a threat to internal validity, the pilot participants were excluded from the main study (Polit & Beck 2008).

The use of the mixed method design was also important in determining the complex mix of

stressors that would be used in the SBLE. Complementarity and triangulation techniques were used to provide confidence that the resulting scenario would have a high level of fidelity reflecting the reality of the new graduates practice. For example, the *workload* subscale was most frequent stressors based on the results from the survey and individual interviews of the new graduates and group discussion of nurse educators.

Another strength of this study was the extremely good response rates from survey which was representative of the target population. A response rate of 72.4 per cent indicated accurate and useful results.

Lastly, was the use of validated measurement tools to assess the level and sources of stressors, the PSS-10 and ENSS-57. These tools have already been translated into different languages and used in many countries. The researcher tested the reliability for both tools and established a good reliability.

6.7 Limitation of the Study

Despite the valuable results afforded in this study with great potential of reducing stress amongst new graduate nurses working in ICUs, the research study does bear a number of limitations. Firstly, was the lack of adequate literature surrounding the topic. In particular there was a dearth of information on new Saudi graduate nurses working in the ICUs in public hospitals in Saudi Arabia. Albeit there was a significant amount of research addressing various other areas within the nursing sector, it was evident that there was a notable research gap in determining the key factors that cause stress amongst the new graduate nurses and strategies to overcome this issue. Thus, the researcher found it challenging to critically compare the results afforded in this study with literature.

Another limitation of this study was the time constraints and the limited resources causing the

researcher to be unable to complete the pilot test of the actual simulation intervention. However, the pilot test will be conducted upon completion of this PhD.

Another limitation the study was the setting of the study which was limited to a single hospital setting, the ICU in one hospital, the KSMC-R. Thus, although the findings were able to make a significant contribution towards the current literature, it may not be representative of the different populations or settings.

Adding to that, the choice of participants was only limited to new graduate nurses working in the ICUs at the KCMC-R, which was another limitation of the study. Thus, this makes the findings of this study not applicable to other nurses, for example registered nurses working in other public or private hospitals, or primary healthcare centres in Saudi Arabia. The perception of new graduate nurses and how they cope with stress may vary depending on the nature of the hospital environment, orientation programs, and working culture. Hospitals of varying size, with varying populations of nurses could also be a key factor to be explored and could potentially affect the findings. Another limitation of the study was the method of data collection. For example, the self- administered survey was not an efficient tool in terms of being able to follow trends in real time or over short periods of time. As the survey in this study collected data at a single point in time, it was difficult to measure changes in the population over a period of time. This was because repeating the survey distribution can be expensive and time-consuming, making frequent periodic surveys impractical. An additional limitation of the study was the method of the group discussion. The researcher was only able to conduct a single group discussion consisting of 5 nurse educators.

6.8 Summary

This chapter discussed the significant stressors faced by new and largely inexperienced Saudi new graduate nurses working in the ICUs. Sexual harassment, gender discrimination, workload and marginalisation within the stressors were a consistent theme. In addition, the issue for the new graduate nurses was the requirement to deal with a language barrier and dealing with expatriate nurses with inadequate preparation and inadequacy. This study highlighted some important information in regards the effectiveness of employing a SBLE trial in such a context, the process of evaluating the effectiveness of the intervention and recognising the risks associated. The limitations and strengths of the study were also discussed in this chapter.

The next chapter describes the conclusion, implications and recommendations.

CHAPTER 7 CONCLUSION

7.1 Introduction

This study was conducted at the King Saudi Medical City in Riyadh in Saudi Arabia. The objective of the study was to bring attention to the current issue that is faced by new graduate nurses working in a highly stressful environment. With the finite amounts of research in the area, the study was aimed at determining the major stressors that are experienced by new graduate nurses who are transitioning into the workforce in addition to having to work in a highly stressful working environment such as the ICUs. A complex intervention using a SBLE was designed based on the identified stressors to potentially reduce stress or at least allow the graduate nurses to cope better with this stressful environment. The study was designed based on the research question; What is the potential of SBLE to reduce stress among new graduate nurses in the ICUs in Saudi Arabia?

The stages involved an interventional mixed method design which incorporated both quantitative and qualitative approaches. The results from both the approaches were then integrated using complementarity and triangulation techniques, to design a complex simulation intervention to potentially better manage these stressors. The collection of data involved the use of a self-administered survey of the new graduate nurses to achieve a broader overview of the stressors with then individual interviews with the new graduate nurses to gain a better and more precise understanding based on their respective perspectives and viewpoints. A group discussion with nurse educators working in the ICUs at the KSMC-R was also carried out to understand the current use of simulation and their thoughts on how it would play as a role in terms of reducing stress.

7.2 Summary of Major Findings

The findings from the quantitative and qualitative approaches revealed valuable information from the individual data sets which were then integrated to design the intervention. The results showed that the new graduate nurses were indeed exposed to a plethora of high level stressors working in such a challenging environment. The key stressors that appeared from this study includes discrimination, dealing with supervisors, workload issues, dealing with peer support and dealing with patients and their relatives. These findings were then used to design a complex intervention with a high level of fidelity.

7.3 Implication of the Study

The research set out to investigate stress among new graduate nurses working in a challenging environment such as the ICUs and recommendations are based on the findings from this research. The significant issues were carefully considered, explored and analysed for the purpose of designing a complex intervention to conclude the study. The specific issues that were considered to be most stressful to be implemented in the complex intervention using the SBLE include the new graduate nurses dealing with patients and their relatives exercising gender discrimination by insisting on a same gender nurse, patients dissatisfied with the service provided, patients consistently demanding for attention, dealing with abusive families and their misogynist remarks, unsupportive supervisors burdening the new graduate nurses with high expectations, shortage of staff resulting in irregular work shifts and a heavy workload and communication barrier arising from being incompetent in the English language. Organisations have a duty of care to ensure that their staff, and in particular inexperienced vulnerable staff, have an appropriate work environment that reduces risk to their health. In addition the need to adequately staff Saudi hospitals must be considered in light of a very inexperienced

Saudi nursing workforce with large turnover rates, specifically new graduates. Although many strategies may be employed, one that is feasible is the use of SBLE to improve the situation for new graduate nurses. Herein, this research has contributed new knowledge regarding to the stressors experienced by Saudi new graduate nurses working in the ICUs. It could be used to guide policymakers in making decisions for future directions. A number of recommendations to be considered includes:

The Saudi new graduate nurses require continued administrative support particularly from the nurse educators and supervisors, a work environment that fosters open communication with the top management and appropriate training programs to deal with potentially stressful conditions in the ICUs.

The information from test of the scenario was able to show the benefits of using complex interventions to decrease stressors among new graduate nurses. In this study, the issue of communication and conflict were the underlying issues that were the focus. With the success of the test, it is envisaged that there is potential benefits of using complex interventions to address other issues in the nursing education.

7.3.1 Implications for Further Research

In regard to this study there is need to firstly conduct the pilot test of the simulation intervention to determine the potential effectiveness of the SBLE to overcome stressors that stem from communication and conflict issues. The Communication and Conflict Management Strategy which is utilized in the complex intervention will then be recommended to the KSMC-R to be used to assist the new graduate nurses to cope with stress. The next steps in this research would include adapting the study design to explore other key stressors that are experienced by new graduate's nurses, for example sexual harassment and other hospital settings. It would be

advisable to replicate this study in order to be able to make comparisons between Saudi new graduate nurses working in public hospitals in different regions of Saudi Arabia. This study arose from an issue that is the consequence of a rapidly changing and quite unique environment. The nature of the *problem,* stress in new graduate nurses, required an evidence-based approach to designing a *solution*. Where little evidence exists an investigation is warranted.

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Appendices

Appendix 1: Ethical approval the University of Adelaide

THE UNIVERSITY of ADELAIDE

RESEARCH BRANCH
OFFICE OF RESEARCH ETHICS, COMPLIANCE AND INTEGRITY

SABINE SCHREIBER
SECRETARY
HUMAN RESEARCH ETHICS COMMITTEE
THE UNIVERSITY OF ADELAIDE
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AUSTRALIA

TELEPHONE +61 8 8313 6028
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email: sabine.schreiber@adelaide.edu.au
CRICOS Provider Number 00123M

Applicant: Dr R Wiechula

School: School of Nursing

Project Title: ***Simulation learning as a method used to reduce stress for graduate nurses in the intensive care unit***

THE UNIVERSITY OF ADELAIDE HUMAN RESEARCH ETHICS COMMITTEE

Project No: **H-2013-054** RM No: 0000016772

APPROVED for the period until: **31 August 2016**

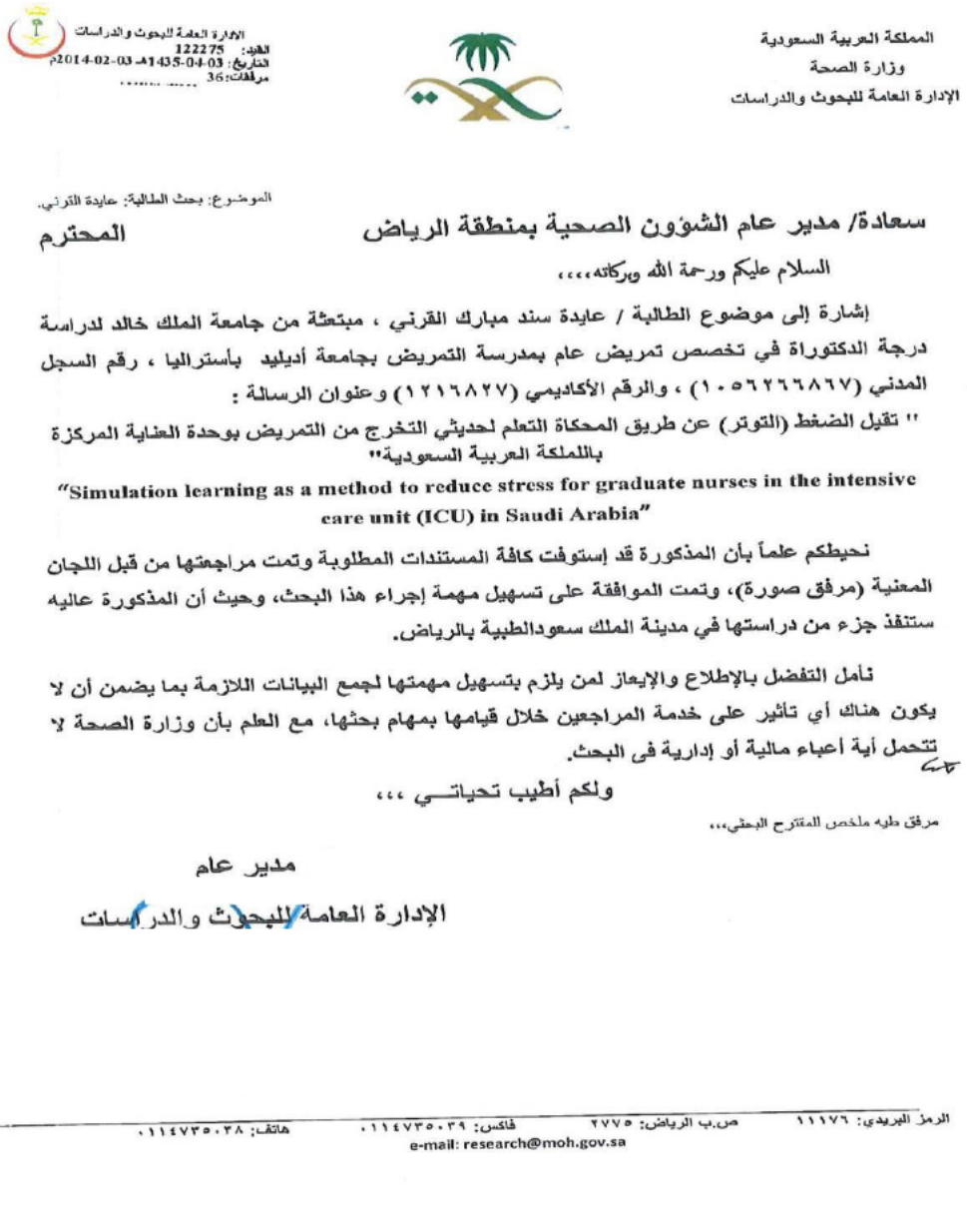
Thank you for the response dated 31.7.13 to the matters raised by the Committee. It is noted that this study will be conducted by Ayidah Sanad Alqarni, PhD candidate.

Refer also to the accompanying letter setting out requirements applying to approval.

Dr John Semmler
Convenor
Human Research Ethics Committe

Date: 1 AUG 2013

Appendix 2: Ethical approval from MOH Saudi Arabia



المملكة العربية السعودية
وزارة الصحة
الإدارة العامة للبحوث والدراسات

الإدارة العامة للبحوث والدراسات
الرقم: 122275
التاريخ: 1435-04-03هـ 2014-02-03م
مرفقات: 36

الموضوع: بحث الطالبة: عايدة القرني.

