Investigation of Undergraduate Nursing Students' Readiness to Practice in the UAE

التحقق من استعداد طلاب التمريض الجامعيين لممارسة مهنة التمريض في الإمارات العربية المتحدة.

by

MOHAMED AL MEKKAWI

A thesis submitted in fulfilment
of the requirements for the degree of
DOCTOR OF PHILOSOPHY IN EDUCATION
at
The British University in Dubai

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ABSTRACT IN ENGLISH

Mounting concerns raised in the last few decades on the ability of educational providers and health care facilities to maintain adequate levels of collaboration and cooperation to graduate work-ready nursing students. The claims on the adequacy of education programs and clinical training experiences of nursing students exerted unremitting challenges for both nursing education providers and health care facilities in many countries. The purpose of the study is to investigate undergraduate nursing students' readiness to practice in the UAE and identify factors that foster or hinder their readiness to practice during students' clinical training experiences. The study followed a sequential exploratory mixed method design that began with collecting qualitative data from 19 nursing students in their final year of study, four faculty members, and three hospital education leaders using focus group and semi-structured interviews. Quantitative data was then collected during the second phased from a larger group of nursing students. Quantitative data was collected from 90 nursing students in their final year of study at five different nursing colleges using Casey-Fink Readiness to Practice Survey 2008. The survey examined students' level of confidence to perform specific clinical practice skills to analyze their perceived readiness to practice. Data analysis revealed that most of the participants perceived that they are ready to practice registered nurse role after graduation. Many students expressed that they are not confident enough to take care for more than 2-3 patients and highlighted that they are not comfortable enough to practice some nursing skills such as Chest tube care, Code response, IV insertion/removal, Trach care, NG insertion, and Catheter insertion. The study had numerous implications for nursing education in the UAE and the region.

ABSTRACT IN ARABIC

تصاعدت المخاوف التي أثيرت في العقود القليلة الماضية على قدرة مقدمي الخدمات التعليمية ومرافق الرعاية الصحية للحفاظ على مستويات كافية من التعاون التي تؤدي إلى تخريج الكوادر التمريضيه القادره على مجابهة متطلبات سوق العمل. ان الادعاء بعدم قدرة برامج التعليم والتدريب السريري على كفاية متطلبات سوق العمل قد اثرت بشكل جدي قد زادت التحديات التي تواجه مهنة التمريض في المؤسسات التعليمية ومرافق الرعاية الصحية في العديد من البلدان. الغرض من هذه الدراسة هو دراسة استعداد طلبة البكالوريوس في التمريض لممارسة المهنة في دولة الإمارات العربية المتحدة, اضافه الى تحديد العوامل التي تعزز أو تعيق استعداد الطلبه لممارسة المهنه جيدا بعد التخرج. اتبعت هذه الدراسة تصميم متتابع استكشافي مختلط بدأ مع جمع البيانات النوعية من 19 طالب في السنة النهائية من الدراسة ، 4 أعضاء من هيئة التدريس و 3 قادة للتعليم فى المستشفيات باستخدام مجموعة التركيز و مقابلات شبه منظمة. ثم جمعت البيانات الكمية خلال المرحلة الثانية من مجموعة أكبر من طلبة التمريض. كمية البيانات التي تم جمعها من 90 طلاب التمريض في السنة النهائية من الدراسة في 5 كليات للتمريض في الدوله باستخدام استطلاع كيسي- فينك لاستعداد الطلبع لممارسة مهنة التمريض. ودرست الدراسة الاستقصائية مستوى ثقة الطلاب في أداء مهارات معينة في مجال الممارسة السريرية لتحليل مدى استعدادهم للتتطبيق العملي بعد التخرج. وكشف تحليل البيانات أن معظم المشاركين رأوا أنهم مستعدون لممارسة دور الممرضة المسجلة بعد التخرج. أعرب العديد من الطلاب أنهم ليسوا واثقين بما فيه الكفاية لرعاية أكثر من 2-3 مرضى. أبرزت النتائج أنهم ليسوا واثقين بما فيه الكفاية لممارسة عدد من مهارات التمريض. وللدراسة آثار عديدة على تعليم التمريض في الإمارات العربية المتحدة والمنطقة.

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ABREVIATION

AACN – American Association of Colleges of Nursing
ANA – American Nursing Association
ANMC – Australian Nursing and Midwifery Council
BSN – Bachelor of Science in Nursing
BUID – British University in Dubai
CAN – Canadian Nursing Association
CASN – Canadian Association of Schools of Nursing
CFA – Confirmatory Factor Analysis
CFRP – Casey-Fink readiness to Practice Survey
CLE – Clinical Learning Environment
COHS – The College of Health Sciences
DEU – Dedicated Education Unit
DOH – Abu Dhabi Department of Health
EFA – Exploratory Factor Analysis
EKG – Electrocardiogram
ENA – Emirates Nursing Association
FND – Federal Nursing Department
GPA – Grade Point Average
IV – Intravenous
MOH – Ministry of Health
NCLEX RN – National Council Licensure Examination Registered Nurse
PBUH – Peace Be Upon Him
PCA – Patient-Controlled Analgesia
PEG – Percutaneous Endoscopic Gastrostomy
SD – Standard Deviation
SPSS – Statistical Package for Social Sciences
TED – Technology, Entertainment and Design
U.S.A. – United States of America
U.S.-U.A.E – American and United Arab Emirates Business Council
UAE – United Arab Emirates
UAENMC – United Arab Emirates Nursing and Midwifery Council
UKCC – United Kingdom Central Council
UN – United Nations
WHO – World Health Organization

CHAPTER ONE: INTRODUCTION TO THE STUDY

1.1   Introduction

This study investigated Undergraduate Nursing Students' Readiness to Practice in the UAE. Many efforts have been made by nursing programs and healthcare facilities in the last two decades to prepare nursing students who are ready to practice safely and independently after graduation (Pitt et al. 2012). However, many employers were claiming that nursing graduates are not ready enough to practice as expected upon entry to the workplace (Dlamini et al. 2014). These claims continued to exist despite all the significant improvements introduced to nursing education in the last three decades (Mellor, Gregoric & Gillham 2017). Many studies on nursing students and new graduates highlighted educational and practice gaps affecting the new graduates' readiness to practice safely and independently. These gaps were mainly related to students' academic preparation, clinical training environments, preceptors, and support received during students' clinical training experiences (Wolff, Pesut & Regan 2010).

This study is expected to explore nursing students' academic knowledge and clinical skills needed to meet the entry-level competence in the UAE. It is expected that the results of this study contribute to developing a better understanding of the factors that improve or hinder nursing students' readiness to practice by all stakeholders who participate in students' academic and clinical training to improve their readiness upon graduation. The following chapter will cover the following topics: background of the study, problem statement, significance, purpose, research questions, and definition of terms.

1.2   Background

The nursing profession has rapidly developed in the last decades, with nurses being tasked with more healthcare responsibilities (Tiffin 2013). The concept of 'nurses care for sick' became more complicated especially with the current advancements in healthcare models and systems and the great paces in technology, physical science, and pharmacology that required a high level of intellectual abilities for simple nursing tasks. The old nursing tasks were based on either the traditional way of doing things or on the natural knowledge of nurses. However, the movement of nursing into distinctive discipline required a specific body of knowledge for the profession, which was identified and complied with nurses' own efforts of education and research. This body of knowledge continued over time to form the theoretical basis of today's nursing practice (Catalano 2015).

Nursing today has an increasing emphasis on research and evidence-based practice. It involves a systematic process of defining, evaluating, and using information as a basis for deciding on the delivery of nursing care. Patients today are more knowledgeable about healthcare issues, and they demand a higher level of knowledge and skills from their care providers (Catalano 2015). Nurses today are changing the notion of modern medicine and healthcare delivery. They are publishing scientific researches, participating in TED talks, developing medical applications, and actively involving in preparation of healthcare policies. The healthcare field is steadily growing, and so are the opportunities for nurse educators, researchers, practitioners, and Ph.D. holders. The nursing field is becoming more profound, and the opportunity for nurses is to master complex and multifaceted qualities that positively impact healthcare systems and the whole community members. Nursing today has become complex in

comparison to a generation ago. Nurses now are not just caregivers, but innovators too. The increasing healthcare demands have made it imperative for a new generation of nurses who are critical thinkers and agents of care innovation. Nursing is now a profession for those who are intellectually curious and lifelong learners (Tiffin 2013).

Great nurses take what they have learned during their formal education and apply it to make tough daily life-or-death decisions. Accordingly, nursing education has a crucial role to play. With the right skills and knowledge, the next generation of nurses can make a more significant difference for patients and community members (Catalano 2015). With all the progress achieved in nursing education and clinical practice in the last decades, many countries are still facing significant challenges in the healthcare industry and education sectors because of the growing demands of the aging populations and the forecasted workforce shortage especially for nurses (El Haddad 2016). Healthcare is becoming more complex, technology is overgrowing, and the community members are getting more diverse, older, and have multiple chronic health conditions that require nurses with specialized knowledge and clinical skills (Spector et al. 2015). Also, several countries have issued warnings about the looming nursing shortage triggered by a significant number of nursing retirements resulting in more novice nurses left at the workplace (McMenamin 2014).

The need for nurses is anticipated to increase in most of the countries rapidly. Approximately 40% of nurses in high and middle-income countries are expected to leave the profession in the next decade (WHO 2013) and 40 million new healthcare practitioners will be needed by 2030 (WHO 2016). Moreover, the healthcare sector is facing many challenges associated with new

nursing graduates' transition to practice (Dwyer & Revell 2016). The high level of new graduate nurse turnover during their first year of professional practice is creating staffing problems and a huge increase of nurses' workload while new nurses are being hired and oriented (Friday et al. 2015). This instability of the nursing workforce has serious threats to the quality of delivered care and overall safety of patients (Aiken et al. 2014; Unruh & Zhang 2014). Therefore, understanding new graduates' challenges for a smooth transition into their professional role has become of global interest. Moreover, to achieve a stable nursing workforce requires graduating nursing students who are ready to practice safely and independently before their transition into professional workplaces (Casey et al. 2011). More efforts should be directed towards students' pre-graduation education and clinical experiences, which are significant to help new graduates adapt to their new roles in real-life environments (Kaihlanen et al. 2018).

Since the establishment of the United Arab Emirates (UAE) in 1971, the country is striving towards developing quality healthcare services to meet the needs of population growth and to control the growth of healthcare spending affected by increased levels of chronic diseases and affluence among UAE population. According to the U.S.-U.A.E. Business Council (2016) Health conditions such as diabetes and obesity, which are commonly caused by sedentary lifestyles and fatty food consumption, are on the rise, in addition to heart diseases and cancer among aging Emirati population. The UAE's expenditure on healthcare reached in 2013 around $16.8bn, in hope to improve the local healthcare sector to provide quality services consistent with the quality delivered around the world. The UAE's vision for 2021 states that the UAE will invest continually to build world-class healthcare infrastructure, expertise, and

services to fulfill citizens' growing needs and expectations (U.S.-U.A.E. Business Council 2016). Moreover, Abu Dhabi Emirate stated in the vision 2030 plan that "The growth of the medical sector is dependent on large investments in technology, which Abu Dhabi is in a position to make. Abu Dhabi will have to attract qualified doctors and medical scientists as well as train local medical staff to develop this sector sufficiently" (Government of Abu Dhabi 2008).

The current nursing workforce in the UAE is composed of approximately 90% expatriate nurses to meet the UAE growing needs of healthcare services (U.S.-U.A.E. Business Council 2016). Nurses from the Philippines, India, and other Arab countries comprise the bulk of the UAE nursing workforce (McCreaddie et al. 2017). However, the shortage of nurses worldwide continues due to the steady population growth, which is currently 9.7 million and expected to reach 15.5 million in 2050 (UN 2015). Relying on expatriate nurses according to El Haddad (2006), with their cultural perspectives, may result in imposing different cultural values on patients who are receiving nursing care incongruent with their cultural values, customs, and social norms. These patients may not properly comply with their treatment protocols and may end up experiencing cultural conflicts, ethical dilemmas, and stress.

Consequently, the UAE Ministry of Health (MOH) established the Federal Nursing Department (FND) in 1992 to manage and develop nursing services in the UAE. A team composed of professional nurses was formed to evaluate the status of the nursing profession and healthcare practices in the country. The FND was responsible for regulating and improving the nursing profession and fostering nursing Emiratization and accelerated the development of

opportunities for Emirati nurses to study and join the nursing profession in the UAE. In addition to the Federal Nursing Department efforts, the Emirates Nursing Association (ENA) was established in 2003 under the legislation of the UAE Ministry of Labor and Social Affairs to enhance the nursing profession image in the country and to increase recruitment and retention of Emirati nationals in the nursing workforce.

Nursing education has passed through radical changes during the past decades in response to modern healthcare requirements and nursing scope of practice. The rapid expansion of clinical knowledge and growing healthcare complexities mandated special educational preparation adequate with the expanding responsibilities of professional nurses (AACN 2017). The new dynamic healthcare environments, changes in disease chronicity and population characteristics, healthcare costs, use of evidence-based medical practices, advancements in information systems and healthcare technologies, and the shift from inpatient to primary preventive community care, required nurses who can function independently across multiple settings (Missen, McKenna & Beauchamp 2015).

The traditional role of nurses according to the American Association of Colleges of Nursing (AACN) can no longer support the expanding demands of modern healthcare as it is increasingly moving to community health and other outpatient centers (AACN 2017). These changes have created increasing demand for a nursing workforce that has clinical decision-making and communication skills, case management, and health promotion knowledge and skills (El Haddad, Moxham & Broadbent 2013; Catalano 2015). The American Nurses Association (ANA) promoted baccalaureate programs as the primary education for

professional nursing in 1960. Moreover, in 1982, the National League for Nursing (NLN) approved the 'ANA Position Statement', which stated that "professional nursing practice requires the minimum of a baccalaureate degree with a major in nursing" (Philbrick 1984). Also, the Commonwealth government in Australia authorized nurse education transfer to tertiary institutions in 1985, the United Kingdom Central Council (UKCC) in 1986, and Canadian Nursing Association in 2004 (UKCC 1986; CAN 2004, El Haddad, Moxham & Broadbent 2013). The predominant trend of change since 1960 has been towards improving nursing students' performance and professionalism through expanding their clinical training hours and moving from diploma and associate degree nursing programs to baccalaureate degree programs (Blaauw, Ditlopo & Rispel 2014). The movement towards a baccalaureate degree was essential to prepare nursing graduates to work in complex clinical environments such as critical care, outpatient care, public health, and mental health settings (Levett-Jones et al. 2011; AACN 2017) and to cope with modern healthcare requirements (Missen, McKenna & Beauchamp 2015).

After all the efforts that have been made to improve nursing practice in the last three decades, the healthcare education and practice sectors faced a new challenge regarding nursing graduates. New nursing graduates' readiness to practice has been an ongoing area of debate in the nursing literature despite all the changes introduced to nursing education in the last 30 years (Usher et al. 2015). Many efforts have been made by education providers to reform nursing curricula and deliver quality clinical training experiences to prepare graduates who are ready to practice safely and independently in the last 20 years (Holland et al. 2010; Pitt et al. 2012). However, nursing education programs are still under the pressure of modern healthcare

systems, employers, and the influence of strict regulations of the licensing authorities due to the unceasing changes of global healthcare needs (Guner 2014). The claims from employers on the adequacy of nursing graduates' readiness upon entry to the workplace are exerting unremitting challenges for both nursing education providers and healthcare facilities in many countries (Dlamini et al. 2014). These claims continued to exist despite all the significant reforms introduced to nursing education (Wolff, Pesut & Regan 2010; Mellor, Gregoric & Gillham 2017). Studies continued to find theory-practice gaps due to significant developmental lag that existed between preparing nursing students at educational institutions and the expectations on the quality of graduate nurses by healthcare facilities (Wolff, Pesut & Regan 2010; Morrell & Ridgway 2014; Mellor, Gregoric & Gillham 2017).

Other studies also identified some factors contributing to senior students' lack of readiness, such as lack of quality clinical training experiences and clinical training hours (Nash, Lemcke & Sacre 2009; Wolff, Pesut & Regan 2010). Additional factors were lack of enough academic preparation especially in pharmacology, pathophysiology, and leadership skills that were needed to work with complex cases at clinical settings (Casey et al. 2011; Candela & Bowles 2008; Li & Kenward 2008). Also, lack of proper connection between educational institutions and healthcare facilities (Wolff, Pesut & Regan 2010; Newton & McKenna 2007), and the need for better students' socialization to alleviate students' anxiety and stress at clinical training environments (Banneheke et al. 2016; Levett-Jones & Lathlean 2008; Newton & McKenna 2007).

Although the accurate definition of 'readiness to practice' remains subtle (Missen, McKenna & Beauchamp 2015), healthcare facilities expect that new nursing graduates entering the workforce have an acceptable level of competency accompanied with the ability to move flawlessly into regular nursing practice (Wolff, Pesut & Regan 2010). The international accrediting bodies, such as American Association of Colleges of Nursing (2008), Australian Nursing, and Midwifery Council (2008) demanded to prepare nursing students to be ready to practice in the realities of today's professional environments. Readiness to practice is the ability of new graduates to meet the entry-level competencies that assure their ability to practice safely and independently, perform job-specific requirements, and ability to contribute effectively to the healthcare team (Banneheke et al. 2016; Watt & Pascoe 2013; Reagor 2011; Wolff, Pesut & Regan 2010).

Numerous studies explored senior nursing students and new graduates' readiness to practice prior and upon transition from educational to practice settings as this seems to be a global issue (Joolaee et al. 2015; Usher et al. 2015; Lea & Cruickshank 2014; Casey et al. 2011; Oermann et al. 2010; Berkow et al. 2009; Wolff, Pesut & Regan 2010; Fink et al. 2008). These studies indicated an urgent need to support student nurses and new graduates by introducing before graduation strategies to improve their clinical training experiences. Clinical training experiences enhance nursing students' engagement with real-life situations, improves their ability to use clinical reasoning (Banneheke et al. 2016; Benner et al. 2010), and nurtures their acquisition of knowledge, skills, and professional behavior (Rogan 2009). These experiences are multifaceted entities that have a crucial role and impact on the learning outcomes of nursing students. They provide students with abundant learning opportunities that help to build their

cognitive, psychomotor, professional attitudes, and critical thinking abilities (Joolaee et al. 2015; Pitt et al. 2012).

1.3 Problem Statement and Study Significance

Healthcare services at the UAE have rapidly developed in response to governmental directions to enhance the overall quality of health care. Most public and private healthcare facilities expanded their services to meet the complexity of care and to be able to cover more specialties and focus more on remote and rural areas (Brownie et al. 2015). Besides, the medical tourism industry in the UAE has grown up remarkably in the last ten years necessitating the provision of high-quality healthcare services to meet the international standards of care. The UAE government aims to create a healthcare infrastructure that meets the world-class standards to attract more international people seeking healthcare services in the UAE. For example, the Emirate of Abu Dhabi and Dubai were ranked among the 25 best global places for medical tourism in 2016, and such efforts generated more than 300 million USD from over than 326,649 medical tourists in 2016 (Popat 2018).

These factors necessitated nurses with special education and clinical skills, such as clinical decision making and communication skills, case management and health promotion knowledge and skills (El Haddad, Moxham & Broadbent 2013) to address prevention and control of complex chronic diseases and to meet the increasingly UAE complex patient populations (Brownie 2014). Consequently, the UAE Nursing and Midwifery Council recommended that nurses who were working in hospitals and outpatient settings to be educated at a baccalaureate level to perform complex nursing procedures and coordinate patients' care in a supportive manner (UAENMC 2013). The Council added that the high demands for health

prevention and promotion of the UAE community necessitate educated and autonomous nurses to achieve the UAE vision for high-quality healthcare services (UAENMC 2013). Therefore, new higher educational institutions opened in the last decade to align with the UAE vision for quality healthcare to graduate nurses with baccalaureate qualification to meet the growing demand for knowledgeable nursing professionals (Brownie et al. 2015).