سعادة/ مدير عام الشؤون الصحية بمنطقة الرياض المحترم

السلام عليكم ورحمة الله وبركاته،،،

إشارة إلى موضوع الطالبة / عايدة سند مبارك القرني ، مبتعثة من جامعة الملك خالد لدراسة درجة الدكتوراة في تخصص تمريض عام بمدرسة التمريض بجامعة أديليد بأستراليا ، رقم السجل المدني (١٠٥٦٢٦٦٨٦٧) ، والرقم الأكاديمي (١٢١٦٨٢٧) وعنوان الرسالة :

" تقيل الضغط (التوتر) عن طريق المحاكاة التعلم لحديثي التخرج من التمريض بوحدة العناية المركزة بالمملكة العربية السعودية"

"Simulation learning as a method to reduce stress for graduate nurses in the intensive care unit (ICU) in Saudi Arabia"

نحيطكم علماً بأن المذكورة قد إستوفت كافة المستندات المطلوبة وتمت مراجعتها من قبل اللجان المعنية (مرفق صورة)، وتمت الموافقة على تسهيل مهمة إجراء هذا البحث، وحيث أن المذكورة عاليه ستنفذ جزء من دراستها في مدينة الملك سعودالطبية بالرياض.

نأمل التفضل بالإطلاع والإيعاز لمن يلزم بتسهيل مهمتها لجمع البيانات اللازمة بما يضمن أن لا يكون هناك أي تأثير على خدمة المراجعين خلال قيامها بمهام بحثها، مع العلم بأن وزارة الصحة لا تتحمل أية أعباء مالية أو إدارية فى البحث.

ولكم أطيب تحياتـــي ،،،

مرفق طيه ملخص المقترح البحثي،،،

مدير عام

الإدارة العامة للبحوث والدراسات

الرمز البريدي: ١١١٧٦ ص.ب الرياض: ٢٧٧٥ فاكس: ٠١١٤٧٣٥٠٣٩ هاتف: ٠١١٤٧٣٥٠٣٨
e-mail: research@moh.gov.sa

المملكة العربية السعودية
وزارة الصحة
المديرية العامة للشئون الصحية بمنطقة الرياض
١٠٠/٢٧٥

وزارة الصحة
Ministry of Health

الإدارة العامة المساعدة للخدمات العلاجية
الرقم: 27659
التاريخ: 1435-04-06هـ 2014-02-06م
مرفقات: 2

الموضوع : البحث المقدم من طالبة الدراسات العليا
عايدة سند مبارك القرني
سجل مدني (١٠٥٢٦٦٨٨٦٧)

المحترم
سعادة المشرف العام على مدينة الملك سعود الطبية

السلام عليكم ورحمة الله وبركاته،،،،،،،،

طيه خطاب سعادة مدير عام الإدارة العامة للبحوث والدراسات رقم ١٢٢٢٧٥ وتاريخ ١٤٣٥/٤/٣هـ المشار فيه إلى موضوع الطالبة/ عايدة سند مبارك القرني (سجل مدني رقم ١٠٥٦٢٦٨٨٦٧) - الرقم الأكاديمي (١٢١٦٨٢٧) - المبتعثة من جامعة الملك خالد لدراسة درجة الدكتوراه في تخصص تمريض عام بمدرسة التمريض بجامعة أديليد باستراليا وعنوان الرسالة:

(Stimulation learning as a method to reduce stress
for graduate nurses in the intensive Care Unit in Saudi Arabia)

وحيث أن المذكورة بعاليه ستنفذ جزء من دراستها في مدينة الملك سعود الطبية ؛ نأمل التلطف بالإطلاع والإيعاز لمن يلزم بتسهيل مهمتها لجمع البيانات اللازمة بما يضمن أن لا يكون هناك أي تأثير على خدمة المراجعين خلال قيامها بمهام بحثها ، مع العلم بأن وزارة الصحة لا تتحمل أية أعباء مالية أو إدارية في البحث.

ولكم أطيب تحياتي،،،،،،،،،،،،

م/ المدير العام للخدمات العلاجية

د/ محمد بن عبدالله الفايز

Appendix 3: Ethical approval the IRB at the KSMC-R Saudi)

Kingdom of Saudi Arabia
Ministry of Health

المملكة العربية السعودية
وزارة الصحـــة

مدينة الملك سعود الطبية
KING SAUD MEDICAL CITY

Subject : Approval for Research Conduct

H.E / The Cultural Attache at The Embassy of Saudi Arabia in Adelaide
(May Allah Save him)

Sir,

With reference to the letter of , file no. 27659 dated 06/2/2013 regarding the PhD student **/ Ayidah Sanad Mubarak AlQarni,** who delegated by the ministry of higher education to study PhD specialties in nursing in Adelaide university, and her request to conduct a research in King Saud Medical City (KSMC) titled : **(Simulation learning as Method Used to Reduce Stress for New Graduate Nurses in The Intensive Care Units : A Study of Ministry of Health (MOH) Hospitals in Riyadh City, Saudi Arabia.)**

So, we hereby inform your excellency that the research was reviewed in the meeting of the research committee held on **24 - 4 -1435H (24/2/2014**) and was approved after making some amendments, provided the researcher shall do the following :

First : Contacts the committee coordinator upon starting the research.
Second : Upon completion of the data collection, provide the committee with a report on the findings to get the letter of completion of data collection from the KSMC
Third : Provide the committee with the research after being published.

Best Regards,

Chairman of Research Committee	Chief Organizational Development Officer
Dr. Tarig Saleh Al Khuwaitir	Dr. Saif Ibrahim Shodari

المرفقات ..... التاريخ 1435/7/30 29/5/2014 الرقم 38546

Appendix 4: Covering letter new graduate RNs

THE UNIVERSITY of ADELAIDE

Covering Letter for Questionnaire Package

Date: January to April 2014

Dear Nurse

Nurse stress study

I am a PhD student in nursing. For my PhD I am conducting research into stress among new graduate nurses working in the intensive care units (ICUs) at King Saud Medical City in Riyadh (KSMC-R) in Saudi Arabia. To gain an accurate picture, I am asking all nurses in ICUs to take part.

I have enclosed a set of questionnaires that I would ask if you would be kind enough to complete. The questionnaires are self-explanatory and should take you no more than half-a-hour to complete. Once completed, put them in the sealed box available for this purpose in your department.

Please read the enclosed information sheet, which tells you more about the study. If you have any further questions, do not hesitate to contact me.

Thank you very much for your time.

Yours sincerely

Ayidah Alqarni

PhD Candidate

1

Appendix 5: An information sheet

THE UNIVERSITY of ADELAIDE

Survey Information Sheet New Graduate Nurses

Designing a simulation intervention as a method to reduce stress among new graduate nurses in the intensive care units at King Saud Medical City in Riyadh: A mixed methods design

Purpose of the study: The purpose of this study is to examine how simulation learning may help reduce stress among new graduate nurses in the ICUs and in order to find new strategies for dealing with stress at the Ministry of Health's hospitals in Riyadh City. This study being conducted by Ayidah Alqarni as part of requirement for the Doctor of Philosophy (PhD) degree at the University of Adelaide under the supervision of Dr Richard (Rick) Wiechula and Dr David Foley.

Participants and withdrawal: Participation in this study completely voluntery and you are free to withdraw from this study at any time without prejudice or penealty. If you do not wish to participate, simply do not complete the questionnaire. Your consent to participate in the study will be given by returning a completed survey. Participation of both male and female nurses are important for comparison and enrichment of the data.

Procedure: Please fill out the questionnaire included and return it to the collection box at the nursing station area.The questionnaire will be in Arabic and should take about 10-15 minutes to complete.

Risk: Participation in this study should involve no physical, mental or social discomfort.If you, however, find any question to be offensive, you are free to omit answering it or participating in the study.

Confidentiality: All data collected in this study will be stored confidentally. Only members of the research team will have access to data. The results of the study or part of it will be published, but we aim not to collect any information that could identify you as an individual. However, if such information is collected, it will remain strictly confidential. The data you provide will only be used for the specific research purposes of this study.

Benefits: Please be aware that there are no direct benefits to the participants for participating in the study. However, the findings of this study are anticipated to help making the ICU's safer place and to reduce stress of the nurses.

Ethics Clearance and Contact: This study complies with the ethics conduct of research of the University of Adeliade, the Australian National Statment on Ethical Conduct in Human Research and the Ministry of Health's Ethical Guidlines. You are free to discus your participation with thr researcher at ant time. If you have any query, problem or you wish to discuss any matter trlated to this project, please refer to the contacts in the attached contacts and Independent Complaints Sheet.

Thank you for your participation in this study.

Ayidah Alqarni

Email: *ayidah.alqarni@adelaide.edu, Mobile:*

Appendix 6 Questionnaire

THE UNIVERSITY of ADELAIDE

"A descriptive study: of the Designing a Simulation Intervention to Reduce Stress among New Graduate RNs in the Intensive Care Units in Saudi Arabia: A Mixed Methods Design

Section A

Demographic Data:

Please tick (√) the correct answer:

Hospital Name _____

1. Gender :

   Male ☐ Female ☐

2. Age:

   19-25 ☐ 26-35 ☐
   36-45 ☐ 46-55 ☐
   55 over ☐

3. Marital status:

   Single ☐ Married ☐

   Divorced ☐ Widowed ☐

4. Dependents:

   No childern ☐ 1-2 childern ☐ more than 2 ☐

5. How long have you been employed as a registered nurse (RN)?

   0-3 months ☐ 4-6 months ☐ 7-9 months ☐
   10-12 months ☐ 12-15 months ☐ ≤15 months ☐

6. How long have you been working in ICU?

   0-3 months ☐ 4-6 months ☐ 7-9 months ☐
   10-12 months ☐ 12-15 months ☐ ≤15 months ☐

7. Highest nursing qulification ?

certificate ☐ Diploma ☐ Academic diploma ☐

Bachelor ☐ Master ☐ Other ☐

8. In which type of setting do you work?

Medical ICU ☐ Surgical ICU ☐ IMCU ☐ CCU ☐

PICU ☐ NICU ☐ ER ☐ BURN ☐

Combined medical /surgical ICU ☐ Other (please specify) ---------- ☐

9. What sort of shifts do you work?

Night ☐ Afternoon ☐
Day ☐ Split shift ☐
All shifts ☐

10. Do you work?

Part time ☐ Full time ☐

11. How many hours do you work per week?

≥20 H ☐ 20-30 h ☐ 31- 40 h ☐

41- 45 h ☐ ≤ 45 h ☐

Section B

Perceived Stress Scale (PSS)

In each case, you will be asked to indicate by ticking (√) the box that the best describes your level of agrment "how *often* you felt or thought a certain way".

The questions in this scale ask you about your feelings and thoughts during the last month.

	Never	*Almost never*	*Sometimes*	*Fairly often*	*Very often*
1.During the last month, how often have you been upset because of something that happened unexpectedly?					
2. During the last month, how often have you felt that you were unable to control the important things in your life?					
3.During the last month, how often have you felt nervous and "stressed"?					
4.During the last month, how often have you felt confident about your ability to handle your personal problems?					
5.During the last month, how often have you felt that things were going your way?					
6.During the last month, how often have you found that you could not cope with all the things that you had to do?					
7.During the last month, how often have you been able to control irritations in your life?					
8.During the last month, how often have you felt that you were on top of things?					
9.During the last month, how often have you been angered because of things that were out of your control?					
10.During the last month, how often have you felt difficulties were piling up so high that you could not overcome them?					

Section C

Expanded Nursing Stress Scale (ENSS)

Please respond to each statment by ticking (√) the box that the best describes your level of agrment. Below is a list of situations that commonly occur in an ICU setting.

For each situation if you have encountered in your present setting, how would you indicate 'how stressful' it has been for you.

	Does not apply	*Never stressful*	*Occasionally stressful*	*Frequently Stressful*	*Extremely stressful*
1. Performing procedures that patients experience as painful					
2. Feeling helpless in the case of a patient who fails to improve					
3. Listening or talking to a patient about his/her approaching death					
4. The death of a patient					
5. The death of a patient with whom you developed a close relationship					
6. Physician(s) not being present when a patient dies.					
7. Watching a patient suffer.					
8. Criticism by a physician.					
9. Conflict with a physician.					
10. Disagreement concerning the treatment of a patient					
11. Making a decision concerning a patient when the physician is unavailable					
12. Having to organize doctors' work.					
13. Feeling inadequately prepared to help with the emotional needs of a patient's family					
14. Being asked a question by a patient for whom I do not have a satisfactory answer.					
15. Feeling inadequately prepared to help with the emotional needs of a patient.					