The complexity of practice readiness as a concept according to Wolff, Pesut and Regan (2010), cannot be concealed with simple solutions that contradict the degree of collaboration and cooperation between educational providers and healthcare facilities. There are mounting concerns in nursing education literature on the ability of both sectors to adequately prepare nursing students for the workforce (Missen, McKenna & Beauchamp 2015; Buerhaus, Staiger & Auerbach 2009). Many studies highlighted educational gaps affecting students' readiness to practice after graduation. These gaps were mainly related to education and healthcare sectors' cooperation to prepare nursing students' theoretical knowledge and conductive clinical training environments, preceptors, and support while students on clinical training placements (Wolff, Pesut & Regan 2010). Examining readiness to practice and identifying education-practice gaps is a shared responsibility among educational and healthcare sectors (El Haddad, Moxham & Broadbent 2013). Therefore, both sectors need to develop a shared understanding of this concept and establish new models of communication to prepare and deliver quality clinical training experiences for students. This includes improving clinical training environments and supervision of students, providing more students' on-training support, and reviewing the content of educational programs delivered to build up students' confidence, competence, and thus readiness to practice upon graduation (Usher et al. 2015; Dlamini et al.

2014; El Haddad, Moxham & Broadbent 2013; Coyne & Needham 2012; Henderson et al. 2012; Casey et al. 2011; Candela & Bowles 2008).

Several batches of baccalaureate nurses graduated in the UAE during the last ten years. However, there is no known evidence-based literature that explored the graduates' or senior students' readiness to practice upon the completion of their baccalaureate programs in terms of the knowledge and skills they possessed to achieve the UAE vision for high-quality healthcare services. This study will provide significant evidence based on research to the nursing education and healthcare sectors in the UAE. The findings of this study will be used to improve nursing students' academic and clinical preparation to meet the needs of the UAE healthcare employers and licensing authorities. Exploring nursing students' readiness to practice in terms of the academic knowledge and clinical skills they possess to practice safely and independently before graduation is necessary to close any possible educational gap and contributes to the local and international body of knowledge regarding nursing students' preparation to practice. The findings of this study can help nursing education and healthcare sectors to put joint efforts to prepare local nursing students with enough theoretical knowledge and skills that positively affect the quality of nursing practice and patients' safety in UAE.

1.4 Purpose and Research Questions

The purpose of this study is to investigate undergraduate nursing students' readiness to practice in the UAE. The study explored students' academic knowledge and clinical skills needed to meet the entry-level competence to the workforce, which assures their ability to practice safely and independently, perform job-specific requirements, and contribute effectively to the

healthcare team. It is hoped that the study contributes to developing a better understanding of the factors that improve or hinder nursing students' readiness to practice by all stakeholders who participate in students' academic and clinical training to improve their readiness upon graduation.

To achieve the purpose of this research study, the following questions were answered:

1. What are the perceptions of nursing students, faculty members, and health care education leaders about/on the readiness of nursing students to practice at the point before entry to the workforce?

2. How could nursing students' readiness to practice improve before their graduation from nursing programs?

3. What are the factors that foster or hinder students' readiness to practice before graduation?

1.5 Definition of Terms

The new nursing graduate is the staff nurse who completed all educational requirements and graduated from an educational institution, but still a novice with less than one year of nursing experience. This nurse still requires support at the workplace to develop her nursing knowledge, skills, and clinical reasoning abilities to render safe nursing care (Cubit & Lopez 2011; Phillips et al. 2013; Feng & Tsai 2012).

A senior nursing student is a final year student who completed most of the nursing courses and clinical training in the nursing program at a university or a college and is in preparation for graduation (Cubit & Lopez 2011).

The nursing faculty member is a clinical educator who supervises and instructs nursing students in a clinical setting in a baccalaureate nursing program care (Cubit & Lopez 2011; Phillips et al. 2013; Feng & Tsai 2012).

The nursing preceptor is a staff nurse appointed by the hospital to provide clinical supervision to nursing students during their clinical practice in one-to-one relationship care (Cubit & Lopez 2011; Phillips et al. 2013; Feng & Tsai 2012).

Transition to practice is the first year during nursing graduates' employment that follows completion of the nursing program. This period of training is considered traumatic, causing increased stress and frustration for the graduates. Novice nurses are usually couples with a nursing preceptor to provide them with clinical supervision on a one-to-one relationship (Chandler 2012; Feng & Tsai 2012; Phillips et al. 2013).

Nursing clinical practice is a period that facilitates the integration of knowledge and skills, which contribute to the character and development of practice. For nursing students, it means the performance of nursing skills on real patients in a real clinical setting (Benner, Tanner & Chesla 2009).

Clinical placement is the clinical training time performed by nursing students in a clinical setting. They offer nursing students with learning opportunities to interact with real patients and healthcare providers and perform nursing skills on real patients. It is the area where nursing students are expected to apply the knowledge and skills learned in the classroom in a real practice environment to build their confidence and develop their professional identity (Chandler 2012; Feng & Tsai 2012; Phillips et al. 2013).

Readiness to practice is used to describe nurses' ability to practice nursing care on individuals, families, and populations across their lifespan in a healthcare environment (AACN 2008). For nursing graduates and senior students, it is conceptually defined as their ability to have the necessary knowledge and skills to perform complex nursing activities. These complex activities are problem-solving and clinical decision making complex skills, organization and prioritization of patients' needs, and managing the healthcare needs of patients in independent and safe manner care (Cubit & Lopez 2011; Phillips et al. 2013; Feng & Tsai 2012).

1.6   Chapter Summary

Since the establishment of the United Arab Emirates (UAE), the country is striving towards developing quality healthcare services to meet the needs of population growth and to control the increasing healthcare expenditure associated with high levels of disease chronicity and affluence among the population. To comply with the growing healthcare demands, 90% of the UAE nursing workforce is composed of foreigners from the Philippines, India, and other Arab countries. However, the shortage of nurses continues due to the steady population growth that is currently 9.7 million and expected to reach 15.5 million in 2050 (UN 2015).

New nursing high educational institutions opened in the last decade to align with the UAE vision for quality healthcare, and to graduate nurses with baccalaureate qualification to meet the growing demand for knowledgeable nursing professionals (Brownie et al. 2015). Several batches of baccalaureate nurses graduated in the UAE in the last ten years. However, there is no known evidence-based literature exploring graduates' or senior students' readiness to

practice upon completion of the baccalaureate programs in terms of the knowledge and skills they possess to achieve the UAE vision for high-quality healthcare services. Examining readiness to practice and identifying possible education-practice gaps is a shared responsibility among educational and healthcare sectors (El Haddad, Moxham & Broadbent 2013). Therefore, both sectors need to develop a shared understanding of this concept and establish new models of communication to arrange and deliver quality clinical training experiences for students. Accordingly, this study could provide significant information to both nursing education and healthcare sectors in the UAE that can be used to improve students' academic and clinical preparation to meet the expectation of UAE health authorities and healthcare sector.

CHAPTER TWO: REVIEW OF LITERATURE and THEORETICAL FRAMEWORK

2.1 Introduction

The UAE nursing workforce is comprised of 3% of Emirati national nurses, and 97% are expatriates (Brownie et al. 2015). The Department of Health in Abu Dhabi estimated the need of 5900 more nurses to meet the requirements of population growth in the Emirate (DOH 2011). To align with the UAE governmental strategies to place priority on developing Emiratization of healthcare workforce and delivering quality healthcare to the UAE citizens (Sinclair 2013), new nursing high educational institutions launched to prepare Emirati nurses with baccalaureate qualification to meet the growing demand for quality nursing graduates in the UAE (Brownie et al. 2015). However, there is limited evidence in the UAE on the new graduates' transition from academic institutions to acute care settings and the readiness of these graduates to practice safely and independently upon completing their academic degrees. Internationally, nursing students continue to express feelings of unpreparedness and a high level of stress and anxiety associated with their new role as staff nurses (Grimm 2017; Feng & Tsai 2012). Guided by Benner's Novice-to-Expert and Bandura's Self-Efficacy theories, this study aimed to investigate undergraduate nursing students' readiness to practice in the UAE. The study sought to explore students' academic knowledge and clinical skills needed to meet the entry-level requirements of UAE nursing workforce.

This chapter will provide a review of the most relevant literature on the development of the nursing profession and nursing education. The discussion will further describe the theoretical

preparation of nursing students, clinical nursing education, and models of clinical teaching. The review will focus on the challenges in nursing education, especially nursing students' so-called theory-practice gap and readiness to practice. The literature review will highlight the importance of effective clinical learning environments, clinical supervision, and students' socialization in shaping students' learning and building their overall readiness to practice upon graduation. While there are many studies tackling nursing students' learning, this review will focus on the studies that emphasized the concept of students' readiness to practice. The second part of this chapter will describe the theories that served as a theoretical framework for this study to enhance students' clinical training experiences and their overall academic and clinical achievements. Benner's Novice-to-Expert theory and Bandura's Self-Efficacy model served to guide this study towards the fulfillment of the study aim.

The literature review was completed using CINAHL, MEDLINE, Ovid, ERIC, Academic Search Complete, and Google Scholar. An extensive search was done to locate national and international studies using the following terms: nursing students and readiness to practice, nursing graduates and readiness to practice, nursing students and self-efficacy, nursing students and Benner Model. Also, nursing graduates and readiness to practice, self-efficacy and nursing employment, nursing graduates' transition to practice, nursing students' transition to practice, Benner Novice-to-Expert, Self-efficacy, and nursing practice.

2.2   Review of Literature

The literature on new nursing graduates' difficulties during the transition to practice is growing, especially with the increasing complexity of healthcare systems (Spector et al. 2015). The challenges influenced by these difficulties have a tremendous impact on both patients and healthcare organizations. Studies on new graduates' job satisfaction and turnover showed that 14% of new graduates are planning to leave the profession, 23% were thinking to leave, and 18% had left their jobs (Dwyer & Revell 2016). The instability in staffing and the increasing workloads of staff nurses, especially the newly graduated ones, have negatively affected the quality of nursing care and patients' safety (Aiken et al. 2014). Nursing graduates find difficulties transitioning into licensed nursing staff role, which is for some of them a considerable reason to leave the nursing profession (Flinkman & Salantera 2014).

To ease new graduates' transition and retain nursing workforce, nursing students should have better clinical preparation and effective clinical experiences (Kaihlanen et al. 2018). When senior team members use proper guidance and support for new graduates, they will help them master the required clinical skills to perform their job (Feng & Tsai 2012). A qualitative study by Chandler (2012) on 36 new graduates' nurses in the USA revealed that providing appropriate welcoming of nursing graduates and facilitating a supportive work environment could improve graduates' transition experiences. Similarly, Kumaran and Carney (2014) argued in their study that new graduates could quickly become overwhelmed by their new responsibilities and requested more support from their preceptors to enhance their transition.

New nursing graduates are usually unfamiliar with the work routine and are less capable of completing nursing requirements upon employment as their senior colleagues (Wong et al. 2018). Nurse Managers and experienced nurses believed that new graduates are competent and ready to practice when they show competence in practicing nursing skills. However, new graduates feel not yet ready to perform complex nursing skills (Brown & Crooks 2016), and their skills need time to fully develop during their practice (Oermann et al. 2010). Research studies on new graduates' level of competence and readiness to practice described several factors affecting students' performance, such as duration of the BSN program and the amount and quality of clinical practice during BSN programs. Accordingly, nursing education programs should meet the acceptable core competencies required for new graduates to practice nursing care. To reach this level of competency, educational and practice facilities should develop close collaboration to identify the core competencies needed to be mastered during students' study and prepare clinical practice experiences that promote students' learning, develop their clinical skills, and enhance their critical thinking abilities (Brown & Crooks 2016; Dwyer & Revell 2016). By exploring nursing students' readiness to practice, level of competence, and self-confidence, more insights could be gained that would help to prepare students' nurses for their future professional roles.

2.2.1 Development of the Nursing Profession

Nursing practice started when the females in the old European societies took the role of caring for the sick and injured people, as they were not allowed to seek high education and employment during the eighteen centuries (Attewell 2011). Since that time, the nursing

profession has grown and significantly evolved in response to the constant advancements in medical research and technology. According to Lundy and Masters (2016), several historical events had contributed to the evolution of professional nursing particularly at the time when Florence Nightingale established St. Thomas' Hospital's School of Nursing in London after the Crimean War broke out in 1854. Student nurses started to receive classes coupled with clinical training as a new model of educating nurses. Also, students received training in various aspects of nursing under the guidance of a set of curricula to improve their practice in many specialty areas in the hospital. Nightingale directly guided students' classes and clinical experiences, and her instructors' emphasized students' needs for education rather than the hospital needs.

Lundy and Masters (2016) also argued that many social activists in several countries requested from Nightingale to send one of her graduates to establish nursing schools and hospitals in their cities after the success of St. Thomas' Hospital's School of Nursing became well known around the world. This success encouraged a group of social reformers and physicians in the United States to espouse the idea that the provision of nursing care by persons who received formal nursing education is safe and important to the American people. This movement resulted in the establishment of the 'Women's Hospital of Philadelphia', which had the first permanent nursing school in the US in 1872. The 'Women's Hospital of Philadelphia' school of nursing followed Nightingale model and set a nursing curriculum, paid instructors, library, and used proper equipment for practicing nursing skills to facilitate appropriate education of student nurses. The increased demand for nurses to render nursing services in hospitals, military, and community has led to the expansion of nursing education and encouraged the development of more nursing schools around the United stated and the United Kingdom. The

pace of nursing profession growth took place differently in many countries depending on health needs, economic conditions, population demographics, and level of technology in each state (Fitzgerald, Almalki & Clark 2011).

Nursing, according to El Haddad (2006), developed slowly in the Arabic Gulf region. Nursing in Islam was represented by the Muslim women who participated in battles to provide moral support and look for the injured soldiers. Rufaidah bint Sa'ad is considered the first nurse in Islam. She lived during the time of the Prophet Mohammad (PBUH). She established a training school to prepare nurses, provided nursing services to sick and injured people in their community during and after the times of war, and prepared code of ethics for nurses. Besides, Rufaidah was a great promoter of health to her community members (Lovering 2008). Rufaidah and other Muslim women believed that nursing is the art required at times of war and peace. The history of Muslim nurses was parallel to the history of Islamic medicine, represented by great hospitals built in Cairo, Damascus, Baghdad, in addition to the medical knowledge that was transported to Europe to contribute mainly to the European Renaissance (Rassool 2000).

Significant progress has taken place in the UAE health sector in the last 30 years. The Federal Nursing Department (FND) was established by the Ministry of Health (MOH) to evaluate the status of the nursing profession and nursing care practices in the country. The FND was also responsible for regulating and improving the nursing profession, foster nursing Emiratization, and accelerate the development of opportunities for Emirati nurses to join the nursing profession. In addition to the FND efforts, the Emirates Nursing Association (ENA) was

established in 2003 under the legislation of the UAE Ministry of Labor and Social Affairs to enhance the image of the nursing profession in the country and to increase recruitment and retention of Emirati nationals in the nursing workforce (El Haddad 2006). In 2009, the UAE Nursing and Midwifery Council UAE (UAENMC) was formed to improve the nursing profession in the country. The council was responsible for regulating nursing and midwifery professions, improving nursing and midwifery services, and protecting the overall health and safety of the UAE community based on the highest standards of healthcare (UAENMC 2012).

2.2.2 Development of Nursing Education

Nursing education was subject to many changes around the world since Nightingale first school of nursing in 1872. The fast expansion of medical and nursing knowledge and the growing healthcare complexities in the last 50 years necessitated modification of nursing education to make it compatible with the expanding responsibilities of professional nurses (AACN 2017). Over the previous 100 years, nursing education reviews were considered a global phenomenon (El Haddad 2016). Egenes (2009) and Scheckel (2009) argued in 'Nursing education: Past, present, future' that review agencies and academicians regularly criticized the apprentice system used in the United States to educate and graduate nurses in hospitals because of the absence of intellectual rigor and exploitation of students.

Consequently, a committee was established in 1919 to examine nursing education. The committee then published in 1923 a special report called 'Goldmark Report' recommending high educational standards for nursing education, directing nursing schools to focus on education, moving nursing programs to universities, and qualifying nursing educators with

advanced education consistent to their role. After the 'Goldmark Report', another committee was formed to perform the grading of nursing schools. This committee published a report in 1928 recommending hospital-based nursing schools to focus on education rather than the provision of care. In 1948, Esther Brown, funded by Carnegie Foundation, supported the separation of nursing schools to become independent from hospital administration, recruit faculty with graduate degrees, and improve the quality of their programs.

In 1965, the American Nursing Association published what is currently known as the 'ANA Position Paper' under the title of 'Educational Preparation for Nurse Practitioners and Assistants to Nurses' (ANA 1965). This paper asserted that nursing education should take place in higher education institutions and that the minimum preparation of professional nurses should be a baccalaureate degree.

> *The education for all those who are licensed to practice nursing should take place in institutions of higher education. ... [The] minimum preparation for beginning professional nursing practice at the present time should be baccalaureate degree education in nursing (ANA 1965, p. 5-6).*

In 1982, the American National League for Nursing (NLN) approved the ANA Position Statement stating that "professional nursing practice requires the minimum of a baccalaureate degree with a major in nursing" (Philbrick 1984). However, it was not until 1996 that the American Association of Colleges of Nursing approved that the minimum educational preparation in the USA is baccalaureate degree (El Haddad 2016). In the United Kingdom, most nurses' education took place in hospital-based nursing schools rather than higher educational institutions until the United Kingdom Central Council for Nursing boarded a full

review of nurses' educational preparation in 1986. The Council recommended after the review to transfer nursing education to higher education institutions, reduce students' clinical time, and keep students in a supernumerary state throughout their period of education (UKCC 1986; El Haddad 2016).

In Canada, nursing leaders worked hard to establish licensing legislation, professional organizations, and university education for nurses. The first baccalaureate program for nursing education was established in 1919 (CASN 2012). However, it was not until 1982 that the baccalaureate degree in nursing was the entry requirement for the profession to ensure that nurses have adequate knowledge and skills needed for the modern healthcare system (CASN 2012; El Haddad 2016).

In Australia, the decision to transfer nursing education to higher institutions was confirmed by the findings of the National Review of Nursing Education report in 2002 and the Australian Nursing and Midwifery Council in 2008. This move of nursing education was in response to the international efforts to improve the quality of nurses and enhance the level of nursing education (ANMC 2009; El Haddad, Moxham & Broadbent 2013). The predominant trend of change since 1960 in the world has been towards improving nursing students' performance and professionalism through expanding clinical training hours and moving from diploma and associate degree nursing programs to baccalaureate degree programs (Blaauw, Ditlopo & Rispel 2014). The move towards baccalaureate degree was essential to prepare nursing graduates to work in complex clinical environments such as critical care, outpatient care, public

health, and mental health settings (Levett-Jones et al. 2011; AACN 2017) and cope with modern healthcare requirements (Missen, McKenna & Beauchamp 2015).

In the UAE, the Ministry of Health opened the '*Institutes of Nursing'* in 1970 to offer diploma programs in nursing (Kronfol & Athique 1986). In the 1990s, the UAE was subject to rapid development in the size of population and expansion of healthcare services (Brownie et al. 2015). This expansion required different approaches for nursing education to prepare nurses who have adequate clinical reasoning skills and health promotion knowledge and skills (El Haddad, Moxham & Broadbent 2013) to meet the increasingly UAE complex patient populations (Brownie et al. 2015). Consequently, the UAE Nursing and Midwifery Council recommended that nurses working in hospitals and outpatient settings should be educated at a baccalaureate level to perform complex nursing procedures and coordinate patients' care in a supportive manner (UAENMC 2013). The council added that the high demands for health prevention and promotion of the UAE community necessitate educated and autonomous nurses to achieve the UAE vision for high-quality healthcare services (UAENMC 2013).

New nursing high educational institutions were launched to align with the UAE vision for quality healthcare and to prepare nurses with baccalaureate qualification to meet the growing demand for knowledgeable nursing professionals (Brownie et al. 2015). The UAE government invested in the advancement of nursing education to meet the international standards, move towards modern healthcare services, and contribute to the education reform of the UAE healthcare (Wollin & Fairweather 2012). Currently, four higher education institutions are offering a baccalaureate degree in nursing in the UAE. Fatima College of Health Sciences has

three campuses in Abu Dhabi Emirate and one in Ajman Emirate, Sharjah University in Sharjah Emirate, Higher Colleges of Technology in Fujairah and the Sharjah Emirates, and Ras Al Khaimah Medical and Health Sciences University in Ras Al Khaimah Emirate.

2.2.3 Students' Academic Preparation

Nursing education in the last three decades underwent rapid transformation to a university-based education. Much of this change has been driven by the modern healthcare requirements and the shift to an economic model of managing healthcare services (Chang & Daly 2015). The expansion of clinical knowledge and growing complexities in healthcare have influenced nursing practice environments to mandate special educational preparation for nursing students consistent with the expanding responsibilities of professional nurses and new graduates entering employment (AACN 2017). Consequently, nursing programs have numerous challenges to ensure that nursing courses can give students the best preparation to enter the nursing workforce and to optimize their ability to move into their new professional role confidently and successfully (Chang & Daly 2015; Missen, McKenna & Beauchamp 2015; Blaauw, Ditlopo & Rispel 2014).

The traditional role of nurses, according to the American Association of Colleges of Nursing can no longer support the expanding demands of modern healthcare (AACN 2017). As such, nursing programs must prepare critical thinkers who are flexible and life-long learners. Besides, nursing graduates must have excellent communication skills, case management skills,

and health promotion abilities (El Haddad, Moxham & Broadbent 2013; Catalano 2015). As such, undergraduate nursing courses should have a clinical education component consistent with the clinical competency expectations of beginning graduate nurses. Undergraduate nursing courses do not aim to produce expert graduates. The development of graduates' clinical expertise needs years of immersion in clinical experiences. For that reason, new nursing graduates should meet the expectations required by healthcare settings immediately following entry to the workforce (Chang & Daly 2015).

Nursing programs are responsible for providing students with the needed knowledge, skills, and attributes required to meet the demands of new healthcare challenges (Guner 2014). Building up nursing students' knowledge and abilities depend on the type of theoretical education and clinical training experiences they receive during their study (Hezaveh, Rafii & Seyedfatemi 2014). Accordingly, educators must prepare a nursing curriculum that meets the needs of the healthcare industry. The American Association of Colleges of Nursing stated that the educational readiness of nursing students should make them gain necessary competencies and clinical safety (AACN 2017). However, there is still significant concern about the ability of traditional curriculums and clinical training experiences to fulfill the needs and educational goals to graduate competent nurses who can deliver high quality and safe practice upon graduation (Kalyani et al. 2011; Kelly & Ahern 2009). In 2002, The National Council of State Boards of Nursing performed a study, which highlighted several educational elements necessary for undergraduate students before graduation. These elements were communication skills, knowledge of psychomotor skills, nursing procedures, and research (Candela & Bowles 2008).

Clinical practice of undergraduate nursing students is an essential aspect of nursing education that determines the success of students towards the transition to nursing roles (Joolaee et al. 2015). It is unavoidable and considered the most crucial aspect of professional nursing education (Karabulut, Aktas & Alemdar 2015). Undergraduate students need 'hands-on' experience in a well-supervised training environment before they can undertake their practical professional role (Gaberson, Oermann & Shellenbarger 2015). Nursing students' knowledge and clinical competencies are based on the quality of education and clinical training experiences (Kalyani et al. 2011). Therefore, it is the responsibility of educational institutions and nursing facilities to provide students with quality education consistent with the constant changes in healthcare systems, patients' acuity, technology, and chronicity of diseases (El Haddad, Moxham & Broadbent 2017; Wolff, Pesut & Regan 2010). Several studies highlighted the importance of designing curriculum models, educational activities, and practice activities to facilitate the development of students' clinical reasoning skills (Nielsen et al. 2013). These education elements require active collaboration between educational institutions and clinical facilities to shift to a new thinking paradigm of implementing integrated teaching models that facilitate students' deep learning, understanding of theory with practice, and clinical decision-making skills of complex patient care at clinical settings (Waters, Rochester & McMillan 2012). As the result of this change, nursing students' clinical practice will shift from 'doing exactly what the nurses do' to more learning that is comprehensive and targets specific and well-planned learning outcomes (Chang & Daly 2015).

2.2.4   Clinical Nursing Education

Nursing, according to Gaberson and Oermann (2010), is a professional discipline, and nurses are considered professional individuals that own expert knowledge and skills in nursing practice acquired through formal education at higher educational institutions. Professional nurses use the knowledge and skills gained through formal training and clinical experiences to serve patients in society. The difference between professional and academic disciplines relies on the practice component during education. Nursing students perform clinical practice during their formal training, which requires specialized psychomotor and technical skills, critical thinking and problem-solving abilities, and a system of professional and ethical values. Clinical practice exposes nursing students to the realities of clinical settings, which is difficult to convey through using textbooks or even constructed simulation methods.

The realities of clinical settings, according to Schön (1987, in Gaberson & Oermann 2010) incorporate a high level of uncertainty, instability, complexity, and value conflicts.   These situations cannot be solved using formal nursing knowledge and the traditional expertise of nurses. These situations are affected by clear and social expectations and demands. Therefore, nursing students must learn how to solve and overcome these situations through professional education that goes beyond the static knowledge and skills gained at academic institutions. Accordingly, clinical training should embrace cognitive skills, such as identifying knowledge gaps, utilizing new knowledge, and managing healthcare change. Furthermore, nursing students must learn the skills necessary to collaborate and engage with interdisciplinary teams and settings. Additionally, clinical education should permit students to participate in real-life and complex situations rather than focusing on the well-structured cases prepared by clinical

teachers, which could be found easily in nursing theory. Clinical educators should facilitate students' exposure to complex and conflicting clinical problems to trigger their critical thinking and reasoning abilities (Gaberson & Oermann 2010).

Clinical education in nursing, according to Ard, Rogers and Vinten (2008), is a comprehensive experience where students use the three constitutes of clinical learning, the intellectual, physical, and passion learning, to develop their professional identity. This extensive experience of education includes a foundation nursing knowledge, which entitles nurses to think critically, identify priorities, and practice the knowledge in specific clinical situations. Nursing educators have the responsibility to make students bring up these intellectual constituents together during clinical training experiences (Ard &Valiga 2009). The natural facet of practice develops when students have the opportunity to learn nursing psychomotor skills during their clinical experiences. Students must have the ability to practice these skills through active engagement in patients' care, not through observing someone else rendering the care. Students, according to Benner et al. (2010), have to be able to engage in deep learning through involvement in the heart, hands, and mind of clinical practice. The third component of clinical education develops when students improve their professional norms, attitudes, and values to build and nurture their professional nursing identity of caring. Thus, all these components of clinical training must be available to meet the aim of clinical nursing practice (Ard &Valiga 2009).

Contemporary nursing practice requires nurses to use a diverse range of nursing knowledge to care for complex clinical cases. Therefore, nurses should be able to think critically and apply relevant and up-to-date evidence-based practice to render quality nursing care sensitive to the

patients' needs and values (Benner et al. 2010). The traditional approach of clinical education for nursing students relied heavily on placing students with real patients at clinical settings to apply the concepts and theories learned in classrooms. This approach required active learners to experience multiple and complex challenges in clinical settings. These challenges allowed students to interact with other nurses and healthcare professionals and develop their confidence and skills, but they were called upon to think and act while in the middle of rendering nursing care for patients (Rogers & Vinten 2009). The contemporary nursing practice relies heavily on new nurses who have analytical rather than technical skills and relevant updated competencies necessary to meet the needs of modern healthcare systems. New nurses need to have more in-depth knowledge, skills, and capabilities to achieve the entry level of current nursing practice. Nursing education has been subject to many changes since Nightingale opened the first school of nursing in 1872. The fast expansion in the last 50 years in medical and nursing knowledge, in addition to the growing healthcare complexities, have pressed on introducing radical changes to nursing education to become compatible with the expanding responsibilities of professional nurses (AACN 2017).

Nurses now have to be well equipped and educated to meet the contemporary needs of growing populations. The American Nursing Association, for example, has published the ANA Position Paper in 1965, which asserted that nursing education should take place in higher education institutions, and the minimum preparation of professional nurses should be a baccalaureate degree *"The minimum preparation for beginning professional nursing practice at present should be baccalaureate degree education in nursing"* (ANA 1965, p. 106). In Canada, the National League for Nursing approved the Position Statement stating that "professional

nursing practice requires the minimum of a baccalaureate degree with a major in nursing"
(Philbrick 1984). In 1982, the baccalaureate degree was the entry requirement for nursing
education in Canada to ensure that nurses have adequate knowledge and skills needed for the
modern healthcare system (CAN 2004). *In Australia,* nursing education was moved to higher
education institutions in 2002 in response to international efforts to improve the quality of
nurses and enhance the level of nursing education (ANMC 2009).

Clinical nursing education, according to Benner et al. (2010) is crucial to improving the quality
of healthcare services due to several factors. First, nursing workforce constitutes the most
significant population within healthcare systems. Hence, new nurses that have good knowledge
and quality skills at the clinical setting have a positive impact on health care services. Second,
nurses have primary responsibility in the treatment of the growing geriatric population and
patients with high acuity and diverse chronic conditions that require complex nursing care
delivery. This high complexity of patients' conditions necessitated new graduate nurses with
advanced knowledge and skills not needed in the previous years. The third factor is that nurses
were always considered the central point of collaboration and coordination between all other
healthcare disciplines (Propp et al. 2010). Therefore, student nurses should learn and practice
inter-professional communication and teamwork at the clinical setting to function precisely
after graduation.

These developing challenges for quality and multifaceted performance among nurses are
taking place at the time with healthcare becoming more complicated due to growing
technology and diverse population health needs. Patients are more diverse, older, and have

multiple chronic health conditions that require nurses with specialized knowledge and clinical skills (Spector et al. 2015). Also, several countries have issued warnings about the looming nursing shortage, triggered by a significant number of nursing retirements, which will result in more novice nurses at the workplace (McMenamin 2014). The need for nurses is anticipated to increase in most countries rapidly. Approximately 40% of nurses in high and middle-income countries are expected to leave the profession in the next decade (WHO 2013) and 40 million new healthcare practitioners will be needed by 2030 (WHO 2016). The US is expecting 250,000 to 1 million new registered nurses to be ready to practice by 2020 to meet the needs of the growing and aging population (US Department of Labor 2014). To make the nursing workforce stable, the number of new nurses have to increase by approximately 26% during the next ten years (US Department of Labor 2014). Therefore, it is imperative to have new nurses with quality clinical skills who are ready to practice safely and independently before their transition into professional workplaces (Casey et al. 2011). As such, efforts should be towards students' pre-graduation education and clinical experiences, which are significant to help new graduates adapt to their new roles in real-life environments (Kaihlanen et al. 2018).

The US National Survey on clinical education for undergraduate nursing education programs performed in 2009 identified many obstacles to make the best use of nursing students' clinical training experiences (Ironside, McNeils & Ebright 2014). The survey participants described a lack of quality learning settings and students' supervision as the most obstacles to improve students' learning in clinical settings. Other obstacles were the instructor-student ratio, the setting of the clinical sites, and absence of qualified nursing preceptors. McNelis et al. (2014) performed another study to examine the nature of contemporary clinical education from

students' and faculty experiences at diverse universities in the U.S.A. The study highlighted a number of challenges such as lack of proper learning opportunities, using the quantity of completed work by students as the measure of learning, failure to engage students in teamwork, faculty focusing on specific school assignment more than patients' health issues, and students spending most of their time performing basic nursing skills rather than complex nursing tasks. Students also identified that the completion of primary care dominated the discussion of their progress and clinical abilities with their instructors and overshadowed other clinical learning opportunities.

2.2.5 Models of Clinical Education

There are different clinical learning models in nursing education literature. Among the standard models are the traditional, preceptorship, partnership, and dedicated learning models. Gaberson and Oermann (2010) presented a clear description of these models in their book Clinical Teaching Strategies in Nursing. The first model presented was the *Traditional Model* of teaching, where faculty members assume supervisory role over a group of students at the clinical setting. These faculty members provide direct instruction and assessment of these students during their learning experiences. This model help students to use the theories and concepts learned in the classroom and apply them during their clinical training experiences. Faculty members can identify clinical cases and activities that meet the learning needs of students, which are consistent with their learning objectives. Faculty members who are best acquainted with the learning needs of students and actively involved in planning and implementing the nursing curriculum will carefully select the clinical scenarios and actions. An additional advantage of this model is that faculty members are more dedicated to achieving

the nursing program philosophy compared with the hospital preceptors hired for a limited time basis.

Gaberson and Oermann (2010) stated many disadvantages for this model such as the inaccessibility of the faculty members especially when the faculty-student ratio is high or due to the demands of some students more than the others. Another disadvantage is the lack of experience of faculty members in clinical skills and use of hospital technologies due to a commitment with multiple other roles at the nursing school, in addition to the increased costs on the nursing program. In addition, some of the faculty members who have a part-time responsibility at the nursing program might not be adequately oriented with students' curriculum, the goals of the program, clinical competencies and expectations of the clinical course, which they are teaching, and other learning needs that might negatively affect their ability to plan proper learning activities for the students.

The clinical learning experiences in the traditional model depend on the availability of cases while students are on clinical placements. When students are required in their clinical course to provide total patient care, they will have limited time to care for other patients in the unit, and sometimes when they prepare certain cases, they find them discharged when they arrive at the hospital unit on the second day. Another disadvantage of this model is that both faculty and students are perceived as intruders to the hospital units. The unit staff members may view them as guests, which require faculty members to negotiate with the unit nurses to secure learning opportunities for the students, and this may sometimes lead to personal conflicts with the nurses and exposing students to an unmentioned ideal-reality contradiction (Budgen &

Gamroth 2007). As such, faculty members should have close collaboration with the unit managers and nursing educators to make sure that students have active learning experiences. Faculty members often put extensive effort and time to develop and maintain good professional relationships with the unit staff nurses and managers for the sake of securing positive students' learning (Gaberson & Oermann 2010).

The second clinical learning model is the *Preceptor Model*. Gaberson and Oermann (2010) described the preceptor model when a staff member who is an expert nurse in the clinical setting supervises students. Each preceptor works with one student and assumes supervisory, clinical teaching, and at times, evaluation role. Nursing preceptors are employed by the hospital to provide on-site clinical education for nursing students in addition to their registered nurse role with patient care responsibilities. Preceptors deliver guidance and support for nursing students and facilitate building students' clinical competencies, clinical skills, and socialization into their professional nursing role. Also, they foster students' development of confidence, competence, and readiness to assume their role after graduation. Faculty members are responsible for communicating and supporting both students and preceptors, solving the problems or conflicts that arise during students' learning, oversee the complete learning experience of the students, and conduct reflective sessions with students and sometimes with preceptors on their teaching role with students (Yonge, Myrick & Ferguson 2011). Faculty members are often present at different clinical units within the same hospital to oversee the learning process and provide, in collaboration with preceptors, both summative and formative evaluation for the students.

The advantage of this model is the one-to-one professional relationship between preceptors and students. Moreover, it facilitates close supervision of students during clinical experiences, provides more learning opportunities, promotes professional socialization, and enables better students understanding of the role and responsibilities of the registered nurse at real-life settings. Thus, students will be able to practice jointly with those who are expert in the field, leading to better confidence, self-perception, and critical thinking abilities (Gaberson & Oermann 2010). A possible disadvantage of this model is that preceptors may not have enough clinical teaching experience to integrate research, theory, and service provided when nursing faculty members supervise students. Also, if the patients of the preceptor were inappropriate to students' learning, then it would be difficult to reassign the student to a different preceptor. Further, some preceptors may lack adequate educational preparation or the needed teaching skills to perform their role with the students, which may negatively affect students' learning progress (Richardson 1998).

The third clinical learning model is the *Partnership Model*. Nursing programs in this model collaborate with the acute healthcare and community facilities to find appropriate placements for nursing students and overcome the problems of limited clinical training sites and the shortage of nursing faculty members (Beal 2012). Gaberson and Oermann (2010) stated that the partnership model involves sharing an advanced practice nurse to teach the students at the clinical setting and a faculty member to contribute to the clinical facility through conducting research and serving as a consultant for students' teaching-learning process. Thus, both education and service expertise is shared between the academic institution and the practice facility. The advanced practice nurse supervises one or group of students, and the faculty

member is responsible for ensuring that students' receive consistent and relevant clinical activities.

Partnerships can be made with any practice setting, such as communities, acute care, and long-term care facilities. Partnerships require both entities to have mutual goals and benefits, shared vision, constant communication, infrastructure, dedication towards students' learning, and leadership support (Fortier et al. 2015; Beal 2012). Partnership clinical model has several advantages such as good collaboration between academic and practice facilities, increase access to clinical settings, joint research ventures, and ultimate use of facilities' resources. However, it consumes much time to plan and implement the partnership activities, needs sustainable structure and workforce, and most importantly, evidence-based evaluation of the model achievements (Beal 2012).

The fourth clinical learning model is the *Dedicated Education Unit (DEU),* which is a recent model of clinical learning developed to support nursing students' clinical learning. This model was originally found at Flinders University Australia in 1997. It aimed to overcome workforce issues such as shortage of nursing faculty members and clinical sites and to overcome the theory-practice gap of the new nursing graduates (Gonda et al. 1999). In this model, nursing programs and clinical facilities arrange special learning units, which are suitable for students' learning and designated to enhance students' clinical learning experiences. All nurses in these designated units are well oriented to the learning needs of the students. They supervise and mentor students as they provide direct nursing care. One faculty member is assigned to each unit to facilitate students' acquisition of competencies, integrate appropriate nursing theory

and practice, and enhance students' critical thinking and problem-solving abilities (Casey 2008; Moore & Nahigian 2013).

The faculty member in the DEU model is a resource person for both nurses and students. Furthermore, students on this model are expected to take more responsibility and accountability towards their learning. They have to continuously seek new learning experiences, provide support for their peers when needed, and actively participate in a collaborative evaluation of their performance. As such, this will enhance students' confidence, independence, hands-on experiences, and readiness to practice after graduation (Callaghan et al. 2009). Consequently, many colleges adopted the DEU model to overcome the challenges of preceptorship model such as faculty-preceptor communication problems, preceptors' inappropriate knowledge in nursing curriculum and students' learning goals, and decrease number of preceptors willing to supervise nursing students (Casey et al. 2008). Besides, this model facilitated better socialization of nursing students at the clinical settings, enhanced faculty oversight, and conveyed clear learning expectations for all students, faculty, and preceptors (Dean et al. 2013).