16. Lack of opportunity to talk openly with other personnel about problems in the work setting					
17. Lack of opportunity to share experiences and feelings with other personnel in the work setting.					
18. Lack of an opportunity to express to other personnel on the unit my negative feelings towards patients					
19. Difficulty in working with a particular nurse (or nurses) in my immediate work setting.					
20. Difficulty in working with a particular nurse (or nurses) outside my immediate work setting					
21. Difficulty in working with nurses with the opposite sex.					
22. Patients making unreasonable demands.					
23. Having to deal with violent patients.					
24. Patients' families making unreasonable demands.					
25. Being blamed for anything that goes wrong.					
26. Being the one that has to deal with the patients' families.					
27. Having to deal with abusive patients.					
28. Having to deal with abuse from patients' families.					
29. Not knowing whether patients' families will report you for inadequate care.					
30. Inadequate information from a physician regarding the medical condition of a patient.					
31. A physician ordering what appears to be an inappropriate treatment for a patient.					
32. Fear of making a mistake in treating a patient.					
33. A physician not being present in a medical emergency.					
34. Feeling inadequately trained for what I have to do.					
35. Not knowing what a patient or a patient's family ought to be told about the patient's condition and its treatment.					
36. Being exposed to health and safety hazards.					

37. Being in charge with inadequate experience.					
38. Uncertainty regarding the operation and functioning of specialised equipment.					
39. Conflict with a supervisor.					
40. Lack of support from my immediate supervisor					
41. Criticism by a supervisor.					
42. Lack of support of nursing administration.					
43. Being held accountable for things over which I have no control.					
44. Lack of support from other health care administrators.					
45. Criticism of nursing administration.					
46. Unpredictable staffing and scheduling.					
47. Not enough time to provide emotional support to the patient.					
48. Not enough time to complete all of my nursing tasks.					
49. Too many non-nursing tasks required, such as clerical work.					
50. Not enough staff to adequately cover the unit.					
51. Not enough time to respond to the needs of patients' families.					
52. Demands of patient classification system					
53. Having to work through breaks.					
54. Having to make decisions under pressure.					
55. Being sexually harassed.					
56. Experiencing discrimination on the basis of sex.					
57. Experiencing discrimination because of race or ethnicity					

End of the Survey

Appendix 7: Cover letter (Arabic version)

THE UNIVERSITY of ADELAIDE

Covering Letter for Questionnaire Pack

رسالة تغطية

اخي الممرض\ اختي الممرضة

بحث ضغوط اللمرضين

أنا طالبه دكتوراه في التمريض وكمتطلبات الدراسة, أقوم بعمل بحث عن الضغوط لدى ممرضي \ ممرضات حديثين التخرج في مستشفيات المملكة العربية سعودية. وللوصول الى صورة دقيقة فأنني أطلب من جميع ممرضي \ممرضات حديثي التخرج بوحات العناية المركزة أن يشاركو في هذا البحث.

مرسل لك مجموعة من الاستبيانات أرجو منك تعبئتها. أن تعبئة هذة الاستبيانات لن ياخذ من أكثر من نصف ساعة. وبعد تعبئتها ، أرجو اعادتها لرئيس القسم او المشرف في القسم الذي تعمل فية.

الرجاء قراءة المعلومات المرفقة والتي تخبرك أكثر عن الدراسة. أذا كان لديك اية اسئلة او استفسارات، لاتتردد في الاتصال بي.

شكرا جزيلاً على مشاركتك ومنحك جزءاً من وقتك الثمين لهذا البحث.

مع أطيب التمنيات

اختكم
عايدة القرني
طالبة دكتوراه
جامعة أديلايد- استراليا

1

Appendix 8: An information sheet

THE UNIVERSITY of ADELAIDE

Survey Information Sheet New Graduate Nurses

معلومات ورقة المشاركة (ا)

عنوان المشروع: تعلم المحاكاة كوسيلة من الوسائل التي تُستخدم للحد من الإجْهَاد (التوتر) الذي يطرأ على الممرضين والممرضات حديثي التخرج في وحدات العناية المركزة: دراسة استطلاعية (تجريبية) في المملكة العربية السعودية.

عزيزي المشارك،

أنت مدعو للمشاركة في المشروع البحثي الموضح أدناه.

ما الذي يدور حوله المشروع؟

الغرض من هذا المشروع هو دراسة الكيفية التي بها قد يساعد تعلم المحاكاة في الحد من الإجْهَاد (التوتر) الذي يطرأ على الممرضين والممرضات حديثي التخرج. ستجرى الدراسة بين الممرضين والممرضات حديثي التخرج في وحدات العناية المركزة في مدينة الملك سعود الطبية بالرياض.

من القائم بالمشروع؟

سيتم إجراء هذا المشروع بواسطة الطالبة / عايدة القرني التي هي طالبة في مرحلة دكتوراه في الفلسفة بجامعة أديلايد تحت إشراف الدكتور / ريتشارد ويشولا والدكتور / ديفيد فولي.

لماذا يتم توجيه الدعوة إلى للمشاركة؟

يتم دعوتك للمشاركة وذلك للأسباب التالية:

كونك إحدى الممرضات حديثي التخرج إما بالحصول على دبلوم أو درجة البكالوريوس.

لقد عملت كممرضة حديثة التخرج لمدة لا تقل عن عام واحد في وحدات العناية المركزة في مدينة الملك سعود الطبية بالرياض.

لقد انتهت من برنامج التوجيه في وحدة العناية المركزة لتنفيذ العمل المستقل.

يسمح الجدول الزمني للعمل بالمشاركة في الدراسة الاستطلاعية (التجريبية).

ما الذي سيُطلب مني القيام به؟

إذا كنت على استعداد للمشاركة في هذه الدراسة سوف يُطلب منك استكمال استمارة الموافقة. عندئذ يمكنك استكمال استبيان مكتوب في ما يتعلق بالإجهاد (بالتوتر). وبعد ذلك يتم اختيارك لكي تكون جزءا من إحدى المجموعتين. إذا تم اختيارك لمجموعة المحاكاة، فسوف يُطلب منك أن تشارك في تمرين المحاكاة. يتضمن تمرين المحاكاة لعب دور بين نفسك ومُمَرِّضَةٌ خِرِّيْجَة أخرى لمحاكاة سيناريوهات حقيقية في وحدة العناية المركزة. سوف يتكون المشروع من سيناريو واحد يتم إجرائه في أربع مناسبات بحيث أن ثمانية من الممرضات حديثي التخرج في المجموع سوف يشهدون تجربة التدخل (2 × 4). سوف يكون السيناريو مُسجلا بالفيديو للمساعدة في استخلاص المعلومات.

2

بعد استخلاص المعلومات، سوف يُطلب منك استكمال تقييم موجز وسوف تكون هناك حاجة إلى استكمال استبيان الإجهاد (التوتر) بعد شهر من الدراسة الاستطلاعية (التجريبية). إذا تم اختيارك لمجموعة المراقبة، سوف تكون هناك حاجة فقط لتعبئة استبيان نطاق الإجهاد (التوتر) في بداية الدراسة ثم بعد شهر واحد. استمارة الموافقة هي وثيقة تثبت موافقة مشاركتكم في هذا المشروع.

كم من الوقت سيستغرق المشروع؟

تستغرق عملية استكمال الاستبيان المتعلق بالإجهاد (التوتر) حوالي 20 دقيقة (قبل وبعد التدخل) عقب تمرين المحاكاة الذي سوف يستغرق حوالي 55–80 دقيقة (10 دقيقة قبل الإحاطة (الإطلاع)، 15–20 دقيقة للسيناريو و30–50 دقيقة لاستخلاص المعلومات). عند الانتهاء من جلسة استخلاص المعلومات سوف يكون المشاركون بحاجة لاستكمال نطاق تجربة استخلاص المعلومات الذي سوف يستغرق حوالي 10 دقيقة.

هل هناك أي مخاطر مرتبطة بالمشاركة في هذا المشروع؟

تم تصميم عملية المحاكاة لكي يتم وضعك في موقف إجهادي (توتري) لأنه من المحتمل قد تواجه بعض القلق. إذا أصبحت قلق على نحو غير ملائم (على نحو مفرط)، سيتم إنهاء تجربة المحاكاة وسيتم توفير المزيد من الخدمات المشورة لك إذا لزم الأمر.

ما هي فوائد المشروع البحثي؟

تم تصميم عملية المحاكاة لتوفير استراتيجيات للحد من مستويات الإجهاد (التوتر) ولكن هذه ليست سوى اختبار لتحديد ما إذا كانت الاستراتيجية مجدية من عدمه لذلك قد لا تكون هناك فائدة مباشرة تعود عليك. ومع ذلك، فإن نتائج هذه الدراسة قد تتناول استراتيجيات للحد من الإجهاد (التوتر) الذي يطرأ على عمل الخريجين الجدد في المستقبل في وحدات العناية المركزة.

هل يمكنني الانسحاب من المشروع؟

المشاركة في هذا المشروع هو طوعي تماما وأنت حر في الانسحاب من هذا المشروع في أي وقت دون إخلال أو عقوبة. إذا كنت لا ترغب في المشاركة، فما عليك إلا أن تقوم بالتوقيع على استمارة الموافقة.

ماذا سيحدث لمعلوماتي؟

سيتم الاحتفاظ بالمعلومات الخاصة بك والتي سيتم جمعها لهذا البحث في سرية تامة بينك وبين المشرفين. أثناء معالجة البيانات، سوف يقوم المشروفون تلقائيا بعدم تحديد الهُوِيَّة وتجميع البيانات لتحليلها، وبالتالي إزالة أي تحديد لهوية الأفراد. يجوز تقديم النتائج غير المحددة الهوية لأجل النشر ويجوز إتاحة النتائج والبيانات التي تم جمعها للاستخدام من قبل باحثين آخرين لمتابعة الدراسات المتعلقة مباشرة بهذا المشروع.

من الشخص الذي أقوم بالاتصال به إذا كان لدي أسئلة حول المشروع؟

المشاركون قادرون على الاتصال بمقدم البحث والمشرف على البحث إذا لزم الأمر:

الطالبة / عايدة القرني (مقدمة البحث)، كلية التمريض، جامعة أديلايد.

الهاتف:)، البريد الإلكتروني:

الدكتور: ريك ويشولا (المشرف على البحث)، كلية التمريض، جامعة أديلايد.
الهاتف: (+61 8 83133595)، البريد الإلكتروني: rick.wiechula@adelaide.edu.au

الدكتور: ديفيد فولي (المشرف المشارك)، كلية التمريض، جامعة أديلايد
الهاتف: (+61 8 8313 6285) البريد الإلكتروني: david.foley@adelaide.edu.au

الدكتور: مشاعيل العلياني (المشرف المحلي). جامعة الملك خالد، كلية التمريض (المملكة العربية السعودية)
هاتف:) البريد الإلكتروني: malalyani@kku.edu.sa.au

ماذا لو كان لدي شكوى أو أية مخاوف؟

إذا كنت ترغب في التحدث مع شخص مستقل بخصوص المخاوف أو الشكاوى، فإن سياسة الجامعة حول البحوث تنطوي على المشاركين من البشر، أو حقوقك كمشارك، أو حقوقك كمشارك، يُرجى الاتصال بالأمانة العامة للجنة أخلاقيات البحوث البشرية على:

هاتف رقم: +61 83136028

البريد الإلكتروني إلى: hrec@adelaide.edu.au

العنوان: مستوى 4، راندل مول بلازا، 50 راندل مول، أديليد، جنوب أستراليا 5000

سيتم التعامل مع أي شكوى أو مخاوف بكل ثقة والتحقيق فيها بالكامل. وسيتم الإعلان بكل شفافية عن النتائج

إذا كنت أرغب في المشاركة، ماذا أفعل؟

إذا كنت على استعداد للمشاركة، كل ما عليك القيام به هو التوقيع على استمارة الموافقة، واستكمال الاستبيان المتعلق بالاختبار الذي يسبق ويلي مقياس التوتر (الإجهاد)، ومقياس ممارسة المحاكاة وتجربة استخلاص المعلومات.

تفضلوا بقبول فائق الاحترام،

الطالبة الدكتوراة / عايدة القرني

Appendix 9: Questionnaire in Arabic

THE UNIVERSITY of ADELAIDE

مسح الخريجين الجدد من العناية المركزة

تعليمات:

هذة الحزمة من الاستبيانات تحتوي على ثلاثة اجزاء: الجزاء الاول أ (هذا الجزء) والذي يشمل أسئلة مخصصة لهذة الدراسة، والجزء (ب،جـ) والذي يشمل بعض الاستبيانات المعتمدة عالميا والتي تستخدم عادة في أبحاث الضغوط. الرجاء تعبئة كل الاجزاء، واجابة الأسئلة بترتيب واهتمام مع اتباع التعليمات اينما وجدت.

ولتاكيد دقة الايجابات ،واجابة الاسئلة بصدق وامانة. تذكر أن اجابتك التي تعطيها ستكون **موضع سرية** ولن تعطى **لاي كان** وتحت **أي ظرف** من الظروف.

شكراً لمشاركتك

1- معلومات شخصية: Demographics

اسم المستشفى _____ تاريخ_____

1- الجنس: ☐ ذكر ☐ أنثى

2- ماهو عمرك: ☐ 19-25 ☐ 26-35

☐ 36-45 ☐ 46-55

3- الحالة الاجتماعية: ☐ أعزب\أنسة ☐ متزوج\ة ☐ مطلق\ة ☐ ارمل\ة

4- فترة توظيفك كاممرض\ممرضة: ☐ 0-3 أشهر ☐ 4-6أشهر ☐ 7-9أشهر ☐ 10-12أشهر

☐ 12-15شهر ☐ ≤ 15شهر

5- فترة تعينك بالعناية مركزة: ☐ 0-3 أشهر ☐ 4-6أشهر ☐ 7-9أشهر ☐ 10-12أشهر

☐ 12-15شهرا ☐ ≤ 15شهر

6- اعلى درجة علمية حصلت عليها: ☐ دبلوم سنتين ☐ دبلوم ثلاث سنوات ☐ بكالوريس

☐ دبلوم عالي ☐ ماجستير ☐ اخرى

7- في اي وحدة تعمل: ☐ العناية المركزة ☐ العناية الوسطى ☐ العناية القلبية

☐ العناية الجراحية ☐ العناية الباطنية ☐ العناية الجراحية الطبية المشتركة

☐ اخرى (يرجى تحديدها) _____

8- فترة المناوبة في العمل: ☐ صباحي ☐ مسائي ☐ سهر ☐ مناوبتين ☐ جميع المناوبات

9- هل تعمل: ☐ دوام كامل ☐ دوام جزئي

11- كم عدد ساعات العمل التي تعملها في الأسبوع: ☐ 20-30 ساعة ☐ 31-40 ساعة ☐ 41-45 ساعة

☐ اكثر من 45 ساعة

1

2- مقياس ملاحظة التوتر للخرجين الجدد من التمريض

Perceived Stress Scale (PSS) for New Graduate Nurses

(10 Questions)

في الاسفل قائمة من المشاكل توجد أحيانا لدى الناس.

رجاء أجب عن الأسئلة من 1-10 من خلال وضع دائرة حول الرقم بشكل أفضل كيف اثرت عليك أو أرقتك هذة المشكلة **خلال الشهر الماضي بما فية اليوم.**

الفقرة	على الاطلاق	قليلاً	بشكل متوسط	بشكل كبير	بشكل كبير جدا
1- في الشهر الماضي، غالبًا ما كنت منزعجا\ة بسبب ما حدث فجأة ؟					
2- في الشهر الماضي، كم من مرة شعرت أنك غير قادر\ة على السيطرة على الأشياء الهامة في حياتك ؟					
3- في الشهر الماضي، كم من مرة شعرت "بالتوتر"؟					
4- في الشهر الماضي، كم من مرة شعرت بالثقة في قدرتك على التعامل مع المشاكل الشخصية ؟					
5- في الشهر الماضي، كم من مرة شعرت أن الأمور تسير بشكل جيد؟					
6- في الشهر الماضي، كم من مرة وجدت أن لا يمكنك التعامل مع كل الأمور التي عليك أن تقوم بها ؟					
7- في الشهر الماضي، غالبًا ما كنت قادر\ة على السيطرة غضب في حياتك ؟					
8- في الشهر الماضي، كم من مرة شعرت أنك على رأس الأمور؟					
9- في الشهر الماضي، غالبًا ما كنت أغضب بسبب أمور خارجة عن سيطرتك ؟					
10- في الشهر الماضي، كم من مرة شعرت تتراكم الصعوبات حتى انك لا تستطيع التغلب عليها ؟					

3

3- القياس اللمتد Expanded Nursing Stress Scale 57 items (ENSS)
لضغوط التمريض

فيما يلي قائمة الحالات التى عادة ماتحدث في قسم العناية المركزة بشكل مستمر. الرجاء الاخذ بالحسبان الجوانب التالية في عملك.

الرجاء وضع دائرة حول كل رقم يشير الى تكرار الوضع مجهداً في قسمك و ينطبق عليك حسب استجابة الخيارات المتاحة ادناة. ومعلوماتك التي توفرها في غاية السرية.

	قائمة مقياس ضغوط التمريض الممتد	ابداً	احيانا	بشكل متوسط	بشكل متكرر	بشكل متكرر جدا
1	القيام بأجراءات يعتبرها المرضى مؤلمة					
2	الشعور بالعجز في حالة المريض الذي لا تتحسن حالتة					
3	الاستماع أو التحدث الى المريض/ة حول اقترابة او اقترابها من الموت					
4	وفاة المريض					
5	موت مريض طورت معة صداقة وثيقة					
6	عدم وجود الطبيب عند وفاة المريض					
7	ملاحظة معاناة المريض					
8	الأنتقاد من قبل الطبيب					
9	نزاع مع الطبيب					
10	عدم الرضا فيما يتعلق بعلاج المريض					
11	اتخاذ قرار يتعلق بالمريض عند عدم وجود طبيب					
12	الحاجة الى تنظيم عمل الاطباء					
13	الشعور بأنني غير ممتعد بشكل ملائم لتقديم المساعدة فيما يخص الأحتياجات العاطفية لأسرة المريض					
14	سالني مريض سؤالا ليست لدى أجابة مرضية علية					
15	الشعور بعدم الاستعداد الكافي للمساعدة في الحاجات العاطفية للمريض					
16	قلة الفرص للتحدث بانفتاح مع اشخاص آخرين من اقسام اخرى عن مشاكل القسم					
17	انعدام الفرص لتبادل الخبرات ومشاعرمع افراد اخرين في نفس القسم					
18	قلة الفرص للتعبير الموظفين الاخرين في نفس القسم عن مشاعري السلبية اتجاة المرضى					
19	صعوبة التعامل مع ممرضين\اوممرضات في نفس القسم					
20	صعوبة العمل مع ممرضين\او مريضات من اقسام اخرى					
21	صعوبة في التعمل مع الممرضين\ او ممرضات من الجنس الاخر					
22	متطلبات غير معقولة لمريض					
23	التعامل مع مرضى عنيفين					
24	متطلبات غير معقولة لعائلة المريض					
25	أتلقى اللوم على اشياء تحدث خطئ					
26	يتوجب علي التعامل مع عائلات المرضى					
27	التعامل مع مرضى موسئين					

	قائمة مقياس ضغوط التمريض المستد	ابداً	احيانا	بشكل متوسط	بشكل متكرر	بشكل متكرر جدا
28	التعامل مع أساءة المعاملة من عائلات المرض					
29	عدم التأكد من أن عائلات المرضى لم تقدم تقريرا ضدي					
30	المعلومات غير كافية من الطبيب الحالة الطبية للمريض					
31	طبيب يأمر بما يبدو بأنة معالجة غير ملائمة لمريض					
32	الخوف من ارتكاب خطاء خلال علاج المريض					
33	عدم وجود الطبيب في حالات الطوارئ الطبية					
34	الشعور بعدم الكفاءة على مايجب أن تفعلة					
35	عدم معرفة مايجب اخبارة للمريض او اسرتة بخصوص حالة المريض وعلاجها					
36	التعرض الى مخاطر الصحة والسلامة					
37	أكون مسؤلاة مع قلة الخبرة					
38	عدم التاكد من تشغيل وأدارة بعض الاجهزة المتخصصة					
39	نزاع مع المشرف					
40	انعدام الدعم من المشرف المباشر					
41	الأنتقاد من قبل مشرف التمريض					
42	عدم توفر الدعم من ادارة التمريض					
43	المماعلة عن الأمور التي ليس لها سيطرة عليها					
44	عدم وجود دعم من ادارات اخرى من الرعاية الصحية					
45	انتقادات من ادارة التمريض					
46	جدول العمل غير متنبئ بة					
47	لايوجد وقت كافي لتقديم دعم معنوي للمريض					
48	لايوجد وقت كافي لانهاء كافة واجباتي التمريضية					
49	الكثير من المهام غير التمريضية المطلوبة مثل العمل الكتابي					
50	عدم وجود موظفين بما فية الكفاية لتغطية حاجات القسم					
51	عدم توفر الوقت الكافي لتلبية احتياجات المرضى					
52	نظام تصنيف احتياجات المرضى					
53	العمل اثناء الايجازات الرسمية					
54	اتخاذ القرارات تحت الضغط					
55	مضايقات جنسة					
56	يتعرضون للتميز على أساس الجنس					
57	معاناة من التميز بسبب العرق او لأصل					

انهاية الاستبيان

5

Appendix 10: An information sheet for new graduate nurses (Arabic+English)

THE UNIVERSITY of ADELAIDE

دراسة وصفية لتعلم المحاكاة كوسيلة لتخفيض الضغوط لدى التمريض حديثي التخرج في كافة وحدات العناية المركزة بمستشفيات المملكة العربية السعودية

نشرة معلومات عن المشارك

أنا باحثة درجة الدكتوراة في جامعة أديلد بأستراليا ولدى اهتمام في دراسة الضغوط لدى التمريض حديثي التخرج بكافة وحدات العناية المركزة. والتي تهدف الى دراسة كيفية التعلم والمحاكاة قد يساعد على التقليل من الضغوط لدى التمريض في الاقسام المختلفة من العناية المركزة. ومن أجل ايجاد استراتيجيات جديدة للتعامل بها في وزارة الصحة في مستشفيات الرياض.

كممرض\ ممرضة سعودين سيطلب منك المشاركة في مقابلات شخصية وجها لوجه فرديا للتحدث عن تجربتك حول التوتر في العناية المركزة. هذا اللقاء سوف يكون إجراء مناقشة مفتوحة باللغة العربية وسيستغرق بين 45 دقيقة إلى ساعة واحدة - المقابلات ستجرى في الزمان والمكان الملائم لك .

وقد طلب المشاركة من كافة التمريض حدثي التخرج بكافة وحدات العناية المركزة بالمستشفى على حد سواء في هذه الدراسة مهمة جدا لتوسيع وأثراء ومقارنة البيانات التي سوف يتم جمعها. وتركز المقابلات الفردية على الخرجين حديثي التخرج من التمريض. وستجري الدراسة في فهم المسئل المعنية عن هذة الحالة في بيئة العناية المركزة: مثل العوامل التي تساهم في زيادة التوتر عند حديثي الخرج من التمريض. ومن احل ايجاد استراتيجيات مختلفة ومفيدة لتغلب على الضغوطات ولان التعلم والمحاكاة يلعب دورا كبيرا في تقليل حد التوتر.

سوف يتم نشر نتائج هذة الدراسة ولكن لن يتم نشر أي معلومات شخصية قد تعرف بكم أو تدل على شخصيتكم حتى وان تم جمع مثل هذة المعلومات . سوف تبقى جميع المعلومات التى تخص المشاركين في هذا الاستبيان سرية وسوف تحفظ حسب أنظمة وأخلاقيات البحث العلمي المتبعة. مشاركتك سوف تساعدنا في اكتشاف مدى وقوع التمريض تحت الصغوط العمل وكذلك مصادر هذة الضغوطات. نتائج هذة الدراسة قد يساعد التمريض العاملين في وحدات العناية المركزة كمكان آمن للعمل من خلال تقليل حدة التوتر. ستساعد النتائج في تخطيط للجزء الثاني من الدراسة.

هذة الدراسة متوافقة مع السلوك الأخلاقي للبحث العلمي من جامعة أديلد بأستراليا, ومع المبادئ التوجيهية الآخلاقية للبحوث العلمية بوزارة الصحة في المملكة العربية السعودية. يمكنكم مناقشة أي مسألة ذات صلة بهذة الدراسة, يرجى التواصل مع الباحثة.

الرجاء قراءة نشرة المعلومات المرفقة والتى تخبرك عن الدراسة. وبمكنك الاحتفاظ بنشرة المعلومات.

شكرا جزيلاً على مشاركتك ومنحك جزءا من وقتك الثمين لهذة الدراسة

الباحثة: عايدة القرني

أيميل:

جوال (السعودية):

الدكتور: مشيعل العليان (جامعة الملك خالد بأبها)

أيميل: malalyani@kku.edu.sa

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Interview Participation Information Sheet Graduate Nurse

Title: Designing a Simulation Intervention as a Method to Reduce Stress among New Graduate Nurses in the Intensive Care Units at King Saud Medical City in Riyadh: A Mixed Methods Design

Purpose of the study: The purpose of this study is to examine how simulation learning may help reduce stress among new graduate nurses in the ICU and in order to find new strategies for dealing with stress in the ICU at the Ministry of Health's hospitals in Riyadh City. The interview of new graduate nurses will only constitute interview with volunteered participants.

The study is interested in understanding issues about the present situation of the ICU environment; such as factors that contribute to stress experienced by new graduate nurses, different strategies useful for graduates to overcome stress and if simulation may play a role to reduce stress.This study is being conducted by Ayidah Alqarni as part of the requirment for the Doctor of Philosophy degree at the University of Adelaide under the supervision of Dr Richard (Rick) Wiechula and Dr David Foley.