Like all other clinical models, the DEU requires proper planning and collaboration between the academic institution and the training facility. Faculty members, nurses, and students need proper orientation to the model specifying the responsibility of each one. Students learned at DEU reported positive feelings towards the learning environment, clinical confidence to practice, nursing clinical competence, positive unit teamwork, the collaboration between nurses and faculty members and between nurses and students (Jeffries et al. 2013). In a study

to examine DEU collaboration, Moore and Nahigian (2013) found more collaboration and accurate communication at the DEU than other traditional units. In another study to explore students' perceptions of a DEU experience, Mulready-Shick et al. (2013) found that students had positive feelings about their DEU experience. Students reported more instructor feedback, increased contribution to teamwork, improved feedback from preceptors and faculty members, and better opportunities to master critical thinking and decision-making abilities.

Many studies found several advantages of the DEU model. Students felt more welcomed as members of the nursing team, which reduced their stress and improved their feeling of self-confidence. Also, students had better learning opportunities consistent with their learning goals. Also, there was more opportunity for peer teaching and better learning experiences to improve students' competence and application of theory in practice. Furthermore, nursing programs could increase the ratio of faculty to students because nurses maintained moral responsibility to mentor nursing students. Besides, the DEU facilitated more staff nurses orientation of students' learning needs, increased opportunity for collaborative ventures, and nurses can take advantage of faculty knowledge and expertise to adopt new approaches to patient care. However, nurses' burnout can still be a challenge in the DEU as and there is a possibility that novice nurses supervise students (Casey et al. 2008; Dean et al. 2013; Nishioka et al. 2015).

To sum up, there is no one ideal model to meet all the needs of nursing education programs. It is recommended that faculty members select a model that fits the philosophy of the nursing program, students' learning goals, and expected learning outcomes. Also, selection of clinical

model should take into consideration the level of nursing students, type of clinical sites, availability of good preceptors, and willingness of preceptors and clinical agencies to participate and facilitate students' teaching and learning (Gaberson & Oermann 2010).

2.2.6 Clinical Learning Environment (CLE)

Nursing education is a 'practice-focused' study where knowledge and skill are acquired and consolidated through formal training at the clinical areas (Gaberson, Oermann & Shellenbarger 2015). Clinical learning is essential in preparing students to integrate theory to clinical practice (Lamont, Brunero & Woods 2015) through exposure to complex real-life situations to help them become prepared for practice (Coyne & Needham 2012). Clinical learning is crucial to prepare students for the reality of their future work. As they progress during their study, students build up their clinical decision-making and reasoning skills under direct and close follow-up from their preceptors and faculty members (Benner 2012).

Clinical learning environment (CLE) pertains to all educational and learning activities that take place while students are on clinical practice (Papastavrou et al. 2016). CLE represents everything that surrounds nursing students during their clinical practice such as the setting, staff, patients, equipment, preceptors, and faculty members that have extremely beneficial roles in familiarizing nursing students to their future position, build their critical thinking abilities, and exposing them to different aspects of nursing care (Papastavrou et al. 2016; Price et al. 2011). A well-structured learning environment will help students to integrate and consolidate the theoretical component of the curriculum with the practical one to build up their professional identity and develop necessary competencies to perform quality and safe practice (Khater,

Akhu-Zaheya & Shaban 2014; Kaphagawani & Useh 2013). The social complexity of clinical learning environment provides students with an excellent opportunity to syndicate their behavioral, cognitive and emotional skills, and to enhance their self-confidence, personal leadership skills, and self-efficacy (Dimitriadou et al. 2014; D'Souza et al. 2013). However, the clinical learning environment can increase readiness difficulties of the students if it was insufficient to their learning (Kumaran & Carney 2014; McKenna, McCall & Wray 2010). Students will have better readiness when they are treated as members of the nursing teams and get sufficient support to develop their self-confidence (Ortiz 2016).

A conductive clinical learning environment is one that supports nursing students and has a good learning atmosphere where students can maintain good relationships to achieve positive learning outcomes (Dale, Leland & Dale 2013). The CLE can positively influence students' learning when staff members have good professional morale and attitude, are happy, friendly, cooperative, and willing to guide and mentor students towards delivering quality care (Papastavrou et al. 2010). Students develop their confidence, independent skills, and feeling of belongingness once they feel recognized and respected as part of the nursing team (Levett-Jones & Lathlean 2008). Several studies showed that students' confidence and motivation to learn is improved in clinical environments that have positive teamwork, good students' support, mutual respect, and appreciation of students' performance (Hickey 2009; Henderson et al. 2012). However, if staff members were not friendly, reject to give students' opportunities to learn, and create barriers to learning, students will feel unappreciated leading to frustration and demotivation which is considered a barrier to knowledge and skills' acquisition and negatively affect their ability to become competent practitioners (Chuan & Barnett 2012).

Clinical unit managers have a significant educational role in nursing students learning through promoting positive students' supervision and establishing conductive learning environments (Papastavrou et al. 2010). Unit managers must ensure that students get enough learning opportunities necessary to develop their practical skills consistent with the theory learned in the classroom (Chesser-Smyth 2005). Moreover, they can facilitate building an educational culture and behaviors conducive for students' learning. Tilley et al. (2007) argued that unit managers could facilitate students' learning when they show support to assist and assign students to nurse preceptors who are willing to teach, explain and discuss students' their learning needs.

Quality clinical training is imperative for students' smooth transition to real practice and development of the necessary professional nursing competencies (Madhavanprabhakaran et al. 2013). The clinical performance of students represents their ability to exhibit a satisfactory level of professional knowledge, skills, and attitudes (Pitt et al. 2012). When students often function as observers rather than active participants and do not receive efficient support from their preceptors, their overall ability to build up their professional competencies will be reduced affecting their clinical performance negatively (Olson 2009). As they progress during their clinical learning, students improve their overall identity building and academic achievements. Therefore, initiating effective learning environments depend on several influencing factors that might interfere with students' learning, self-confidence, efficacy, and identity building. These factors are delivering appropriate orientation to the training area (Brammer 2008), the presence of well-trained clinical preceptors (Mackay et al. 2014), and effective model of clinical learning and support of registered nurses (Khaphagawani & Useh

2013; Henderson & Tyler 2011). Any alteration or impairment of these factors might end with growing experiences of alienation and rejection that have undesirable effects on students' academic achievements (Arieli 2013).

Students' socialization during their training experiences and the professional relationships they build have a positive effect on their identity development and self-concept of being part of the nursing profession (Walker et al. 2014). Accordingly, nursing preceptors and faculty members have a crucial role in helping students develop their self-perception (Andrew 2012). Alder and McAdams (2007) described, based on *James & Mead Connectionism and Self,* that the ever-changing self is developed through socialization within a cultural context. When students build well-structured self-concept and professional identity, they will show more confidence and self-efficacy towards their role and profession, which make them more satisfied and narrowly linked with retention (Walker et al. 2014). Furthermore, lack of proper students' socialization at the clinical area represent an additional concern, which may affect their overall quality of learning (Pitt et al. 2012; Livett-Jones & Lathlean 2008). Students should feel accepted, connected, and secured during clinical placements to become more confident. Learning what to do, when to ask, and where to fit will enhance students' overall learning and their readiness to practice (Pitt et al. 2012; Livett-Jones et al. 2007).

Socialization of nursing students improves their support and acceptance at clinical settings (Thomas 2013). Being part of the team is essential to enhance students' overall productivity and to build up of professional identity. Levett-Jones and Lathlean (2009) performed a study in the UK to examine the impact of feeling welcomed on nursing students. Results showed that

impaired feeling of welcomed is strongly associated with serious negative behavioral, psychological, and academic achievements. Besides, students' stress and anxiety because of being unwelcomed and sometimes neglected at clinical settings have adverse effects on their education process and achievement (Gilbert & Brown 2015).

2.2.7   Supervision of Students' Clinical Education

Clinical supervision is the process that entails delivering guidance, support, and feedback for nursing students during clinical training experiences by an experienced nurse to develop their nursing skills, critical thinking, and clinical reasoning abilities (Papastavrou et al. 2010; Hickey 2009). Clinical supervision is considered a vital element to facilitate students' learning in the clinical setting (Hickey 2009).   Well-Structured supervision improves students' ability to integrate theory and practice, enhances students' professional growth, and ensures safe students' practice (Holmlund, Lindgren & Athlin 2010). The clinical supervisor is responsible for providing students with appropriate learning opportunities consistent with their level of learning and learning goals. Supervision could be done on a one-to-one basis with one student assigned to a nurse preceptor, or a group of students supervised by one faculty member or a staff nurse from the clinical setting.

One-to-one supervision facilitates students' learning and improves their professional development, independence, and role socialization (Papastavrou et al. 2010). Building good relationships with the clinical preceptor allows students to reflect on their learning experiences and express their needs and concerns, leading to the better attainment of clinical knowledge and competency (Warne et al. 2010). On the other hand, group supervision promotes students'

personal and professional growth. The clinical supervisor stays with the students during their training to deliver guidance and direction (Esterhuizen 2009). This approach will allow students to work together, support each other, and share their learning experiences. Therefore, successful clinical supervision should provide students with enough and specific learning opportunities, directions, guidance, feedback on their practical experience and performance (Holmlund, Lindgren & Athlin 2010). However, this successful role may be affected when clinical supervisors perform more of evaluation than of guidance and support. This behavior is usually correlated with those who lack previous experience in supervising students or those who were not willing or well oriented to the students' learning needs and objectives (Walker et al. 2011).

Nursing faculty and clinical preceptors have the responsibility to prepare clinical learning environments, which help in positioning students' socialization (Kern et al. 2013). Encouraging students' self-awareness and directedness throughout the nursing program will positively improve their answerability to be more familiar with their role and responsibility. Thus, cultivating their overall sense of self-directedness (Levett-Jones 2005). Also, being part of the clinical setting is enabled by enhancing students' connections with their faculty and clinical preceptors. Socialization could be achieved through the engagement of students with their clinical and academic staff members in social events (Pryce-Miller 2010). Social events are brilliant opportunities for students to pledge professional relationships needed to build up their professional identity. Students will be allowed to be connected with their clinical preceptors to advance their emotional state of belonging during clinical training (Kern et al. 2013).

Moreover, clinical faculty and preceptors need to be well informed of the learning needs of the students. Appropriate orientation and active participation in students' preparation will help to produce directions of the best teaching and evaluation methods required for their achievement (Thomas 2013). Delivering valued multiple learning opportunities and constant constructive feedbacks to students at clinical settings will improve their confidence and self-efficacy towards a more structured and organized learning progression (Kern et al. 2013).

Gaberson and Oermann (2010) argued that the use of experienced nurses as preceptors for students has both advantages and disadvantages. The presence of students in the clinical facility during their clinical training enhances preceptors' teaching skills and professional development. Nursing students continuously challenge their preceptors' status quo by raising questions during their training. Besides, students may help their preceptors to conduct research and teaching projects that is a mean for preceptors' professional advancement at the facility. However, increased patients' acuity and nurses' heavy workload may be a drawback for preceptorships at clinical facilities due to the possible decline to participate in students' teaching activities. Also, recruiting more nurses is considered a financial burden on healthcare facilities especially that most facilities aim to minimize the costs and increase the efficiency of their staff members through increasing workloads and decreasing the number working hours (Gardner & Suplee 2010).

Nursing students enjoy many benefits during preceptorship. They can work with an expert nurse on a group or one-on-one basis to improve their performance and clinical competence.

Nursing preceptors provide students with excellent learning opportunities to practice, guide, and support them during clinical training experiences. Preceptors may also offer the nursing programs with extra clinical teachers and thus more individualized and intensive guidance for the students during their training. Preceptors also help the nursing faculty members to stay well informed and up-to-date regarding current realities and new technologies in nursing practice, which can be used for the ongoing update of the nursing curriculum. However, preparing nursing preceptors to supervise and evaluate students requires nursing programs to maintain continuous collaboration and communication with healthcare facilities, which consumes a lot of time and efforts (Gaberson & Oermann 2010). While preceptors have a vital role in providing students with excellent learning opportunities during their practice and guiding them towards the achievement of their learning objectives, there may be a lack of consideration from faculty members to preceptors' evaluation and feedback on students' performance (Happell 2009). Therefore, proper selection and preparation of preceptors are necessary to make sure that they understand their responsibility of supervising student nurses.

Gaberson and Oermann (2010) considered that the success of students' preceptorship depends highly on the selection of good preceptors. They added that academic programs have to select preceptors who have educational preparation congruent with the students' degree of study. Also, preceptors need to have the desire and willingness to supervise nursing students, and nurses must not be obliged to take this role as this may negatively influence students' learning. Gardner and Suplee (2010) summarized the requirements for selecting nursing preceptors. First, preceptors should have good clinical expertise demonstrated by critical thinking, problem-solving, clinical reasoning, and expert psychomotor skills. Second, they should have

good leadership abilities, communication skills, and trusted by their colleagues. Third, preceptors need good teaching skills, which will allow them to use the principles of adult learning, communicate their ideas effectively to the learners, and deliver constructive feedback. Fourth, preceptors should have an adequate professional attitude that entitles them to act as role models for the students. Preceptors should be accountable towards their actions, demonstrate maturity and self-confidence, and have nonjudgmental behavior. Also, they must be open to students' questions, flexible, open-minded, and show enthusiasm and willingness towards working with students,

Nursing programs should start preparation of nursing preceptors with an orientation to curriculum, teaching methods, students' need, and learning objectives. The preceptorship preparation program is necessary for preceptors to perform their role confidently and effectively. This program should include characteristics of effective preceptors, challenges of preceptorship, principles of adult learning, students' learning needs and objectives, evaluation of students' performance, and clinical teaching methods. Also, preceptorship programs must include elements of students' motivation, dealing with challenging students, and techniques of coaching and useful feedback (Smedley & Penney 2009).

2.2.8   Students' Involvement and Learning Opportunities

Nursing students must be offered with appropriate learning opportunities during their clinical training experiences to get involved and learn to render comprehensive nursing care and not distracted separate tasks. Nursing students' active involvement in the care of complex clinical cases will offer them the opportunity to integrate and apply theory to practice (Sandars & Patel

2015; Henderson et al. 2012). This active engagement facilitates students' learning and leads to the development of students' clinical competency and self-confidence (Henderson et al. 2012). Also, consolidating theory and practice during clinical training is necessary to develop students' professional communication, problem-solving, decision making, and clinical reasoning skills (Walker et al. 2014; Sandvik, Eriksson & Hilli 2014). Arranging good learning opportunities for students to learn and apply what they learned in the classroom in a safe, non-punitive, and supportive environment will result in effective learning. A well-organized nursing unit that has appropriate clinical activities to involve students during their practice will result in students' satisfaction and positive educational achievements (Walker et al. 2014).

Creating positive clinical learning environments for students is influenced by nurses' attitudes and behaviors towards students, students' ability to be part of the unit teamwork, the support of faculty members, unit managers, the clinical learning model implemented to guide students' learning, and the number of clinical training hours they spend during nursing study programs. Students learn when they are involved with exciting and challenging activities during their training. They are also encouraged to ask their clinical supervisors questions and yet become accountable for their learning. Many studies stressed on the importance to keep students actively involved in the unit activities and provide them with enough and appropriate learning opportunities to develop their professional role and confidence to practice (Flott & Linden 2015).

2.2.9 Students' Readiness to Practice

New nursing graduates' readiness to practice has been an area of debate since transferring nurse education to higher educational institutions. Students' readiness upon graduation is a challenging area for nursing education sector who struggled to find solutions to the so-called 'theory-practice gap' leading to a deficiency in graduates' readiness to practice (Dlamini et al. 2014; Usher & Mills 2011). Since the description of this concept is elusive, most nursing educators and practice professionals refer it to the ability of students to be work ready in terms of acquiring the knowledge and competencies needed to practice safely and independently upon completion from the nursing education programs (Missen, McKenna & Beauchamp 2015; Romyn et al. 2009). Graduate nurses are expected to have enough knowledge, clinical reasoning skills, personal attributes, and high standards of ethical and professional practice required to perform the tasks expected from a competent nurse in real-life situations (Seekoe 2016; Wolff, Pesut & Regan 2010). Before moving nursing education to tertiary institutions, students in the apprenticeship training programs spent most of their training in the hospital, which has made them an integral part of the hospital life, gained extensive clinical experience in familiar settings, and became central to the nursing workforce (Mannix, Wilkes & Luck 2009). Today, many questions are raised in the nursing literature on the new nursing graduates' work readiness accompanied with claims from healthcare employers that graduates do not get enough education and clinical experiences before they enter the workplace (Usher et al. 2015). Employers expect that new nursing graduates are ready to 'hit the ground running,' which is perhaps unreasonable for novice graduates, but this debate remains intense across the globe (El Haddad, Moxham & Broadbent 2017).

Much of the longstanding global debate between the health industry and education institutions refer to this issue to a 'theory-practice gap' (Numminen et al. 2014). Sax (1978) reported before three decades that inadequate students' preparation and the theory-practice gap were limitations of the hospital-based programs. The theory-practice gap at the time of apprenticeship style training was raised because students had clinical practice more than the theoretical basis of nursing knowledge. However, the current discourse of the theory-practice gap is derived from the perception that students have more theory than practice skills (Dlamini et al. 2014). It is perceived as a limitation since the movement of education to higher education institutions and influenced by many factors such as undergraduate theoretical preparation, quality of clinical training environments, students' support while on placements, and degree of students' socialization into their professional role (Woods et al. 2015; Monaghan 2015).

Several studies in nursing education suggested some educational measures to overcome students' theory-practice gap. One of these measures was the use of reflective and problem based learning (Dlamini 2011). This type of learning allows students to learn and reflect on their clinical training experiences during the discussion of cases with other students under the guidance of the nursing faculty or preceptor. Problem-based learning and reflective learning enhance students' learning independence and develop their critical thinking and problem-solving skills (Dlamini 2011; Ehrenberg & Häggblom 2007). Also, this type of learning allows students' active searching from different literature sources, questioning, and therefore developing self-confidence and responsibility towards their learning.

Moreover, Chuan and Barnett (2012) argued that effective and adequate clinical supervision and enough students' support during their clinical training facilitates effective learning and adequate translation of theory to practice. When student nurses get enough support from their experienced supervisors during clinical training, they will be able to engage in the realities of nursing practice and therefore overcome the theory-practice gap of learning. Timely support and effective feedback from the supervisors in addition to active involvement at the real environment will bridge the theory-practice gap. Besides, proper planning and communication between the academic programs and healthcare facilities are required to arrange conductive clinical experiences consistent with students' level of learning, learning needs, and expected to learn outcomes. This argument was supported by Ousey and Gallagher (2007), who stated that bridging the theory-practice gap for nursing students is emphasized through the building of a strong collaborative relationship between nursing programs and clinical areas. The partnership and continuous collaboration between nursing programs and healthcare facilities have a positive effect on nursing students. Effective students' learning will take place when students have enough support and guidance to apply what they learned in classroom and simulation labs at real-life clinical settings (Scully 2011).

Reviewing the literature revealed various descriptions of 'readiness to practice'. Wolff, Pesut and Regan (2010, p. 1) defined it as "having a generalist foundation and some job capabilities, providing safe client care… and possessing a balance of doing, knowing and thinking". Casey et al. (2011) described readiness to practice as showing competence and possessing the knowledge, skills, and clinical judgment required for role performance. Healthcare employers expect nursing students who are joining the workforce to have excellent communication skills

and to be able to provide safe nursing care based on evidence-based practice and critical thinking skills (Missen, McKenna & Beauchamp 2015). Hickey (2009) studied the perceptions of 200 nursing preceptors on students' readiness to practice. Most participants specified that students were not ready to apply critical thinking, perform complex and advanced nursing skills, perform prioritization and organization of tasks, and manage the load of cases.