Participants and withdrawal: Participation in this study completely voluntery and you are free to withdraw from this study at any time without prejudice or penealty. The interview will be conducted with graduate nurses involved in or who have been working in the ICU for less than one year to investigate their experience of stress.If you do not wish to participate, or not use voice recorder simply do not sign the consnt provided prior to the interview. However, the consent to participate in the study will be indicated by signing the consent form.

Procedure: Participates are asked to participate in face-to-face interviews in a group about supporting new graduates and the use of simulation learning used in the ICU. The interview will be conducted with new graduate nurses involved in or who have been working in the ICU for less than one year to investigate their experience of stress. The interview will be held in a place and time convenient to you.

Risks: The discussion may involve issues that cause discomfort. In case, you become upset, distressed or uncomfortable the interview will cease immediately and counselling services will be offeredand will be referd to the independent complant form.

Confidentiality: All data collected in this study will be stored confidentally. Only members of the research team will have access to data. The results of the study or part of it will be published, but we aim not to collect any information that could identify you as an individual. However, if such information is collected, it will remain strictly confidential. The data you provide will only be used for the specific research purposes of this study.The interview will be voice recorded and transcribed by the researcher. Prior to the transcribed the researcher will be use ID for each participant known by the researcher and participant only. The trenscribed interview will be returned to the participants for validation.

Benefits: Please be aware that there are no direct benefits to the participants for participating in the study. However, the findings of this study are anticipated to help make the ICU a safer place by reducing stress of the new graduate nurses.

Ethics Clearance and Contact: This study complies with the ethics conduct of research of the University of Adeliade, the Australian National Statment on Ethical Conduct in Human Research and the Ministry of Health's Ethical Guidlines. You are free to discus your participation with thr researcher at ant time. If you have any query, problem or you wish to discuss any matter trlated to this project, please refer to the contacts in the attached contacts and Independent Complaints Sheet.

Thank you for your participation in this study.

Ayidah Alqarni

Email: ayidah.alqarni@adelaide.edu Mobile:

Appendix 11: A consent form (Arabic)

THE UNIVERSITY of ADELAIDE

CONSENT FORM INTERVIEW OF GRADUATE NURSE

اقرار موافقة (الموافقة المستنيرة)

لحديثي التخرج من التمريض

لجنة أخلاقيات البحوث

1. لقد قرأت هذه المعلومات المرفقة للبحث واقرار الموافقة على المشاركة في الدراسة البحثية التالية:

العنوان:	استكشاف المحاكاة والتعلم على طريقة تقليل الإجهاد (التوتر) لحديثي التخرج من التمريض في وحدات العناية المركزة :الدراسة في مستشفيات وزارة الصحة في مدينتي الرياض و ابها بالمملكة العربية السعودية.
الاخلاق الموافقة:	H-2013-054

2. تم شرح الغرض من هذه الدراسة شرحا وافيا لي من قبل الباحث, وانني اوافق بحرية للمشاركة في هذة الدراسة.
3. فهمت الغرض من هذة الدراسة البحثية, وعلى علم بأنه لا فائدة مباشرة تعود علي شخصيا ولكن نتائج هذة الدراسة قد تساعد حديثي التخرج من التمريض بوحدات العناية المركزة كمكان آمن وكذلك لتقليل وحدة التوتر.
4. قد شرح لي الباحث بأن مشاركتي في هذة الدراسة سيتم التعامل معها بسرية وعدم ذكر الأسم في جميع الأوقات والبيانات المنشورة ولن يتم تحديد اي معلومات شخصية.
5. مشاركتي تطوعية بالكامل , ويمكنني الانسحاب من هذة الدراسة في اي وقت اريد.
6. انا أوافق على المقابلة التي سوف تسجل بصوت/الفيديو . نعم ☐ لا ☐
7. *سوف ابقي نسخة من هذة الموافقة لدي* و عند اكتمال مقابلة، سوف يتم ارفاق الموافقة مع المرفق وورقة المعلومات
8. الباحث سوف يستخدم بطاقه تعريف لكل مشارك بدل استخدام اسم المشارك الحقيقي و يعرف بها من خلال التسجيل وتحليل المحادثة

المشارك\ة:

الاسم : _____

التوقيع: _____

التاريخ: _____

Appendix 12: Independent complaint form (Arabic)

THE UNIVERSITY of ADELAIDE

Independent Complaints Procedure

إجراءات الشكاوى المستقلة

هذه الوثيقة هي الأشخاص المشاركين في المشروع.

الدراسة التالية قد تم استعراضها والموافقة عليها من جامعة أديلايد البحوث لجنة الأخلاقيات:

اسم المشروع:	استكشاف المحاكاة والتعلم على طريقة تقليل إجهاد (توتر) للخرجين لجدد من الممرضين في وحدات العناية المركزة : دراسة من وزارة الصحة والمستشفيات في مدينة ابها و مدينة الرياض المملكة العربية السعودية.
موافقة:	H-2013-054

على لجنة أخلاقيات البحوث مراقبة جميع المشاريع البحثية التي وافقت عليها .واللجنة أن من المهم أن الناس المشاركة في مشاريع مستقلة التقارير السرية آلية يمكن أن تستخدم إذا كانت لديهم أية مخاوف أو شكاوى حول ذلك البحث.

هذا المشروع سوف يكون وفق National Statement on Ethics Conduct in Human (NHMRC) البيان الوطني على الأخلاقي والسلوك الانساني في البحوث. انظر موقع الويب لزيادة معلوماتك

http://www.nhmrc.gov.au/publications/synopses/e72syn.htm

1. إذا كان لديك أسئلة أو مشاكل مرتبطة مع الجوانب العملية من المشاركة في المشروع، أو أن تثير القلق أو الشكوى عن المشروع، فيجب عليك استشارة منسق المشروع:

الاسم:	المشرف الرئيسي الدكتور Dr Rick Wiechula المشرف المشارك الدكتور Dr David Foley المشرف المحلي الدكتور مشيعل العلياني	
الهاتف:	(+61) 8313 4878 8 أو البريد الإلكتروني (+61) 883136285 أو البريد الإلكتروني أو البريد الإلكتروني	rick.wiechula@adelaide.edu.au david.foley@adelaide.edu.au malalyani@kku.edu.sa

2. إذا كنت ترغب في مناقشة مع شخص مستقل والمسائل ذات الصلة :
   - تقديم شكوى، أو
   - مما يثير المخاوف بشأن سلوك من المشروع، أو
   - سياسة الجامعة على البحث البشر المشاركين، أو
   - حقوقك كمشارك

يرجى الاتصال على المشرف ذات الصلة المذكورة أعلاه.

Appendix 13: An information sheet of nurse educators

Focus Group Participation Information Sheet Nurse Educators

Title: Designing a Simulation Intervention as a Method to Reduce Stress among New Graduate Nurses in the Intensive Care Units at King Saud Medical City in Riyadh: A Mixed Methods Design

Purpose of the study: The purpose of this study is to examine how simulation learning may help reduce stress among new graduate nurses in the ICU and in order to find new strategies for dealing with stress in the ICU at the Ministry of Health's hospitals in Riyadh City.

Focus group interviews with nurse educators will be conducted regarding the support and education they provide in their units. The interviews will investigate the issues about the present situation of the ICU environment, such as the factors contributing to stress on new graduates, different strategies used to overcome stress and if simulation may play a role in reducing stress. This study is being conducted by Ayidah Alqarni as part of the requirment for the Doctor of Philosophy degree at the University of Adelaide under the supervision of Dr Richard (Rick) Wiechula and Dr David Foley.

Participants and withdrawal: Participation in this study completely voluntery and you are free to withdraw from this study at any time without prejudice or penealty. The interview will be conducted with nurse educators to gain knowledge regarding the support of education provided for new graduates in their units.If you do not wish to participate, or not use voice recorder simply do not sign the consnt form.However, the consent to participate in the study will be indicated by signing the consent form provided prior to the interview.

Procedure: Participates are asked to participate in face-to-face interviews in a group about supporting new graduates and the use of simulation learning used in the ICU. The interview will be conducted in the form of an open discussion in English and should take between 45 minutes to one hour. The interview will be held in a place and time convenient to you.

Risks: Participation in this study are expected to be low risk, however, if any of participants become distressed they will be offered the assistence of staff councellor and will be referd to the independent complant form.

Confidentiality: All data collected in this study will be stored confidentally. Only members of the research team will have access to data. The results of the study or part of it will be published, but we aim not to collect any information that could identify you as an individual. However, if such information is collected, it will remain strictly confidential. The data you provide will only be used for the specific research purposes of this study.

The interview will be voice recorded and transcribed by the researcher. Prior to the transcribed the researcher will be use ID for each participant known by the researcher and participant only. The trenscribed interview will be returned to the participants for validation.

Benefits: Please be aware that there are no direct benefits to the participants for participating in the study. However, the findings of this study are anticipated to help make the ICU a safer place by reducing stress of the new graduate nurses.

Ethics Clearance and Contact: This study complies with the ethics conduct of research of the University of Adeliade, the Australian National Statment on Ethical Conduct in Human Research and the Ministry of Health's Ethical Guidlines. You are free to discus your participation with thr researcher at ant time. If you have any query, problem or you wish to discuss any matter trlated to this project, please refer to the contacts in the attached contacts and Independent Complaints Sheet.

Thank you for your participation in this study.

Ayidah Alqarni

Email: *ayidah.alqarni@adelaide.eduMobile:*

Appendix 14: A consent form

Consent Form Group Interview of Nurse Educators

Human Research Ethics Committee (HREC)

1. I have read the attached Information Sheet and agree to take part in the following research project:

Title:	Designing a Simulation Intervention as a Method to Reduce Stress among New Graduate Nurses in the Intensive Care Units at King Saud Medical City in Riyadh: A Mixed Methods Design
Ethics Approval Number:	**H-2013-054**

2. I have had the project, so far as it affects me, fully explained to my satisfaction by the research worker. My consent is given freely.

3. Although I understand the purpose of the research project it has also been explained that involvement may not be of any benefit to me.

4. I have been informed that, while information gained during the study may be published, I will not be identified and my personal results will not be divulged.

5. I understand that I am free to withdraw from the project at any time.

6. I agree to the interview being audio/video recorded. Yes ☐ No ☐

7. I am aware that I should keep a copy of this Consent Form, when completed, and the attached Information Sheet.

8. I received ID number from the researcher to be use during recording and prior the transcribed the interview will be known by the researcher and participant itself.

Participant to complete:

Name: _____ Signature: _____ Date: _____

Appendix 15: Independent complaint form

Independent complaint form group discussion of nurse educators

This document is for people who are participants in a research project.

The following study has been reviewed and approved by the University of Adelaide Human Research Ethics Committee:

Research Title:	Designing a Simulation Intervention as a Method to Reduce Stress among New Graduate Nurses in the Intensive Care Units at King Saud Medical City in Riyadh: A Mixed Methods Design
Approval Number:	**H-2013-054**

The Human Research Ethics Committee monitors all the research projects which it has approved. The committee considers it important that people participating in approved projects have an independent and confidential reporting mechanism which they can use if they have any worries or complaints about that research.

This research project will be conducted according to the NHMRC National Statement on Ethical Conduct in Human Research (see http://www.nhmrc.gov.au/publications/synopses/e72syn.htm)

1. If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult the project co-ordinator:

Name:	Principal supervisor, Dr Richard Wiechula Co- supervisor, Dr David Foley Supervisor from Saudi Arabia (KKU) Dr. Mesheil Alalyani
Phone:	(+61) 8 8313 4878 or e-mail: rick.wiechula@adelaide.edu.au. (+61) 883136285 or e-mail: david.foley@adelaide.edu.au or e-mail: malalyani@kku.edu.sa

2. If you wish to discuss with an independent person matters related to:
   - making a complaint, or
   - raising concerns on the conduct of the project, or
   - the University policy on research involving human participants, or
   - your rights as a participant,

Please contact the relevant supervisor listed above.

Appendix 16: Ethical approval the University Of Adelaide Intervention

THE UNIVERSITY of ADELAIDE

RESEARCH BRANCH
OFFICE OF RESEARCH ETHICS, COMPLIANCE AND INTEGRITY

SABINE SCHREIBER
SECRETARY
HUMAN RESEARCH ETHICS COMMITTEE
THE UNIVERSITY OF ADELAIDE
LEVEL 4, RUNDLE MALL PLAZA
50 RUNDLE MALL
ADELAIDE SA 5000 AUSTRALIA
TELEPHONE +61 8 8313 6028
FACSIMILE +61 8 8313 3700
email: hrec@adelaide.edu.au
CRICOS Provider Number 00123M

Applicant: Dr R Wiechula

School: Nursing

Project Title: ***An exploration of simulation learning as a method used to reduce stress for graduate nurses in the intensive care units (ICUs): a study of King Saud Medical City in Riyadh (KSMC-R), Saudi Arabia***

THE UNIVERSITY OF ADELAIDE HUMAN RESEARCH ETHICS COMMITTEE

Project No: **H-2016-220** RM No: 0000022031

APPROVED for the period until: **31 October 2019**

Thank you for the response dated 21.10.16. It is noted that this study will be conducted by Ayidah Sanad Alqarni, PhD candidate.

Refer also to the accompanying letter setting out requirements applying to approval.

Professor Paul Delfabbro
Convenor
Human Research Ethics Committee

Date: 25 October 2016

Appendix 17: Ethical approval the IRB at the KSMC-R Saudi

Kingdom of Saudi Arabia
Ministry of Health
King Saud Medical City

المـملكة العـربية السـعودية
وزارة الـصحة
مدينة الملك سعود الطبية

مدينة الملك سعود الطبية
King Saud Medical City
INSTITUTIONAL REVIEW BOARD (IRB)

- Memorandum -

IRB Registration Number with KACST, KSA: **H-01-R-053**

Date: January 18, 2017

Proposal Reference No.	: **H1RE-20-Oct16-01**
Proposal Title	: Simulation Learning As a Method used to Reduce Stress among New Graduate Nurses in the Intensive Care Unit (ICUs) in Saudi Arabia at King Saud Medical City at Riyadh (KSMCR)
Type/Category of Review	: Continuing Review with Modification
Date of IRB Approval	: 18/01/2017 20/04/1438
Date of IRB Approval (Expiration)	: 17/01/2018 30/04/1439

Dear Ms. Ayidah Sanad Alqarni,

We are pleased to inform you that the above-referenced research proposal has been reviewed and was approved, as continuing review with modification. To continue the collection of data a permission letter must be issued from the Director of the Research Center first.

This approval is valid for one year from the date of IRB review when approval is granted. The approval will no longer be in effect on the date listed above as the IRB expiration date. Please note that you are obligated to submit the following to IRB committee:

1. *periodic progress report every 6 months;*
2. *final report within a year from the date of this memo (or earlier in the case the study has completed);*
3. *any manuscript resulting from this research for approval by IRB before submission to journals for publication.*

It is the responsibility of all investigators and research staff to promptly report to the IRB any serious, unexpected and related adverse events and potential unanticipated problems involving risks to subjects or others. All records relating to the research (including signed consent forms) must be retained and available for audit for at least 3 years after the research has ended.

We wish you every success in your research endeavors.

وزارة الصحة المملكة العربية السعودية
مدينة الملك سعود الطبية
King Saud Medical City
لجنة أخلاقيات البحوث (IRB)

Dr. Hesham Al Mashat
Chairman, Institutional Review Board (IRB)
King Saud Medical City Riyadh, KSA

Dr. Muteb A. Muteb
Director, Research Centre
King Saud Medical City, Riyadh, KSA

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Appendix 18: Information sheet RCT

THE UNIVERSITY of ADELAIDE

Participation Information Sheet
Randomized control trial RCT of new graduate nurses

Project Title: Designing a simulation intervention as a method to reduce stress among new graduate nurses in the intensive care units at King Saud Medical City in Riyadh: A mixed methods design.

Human Research Ethics Committee Approval Number: H-2016-***,**Principle Investigator:** Dr Richard Wiechula, **Student Researcher:** Miss Ayidah Alqarni **Student Degree:** Doctor of Philosophy (Nursing)

Dear Participant,

You are invited to participate in the research project described below.

What is the project about? The purpose of this project is to examine how simulation learning may help reduce stress for new graduate nurses. The study will be conducted among new graduate nurses in the ICUs at the King Saud Medical City in Riyadh (KSMC-R).

Who is undertaking the project? This project will be conducted by Miss Ayidah Alqarni who is a student in the degree of Doctor of Philosophy degree at the University of Adelaide under the supervision of Dr Richard Wiechula and Dr David Foley.

Why am I being invited to participate? You are being invited to participate for the following reasons: You are a female new graduate nurse, with either diploma or bachelor degree.
You have been working as new graduate nurses for less than one year in the ICUs at KSMC-R.
You have completed the ICU orientation program, to carry out independent work,
You work time schedule permits you to participate in the pilot study.

What will I be asked to do? If you are willing to participate in this study you will be asked to complete a consent form. You will then complete a written questionnaire in relation to stress. You will then be selected to be part of one of two groups. If you are selected for the simulation group, you will be asked to participate in a simulation based learning exercise (SBLE). The SBLE involves a role-play between yourself and another graduate nurse mimicking real scenarios in an ICU. The project will consist of one scenario which will be conducted on four occasions so that eight female new graduate nurses in total will experience the intervention (2×4).

Following a debriefing, you will be asked to complete a brief evaluation and a stress questionnaire will be required to be completed a month after the pilot study. If you are selected for the control group, you will only be required to fill out the stress scale questionnaire at the

1

What if I have a complaint or any concerns?
If you wish to speak with an independent person regarding a concern or complaint, the University's policy on research involving human participants, or your rights as a participant, or your rights as a participant, please contact the Human Research Ethics Committee's Secretariat on:
Phone: +61 8 8313 6028 or by **Email to**: hrec@adelaide.edu.au. Post: Level 4, Rundle Mall Plaza, 50 Rundle Mall, ADELAIDE SA 5000

Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

If I want to participate, what do I do? If you are willing to participate, all you need to do is to sign the consent form, complete the questioner regard to stress scale pre and post-test, SBLE and debriefing experience scale.

Yours sincerely,
Miss Ayidah Alqarni

Appendix 19: A consent form for RCT

THE UNIVERSITY of ADELAIDE

Consent form for Randomized control trial (RCT) SBLE

Human Research Ethics Committee (HREC)

1. I have read the attached Information Sheet and agree to take part in the following research project:

Title:	Designing a Simulation Intervention as a Method to Reduce Stress among New Graduate Nurses in the Intensive Care Units at King Saud Medical City in Riyadh: A Mixed Methods Design
Ethics Approval Number:	**H 2016-220**

2. I have had the project, so far as it affects me, fully explained to my satisfaction by the research worker. My consent is given freely.

3. Although I understand the purpose of the research project it has also been explained that involvement may not be of any benefit to me.

4. I have been informed that, while information gained during the study may be published, I will not be identified and my personal results will not be divulged.

5. I understand that I am free to withdraw from the project at any time.

6. I agree to enrol in the SBLE either intervention or control group Yes ☐ No ☐

7. I am aware that I should keep a copy of this Consent Form, when completed, and the attached Information Sheet.

Participant to complete:

Name: _____ Signature: _____ Date: _____

Debriefing Experience Scale (New graduate nurses)

Little is known about participants' experience during debriefing following simulation. You can add to professional knowledge by giving your opinions. Please complete the survey below. Your views are very valuable. There is no right or wrong answer.

Your debriefing type(s)--Mark(x) all that apply:

___ Discussion without videotape ___ Discussion with videotape ___ Other (Specify)_____

Circle the number that best reflects your opinion about your debriefing experience :

1- Strongly disagree with the statement
2- Disagree with the statement
3- Undecided- you neither agree or disagree with the statement
4- Agree with the statement
5- Strongly Agree with the statement

NA- Not Applicable; the statement does not pertain to the debriefing

Rate each experience item based upon how important it is to you:

1- Not Important
2- Somewhat Important
3- Neutral
4- Important
5- Very Important

	Strongly Disagree	Disagree	Undecided	Agree	Strongly agree	Not Applicable	Not Important	Somewhat important	Neutral	Important	Very Important
Analysing Thought and Feeling											
1. Debriefing helped me to analyse mythoughts											
2. The facilitator reinforced aspects of thehealth care team's behaviour											
3. The debriefing environment was physicallycomfortable											
4. Unsettled feelings from the simulation wereresolved by debriefing											
	Strongly	Disagree	Undecided	Agree	Strongly	Not	Not	Somewhat	Neutral	important	Very

	Disagree				agree	Applicable	Important	important			Important
Learning and Making Connections											
5. Debriefing helped me to make connections in my learning											
6. Debriefing was helpful in processing the simulation experience											
7. Debriefing provided me with a learning opportunity											
8. Debriefing helped me to find meaning in the simulation											
9. My questions from the simulation were answered by debriefing											
10. I became more aware of myself during the debriefing session											
11. Debriefing helped me to clarify problems											
12. Debriefing helped me to make connections between theory and real-life situations											
Facilitator Skill in Conducting the Debriefing											
13. The facilitator allowed me enough time to verbalize my feelings before commenting											
14.The debriefing session facilitator talkedthe right amount during debriefing											

15. Debriefing provided a means for me toreflect on my actions during the simulation											
16. I had enough time to debrief thoroughly											
17. The debriefing session facilitator was an expert in the content area											
	Strongly Disagree	Disagree	Undecided	Agree	Strongly agree	Not Applicable	Not Important	Somewhat important	Neutral	important	Very Important
Appropriate Facilitator Guidance											
18. The facilitator taught the right amount during the debriefing session											
19. The facilitator provided constructive evaluation of the simulation during debriefing											
20. The facilitator provided adequate guidance during the debriefing											

Comments:

We would like to know a little more about you:

Your Age: _____ Ethnicity _____

Date of your debriefing: _____ Title of your course and course #: _____

Number of participants in your debriefing group: _____

If you are already a licensed health professional, how many month of direct patient care have you had? ____ months

THANK YOU FOR HELPING US TO UNDERSTAND THE DEBRIEFING EXPERIENCE

Appendix 21: Scenario

Scenario

Part A

SBLE name: Conflict and communication

SBLE Developer (s): Ayidah Alqarni

Date submitted: 15 November 2016

Institution: University of Adelaide

SBLE setting/environment: Intensive care unit (ICUs)

Location:

The researcher will be conducting the SBLE at King Saud Medical City (KSMC). The researcher and co-researcher from (KSMC-R) will organize a room in the male medical ward (MMW) / Intermediate care unit (IMCU) (availability dependent) resembling the environment of the ICU.

Debriefing location:

To ensure that the participants feel safe, comfortable and well supported, the researcher and co-researcher will conduct the debriefing session in the same unit of the SBLE conducting.

Target audience:

The target audience for this pilot study will be involve in the SBLE female new graduate nurses who have just started working in the adult ICUs. Each SBLE occurrence will use two participants who will play themselves in the scenario.

Video/Recording

Video recording will not be used in the SBLE.

Expected Run Time:

The length of the scenario will be likely to be run for approximately 10-15 minutes

Part B Broad objective: (given to the participants)

To deal with conflict and communication issues

Learning objectives:

Primary/ (specific outcome (s)

At the end of the session, the participants should be able to:

1. Successfully use conflict management strategies to create solutions that resolve differences with an unhappy patient, who was dissatisfied with service provision, demanding attention and insisting on a same gender nurse.
2. Use conflict management strategies to create solutions that resolve differences with the angry patient's relative, who demands that their relative be given more attention and insists on a same gender nurse.
3. Use the DESC script to resolve differences in opinion between co-workers and to express opinions and provide feedback with confidence and respect.
4. Consider the use of the conflict management style to manage and overcome issues as a result of gender
5. The participant be able to use communication strategy as described in TeamSTEPPS to deal with patients and their relatives.

Pre-request knowledge/activities

Critical actions checklist: must be done by graduate in SBLE or explained in the post scenario debriefing

Participants will demonstrate the use of conflict and communication management strategies and to understand when, why and how they are used. For example:-

(i) Provide solutions to effectively deal with the unhappy patient who was dissatisfied with service provided, demanding attention, and insisting on a same gender nurse

(ii) To provide solutions to deal with abusive families and their misogynist remarks, demanding attention for his father and insisting on a same gender nurse,

(iii) Participants will demonstrate the use a communication strategies such as the DESC script and TeamSTEPPS to deal with co-workers and patients and their relatives.

(iv) To provide solution to deal with issue as a results of gender discrimination.

NOTE: The SBLE set-up will be based on a SBLE from an actual event. However, all identifying features have been removed.

Props: The room will be in the MMW / IMCU (availability dependent) resembling the environment of an ICU.

Participants (an example of RNs experience working in an ICU depend on availability during recruitment):

The participants that will be involve in the SBLE female new graduate nurses who have just started working in the adult ICUs. Each SBLE occurrence will use two participants who will play themselves in the scenario.

Actors

Four actors will be recruited in this study to play roles a number of roles with certain actors having multiple roles. These actors playing respective roles, actor one will play the role of an elderly male patient, one male relative who is the son of the elderly patient, one male nurse manger and one female senior nurse staff. Scripts will be provided to the actors regarding

their roles. The educators will be provided with detailed information about the study and scripts of their respective roles.

1. Actor 1 patient (Room x Bed A: Mr Ali Ibrahim, 60 years old)
    - Mr. Ibrahim will act as an elderly male patient who was suffering in pain, unhappy patient, dissatisfied with service in the ICU, demanding attention and insisting on a same gender nurse, giving RN2 to deal with a very challenging situation.