Concerns about new nursing graduates' readiness to practice in real life situations were explored in many international studies. Many graduates described their experiences during their early employment as frightening and stated that they lack self-confidence at critical situations that required problem-solving, decision-making, and leadership skills (Watt & Pascoe 2013; Zinsmeister & Schafer 2009; Stewart et al. 2008; O'Shea & Kelly 2007). Graduates' lack of self-efficacy and confidence was positively associated with their doubts or even lack of competencies required to practice safe nursing care (Guo et al. 2017; Ersanli 2015). These feelings were attributed to the fast transition to unfamiliar workplace settings, theoretical preparation to practice in real situations, high stress and anxiety associated with the graduates' feelings of social isolation at the clinical areas, and the overall quality of clinical environments (Seekoe 2016; Dlamini et al. 2014; Nash, Lemcke & Sacre 2009; Wolff, Pesut & Regan 2010; Bradshaw & Merriman 2008; Levett-Jones & Lethlead 2009).

Wolff, Pesut and Regan (2009) conducted a study on 150 nurses from different educational institutions, practice settings, and the provincial regulatory body in British Columbia, Canada. The study aimed to explore participants' perceptions of new graduates' readiness to practice. Participants believed that to be ready, new graduates required generalist foundation and

specific job-related skills and job capabilities. The study described that nursing graduates should be prepared to practice safe nursing care and have a balance of knowing, thinking, and performing. The limited ability of new graduates to exercise safe nursing care was attributed to limited clinical training hours and learning opportunities to apply theoretical knowledge in real practice settings. Furthermore, new graduate nurses continued to show low clinical performance despite the implementation of the transition to practice programs at the beginning of employment (Newton & McKenna 2007; Rush et al. 2014).

Likewise, a Canadian study undertaken by Hickey (2009) utilized both quantitative and qualitative approaches to 200 nursing preceptors to explore their opinions on new graduates' readiness to practice. The study revealed that the graduates' clinical exposure during their academic preparation was not sufficient to prepare them for practice in real-life settings. Another study carried out by Romyn et al. (2009) used focus group discussions with 186 nursing graduates, nursing preceptors, educators, and employers to explore nursing students' transition into the graduate nurse role. The study revealed that graduates' lack of practice readiness upon entry to the workforce represented a real concern to all stakeholders in Canada, especially educators and employers. Romyn et al. (2009, p. 7) stated that

> *The idea that breadth, rather than depth of knowledge is privileged in nursing curricula was shared by many. Questions emerged regarding "generalist" educational preparation and whether it is possible for students to acquire the knowledge and skills required to function effectively in all practice settings, including rural and specialty areas where the demands and expectations of new graduates are "enormous." Attaining "complete practice readiness" before entering the workforce was deemed impossible.*

Several studies also discussed nursing higher education institutions' ability to prepare nursing students with the real clinical practice skills (Seekoe 2016; Woods et al. 2015; Ellerton & Gregor 2003; Wolff, Pesut & Regan 2010; Holland et al. 2010). The dissonance between what hospitals expect from students and what they ideally learn at educational institutions affected their performance and their ability to practice effectively and efficiently (Ellerton & Gregor 2003). Creating a closer link between educational institutions and hospitals to coordinate and monitor nursing students' clinical training experiences was recommended to overcome the presumed gap in students' preparation (El Haddad, Moxham & Broadbent 2013).

Liou et al. (2013) performed a study to examine nursing education programs preparation of students to be ready to practice in the workplace through the development of students' clinical skills. The study assessed the clinical competence of 256 and 266 nursing students in 2009 and 2010, respectively. The students completed a clinical competence pretest, and then they participated in a nursing practice program and completed a posttest to measure their clinical practice skills.   The study showed that students who had more practice experience achieved a higher average of grades in their posttest as compared with those who had less clinical experience. As such, the study recommended that nursing students have more clinical experience opportunities to improve their overall level of competence upon graduation. Evans, Boxer and Sanber (2008) completed a qualitative study on nine new graduates and 15 experienced nurses in Australia to determine the strengths and weaknesses of the transition to practice programs for new graduates. The study participants expressed their dissatisfaction with student nurses' academic preparation and their ability to function post-graduation.

Similarly, Walker and Campbell (2013) investigated the relationship between work readiness and graduates work experience during their first year of employment. Ninety-six new nursing graduates completed a work-related survey. The findings showed that graduates' clinical competence was an important element to accomplish positive work outcomes. The graduates' lack of enough clinical experience during their academic study was positively associated with feelings of dissatisfaction, anxiety, and lack of confidence in real life situations.

Several studies also explored nursing students' readiness to practice before employment. Most of the students who participated in these studies believed that they had enough knowledge needed to start their real practice. However, they were not confident about their clinical skills and abilities needed for practice (Chappy, Jambunathan & Marnocha 2010; Casey et al. 2011; Guner 2014; Woods et al. 2015). Morrell and Ridgway (2014) in their study on nursing students' preparation for future clinical placements published in the British Journal of Nursing, identified some concerns related to nursing students' preparation for practice. The study highlighted the importance of mentors in students' preparation, mentors considering students practicing documentation as a minor task, students' feeling of lack of knowledge and skills necessary for practice, students' feeling unsupported and used as an extra set of hands during their clinical placements.

Watt and Pascoe (2013) used an interpretive descriptive study to explore the perceptions of graduate nurses on their preparedness for practice upon completion of their final BSN degree in Melbourne, Australia. The study participants were first-year graduates who completed their BSN program. The study revealed that the effectiveness of clinical experiences was positively

correlated with bridging the gap between students' educational needs and readiness for practice. In another Australian study, Usher et al. (2015) assessed senior nursing students' perceptions of readiness to practice and their level of confidence before and after the introduction of a Capstone subject of 240 clinical training hours at the end of their study. The Capstone subject was introduced for nursing students at an Australian university in 2013. The authors examined the perceptions of readiness to practice of final year students in two cohorts, one of them only undertook a capstone subject. The results showed that both cohorts reported low levels of confidence dealing with the increased size of patient assignment and areas of professional identity. Students' confidence was higher in those who had more clinical experience. The study concluded that the perceptions of preparedness to practice did not significantly change after introducing the Capstone subject.

Casey et al. (2011) performed a study on 429 senior undergraduate nursing students in the USA to examine their perceptions towards their readiness to practice. The authors developed *'Casey-Fink readiness to Practice Survey (CFRP)'* to measure students' self-perceived readiness to practice. The CFRP survey had three components: students' demographic and experience, comfort with skills performance, and self-reported confidence and comfort performing specific nursing skills. The findings of the study showed that students were most confident in communicating with their patients and family members and asking for help from others. However, they were less confident when it came to their ability to delegate tasks, call the physician, handle multiple tasks, care of a dying patient, and respond to changes in patients' condition. CFRP survey had been used in many other studies to examine students' readiness to practice. Woods et al. (2015) used CFRP to explore the perceptions of 133 Australian

nursing students on their readiness to practice post-graduation. The findings revealed that approximately 90% of the participants felt ready to practice, and students' simulation experiences helped in attaining the state of readiness. Many students were not confident in their ability to care for three patients. Another study by Guner (2014) used CFRP survey to explore the readiness to practice of 1800 nursing students in Turkey. It showed that 58% of participants were ready, but they expressed many concerns regarding their confidence to be independent and the lack of clinical skills during personal interviews.

In summary, academic programs and healthcare employers expect that senior nursing students and new graduates to have the ability to practice safely and competently at healthcare settings. However, many studies indicated a low level of confidence to practice due to gaps in students' preparation for real-life settings. Clinical experiences are considered the mainstay of nursing educational preparation as they provide nursing students with the required learning opportunities to practice nursing skills and consolidate the knowledge they received during their study in real-life settings. This study aimed to examine the variables affecting students' clinical learning experiences for their potential effect on students' perception of readiness to practice in their final semester of study. Many factors highlighted in the literature review impacted students' readiness to practice in clinical settings. These factors included students' academic preparation, relationship with academic faculty, relationships with staff and preceptors, complex patient care needs, students' anxiety and their ability to socialize (Kern et al. 2013; Gilbert & Brown 2015; Khaphagawani & Useh 2013; Henderson & Tyler 2011).

2.3   Theoretical Framework

The theoretical framework is based on Bandura's 1994 Self-efficacy theory and Benner's 2001 Novice-Expert theory. These two theories were selected for their relevance to the concepts and perspectives used in the study to investigate nursing students' readiness to practice. Benner's Novice-Expert theory focused on nurses' development of expertise over time and described the needs and characteristics during nurses' various stages of practice. Benner's theory considered senior nursing students as a novice or sometimes advanced beginners as they have limited clinical experience, and their behavior is attached to theory and strict rules (Benner 2001). Benner's theory postulated that senior nursing students acquire, develop, and then master their clinical skills as they progress in their practice (Benner 2001).

Bandura's self-efficacy theory explains the relationship between self-efficacy and students' learning (Bandura 1999). Bandura defined students' self-efficacy as "trust on their abilities to act efficiently in different situations" (Bandura 1999). This theory can be used to explain how clinical learning experiences can influence nursing students' thoughts, beliefs, and behavior. Assuming that there is an interaction between student thoughts and behaviors, and the learning environment where they practice and the capability to influence their performance (Bandura 1997). The four aspects of self-efficacy, namely, mastery of experience, vicarious experience, verbal persuasion, and emotional arousal can influence nursing students' ability to learn and affect their overall readiness to practice (Bandura 1997).

Nursing education aims to prepare students to show an acceptable level of competence in all aspects of nursing knowledge, skills, and professional behavior (Benner 2012). As part of this education, students do clinical training placements at designated healthcare facilities to link theoretical knowledge delivered in classrooms into clinical real practice environment (Gaberson, Oermann & Shellenbarger 2015; McNiesh 2007). During these training experiences, students are exposed to actual clinical cases in a completely different context than their classrooms (Coyne & Needham 2012). Over time, students develop their clinical skills, critical thinking and reasoning abilities, and build their professional identity under the direct supervision of registered nurse preceptors and their faculty members (Benner 2012). Accordingly, clinical training for students is a crucial learning endeavor to prepare future nurses who are competent and have a sense of clinical self-efficacy (Khater, Akhu-Zaheya & Shaban 2014). Therefore, Benners' Novice-Expert and Bandura's self-efficacy theories fit this study to investigate the readiness of senior nursing students, who are expected to exhibit an advanced beginner's clinical proficiency, to practice in real life settings. This theoretical underpinning provided the study with the needed strength and trustworthiness through its "explanatory and predictive power" related to student academic and clinical development (Bandura 1997). These two theories provided the study with the needed direction in creating research questions, advancing with the literature review, and developing of required methodology (Polit & Beck 2014).

Several studies explored the concept of nursing students' readiness to practice using either Banner's or Bandura's theory as a theoretical basis of these studies. Wright (2014) looked at readiness to practice based on graduate nurses, faculty members', and hospital leaders'

perspectives in the USA. The study used Benner's Novice to Expert model as a theoretical basis. Data was collected quantitatively using nursing practice readiness tool distributed to all participants to compare perceptions and identify factors to improve students' readiness to practice. Reagor (2011) also looked at the perceived readiness of senior nursing students in the USA. The study used Bandura's self-efficacy theory as a framework to guide data collection and analysis. Casey-Fink readiness to practice 2008 survey and interviews were used to collect data from senior students, faculty members, and hospital leaders. Data collected from participants identified important elements affecting perceptions of students' readiness for practice. Also, Simpson-Cosimano (2010) explored the experiences of new nursing graduates through a phenomenological approach. The study used Benner's Novice to Expert model as a theoretical basis. The study identified several variables, such as students the knowledge, skills, and behaviors that are necessary for new graduates to succeed in their appointment.

2.3.1 Bandura's Self-Efficacy Model

Albert Bandura established in 1977 the 'Social Cognitive Theory' that aimed to explain the effect of individuals' self-judgment on their behavior, thoughts, and emotions (Bandura 1999). Bandura called this effect as 'self-efficacy', which is determined by four sources: mastery of experiences, vicarious experiences, verbal persuasion, and emotional arousal (Bandura 1989; Bandura 1999). Bandura (1989) explained in his theory, the relationship between self-efficacy and the four aspects, in addition to its positive motivation effect on learning achieved through modeling. When individuals observe any event, they develop behavioral patterns through individual performance feedback that result in the acquisition of these behavioral patterns and

positively favorable self-efficacy. Bandura believed that personal mastery experiences have strong predictors of self-efficacy.

Bandura defined students' self-efficacy as "trust on their abilities to act efficiently in different situations" (Bandura 1999). Bandura considered self-efficacy as an essential aspect of students' professional identity development to help them get motivated to achieve their learning outcomes (Yusuf 2011; Lim et al. 2010). To achieve their learning desired outcomes, students have to believe that they can successfully implement all the behaviors necessary to attain these desired outcomes (Bandura 1999). Self-efficacy is a crucial factor affecting students' academic achievement (Komarraju & Nadler 2013). Students who have strong self-efficacy would challenge themselves with complex tasks, show internal motivation, and can achieve their professional goals, while those with poor self-efficacy would have less aspiration and motivation resulting in lower academic performance (Hwang et al. 2015). Accordingly, Bandura's theory could be used as a framework to examine the relationship between nursing students' self-efficacy in nursing practice and their clinical training experiences during their study (Figure 1.)

Figure 1. Nursing Students' Clinical Experiences Effect on their Self-Efficacy

Self-efficacy has a positive influence on students' motivation to learn and their confidence to perform in complex clinical situations (Pike & O'Donnell 2010). Self-confidence is needed for nursing students to learn and perform nursing practices for which they are not yet skilled. Accordingly, it is essential that educators select clinical placements that have positive learning environments and be able to deliver both academic and emotional support for students to improve their overall confidence and independence (Zhang et al. 2015). Self-confidence will make students feel more competent to meet clinical fields entry level (Alavi 2014). Improving students' self-efficacy acts as a booster of their ability to take proper actions and manage complex clinical situations (Stump, Husman & Brem 2012). Bandura argued that students who have low self-efficacy might avoid clinical situations, which they failed to succeed in the past (Bandura 1993). This behavior may lead to students bypassing nursing tasks that they believe they cannot achieve and may end up having less clinical practice readiness than other students who have better believe in their abilities and used their efforts to practice in all clinical situations (Alavi 2014).

Reagor (2011), in congruence with Bandura's self-efficacy theory, argued that clinical training experiences have several impacts on nursing students' self-efficacy expectations and therefore their ability to perform well, build their competencies, and their professional identity. Firstly, clinical training allows nursing students to achieve *mastery performance* by assuming the role of the nurse under the direct supervision of experienced nurses. Mastery experience will encourage nursing students' progress to learn complex skills and proceed to complex learning opportunities. Secondly, the *vicarious experience* will be achieved when experienced nurses provide role modeling for students and socialize with them to accomplish and build their

professional role. Direct supervision and preceptorship of nursing students will assist them in enacting their nursing role and facilitating their readiness to move into the practicing nurse role.

Thirdly, when experienced nurses deliver direct feedback to students based on their performance, they will fulfill *verbal persuasion.* Direct feedback will encourage nursing students to be ready to perform more complex roles. Lastly, self-efficacy controls the impact of *physiologic feedback* of students represented by anxiety and stress associated with fragmented clinical experiences and the inability to assume their role after graduation that enervates students' performance and discourages their active participation in learning experiences (Lundberg 2008). Delivering quality academic and clinical training experiences will positively influence students' self-efficacy, which is reflected by their ability to critically think and successfully enact the required nursing competencies that make them practice-ready (Sebaee, Aziz & Mohamed 2017).

Improving students' self-efficacy requires adequate academic preparation, conductive clinical learning environment, effective clinical supervision, and constant academic and emotional support. These measures will enhance students' socialization into their future professional role and assist them in comprehending the demands and expectations to be ready to practice upon graduation (Sebaee, Aziz & Mohamed 2017; Serrano-Gallardo et al. 2016). As students engage in clinical training experiences, they become more self-efficacious to acquire better knowledge and master complex skills. They will be able to set their priority goals, endure to complete complex nursing tasks, and have a smooth transition into nursing professional roles upon graduation (Townsend & Scanlan 2011; Dearnley & Meddings 2007).

2.3.2 Benner's Novice-to-Expert Model

Patricia Benner, a noted nursing theorist, postulated a career development model in nursing practice, known as 'Novice to Expert Model' (Benner 1982). This model focused on nurses' ability to develop clinical abilities and skills over time. Benner's model is derived from the Dreyfus Model of Skill Acquisition and then modified to objectively assess nurses' ability to acquire clinical skills (Davis & Maisano 2016). Benner argued in this model that clinical training experiences help in moving a nursing practitioner from a novice into an experienced role. Benner believed that nursing students, with enough support, could move from their novice position to a more mature professional position through an understanding of nursing theoretical knowledge and clinical skills. An experienced nursing role is achieved by providing enough quality learning opportunities to apply the theoretical knowledge learned in classrooms and to practice clinical skills in a conducive learning environment (Batch-Wilson 2016).

Novice to Expert theory of clinical nursing knowledge postulated that the level of competency for nurses is developed based on their critical thinking and judgment abilities at clinical situations (Benner 1982). Benner divided skills acquisition into five stages based on a set of acquired competencies and skills development. These stages are consequently novice, advanced beginner, competent, proficient, and expert (Davis & Maisano 2016). According to Benner (2001), the *Novice stage* is when beginner nurses have no previous clinical experience in real-life situations, and they have limited ability to use clinical judgment. To prepare them to enter these situations and gain the experience necessary for their skills development, they are taught using objective parameters of patients' conditions such as vital signs, intake-output,

height, and weight. They are also taught the context-free rules of care to guide their actions in different situations. When nursing students enter a new clinical area, they have limited understanding of the contextual meaning learned in classrooms; however, when they start gaining knowledge and experience, in addition to confidence, they can then progress into the second, *advanced beginner* stage. *Advanced beginners,* according to Benner (2001) are the ones who have marginally acceptable clinical performance. They can note the components or aspects of repeated real situations that can be identified only through previous clinical experience. Advanced beginners need the assistance of their mentors when prioritizing nursing care, as they are not yet competent enough to distinguish between the priority patients' tasks.

The third stage is a *competent* nurse who usually has two to three years of experience. The competent nurse has experience in similar clinical situations gained through her practice and developed when she starts recognizing their actions in terms of long-term goals. A competent nurse can organize his/her responsibilities and able to make clinical decisions in real situations. However, the competent nurse still lacks the 'speed and flexibility' of the proficient nurse despite the feeling of clinical mastery and the ability to manage important clinical situations (Benner 2001). The last stage is the *proficient* performer, who is an expert and has many years of clinical experience. A proficient nurse perceives situations as wholes rather than specific aspects to achieve. They can comprehend clinical situations in a deeper level compared with other nurses of different stages. They acquire problem-solving abilities and focus of patients' holistic care and long-term outcomes that would be achieved with high-quality nursing care (Benner 2001).

Nursing students at their final year of study according to Benner, Tanner and Chesla (2009) are not expected to perform as experienced nurses as they are still at the novice level. However, due to the high international demand for new nursing graduates who perform as advanced beginners and the continuous rise in the costs of training, too many pressures are exerted on nursing educators and educational institutions to graduate students who are ready to practice (Wolff, Pesut & Regan 2010). Advanced beginners exhibit an acceptable level of knowledge and skills performance needed at hospitals for safe and effective care delivery (Benner 2012).

Clinical training experiences enable a reflective teaching-learning experience for students to consolidate their theoretical knowledge and develop their practice skills (Bambini 2009). Students working under the supervision of experienced nurses will gradually improve their skills acquisition and move to a higher level of mature performance (Benner 2012). Such performance, according to Khan and Ramachandran (2013), will be composed of psychomotor, cognitive, and attitudes abilities in addition to management skills such as communication, teamwork, and situational awareness. New nurses' acceptable level of competency relies not only on the skills and on abilities they have but also most importantly on their ability to use these skills to perform satisfactorily and reasonably at complex clinical situations (Humphreys 2013; Khan & Ramachandran 2012).