2. Actor 2 (Saleh, 22 years old, single) Mr. Saleh will act as the son of the patient 1 (bed A).
    - Mr Saleh will act as a a male relative who will play the son of the elderly patient, a dissatisfied relative, dissatisfied with the care provided, demands his father to be given more attention, insistent on either a male or expatriate nurse be assigned to care for his father and uses abusive and misogynist remarks.

3. Nurse manger/ supervisor will act as male nurse manger: He will play the role of,

    - Unsupportive supervisor
    - Requires the participants that work night shift and to extend their shifts due to shortage of nursing staff with a heavy workload
    - Allocate the role for the participants after the pre-brief
    - Demand and requires the participants to carry out extra work beyond their required responsibilities due to shortage of staff in the morning shift.
    - Ask participants to provide assistance to another nurse with 3 other patients.
    - Ask either RN1 or RN2 to assist one of the critically ill patients to the X-ray department for a CT scan within an hour.

- Will intervene and take the patient and relative's side during the ensuing disagreement. In other words they will undermine the participants by supporting the patient and their relative.
- Reprimand RN1& RN2 outside the patient's room.

4. Non-Arabic speaker/ team leader, female, either Filipino or Indian. Will act as:

- Give a poor handover to the participants.
- Be unable to provide sufficient information on the patient's condition.
- Handover in a manner that hinders the participant's ability to comprehend the limited information provided to her due to the language barrier.

Coordinators

They will be few coordinator to facilitator role of the researcher:

- Assist the researcher
- Organise the participants for each following scenario
- Run the SBLE
- Assist in the debriefing session with the researcher
- Follow up a month later distribute the survey among the participants

Part C: Case narrative

SBLE Background:

Case Description/patient history:

Mr. Ali Ibrahim, a 60 year old, male was initially admitted to the ICU 2 days ago. He had a cerebrovascular accident with weakness on the right side of his body. He has dysphasia. Mr. Ibrahim has an indwelling urinary catheter and IV infusion. He requires continual assistance with all activities of daily living.

Previous Medical History (PMH): high blood pressure, type II diabetes, hypercholesterolemia and bronchial asthma.

The nurse begins by carrying out a routine check on the patient's condition.

Meds: heparin 5000u. s/c BD, labetalolpo. BD, simvastatin po.OD, nitroglycerin sublingual. OD, insulin s/c BD, salbutamol nebulizer TDS, and frusemide20mg po.QD.

Allergies: None

Family history: unknown

Social history: married with 6 adult children (4 sons and 2 daughters)

Assessment (patient condition at beginning of scenario), Mr. Ibrahim is a 60 year old man in a stable condition

Vital Signs: Temp 36.5 °C, Heart Rate 80on monitor, Respiratory Rate 22 Breath/min, BP 130/90 mmHg and O2 sat 97% and blood sugar level 5mmol/L.

7.50 am Pre-briefing (10 minutes):

The researcher will conduct the pre-briefing session for the new graduate nurses in the pre-briefing room. The purpose of the pre-briefing is to provide for personal comfort, build trust, orient the participants to the environment, agree on a fiction contract and set the rules for behaviour. In addition, the researcher will discuss with the participants the psychological safety to the pre-brief.

SBLE proceed (10-15 minutes)

The scenario will proceed with the nurse manger guiding the participants to room x in the medical ward (resembling ICU environment) where the SBLE will be carried out.

8.00 Nurse Manager, meets the RN1, at the corridor. Says, "Today will be extend your shift and you will be working with one of the new RNs due to shortage of staff and heavy workload . I have allocated you to room x with 1 patient. You will be also be required to look after the 4 patients in room x, and 2 patients are to be discharged today while the other 2 are in a stable condition."

"When you are done with your assignments and you're patients are all stable, could you please help the other nurse with her patients. I believe she has been assigned to 3 patients in Room 6. We have a shortage of staff today and I've had to juggle the rosters and assignment to ensure all patient's have a nurse attending to them."

"Also, in an hour, could either you RN1 or RN2 follow the critical patient to the X-ray department for a CT scan?"

Handover outside the room

8.05 am: non-Arabic speaker, team leader -(greeting) "Hi, we have been very busy all night, most of the patients and their relatives have been very demanding. However, with most of the relatives, I found it difficult to full-fill their requests as I could not understand them due to the language barrier.

"RN1, you will be assigned to room x and x with 1 and 3 patients respectively. Let's begin the handover for room x. We were been busy all night, Patient A, a Mr Ibrahim 60 year old male. He suffered from a stroke with weakness on the right side of his body. The patient was observed to be restless most of the night. He kept removing the oxygen nasal mask because he was feeling very uncomfortable. I have tried explaining to him and his son that it is very important to keep the nasal

mask on to ensure his oxygen saturation levels are stable. Unfortunately, the son was having trouble understanding me and requested for an Arabic speaking nurse but we didn't have any during the night shift. Patient was hard to deal with, also he's son was demands his father to be given more attention and not cooperative.

The patient has been stable so far with no complains of chest pains and his oxygen level has been stable. He has been sleeping periodically.

All the patients in room 4 stable, 2 of them are scheduled to be transferred to the general ward. Okay I am leaving now to the other rooms to continue handover". Thanks

Outside the room (prior enter to the room)

8.10am: (Nurse Manager speaking to RN 2 and RN1) you are assigned to the patients A. Both nurses enter to the room x at the same time, patient A is restless.

Patient A: (example act)

- Unhappy and dissatisfied with service, demanding attention and insisting on a same gender nurse, giving RN2 to deal with a very challenging situation.
- (Angry tone) "I have continuously mentioned that I am having chest pains since last night,
- There has been no one to attend to me and give me any medication to reduce the chest pains.
- The urine catheter is also causing a lot of pain and I'm feeling very uncomfortable. Could you please remove it?
- Where is the doctor? A doctor has not attended to me since I was transferred from the ICU yesterday,

- The hospital not allow my son to stay with me, my son has gone. Where are the male nurses? I would like a male nurse to look after me.
- (Screams loudly) Go away!

Within few minutes (Relative arrived) (example act)

(Arrives in the room), (with a surprised look)

- Violent relative demanding attention for his father and insisting on a same gender nurse,
- Policy of hospital not allow relative to stay with the patient in the ICU.
- Demanding to stay with his father!
- Refused to accept a female nurse from Saudi to look after his father.
- Is there a male nurse or English nurse to look after my father (with a disappointed expression)
- Can you arrange for a male nurse to replace you as soon as possible? I am very disappointed with the service that has been provided.
- My father was in so much pain but he was ignored the whole time. The nurse was unable to explain my father's condition to me.
- Start screaming loudly get out of the room now?
- Nurse Manager who takes the patient and relative's side during the ensuing disagreement and,
- then later admonishes the RN1& RN2 outside the patient's room

Endpoint

The scenario will take place for approximately 5 to 10 minutes. The scenario will end based on a few expected end points during the time. For example, -either if the participants are

unable to cope with the different situations or cope extremely well during the scenario. Once the learning outcomes have been achieved, the nurse educators will terminate the SBLE.

The purpose of the SBLE is to create a stressful situation. The patient and his relative will be angry, the nurse manger will be unsupportive and unreasonable in their demands and undermining of RN1 & 2. They will also unfairly admonish RN1 & RN2.

SBLE Flow Diagram: Conflict and Communication Issues

7.50 am Pre-briefing session by researcher

- Pre-briefing room

8.00am nurse manager allocated new graduate to room 3 with extra responsibility

- Conversation between (nurse manger and RN1) (in order tone)

↓

- RN1 will work with new RN2
- Assigned to room x with 2 patients
- Additional to room x with 4 patients (2 patient for discharge & 2 patient stable condition).
- Demanding extra work from RN1 to help another RN in room 6
- Within an hour's require to help to take patient to x-ray department for CT scan.

↓

8.05 handover by non-Arabic speaker nurseteam leader

- Poor handover
- Unable to provide in-depth information

- Ward being busy
- Shortage of staff
- Unable to comprehend due to language barrier
- Left immediately after handover

↓

8.07 am Outside the room (prior enter to the room)

- Nurse manger assign RN 2 and RN1 to patient
- Both nurses enter to the room x at the same time

↓

8.08am RN2 went to patient (check vital signs and conversation began between (RN2 & patient), while RN1 checking file

- Heart rate 80/minute
- Respiratory rate 22/minute
- O2 Sat 97%
- I/V line RT forearm (swelling)
- Folly's catheter
- On cardiac monitor
- Unhappy patient
- Demanding more care
- Felt ignored from previous shift
- Prefer male nurse to look after him

↓

8.10 am Relative, Saleh (son) arrived

- Arrives in the room), (with a surprised look)
- Shouting with the hospital policy
- Unhappy with the Saudi female nurse attending to his father.
- He preferred a male or non-Arabic speaker nurse.
- Nurse manger intervening

8.15 Endpoint

- Researcher step up end of scenario

Appendix: 22 Trial protocol

Trial protocol

Aims of the Trial

The purpose of this research is to establish the feasibility of conducting a randomised control trial (RCT), to evaluate the effectiveness of a simulation based learning exercise (SBLE) to reduce stress amongst new graduate nurses in an intensive care units (ICUs).

An initial phase of this project determined what were the major stressors for new graduates in an ICUs. This information was used to design a SBLE which will be piloted to determine the feasibility of this approach to reduce stress of new graduates working in ICUs. There may be no direct benefit to the participants but participation will assist in development of strategies that may reduce stress in future graduate nurses.

Rationale of the Project:

The rational for this research is to determine if SBLE as intervention can play a role in reducing stress among new graduate nurses working in ICUs. The main aim of this pilot study is to establish the feasibility of a full scale study to evaluate a SBLE based on the results from the self-administered survey and individual interviews of new graduate nurses and group discussion of nurse educators.

To achieve proof of concept, a SBLE has been designed and will be conducted among 4 groups consisting of 2 female new graduate nurses. Four actors will acts as male elderly patient, a male son of the elderly patient, a male nurse manger, and a female senior staff non Arabic speaker. With assistance of a number of nurse educators as coordinators to facilitate the role of researcher details (see Appendix 24).

The SBLE will be conducted in four occasions to provide an opportunity for eight new graduates to undergo the intervention. Another eight female new graduate nurses will be

recruited for a control group, where they will complete the stress tools only. We do not aim to establish effectiveness of this approach as this would require a much larger sample.

Research Methodology:

This is a pilot RCT, to determine the feasibility of conducting a full scale trial to test if SBLE can be effective as a strategy to reduce stress among new graduate nurses in an ICU environment. This section discusses the participants recruitment, intervention, data collection and data analysis.

The pilot study will be conducted at the KSMC-R. The study will take place in rooms consisting of 1 beds and computerised medical equipment. The room will resemble an ICU setting. The researcher and nurse educators will conduct an orientation of the setting for the new graduate nurses to familiarize them with the environment and facilities. For example, the nursing station, the phones, the various equipment's and others.

Sample

In the pilot RCT, the participants will be randomly assigned to one of two groups: one (the intervention group, n = 8) will receive the intervention that will be tested, and the other (the control, n = 8) will fill out the stress scales only.

The two groups will be then followed up a month later to complete the stress scales again.

Inclusion and exclusion criteria of graduate nurses

a) Inclusion criteria:

- The target population for the pilot study are registered nurses (acquiring both diploma and bachelor degrees) working as new graduate nurses in the ICUs.

- All participants will be above the age of 18.
- Female new graduate nurses working full time or part time.
- Graduate nurses must have completed the orientation program of the ICUs, to be able to carry out independent work

b) Exclusion criteria for graduate nurses

- New graduate nurses with less than 3 months or more than 1 year of working experience
- Nurses that have previously worked in other wards
- Also those who do not wish to be video/voice recorded during the SBLE will be excluded.

Recruitment of participants

The female new graduate nurses that will be recruited from the KSMC-R. Nurse educators and head nurses working in the various ICUs will be responsible to recruit the participants. They are also responsible to distribute the questionnaires to the new graduate nurses' pre and post-test. The new graduate nurses will be asked to participate voluntary at a staff meeting. The researcher will provide an information sheet and consent form to the participants preparing them for the intended learning outcomes and with a detailed description of the SBLE setting.

Ethical Consideration

Ethical approval was attained from the HREC of the University Of Adelaide (HREC number, H-2016-220) (Appendix 21) and from the IRB at the KSMC-R (Appendix 22) for this study.

In this study, the intervention is specifically designed to place the participants in a situation that is stressful and thus exposing them to an obvious risk. Nevertheless, a number of strategies will be devised to address these risks. All participants will be provided with an information sheet (Appendix 21) which will include a comprehensive and detailed description of the nature of the trial, and will state that all information will be kept anonymous. The participants will be reassured they are practicing in a safe environment and they will be provided with the necessary support during the pre-briefing and debriefing session. The consent to participate will be indicated by participants signing the consent form (Appendix 22), more details discuss in Chapter 5 of this study.

Describe how the risks will be minimised or mitigated.

- The design of the scenarios could cause a certain amount of stress to the participants. Thus, a number of strategies have been devised to overcome the stress levels induced from the design of the scenarios itself.
- Participants will be reassured they are practicing in a safe environment and psychological safety.
- The debriefing session as part of the intervention is will provide participants with support.
- The researcher has received formal simulation training.
- The researcher will provide the nurse educators with education about psychological safety to mitigate the stressors reaction of the participants and to deal with it.

In the event of any adverse effects, the trial will be terminated immediately. Counselling services will be provided to the respective participants. The intervention will take place in the nurses work environment and educators from the organization will be assisting with the intervention.

Evaluation

The tools used for evaluation in this study includes both the PSS-IO and ENSS-57 items, both validated in English and Arabic and tested for reliability prior to being used. Both these tools will be used to measure the outcomes before and after the pilot test. The Debriefing Experience Scale (DES) an additional evaluation tool will be employed after the pilot test to analyse thought processors and obtain more specific feedback (Appendix 23).

Pre - test data collection

Both intervention and control groups will complete a stress scale questionnaire which comprise demographic variables, Expanded Nurse Stress Scale (ENSS) and Perceived Stress Scale (PSS) (see Appendix 6).

Intervention

The SBLE will take approximately 55 to 80minutes (5-10 minutes pre-briefing, 10-15 minutes of scenario and 30-50 minutes of debriefing). The SBLE will be conducted in the Arabic language.

Pre-briefing

The researcher will conduct the pre-briefing session for the new graduate nurses which includes:

- The objective of the scenario which is dealing with conflict and communication issue was re-in-stated to the participants.

- Additional information of the study, more in-depth but concise explanation on SBLE as the participants are assumed to be naïve to the simulation protocol. Also the researcher will provide additional information in regard psychological harm.
- The participants will also receive information about the facilitator's role and the type of guidance they would expect.
- Reassurance that the scenario is conducted within a safe environment.
- The participants should be able to voice opinions even in uncomfortable situations.
- Reassurance for the participants that there will be no judgments on their performance or responses.
- The participants will act as if they are in an ICU environment.

Scenario (Appendix 21)

The intervention will then proceed with the researcher and nurse manger guiding the participants to the room that simulates an ICU environment (Appendix 24).

The non-Arabic speaker nurse will carry out a handover to the 2 graduate nurses. The scenario involves conflict and communication issues between new graduate nurses and patient/relatives and nurse manager.

De-briefing

Once the scenario has been completed, a debriefing session will be conducted with guidance to reflect upon the outcomes of the scenario. The objectives of the debriefing session are (i) review SBLE, (ii) sort out and clarify thinking, (iii) release emotional tension, (iv) reinforce specific teaching points by using conflict and communication strategy techniques, (v) correct misconceptions. The participants will explore and analyse their action and thought processes, emotional states, with the aim to improve performance in real situations. Strategies to

improve communication and reduce conflict such as conflict management style (Black & Mouton 1964; Thomas &Killman1975; Rahim 2001), DESC (Brooks 2010) and Team STEPPS Strategy (National Council of State Boards of Nursing, 2011) will be discussed with the pa1ticipants (Appendix 27.28 & 29).

Post-test Data collection

For the intervention group, they would be required to complete 2 questionnaires;

(i) Debriefing Experience Scale (DES) (Appendix 23) will be completed immediately after the debriefing session: Includes analysing the thought and feeling, learning and making connections, facilitator skill in conducting the debriefing and appropriate facilitator guidance.

(ii) The PSS and the ENSS will be completed one month post intervention.

The control group will only be required to complete the stress scale at one month post-test.

Documentation of the process before, during and after the intervention (SBLE) will be carried out by the researcher.

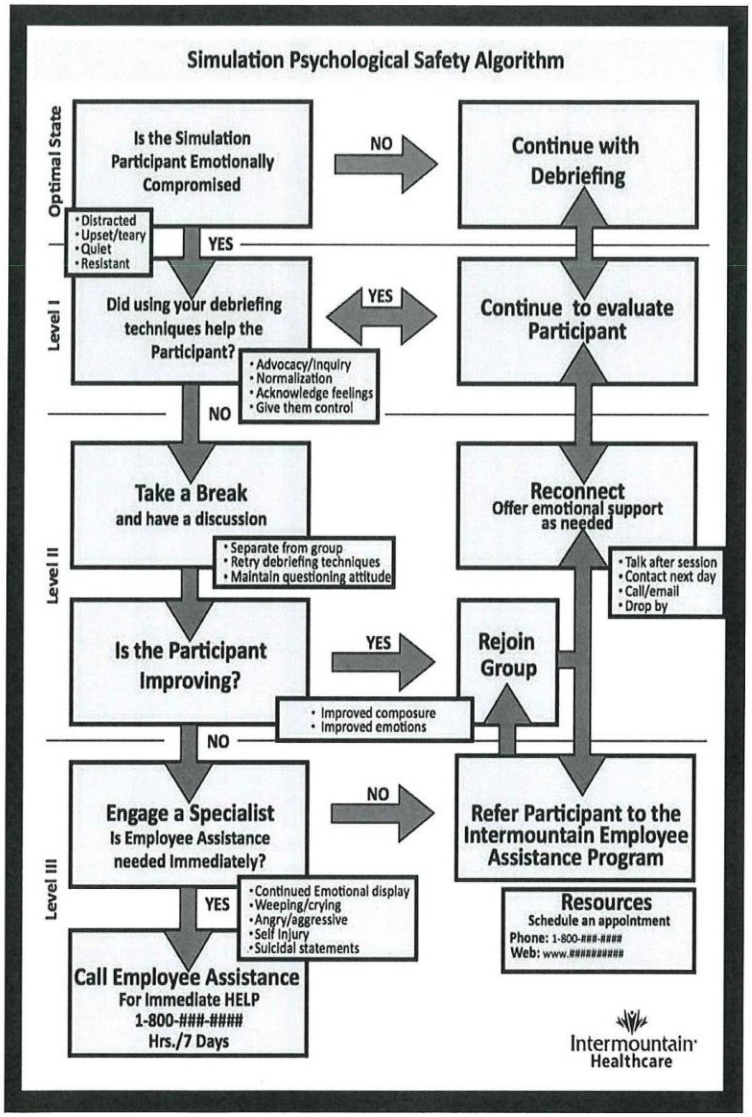
Data analysis

The aim of the analysis is to determine if the intervention (SBLE) can reduce stress levels in new graduate nurses. The stress scale questionnaire and debriefing stress scale will be analysed using the Statistical Package for Social Science (SPS) software, version 21. The questionnaire's demographic data for all the participants will be coded , the data will be analysed using the descriptive statistics. Each item from the PSS- I0, ENSS, DES includes a Likert scale.

- The analysis will include (a) the stress scale questionnaire comparing the pre-test and post-test including within a group between group comparisons.
- The debriefing experience scale analysis will be carried out as a reflection of the outcome and feasibility of the debriefing process.

All data will be returned to the University of Adelaide for analysis. Only the doctoral student and the supervisors will have the access to the data.

Appendix 23: Simulation psychological safety algorithm



Simulation psychological safety algorithm. This is a picture of the algorithm depicting levels and an approach to an individual in a level. Adopted from (Henricksen, Altenburg & Reeder 2017)

Appendix 24: Conflict management style

Conflict management Styles

Conflict management style will be use by the new graduate nurses to learn how to deal with gender issue and patient and their families, which introduced by Black and Mouton in 1964 and expanded by Thomas and Killman (1975) as well as Rahim (2001), Rahim was categorized into five patterns of conflict management styles as follows: avoiding, obliging, dominating, integrating, and compromising.

Conflict management style	Definition
Dominating	Individuals seek to satisfy their own interests regardless of the impact on other parties in the conflict (Robbins et al., 2008).
Integrating	Win-win resolution where it is assumed that the solution to the conflict can leave both parties in a better condition (Johnson & Johnson 1994).
Avoiding	Ignoring or suppressing a conflict in the hope that it will go away or won't become too destructive (Johns, 1994).
Obliging	When one party in the conflict is willing to place the opponent's interest above his or her own (Johnson & Johnson, 1994).
Compromising	No clear winner or loser; each party to the conflict is willing to give up something to come to a resolution (Johnson & Johnson, 1994)

Appendix 25: DESC

DESC Script

WHAT IS IT?

DESC scripts defined as a structure, assertive, communication approach for managing and resolving conflict. The DESC script is an ideal strategy to be use during conflicted situation that could affect the job performance.

D	**Describe the specific situation**
E	**Express your concern about the action**
S	**Suggest other alternative**
C	**Consequences should be stated**

WHEN TO USE IT

Whenever you have a personal conflict with another health team member that threatens your ability to perform your job well.

The DESC provide strategy dealing with different situation for example in the scenario for this intervention, strategy to dealing with aggressive and assertive people would provide as ideal training for the new graduate nurses.

This situations would occur specially when dealing with patient and their relative and co-workers.

The DESC scrip would enable the new graduate nurses to develop more confident and more assertiveness especially when dealing with challenging situation.

When you are assertive, you are able to:

Express and communicate your feelings accurately.

Ask for things you want.

Say no to things you do not want.

Have the opportunity to have your needs and wants met.

Appendix 26: TeamSTEPPS Strategy

TeamSTEPPS (Communication)

Team Strategies and Tools to Enhance Performance and Patient Safety

STEP
Tool to help assess health care situations
Status of Patient
Patient History
Vital Signs
Medications
Physical Exam
Plan of Care
Psychosocial Issues
Team Members
Fatigue
Workload
Task Performance
Skill
Stress
Environment
Facility Information
Administrative Information
Human Resources
Triage Acuity
Equipment
Progress Toward Goal
Status of Team's Patient(s)?
Established Goals of Team?
Tasks/Actions of Team?
Plan Still Appropriate?

Communication
SBAR

A technique for communicating critical information that requires immediate attention and action concerning a patient's condition. In this scenario new graduate nurses will be receiving poor handover.

Situation - What is going on with the patient? *"It is about Mr. Ibrahim in room 3, unhappy with service and demanding same gender nurse?"*
Background - What is the clinical background or context? *"Patient is a 61-year-old male, with history of hypertension, type II diabetes, hypercholesterolemia and bronchial asthma. "*
Assessment- What do I think the problem is? *"In this scenario we are looking how the new graduate nurses can deal with communication and conflict issue.*
Recommendation and Request - What would I do to c01Tect it? *" How to manage/or use communication strategy to deal with the patient and his relative?"*

Handoff

The transfer of information (along with authority and responsibility) during transitions in care across the continuum. It includes an opportunity to ask questions, clarify, and confirm. Examples of transitions in care include shift changes; transfer of responsibility between and among nursing staff (expatriate nurse, new graduate nurses, nurse manger; and patient transfers.

Handoff

Strategy designed to enhance information exchange during transitions in care

I PASS the BATON

- **Introduction:** introduce yourself and your role
- **Patient:** name, identifiers, age, sex, location
- **Assessment:** presenting chief complaint, vital signs, symptoms, diagnosis
- **Situation:** current status and circumstances; including codes status, level of certainty, recent changes, and response to treatment
- **Safety concerns:** critical lab values and reports, socioeconomic factors, allergies, alerts (eg, falls, isolation)
- **Background:** comorbidities, previous episodes, current medications, family history
- **Actions:** which were taken or are required, providing brief rationale
- **Timing:** level of urgency, explicit timing, and prioritization of actions
- **Ownership:** who is responsible (eg, nurse, doctor, team), including patient or family responsibilities
- **Next:** what happens next (eg, any anticipated changes in condition or care, the plan, any contingency plans)

- General nurses, perioperative nurses, physicians

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Appendix 27 Simulation effectiveness tool

CAE Healthcare

PNCI® Simulation Effectiveness Tool

Date: _____ **Course:** _____

Instructor: _____ **Name** (Optional): _____

Please rate the following statements on the scale provided. Mark NA if you have no experience with the statement.

	Do Not Agree	Somewhat Agree	Strongly Agree	Not Applicable
The instructor's questions helped me to think critically	0	1	2	NA
I feel better prepared to care for real patients	0	1	2	NA
I developed a better understanding of the pathophysiology of the conditions in the SCE	0	1	2	NA
I developed a better understanding of the medications that were in the SCE	0	1	2	NA
I feel more confident in my decision-making skills	0	1	2	NA
I am more confident in determining what to tell the healthcare provider	0	1	2	NA
My assessment skills improved	0	1	2	NA
I feel more confident that I will be able to recognize changes in my real patient's condition	0	1	2	NA
I am able to better predict what changes may occur with my real patients	0	1	2	NA
Completing the SCE helped me understand classroom information better	0	1	2	NA
I was challenged in my thinking and decision-making skills	0	1	2	NA
I learned as much from observing my peers as I did when I was actively involved in caring for the simulated patient	0	1	2	NA
Debriefing and group discussion were valuable	0	1	2	NA

Comments: _____

Program for Nursing Curriculum Integration (PNCI®)