2.3.3 Bandura and Benner Framework for Learning

The two theories served as a theoretical framework for this study (Figure 2.) to guide and answer the study questions through looking at perceptions of students and stakeholders involved in preparing students to explore students' readiness to practice. Benner's Novice to Expert theory identified the knowledge, skills, and competencies that served as a basis towards

professional practice growth. Theoretical and clinical preparation of nursing students during their undergraduate study is intended to bring them to a novice position once graduated. Benner's theory indicated the need to immerse students in professional practice to meet healthcare authorities and industry expectations. Benner's theory was used to guide the revelation of the psychomotor, cognitive, attitudes, and management skills and abilities acquired during students' study and clinical training experiences whereas Bandura's Self-Efficacy theory guided the study to reveal the factors that, encourage students' engagement in learning and performance during their professional practice, such as practice learning environment, preceptorship, and students' support.

Figure 2. Model to Improve Students' Readiness to Practice
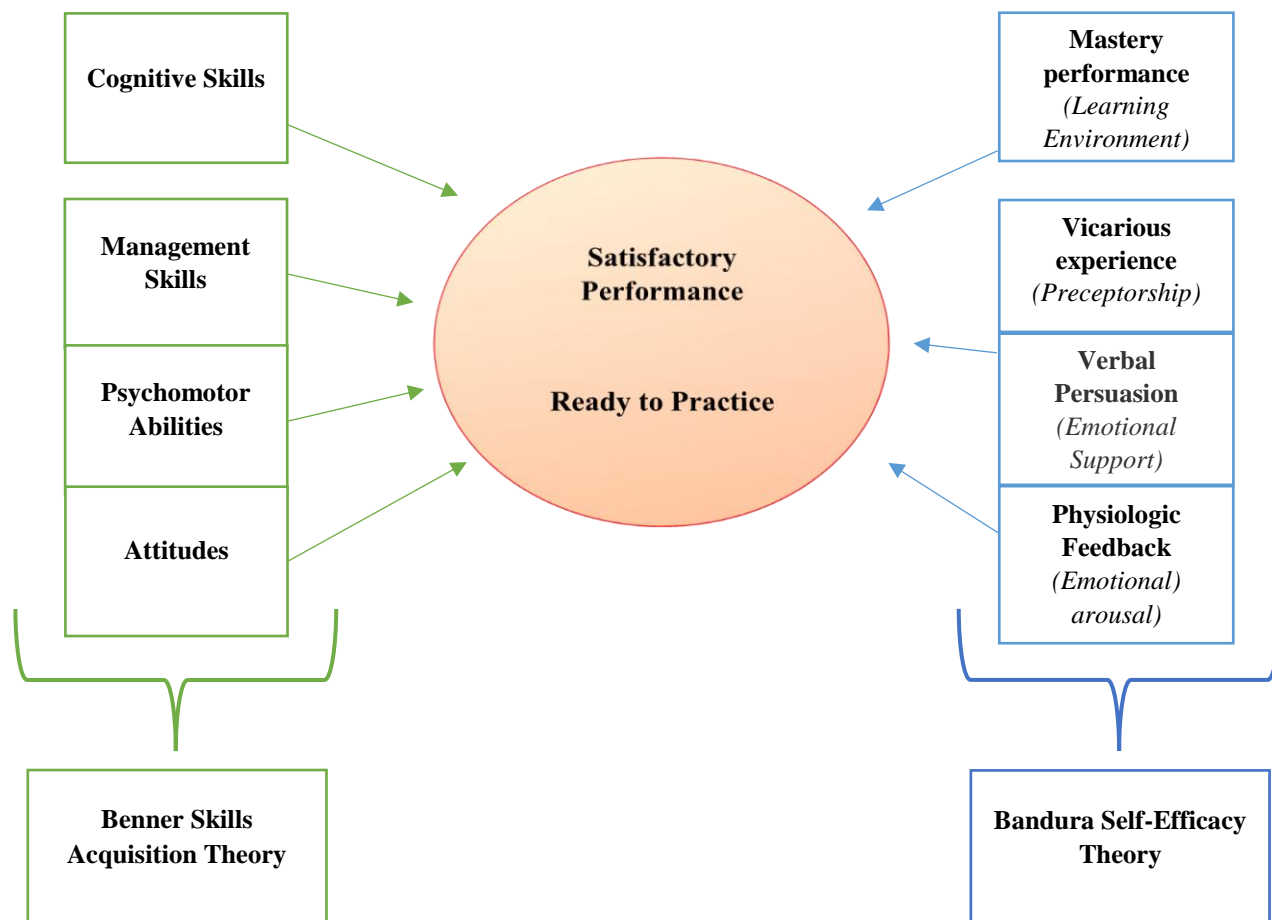
2.4   Chapter Summary

Nursing education was subject to many changes around the world since Nightingale first school of nursing in 1872. The fast expansion of medical and nursing knowledge and the growing healthcare complexities in the last 50 years required introducing changes to nursing education to make it compatible with the expanding responsibilities of professional nurses (AACN 2017). In response to the new international education and healthcare standards, several nursing educational institutions opened in the UAE to prepare nurses with baccalaureate qualifications to meet the growing demand for knowledgeable nursing professionals (Brownie et al. 2015).

Moving nursing education to tertiary institutions resulted in numerous challenges to ensure that these programs prepare the students to enter the nursing workforce and optimize their ability to step into their new professional role confidently (Chang & Daly 2015; Missen, McKenna & Beauchamp 2015). However, new nursing graduates' readiness to practice has been an area of debate since transferring nurse education to higher educational institutions. Students' readiness upon graduation is a challenging area for nursing education sector who struggled to find solutions to the so-called 'theory-practice gap' leading to a deficiency in graduates' readiness to practice (Dlamini et al. 2014; Usher & Mills 2011). The ability of nursing graduates to practice confidently and independently is perceived as a limitation since the movement of education to higher education institutions. Practicing confidently and independently is influenced by many factors such as undergraduate theoretical preparation, quality of clinical training environments, students' support while on placements, and degree of students' socialization into their professional role (Woods et al. 2015; Monaghan 2015).

CHAPTER THREE: RESEARCH METHODOLOGY

3.1   Introduction

The focus of this chapter is on situating the study within a suitable research paradigm that helps to answer the three research questions and fulfills the purpose of the study. The chapter presents a justification for the selected design and explains participants' selection, data collection methods, research procedure, validity and reliability, and ethical considerations for this study. Besides, it presents an overview of both quantitative and qualitative research paradigms and a discussion of pragmatic paradigm and mixed methods design as those adopted for this study. Guided by Benner's Novice to Expert and Bandura's self-efficacy theories, the purpose of this study was to investigate undergraduate nursing students' readiness to practice in the UAE. Students' academic knowledge and clinical skills were explored to determine if they meet the entry-level competence to the workforce, which assures their ability to practice safely and independently, perform job-specific requirements, and contribute effectively to the healthcare team. Data was collected from senior nursing students, nursing faculty members, and education leaders at healthcare facilities to understand the issue of students' readiness to practice.

3.2   Overview of Research Paradigms and Designs

3.2.1   Research Paradigms

A research paradigm is the belief system that guide researchers to decide what type of inquiry to use in their studies (Teddlie & Tashakkori 2009). It reflects the personal researcher

philosophy about the world and constitutes his/her principles and beliefs that outline the view of the world (Lather 1986). It is the lens through which the researcher uses to determine his/her research methods, which will be utilized in data collection and analysis. According to Guba and Lincoln (1994), the research paradigm is the basic set of a worldview, which guides the research investigation. Likewise, Denzin and Lincoln (2000) defined research paradigms as human constructions that deal with researchers' principles that reflect researchers' construct of the meanings embedded in data. As such, research paradigms are essential to determine what and how education concepts should be studied and how findings are interpreted (Kivunja & Kuyini 2017).

A paradigm epistemology accounts for how to know the truth, or what is considered the knowledge at the world (Cooksey & McDonald 2011). Epistemology is concerned with the nature and forms of knowledge, and how this knowledge is conveyed and communicated to human beings. It is involved with the very bases of knowledge, its nature, and forms, how it can be acquired, and how it can be communicated to other human beings. It focuses on the comprehension and use of knowledge to broaden humans' understanding. Epistemology deals with questions about the nature of knowledge. Also, it deals with the relation between the researcher as the inquirer, what is known, and what is to be known. Epistemology guides researchers to ask factual questions as what counts as knowledge and how to see the truth. These are important questions for researchers to determine what research context to use, what is already known, and what should be considered as new knowledge (Kivunja & Kuyini 2017). Slavin (1984) identified four sources that could be used to determine what counts as knowledge. These sources are logical knowledge, authoritative knowledge, intuitive knowledge, and empirical knowledge. The logical knowledge, or rationalist epistemology, is

when researchers highlight the importance of reason to know the truth. Authoritative knowledge is when researchers rely on the people who have the best knowledge, such as leaders and writers. Intuitive knowledge relies on faith, beliefs, and intuition. Finally, empirical knowledge is driven by sense experiences and objective facts.

On the other hand, a paradigm ontology, according to Kivunja and Kuyini (2017) is the philosophical study of the nature of reality, quality of being and becoming, and things that exist. Ontology is concerned with the rules that are used to make sense of the social phenomenon under investigation. The beliefs on the nature of reality are essential to understanding how researchers make meaning of their collected data. Also, these beliefs and personal assumptions guide the researcher to understand the research problem, study significance, the approach used to answer research questions, and the meanings deep-rooted in the research data. Therefore, the ontology of research paradigm is crucial as it provides an understanding of what constitutes the world and how the researcher may interpret the collected data (Scott & Usher 2011).

3.2.2 Positivist and Constructivist Paradigms

Two opposing paradigms, driven from their view of how the world works, dictated what questions should researchers ask and the methods used to answer these questions. Scholars used different terminology to describe these two paradigms. Guba and Lincoln (1985) used the terms naturalistic and scientific, while others such as Teddlie and Tashakkori (2009) used positivism and constructivism. Positivist paradigm uses a quantitative approach to solve

scientific inquiry, whereas the constructivist paradigm implies the use of a qualitative approach (Bryman 2004).

Positivist paradigm was first proposed by Auguste Comte, who assumed that experiment and reason which based on experience is the foundation of the understanding of human behavior. Positivist paradigm searches for cause-effect relationships and interprets observations using quantifiable entities and facts. This type of research uses deductive reasoning, hypotheses, statistical calculations, extrapolations, and expressions to provide explanations based on measurable outcomes (Fadhel 2002). Polit and Beck (2014) argued that positivism is rooted in the 19th century and reflected a cultural movement called modernism, which emphasized the use of rational and scientific approaches. Positivists had a basic ontological assumption about reality that exists in the real world and driven by real causes independent of human observations. Positivists believed that phenomena are not haphazard but instead have antecedent causes. They adhered to an objective approach that involved the use of logical and systematical procedures with tight control over the research process in testing the nature of the phenomena under study. They attempted to hold their personal beliefs as possible during their research to avoid phenomena contamination (Polit & Hungler 1999). Positivist paradigm outcomes are underpinned by empiricism, determinism, parsimony, and generalizability (Cohen, Manion & Morrison 2007). Empiricism pertains to the ability to collect empirical data, which enables the researcher to test the formulated hypotheses. Determinism is the methodology used by the researcher to understand causal relationships and the factors that act directly or indirectly to produce outcomes. Parsimony refers to explaining the research

phenomena using the possible economic way. Moreover, generalizability is the applicability of the research findings to other contexts by inductive inferences.

Constructivist paradigm started as a countermovement to positivism with writers such as Kant and Weber who argued that context and time-free generalization were neither desirable nor possible. Constructivists asserted that it is impossible to differentiate between causes and effects entirely, and thus it is difficult to separate the knower and the known because the subjective knower is the primary source of reality (Johnson & Onwuegbuzie 2004). Guba and Lincoln (1994) stated that the central concept of the constructivist paradigm is to gain an understanding of the subjective interpretation of the human experience. Constructivist researchers make all efforts to understand the viewpoints of the study subjects rather than the researchers' viewpoints. Moreover, Constructivists believed that reality exists in the context, and it is the construction of the participant involved in the research study (Polit & Beck 2014). Constructivists supported the position of relativism that there are multiple interpretations of reality existing in people's minds, and thus, it is challenging to determine the ultimate truth or falsity. The constructivist paradigm assumed that interpretations of the individual interactions of those under study are crucial to understanding the phenomenon, and findings are the result of cooperation between researchers and participants (Polit & Beck 2014). Studies in the constructivist paradigm focused heavily on understanding human experiences as lived by participants, through a vigilant collection of qualitative subjective and narrative data (Cohen, Manion & Morrison 2007). As such, the theory in this paradigm is grounded on the meaning of the collected data (Strauss & Corbin 1990).

Constructivist paradigm has four assumptions, subjectivist epistemology, relativist ontology, naturalist methodology, and balanced axiology. Subjectivist epistemology refers to the researchers' ability to interpret the collected data using their cognitive processing by interacting with the study subjects. Constructivist researchers use their understanding to construct knowledge based on their own experience in natural settings. Relativist ontology refers to the multiple realities of the studied situation. These realities could be explored and interpreted through social interaction between the researcher and the study subjects. Naturalist methodology is when researchers use interviews and reflective sessions to collect data being through observation of study subjects. Moreover, balanced axiology means that the research outcomes are balanced and reflect the researchers' values (Chalmers, Manley & Wasserman 2013).

Quantitative research approach follows a structured technique, through systematic steps, from identifying the problem to finding solutions. It uses objective methods to control the study and to minimize possible bias and maximize validation (Cohen, Manion & Morrison 2007). Quantitative researchers strive to gather empirical evidence rooted in objective reality using formal instruments to collect quantitative data to be analyzed statically in attempt to generalize research findings to individuals beyond those who participated in the study (Fraenkel, Wallen & Hyun 2015). Using quantitative methods in nursing, education, and other social sciences help acquire knowledge that is grounded by the ability of generalization to a greater population. Generalization of quantitative research takes place when the study results embrace strong dependency on the random choice with populations that are considered similar to those investigated. Opponents of quantitative methods expressed concerns regarding generalizing

research results as a way to explain precise events, in a belief that interpreting social phenomena could be influenced by the researcher individual subjective perspective (Szyjka 2012). However, supporters of the quantitative paradigm argued that researchers detach themselves when investigating a studied phenomenon to prevent any interference with the study results.

Polit and Hungler (1999) argued that quantitative researchers gather empirical evidence rooted in the objective reality through human senses. The requirement to use anecdotal evidence as a basis of knowledge justify that the findings of research studies are grounded to reality rather than to the personal hunches of the researcher. The primary goal of researchers is to understand the study phenomenon in a broad and general sense rather than in isolated circumstances. The desire of researchers to go beyond specific situations is an essential characteristic of the quantitative paradigm. The quality of studies can be assessed through the degree to which results can be generalized to other populations other than those involved in the reviews.

On the other hand, Qualitative research approach emphasizes the individual aspect of human life and strives to comprehend the social phenomena from the perspectives of the individuals involved in the study. Qualitative researchers use flexible and evolving procedures to capitalize on the findings that appear during studies that took place in natural settings. Data collection and analysis progress concurrently as more insights are gained, new questions might emerge, and more evidence is sought to apprehend the ideas. Qualitative researchers integrate the collected data through an inductive process to develop a theory that explains the phenomena under observation (Polit & Beck 2014).

Moreover, a qualitative research approach applies naturalistic methods of inquiry in an attempt to explore the human complexity directly. Qualitative researchers exert heavy emphasis to understand social experiences as it is, through the collection of subjective and narrative data. This type of naturalistic approach emphasizes the holistic and dynamic aspects of human exposure to acquiring an in-depth understanding of the study phenomenon within the context of those experiencing it. Qualitative methods can yield insights to complex and multifaceted social experiences revealing the individual personal experiences. The nature of inquiry recommends that the researcher study closely a small number of participants to place their experiences into a meaningful setting. Researchers can use flexible procedures to capitalize on the emerged meanings over an extended period (Szyjka 2012). Data collection and analysis progress concurrently, as the researchers examine existing information, new insights might be gained, and further evidence is required to confirm the new ideas. The findings of qualitative research are rich, which result in a deep understanding of the phenomenon (Polit & Hungler 1999).

The two research paradigms have indeed produced two opposing research cultures, "one professing the superiority of deep, rich observational data' and the other the virtues of hard, generalizable . . . data" (Sieber, 1973, p. 1335, cited in Johnson & Onwuegbuzie 2004). However, the 'paradigm war' commenced during the 1960s with a challenge for supremacy of the mono method of inquiry, resulted in the development of a mixed method paradigm in the 1990s (Teddlie & Tashakkori 2009). This new paradigm implied the use of 'mixing' both quantitative and qualitative methods within one study (Creswell 2003). The use of mixed methods debate resulted in the emergence of a third approach based on a set of beliefs known

as the pragmatic paradigm.   This new paradigm is an alternative paradigm that accepts philosophically the presence of single and multiple realities, which are open to empirical inquiry and applicable towards finding practical solutions to problems in the real world (Creswell & Plano Clark 2007). This new approach allowed researchers to free of all types of constraints imposed by both positivism and constructivism (Creswell 2009).   The logic of inquiry used in pragmatism incorporates induction to discover patterns of meaning, deduction to examine theories and hypotheses, and abduction to rely on the best set of explanations (Johnson & Onwuegbuzie 2004).

3.2.3   Pragmatism

"Every thinker puts some portion of an apparently stable world in peril and no one can wholly predict what will emerge in its Place" (Dewey 2008).

Pragmatism exemplifies the notion of John Dewey in building knowledge among those who seek to improve scientific truth (Creswell & Plano Clark 2007). The pragmatic paradigm encompasses an intuitive appeal, studying interesting areas, embracing appropriate research methods, and using the study findings incongruence and harmony with the researchers' value system (Creswell 2009). The philosophical background of pragmatism represents a mean for bridging the gap between the scientific empirical research approach and the freewheeling inquiry of qualitative approach (Teddlie & Tashakkori 2010). Pragmatism can link the study approach to the nature and purpose of the study postured questions (Creswell 2003) to help researchers to tackle research questions that cannot be situated comfortably within one approach, either quantitative or qualitative.

Creswell (2007) argued that researchers do not have a set standard to view the worldviews, as they tend to categorize many types of worldviews by the characteristics they have in common rather than seeing them from a rigid perspective. Pragmatism as a worldview emphasizes on consequences of the research, the questions rather than the methods, and the use of multiple data collection methods to answer the study question. Pragmatism is characterized by practicality, and thus, researchers can combine both inductive and deductive methods to explain the reality (Creswell & Plano Clark 2007). The researchers' use of flexible approach allows them to understand that both objective and subjective perspectives are essential to their study. Mixing both quantitative and qualitative methods will enrich the research and present a complete view of reality (Teddlie & Tashakkori 2010).

Shannon-Baker (2016) stated that the use of pragmatism permit researchers to link the contradictions of mixing both quantitative and qualitative methods in one research study. Shannon-Baker added that authors such as Biesta (2003) addressed this issue in his description that 'knowledge' will give researchers the necessary information about their actions and findings, not the 'once-and-for-all truths'. Therefore, pragmatism looks at what is meaningful in both constructivist and positivist approaches. Pragmatism utilizes an abduction approach that moves between induction and deduction "converting observations into theories and then assessing those theories through action'' (Morgan 2007, p. 71). Pragmatism can also allow researchers to use transferability to examine the possibility of transferring research findings into another setting (Morgan 2007).

Pragmatic research, according to Creswell (2003) and Teddlie and Tashakkori (2010)) has the following characteristics over the other paradigms. It rejects the positivist notion that the inquiry of social science could expose the 'truth' in the real world. Also, pragmatic research emphasizes workability in research. Using 'what works' will give the researcher the ability to address questions with no worry if the nature of the questions is solely quantitative or qualitative. Moreover, pragmatic research adopts a worldview, which allows the researcher to select a research design and methods that meet the aim of the study. Pragmatic research does not require the researcher to locate his/her study in either constructivist or positivist paradigms. It allows the researcher to use any available method to gain knowledge depending on the aim of the study.

Utilizing a pragmatic approach in this study allowed the researcher to recognize the multiple factors that might foster or hinder nursing students' readiness to practice before graduation. The pragmatic approach offered a mean to explore nursing students' academic knowledge and clinical skills needed to meet the entry-level competence to the UAE workforce. The sequential exploratory mixed methods design of this study allowed the researcher to utilize qualitative and quantitative data analysis that helped to reveal comprehensive information on nursing students' readiness to practice, factors associated with students' perceived readiness, and strategies to improve their readiness before graduation. Combining both qualitative and quantitative methods facilitated a better understanding of the meaning of data, complemented and validated the qualitative analysis findings with the quantitative results to enhance the overall conclusions and achieve a more profound understanding of the study phenomenon (Onwuegbuzie & Leech 2004; Creswell & Clark 2010).

3.3 The Study Design

Understanding nursing students' readiness to practice appears to be a complex issue due to different perspectives among students, educators, and healthcare sectors (Wolf, Pesut & Regan 2010). Investigating nursing students' readiness to practice from different perspectives indicates diverse opinions that focus mostly on what are the perceived requirements suggested by participants to improve students' readiness (Usher et al. 2015). This study aimed to develop an understanding of senior students' readiness to practice, those who are in their final year of study and completed most of the nursing courses. Therefore, a mixed methods design was an appropriate design to fit together insights delivered by using both qualitative and quantitative tools to identify a workable solution to the study phenomenon and enhance the study significance and reliability (Teddlie & Tashakkori 2009; Creswell 2009). The approach of using qualitative and quantitative methods to collect information have jointly delivered complementary in-depth meanings for a better understanding of the participants and the context of the study.

The study used a sequential exploratory mixed method design as ascribed by Creswell (2009) to investigate undergraduate nursing students' readiness to practice in the UAE. Data was collected sequentially over two phases. In the first phase, qualitative data was collected from a sample of nursing students in their final year of study, and a sample of nursing faculty members and hospital education leaders. The first phase answered the first two research questions: 'What are the perceptions of nursing students, faculty members, and health care education leaders about/on the readiness of nursing students to practice at the point before

entry to the workforce', and 'how could nursing students' readiness to practice improve before their graduation from nursing programs'.

In the second phase, quantitative data was collected from a larger group of senior nursing students to answer the third research question: 'what are the factors that foster or hinder students' readiness to practice before graduation' through examining senior students' level of confidence/comfort to perform a set of nursing clinical skills/tasks before their graduation. Collecting both qualitative and quantitative data in two phases provided the study with rich and complementary information that helped in gaining an in-depth understanding of nursing students' readiness in terms of participants' personal and experience perspectives and study context (Figure 3.).

Figure 3. Fuentes' (2008) Sequential Exploratory Mixed Methods Design.
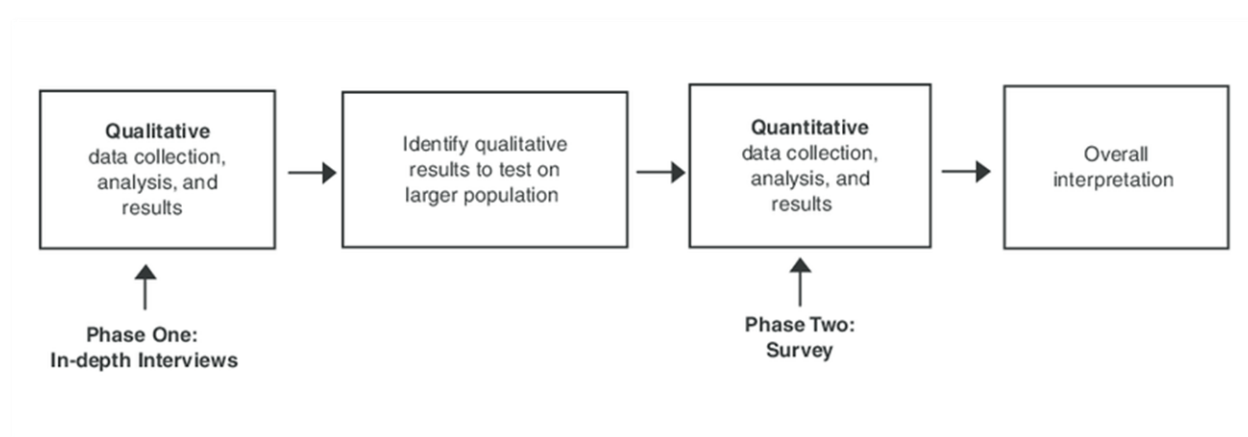
The study used methods for data collection from two different research paradigms, qualitative and quantitative, to collect meaningful and representative data that helped to answer the study questions. Qualitative paradigm emphasizes the individual aspect of human life to capture those aspects in the entirety within participants' lived context. Qualitative paradigm uses

flexible, evolving procedures to capitalize on the findings that appear during studies at natural settings. Data collection and analysis progress concurrently as more insights are gained, new questions might emerge, and more evidence is sought to apprehend the new insights. However, quantitative paradigm according to Cohen, Manion and Morrison (2007), follows a structured technique, through systematic steps, from identifying the problem to finding solutions to control the study, minimize possible bias and maximize validation. Researchers gather empirical evidence using formal instruments to collect quantitative data that can be statically analyzed in strive to generalize research findings to individuals beyond those who participated in the study (Fraenkel, Wallen & Hyun 2015). These two dominant research paradigms have indeed produced two opposing research cultures, "one professing the superiority of deep, rich observational data' and the other the virtues of hard, generalizable . . . data" (Sieber, 1973, p. 1335, cited in Johnson & Onwuegbuzie 2004). As such, the dichotomy of data between both paradigms, according to Polit and Beck (2014) represents a critical methodologic distinction. In this study, using the mixed methods approach enriched many areas of inquiry on students' readiness to practice through careful triangulation of both qualitative and quantitative data driven from nursing students and nursing faculty members and education leaders.

The mixed method approach in this study helped, according to Creswell and Wisdom (2013), invalidating both qualitative and quantitative findings. Qualitative data analysis was useful to reveal comprehensive information on students' readiness to practice utilized to explore factors associated with students' perceived readiness and identify strategies to improve their practice readiness (Creswell 2009). Onwuegbuzie and Leech (2004) stated that combining both qualitative and quantitative methods could facilitate a better understanding of the meaning of

data. Complementing and validating the qualitative analysis findings with the quantitative results in this study enhanced the overall conclusions and achieved a deep understanding of the study phenomenon (Creswell & Clark 2010). Moreover, this approach of inquiry was helpful to compensate for the fact that the use of qualitative data is difficult to be generalized (Onwuegbuzie & Johnson 2004).

The mixed methods approach according to Creswell and Plano Clark (2007) is an alternative paradigm that accepts philosophically the presence of single and multiple realities, which are open to empirical inquiry and applicable towards finding practical solutions to problems in the real world. This approach allows researchers to be free of all types of constraints imposed by both positivism and constructivism (Creswell 2009). The logic of inquiry used in mixed methods approach incorporates induction to discover patterns of meaning, deduction to examine theories and hypotheses, and abduction to rely on the best set of explanations (Jonson & Onwuegbuzie 2004). Using a mixed methods approach as a design in this study improved fitting together insights delivered by nursing students and nursing faculty members and education leaders (Creswell 2009). The use of interviews in this study as a qualitative method was helpful to identify how and when nursing students' readiness to practice occurs and identified variables used to select and slightly modify a survey to collect quantitative data (Fetters, Curry & Creswell 2013). The Casey-Fink Readiness to Practice survey was utilized for measuring pervasiveness of students' readiness to practice. Therefore, the mixed methods approach was more than collecting two types of data from different tools such as interviews and surveys. It represented the intentional collection of qualitative and quantitative data to

combine and integrate the strengths of both approaches to answer the study questions (Fetters, Curry & Creswell 2013; Teddlie & Tashakkori 2010).

3.4   Research Setting, Population and Sampling

In this study, data were collected from three sites. The first site was The College of Health Sciences (COHS), which is the primary nursing education provider in the UAE. COHS was established in 2006 as a post-secondary governmental entity aiming to graduate qualified nurses who are trained locally to meet the growing needs for skilled healthcare professionals in the UAE. The college has four campuses around the UAE. The second site was University A in UAE. Data were also collected from three healthcare facilities (Facility A, Facility B, and Facility C) where nursing students perform their clinical training experiences (*The identity of educational and healthcare institutions was anonymized to overcome any possible undesirable sensitivity that might take place upon the researchers' attempt to publish the study findings*).

The population of this study consisted of senior baccalaureate nursing students, nursing faculty members, and nursing education leaders. Inclusion criteria for the study included final year nursing students enrolled in their last semester of study. Senior nursing students were those who finished most of their clinical training courses and program requirements and were best acquainted with the knowledge and skills required to be ready to practice upon graduation (Heslop, McIntyre & Ives 2001; Usher et al. 2015). Nursing students who were in year one to year, three were excluded as they were at varying levels of academic preparation and clinical

competence due to their level of study. For the nursing faculty members, inclusion criteria included those who were experienced and involved in the theoretical and clinical education of senior students. For the nursing education leaders, inclusion criteria included those who work at healthcare facilities and had different years of experience in training of nursing students and preparation of new nursing graduates' transition to practice.

In the qualitative phase of the study, purposive sampling was used to select participants who have knowledge and experience with nursing students' needs to practice for the aim of acquiring a deep understanding of the study phenomenon (Fraenkel et al. 2015). The total of 19 senior nursing students, four nursing faculty members, and three nursing education leaders participated in the semi-structured and focus group interviews. Participants' experiences of nursing students' readiness were explored to obtain qualitative themes (Ponce & Pagan-Maldonado 2014). These themes were vital according to Creswell (2009) to build an in-depth understanding of the study phenomenon and guide the selection of a proper survey for the quantitative phase (Gay, Mills & Airasian 2009). Purposive sampling procedure is a common sampling procedure used in qualitative research to collect perceptions from the population of interest, consequently improving transferability of the findings and application to a larger population (Teddlie & Tashakkori 2009).

In the quantitative phase, all senior nursing students available at COHS and University A were recruited via email and asked to voluntary participate. The total number of senior nursing students in the academic institutions where the researcher received ethical approval to perform the study was 117 students. All senior students were invited to complete an online version of

the Casey-Fink Readiness to Practice Survey CFRPS that was modified to meet the UAE context based on the analysis of qualitative data collected in the first phase of data collection to evaluate students' readiness to practice. 90 students out of the 117, completed the study survey. The sample size (Figure 4.) was calculated statistically using a confidence level of 95% and a confidence interval of 5%; the required sample size was 90 out of the total population of 117 students.

Figure 4. Sample Size Calculation, from https://www.surveysystem.com/sscalc.htm

Determine Sample Size

Confidence Level: ◉ 95% ○ 99%
Confidence Interval: 5
Population: 117

Calculate   Clear

Sample size needed: 90

Find Confidence Interval

Confidence Level: ◉ 95% ○ 99%
Sample Size: 90
Population: 117
Percentage: 50

Calculate   Clear

Confidence Interval: 4.98

3.5   Ethical Consideration

Ethical approval was obtained from the Institutional Review Boards at the British University in Dubai (BUID), COHS, University A, and Facility A, Facility B, and Facility C, before any attempt to collect data from participants (Appendix A). The researcher explained the study

approach, methodology, and purpose to all participants before getting participants' consent and data collection. Participants were reminded that their participation in the study was voluntary and that they can refuse or stop at any time.   Participants were assured that anonymity and confidentiality would remain continuously protected throughout the study. No data was linked to any individual in the study. All notes and verbatim scripts remained stripped of identifiers with pseudonyms applied. Participants were asked to sign a consent sheet/form before participation in the study interview. Also, the online version of the study Survey highlighted that completing the survey is a consent to participate in the study. All types of data were securely stored either in a password-protected laptop backed up to an external hard drive or in a locked filing cabinet.   All data will be retained for five years after completion of the study. All Interviews were recorded after briefing all participants on the topic, purpose, and the procedure of data collection and analysis to grant their permission (Appendix B & C). Thematic analysis was used upon the completion of interviews to pull out statements to identify and categorize important themes reflecting students, faculty members, and education leaders' perceptions.

3.6   Study Instruments

3.6.1   Interviews

Qualitative data was collected from nursing faculty members and nursing education leaders using semi-structured interviews, and from senior nursing students using focus group interviews. Interviews are used in qualitative research to gain an in-depth understanding of the

experiences and feelings and to get useful opinions from the participants (Merriam 2009). Kvale (1996) identified several types of interview arguing that they differ in their purpose, structure, whether they are descriptive, interpretive, emotion-focused, or cognitive-focused. Kvale stated that the significant difference lies in the degree of the interview structure, which reflects the purposes of the research study. Polit and Beck (2014) also described several approaches to interviewing participants to collect qualitative data. Unstructured interviews are used when researchers do not have a preconceived view of the research problem. Researchers perform interviews to learn about participants' opinions and experiences regarding the phenomenon under study without imposing their understanding and perspectives during the discussion. However, the semi-structured interviews are used when researchers have preliminary knowledge of the topic. It is useful when "researchers are aware of what they do not know and therefore are in a position to frame questions that will supply the knowledge required" (Lincoln & Guba 1985, in Cohen, Manion & Morrison 2007, p. 354). The content and procedures of the semi-structured interview are organized in advance, and the wording and overall sequence are pre-determined, so the interviewer is left with little freedom to make modifications.

Cohen, Manion, and Morrison (2007) considered interviews as a place for the interchange of views between people on a mutually exciting topic. The authors stated that the use of interview in research achieved a moved towards treating human subjects as sources of knowledge which are generated between humans through conversation. However, it is different from the everyday conversation because it has a specific aim, based on questions asked and controlled by the interviewer, and participants' responses should be explicit and detailed as possible.

Interviews allow participants to discuss their views of the world and describe how they perceive or feel about certain situations from their perspective. Therefore, the interview does not only aim to collect data about participants' life, but it is embedded in their own life itself.

Interviews are relatively inexpensive and considered useful to collect a wide variety of data, but researchers should be aware that discussions are time-consuming, open to bias, sometimes inconvenient for participants, and issues such as participant's fatigue may impede the interview. The effectiveness of an interview relies on its structure. Hence, the interview should be well planned and standardized so that participants are asked the same questions in the same order. Interviewers have to be well trained to administer and manage interviews to avoid variation in data collection. One of the drawbacks of the interview procedure is the inability to perform extensive statistical analysis of the collected data because they merely describe the situation rather than quantifying it (Cohen, Manion & Morrison 2007). This study used Semi-structured interviews that focused on participants' perceptions of the adequacy of students' clinical training experience, academic and clinical proficiency, and factors that influence students' readiness to practice (Table 1.). The researcher completed seven one-to-one interviews with nursing faculty members and nursing education leaders. Open-ended questions were used according to Minichiello, Aroni and Hays (2008) to encourage rich and descriptive responses. Question guides (Appendix D) were developed after an extensive review of the literature on the study topic and reviewed by a penal of 3 to 4 expert nursing educators to maintain the trustworthiness of the instrument (Creswell 2009). Semi-structured interviews were a simple and flexible tool for data collection, which produced a wealth of information about the phenomenon under study (Marczyk, DeMatteo & Festinger 2005). It enabled the

researcher to uncover both verbal and non-verbal responses while still maintaining enough space for spontaneity.

Focus group interview according to Polit and Beck (2014) involves groups of 5 to 10 participants whose experiences and opinions are explored at the same time. This type of interview, according to Morgan (1998) relies on the interaction within the group in the discussion of the research topic. Participants interact with each other during the debate rather than only with the interviewer. This interaction and discussion will yield emerging views and opinions rather than the researcher's agenda can predominate. Focus group interview is a form of group interaction where the data can develop.

The interaction with the groups of senior students in this study led to uncovering rich data related to students' readiness to practice. The discussion was very focused and produced rich insights that were difficult to be conquered using the individual interview. Also, the discussion was efficient to provide large amount of data. Conducting focus group interviews enabled the researcher to gain a better understanding of the adequacy of students' clinical training experience, their academic and clinical proficiency, and factors that influence their readiness to practice. Also, the discussions allowed students to share their perceptions, thoughts, and understandings of the study phenomenon. Four focus group interviews were conducted with senior nursing students (Table 1.). The discussion was carried on until the saturation of information took place.

Table 1. The Study Interviews

Data Collection	Participants	Number	Venue	Time
One-to-one Interview	Nursing Faculty Members	4	COHS -Al Ain COHS -Abu Dhabi COHS -Aiman COHS -Al Dhafra	45min – 1hr each
One-to-one Interview	Nursing Education Leaders	3	Facilities A, B, & C	45min – 1hr each
Focus group Interview	Senior Nursing Students	19	COHS -Al Ain (5 students) COHS -Abu Dhabi (5 students) COHS -Ajman (5 students) COHS -Al Dhafra (4 students)	1hr – 1.5hrs each

3.6.2   Questionnaire

Quantitative data was collected from senior nursing students using 'Casey-Fink Readiness to Practice Survey 2008 – CFRPS (Appendix E), to identify the factors that might foster or hinder their students' readiness to practice before graduation. The CFRPS was selected after completing the analysis of qualitative data of the first qualitative phase. The items of the survey were consistent according to (Creswell 2009) with the qualitative phase findings and with the nature of research questions. In order to be used in the UAE, CFRPS validity and reliability was maintained through an extensive review of literature on undergraduate nursing students' readiness to practice, a review by a panel of expert nursing educators from the UAE, and performing of a pilot study (Fraenkel et al. 2015, Parker et al. 2014). Internal consistency of the survey items was measured by calculating Cronbach's alpha (Polit & Beck 2014).

Casey-Fink Readiness to Practice Survey CFRPS is a US validated instrument. The survey's validity and reliability were published in Casey et al. (2011) study on 'factors influencing senior nursing students' readiness to practice' (Table 2.). Casey and her colleagues maintained the content validity of the survey, "using an expert consensus development process" (p. 647). They achieved construct validity through exploratory factor analysis (EFA) of all items of the developed sample, followed by "a confirmatory factor analysis (CFA) to revalidate the EFA findings in a second, independent sample. EFA was conducted using PASW 18, and CFA was conducted using AMOS 18" (p. 648). Moreover, Cronbach's alpha was measured to assess the internal consistency of the survey; it scored 0.69 for all the 20 items on confidence (Casey et al. 2011).

CFRPS was used in several studies to examine undergraduate nursing students' readiness for practice. Reagor (2011) used a mixed method approach study on 483 senior baccalaureate-nursing students at Missouri and Kansas, USA. The study used Casey-Fink Readiness to Practice Survey CFRPS to explore the effect of clinical internship experience on students' perception of readiness for practice. The results confirmed that clinical experience improved students' perceptions of readiness for practice. In another study, Brown (2016) used a convenience sample of 26 seniors at southern Colorado University using Casey-Fink Readiness for Practice Survey to examine BSN students' readiness for practice as a registered nurse. The findings showed a high level of students' readiness, although some areas of weakness were identified, especially with performing invasive procedures, trach care, and care for dying patients.

Table 2. Exploratory Factor Analysis using the Kaiser Criterion Suggested up to Eight Factors in Casey et al. (2011).

Scale Item	Clinical Problem-Solving Subscale	Learning Techniques Subscale	Professional Identity Subscale	Trials and Tribulations Subscale
Factor Loadings in Exploratory Factor Analysis Solution for Development Sample				
I feel confident communicating with physicians.	**0.574**	−0.153	0.331	0.180
I feel comfortable communicating with patients and their families.	0.337	0.205	**0.510**	−0.294
I am comfortable delegating tasks to the nursing assistant.	0.336	0.508	0.112	**−0.491**
I have difficulty documenting care in the electronic medical record.	−0.291	0.226	−0.374	**0.581**
I have difficulty prioritizing patient care needs.	−0.311	0.144	−0.136	**0.731**
My clinical instructor provided feedback about my readiness to assume an RN role.	0.317	−0.093	**0.537**	−0.049
I am confident in my ability to problem solve.	**0.744**	−0.022	0.318	−0.155
I feel overwhelmed by ethical issues in my patient care responsibilities.	−0.057	0.048	−0.126	**0.604**
I have difficulty recognizing a significant change in my patient's condition.	−0.401	0.095	−0.243	**0.405**
I have had opportunities to practice skills and procedures more than once.	0.335	0.140	0.345	**−0.411**
I am comfortable asking for help.	0.393	−0.161	**0.576**	−0.241
I use current evidence to make clinical decisions.	**0.637**	0.156	0.219	−0.277
I am comfortable communicating and coordinating care with interdisciplinary team members.	**0.796**	0.042	0.278	−0.328
Simulations have helped me feel prepared for clinical practice.	−0.010	**0.600**	0.162	0.274
Writing reflective journals/logs provided insights into my own clinical decision–making skills.	0.155	**0.746**	0.037	0.044
I feel comfortable knowing what to do for a dying patient.	**0.561**	0.290	0.058	−0.134
I feel comfortable taking action to solve problems.	**0.732**	0.188	0.460	−0.297
I feel confident identifying actual or potential safety risks to my patients.	**0.652**	0.145	0.444	−0.415
I am satisfied with choosing nursing as a career.	0.042	0.073	**0.767**	−0.133
I feel ready for the professional nursing role.	0.409	0.299	**0.709**	−0.184
Cronbach's alpha for subscale	0.80	0.50	0.65	0.63

Two recent studies also used Casey-Fink Readiness for Practice Survey. Wray (2017) examined senior BSN students' level of confidence to perform nursing skills and their perception of readiness for practice as new graduate nurses. The study showed that students were confident too in communication and decision-making skills, but they did not feel prepared to enter the nursing profession. Grimm (2017) examined the relationship between pre-

licensure employment and self-efficacy of 132 senior nursing students during their final semester of study. The study showed a significant positive relationship between the amounts of pre-licensure work experience and self-efficacy in the management of patient's care.

In this study, permission to use CFRPS was granted from UC Health website (Appendix F), but it was necessary to modify the demographic section in the survey based on phase 1 qualitative findings to meet with the UAE context. Permission to modify the demographic part was gained from Professor Regina Fink (Appendix G). Accordingly, the demographic part was amended to add participants' marital status, the school of nursing attended, the clinical area of senior practice experience, the ethnicity of participants, the clinical hours required to complete the senior practicum, and the question on NCLEX –RN was removed.

The first section of the modified CFRPS tool collected demographic data of nursing students. The second section focused on the student's comfort level with both clinical and relational skill performance. Students were asked to identify the top three skills or procedures that they felt most uncomfortable performing independently from a list of 18 skills and procedures, with the option to add an item that was not listed. In the third section, students were asked about their level of confidence in managing multiple patient assignments, ranging from caring for four patients to two patients using a Likert scale with a range of 1-5, with 1 = Not Confident and five = Very Confident. Lastly, students were presented with a list of 20 items asking for a self-report about their level of comfort/confidence in performing key nursing activities using a Likert scale (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree). This comfort/confidence questionnaire was used to identify the four domains of readiness offered

during students' clinical training experiences in the development of readiness for practice. Casey et al. (2011) performed exploratory factor analysis that generated a four-factor set of correlated subscales that were used as four domains of readiness, namely 'clinical problem solving', 'learning techniques', 'professional identity', and 'trials and tribulations' (Figure 5.). The last section also had an open-ended question on 'what could be done to help students feel more ready to enter the nursing profession'.

Bandura's self-efficacy and Benner's Novice to Expert theory served as a theoretical framework to guide and answer the study questions through looking at perceptions of students and stakeholders involved in preparing students to explore students' readiness to practice. Benner's Novice to Expert theory identified the knowledge, skills, and competencies that serve as a basis towards professional practice growth. Theoretical and clinical preparation of nursing students during their undergraduate study was intended to bring them to a novice position once graduated. Benner's theory indicated the need to immerse students in professional practice to meet healthcare authorities and industry expectations. In this study, Benner's theory guided the revelation of students' psychomotor, cognitive, attitudes, and management skills and abilities required for the nursing profession (Bandura 1999). Bandura's Self-Efficacy theory guided to reveal the factors that encourage students' engagement in learning and performance during their professional practice, such as the practice learning environment, preceptorship, and students' emotional support. Casey-Fink Readiness to Practice Survey CFRPS was useful in this study to determine senior nursing students' overall confidence in performing nursing care and subsequently, their readiness to practice.

3.7   Data Collection

Permission to collect data for this study was granted from COHS, Facility A, Facility B, Facility C, and University A. The researcher was responsible for collecting, administering, and analyzing both qualitative and quantitative data for the study.   In the qualitative phase, invitations were sent via emails to all senior nursing students at COHS and University A to participate in a focus group interview. Also, four nursing faculty members and three nursing education leaders who have previous experience in nursing students' transition to practice were invited to participate in a one-to-one semi-structured interview. Each one-to-one interview took approximately 45 minute to be completed, and each focus group interview took 1 to 1.5 hours. A total of seven one-to-one interviews and three focus group interviews were completed during June –July 2018.

The researcher distributed information sheet and informed consent to all participants before each interview; permission was obtained from the faculty, leaders, and students to perform the interview. Open-ended questions were used to guide the interview discussions guided by both Banners' Novice to Expert and Bandura's self-efficacy theories focusing on sources and elements of readiness to practice. The researcher maintained the quality of the collected data through facilitation of active discussion through probing, explaining, clarifying, and use of commentary prompts to facilitate participants' engagement in the discussion and to enhance sharing their feelings and experiences on students' clinical learning and readiness to practice (Polit & Beck 2012; Streubert & Carpenter 2011). This approach is commonly used in qualitative research to discover participants' experiences and gain an in-depth understanding

of the study phenomenon (Hays & Singh 2012). Participants were informed during the discussion that all information would remain confidential, and they were reassured that their identity would remain anonymous. The researcher provided participants with sufficient time to answer the questions allowing flexibility to share their opinions and feelings, to allow for rich descriptions of experiences (Hays & Singh 2012).

In the quantitative phase, an online version of Casey-Fink Readiness to practice Survey CFRPS tool was sent to all senior nursing students registered at COHS and University A in August 2018 via direct email. One hundred twenty surveys were sent to senior nursing students, and the researcher received 90 completed surveys. The first page of the online survey asked participants to read the front page before they answer the survey. The survey front page described the use and purpose of the study. It stated time needed to complete the survey and assured participants that all information would be kept confidential, and neither information nor individuals will be identified. Finally, it highlighted that answering the survey would confirm a student's consent to participate in the study.

3.8 Data Analysis

The researcher transcribed all interviews during the time of the meeting. All transcripts were double-checked with participants to ensure information accuracy. Analyses of data started after the first interview and continued until the last one to be able to achieve data saturation. Thematic analysis, as described by Clarke and Braun (2013) was used in this study to identify patterns and themes in qualitative data. Thematic analysis is used in qualitative researches as

a flexible method to search and examine "patterns across the language does not require adherence to any particular theory of language, or explanatory meaning framework for human beings, experiences or practices" (Clarke & Braun 2013, p. 3). Thematic analysis is suitable with many research interests and theoretical perspectives because it can be used to answer a wide range of research questions ranging from personal experiences to those related to the construction of phenomena. Also, it can be utilized to analyze different types of qualitative data and is applicable to produce theory-driven analyses.

This study followed Braun and Clarke (2006) six steps of thematic analysis to perform qualitative data analyses. The first step was 'Familiarization with the data'; which required the researcher to immerse himself, read, and re-read the study transcripts to become familiar with the data. The second step was 'Coding'; the researcher labeled the important concepts identified during participants' discussion and relevant to the study research questions. The coding process helped to capture both a semantic and conceptual reading of the data. The researcher then collated all the identified codes and relevant data extracts. The third step was 'Searching for themes'; the researcher identified the themes through organizing and gathering codes into potential themes. The researcher then 'Reviewed the themes' and 'Named them'. These two steps were helpful to ensure that the identified themes were consistent and applicable to the coded extracts and full data set. The final step was 'Writing up' which involved merging the analytic narrative and data extracts.

The researcher used IBM SPSS Statistics software version 21 to perform the analysis of quantitative data. Descriptive statistics were used to calculate the means and standard

deviations of the variables in sections 1, 2, 3, and 4 of the survey. Section 1 collected demographic data of nursing students. Section 2 focused on students' comfort to perform a list of nursing skills. Section 3 asked students to identify their level of confidence in managing patient care (two, three, and four) patient's assignment on medical-surgical units. This section used a 5-point Likert scale ranging from 1= not confident to 5= very confident. Section 4 focused on students' readiness to practice using 20 questions on students' ability to perform nursing skills ranging from 1= strongly disagree to 5= strongly agree. Analysis of quantitative data facilitated reporting students' level of confidence in caring for multiple patient assignments and ability to perform the list of nursing skills before their graduation. The open-ended question at the end of the survey was qualitatively analyzed to highlight students' opinions on how to improve their readiness before graduation.

3.9   Validity of Data

Lincoln and Guba (1985) described four aspects that researchers should consider to establish trustworthiness or rigor of qualitative data, which are credibility, transferability, dependability, and conformability. Credibility is an essential factor to determine trustworthiness. It refers to whether the study findings were correct and represents participants' perspectives, and the reporting was truthful (Lincoln & Guba 1985). To maintain credibility in this study, the researcher discussed the findings with some participants to ensure that they truly reflect their opinions and experiences. Also, the work responsibility of the researcher as nursing faculty member engaged in preparing senior nursing students' clinical training experiences and

transition to practice, facilitated deep engagement with the participants and ensured a deep understanding of their opinions (Holloway & Wheeler 2016).

Transferability refers to how much the study findings can be applied or generalized to other groups or contexts (Lincoln & Guba, 1985). In this study, transferability was addressed by providing a detailed description of the interviewed participants (Creswell 2007). The demographic data were presented and discussed to help the readers understand the detailed characteristics of participants and facilitate comparability to participants in similar contexts. Dependability refers to the stability of data over time and conditions (Polit & Hungler 1999). In this study, a clear description of the study purpose, design, and participants was presented, which may help other researchers to replicate the research and obtain similar results. Also, dependability was established using time, person, and space triangulated, and some peer faculty members reviewed the findings to maintain the objectivity of data (Creswell 2009). Confirmability is the objectivity of the data (Lincoln & Guba 1985). It is established through consistency while data collected and highlighting the evidence that leads to the attainment of the study aim (Holloway & Wheeler 2016). The confirmability in this study was established by conducting 19 focus group interviews and seven semi-structured interviews to achieve adequate data that yielded meaningful interpretation. Data was precisely transcribed, as stated by the participants. Also, maintaining the findings' credibility and transferability served to establish additional data confirmability (Rebar et al. 2011).

To be used in the UAE, CFRPS content validity and reliability was established through some measures. Firstly, an extensive review of the literature on undergraduate nursing students'

readiness to practice. Secondly, a review by a panel of expert nursing educators in the UAE. These expert educators included two nursing senior faculty members who have experience in students' transition to practice, curriculum development, and students' clinical training experiences and one nursing education leader who chairs the nursing education committee at Abu Dhabi governmental healthcare facilities. The review revealed that the items of the survey were consistent with the concept of students' readiness to practice and the nature of research questions (Creswell 2009). Thirdly, the researcher performed a pilot study to check the survey and interview questions validity and applicability (Fraenkel et al. 2015; Parker et al. 2014).

3.10   Pilot Study

A pilot study of both instruments was conducted on a small sample of the target population (Fraenkel et al. 2015). The pilot study used the CFRPS tool on nine senior nursing students and the draft interview questions on four students and two staff members. The purpose of the pilot study was to calculate the internal survey consistency, check the adequacy of data collection tools, determine if the tools answered the posed questions, and decide if the items required any further clarification.

Performing a pilot study was essential to gain feedback on the clarity of the instrument's questions, eliminate ambiguities or difficulties in wording, check the time taken to complete the instruments, and identify possible misunderstood or non-completed items (Gay, Mills & Airasian 2009). The feedback received from the students and faculty members showed that some of questions/words in the tools required modification. Therefore, in the questionnaire,

the word 'clinical instructor' was changed to 'clinical supervisor' as it was clearer for students. Also, the word 'simulation' was changed to 'lab simulation', and the word 'prepared' to 'prepared/ready'. Students took around 15 – 20 minutes to complete the questionnaire. The internal consistency of the survey items was measured by calculating Cronbach's alpha that was 0.819 (Table 3.) for the 20 items in section 4 measuring students' readiness to practice in the survey (Polit & Beck 2014). Also, the interviews took approximately 1 hour to complete. Some of the questions were ambiguous to participants, so the researcher modified these questions for more clarification.

Table 3. Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.819	.815	20

3.11   Chapter Summary

In summary, this study used a sequential exploratory mixed-methods approach to investigate undergraduate nursing students' readiness to practice in the UAE guided by Benner's Novice to Expert and Bandura's self-efficacy theories. The study explored senior students' academic knowledge and clinical skills needed to meet the entry-level competence to the workforce, which assures their readiness to practice safely and independently before graduation. The study was approved from the IRB of the academic institutions, and the hospitals were students are employed after graduation. Qualitative data was collected from senior nursing students,

nursing faculty members, and education leads to healthcare facilities using semi-structured and focused group interviews. Quantitative data was collected from senior nursing students using an online version of the Casey-Fink Readiness to Practice Survey. This chapter also included a detailed description of the sampling techniques, data collection methods, pilot study, ethical considerations, and validity and reliability of the study.

CHAPTER FOUR: QUALITATIVE RESEARCH FINDINGS

4.1 Introduction

This study aimed to investigate undergraduate nursing students' readiness to practice in the UAE. The study explored senior nursing students' academic knowledge and clinical skills needed to meet the entry-level competence to the workforce, which assures their ability to practice safely and independently before graduation. The study used a mixed methods design to collect both qualitative and quantitative data. In the qualitative phase of the study, the researcher used focus group interviews with senior nursing students and semi-structured interviews with nursing faculty members and nursing education leaders. Both faculty members and hospital nursing education leaders were best acquainted with the knowledge and skills required for students to be ready to practice upon graduation. In the quantitative phase of the study, data was collected from senior nursing students who completed an online version of the Casey-Fink Readiness to Practice Survey CFRPS.

This chapter presents the results of qualitative data collection. It introduces the qualitative results and the themes that emerged from both the focus group and semi-structured interviews with senior nursing students, faculty members, and hospital nursing education leaders. The next chapter presents the quantitative results, including the demographic characteristics of the participants and the CFRPS scores.

4.2   Findings from Qualitative Data

In the qualitative phase, senior nursing students were invited to participate in focus group interviews. Nineteen students accepted to participate in the focus group interviews at four different locations (Al Ain, Abu Dhabi, Ajman, and Al Dhafra). Also, four nursing faculty members and three nursing education leaders who have previous experience in nursing students' transition to practice participated in one-to-one semi-structured interviews. Each focus group interview took 1 to 1.5 hours, and each one-to-one interview took approximately 45 minutes to be completed. A total of seven one-to-one interviews and three focus group interviews were completed during June –July 2018.

4.2.1   Perceptions of nursing students, faculty members, and hospital education leaders on the readiness of nursing students to practice at the point before entry to the workforce.

This question was answered by examining participants' perceptions that were shared during face-to-face and focus group interviews. Three themes emerged after analyzing the data. These themes were communication confidence, clinical practice skills, and clinical training experiences. The identified themes were somehow interconnected, but the researcher tried to describe each one of them uniquely. Participants' quotes were labeled with the number of each participant (student, faculty, or leader).

1. Communication confidence
2. Clinical practice skills
3. Clinical training experiences

The first theme, "Communication confidence" referred to the ability of nursing students to communicate effectively during their clinical training with their peers, staff nurses, and other healthcare teams. The second theme, "Clinical practice skills" discussed the ability of nursing students' to implement nursing care as expected from senior students at this level of study before graduation. The third theme, "Clinical training experiences" described the effectiveness of students' clinical training experiences on their ability to learn, implement safe nursing care, and exhibit a readiness to practice before graduation.

4.2.1.1 Perceptions of nursing students on the readiness of nursing students to practice at the point before entry to the workforce.

Students had different perceptions related to the first theme ***'communicate confidence'*** during their practice. However, most of them expressed that they were not comfortable to communicate with physicians.

> *We did not involve a lot with physicians. We have very limited experience with them. (Student 1, 3, 5)*
> *Physicians do not have time to talk to student's nurses. They only ask us to translate for patients. (Student 2)*
> *We like to be part of the physicians round, but they do not allow us to speak, as they are busy with the medical students. (Student 2, 4)*

Students expressed that they did not prefer to be with physicians during the unit rounds on patients because they felt unready to answer physicians' questions about patients.

Some physicians ask us questions or ask us to bring things that we do not know. (Student 2, 3)

Students stated that they had good communication with nursing staff and faculty members. Most of the nurses and faculty members were supportive and answered students' queries about patients or any other issue during clinical practice.

Communication with nurses and our college staff is good. It is very rare to have not cooperative staff. No obvious barriers with them. (Student 5, 6, 7)
We are confident to communicate with nurses and college staff because we have enough clinical experience. (Student 8)

Four students stated that some nurses ignored students because they were busy with their patients. Other students highlighted that some nurses from certain countries used unofficial languages when they communicate with each other, which was not known to the students.

In general, it is ok. But some nurses have no time to communicate with us. Not all of them, but some. (Student 10, 11)
We are skilled in communication. However, some nurses use language or specific terminology that we are not aware of. (Student 13, 15)

Students described that they could communicate confidently with patients and their family members. However, they became confused about whether to answer their questions about the medical situation of the patients or not.

We are much comfortable to communicate with patients unless there is a language barrier. (Student 12, 13)

Communication with patients is ok. But we can't answer some questions such as patients' medical history or medications, diagnostic or lab results. (Student 2, 3)

When the patient family asks questions, we don't know if we can answer or not. (Student 8)

In summary, most students expressed confidence to communicate with their peers, nurses, and faculty members. However, they described difficulties when it came to communication with physicians and patients. They stated that physicians were always busy with their medical students and did not have time to attend to nursing students' queries. Students were also not so sure whether they could answer questions related to the medical situations of their patients.

In general, we are good at communication. We do not consider some of the issues that we have a major issue affecting our readiness to practice (Student 1, 4)

In the second theme, ***'clinical practice skills'***, students stated that they had the chance to practice most of the nursing skills in the College laboratories during their nursing education. However, they could not practice them all in real life situations during their clinical training experiences. They needed more time of clinical training to practice more skills, especially the psychomotor skills.

We covered everything during our lab training, but there was no time to practice all the skills in the hospitals. (Student 6, 7, 8, 10, 16, 18)

Students felt that they were particularly weak in performing invasive procedures, IV medication administration, drug calculation and interactions, IV pumps, wound care, Foley's catheter care and insertion, management of PEG tube, and management of drains.

We did not have enough chances to practice a number of skills especially IV medication preparation and administration, IV cannulation, PEG tube care, drain care, wound care, and other invasive procedures. (Student 1, 2, 7, 8, 12, 14, 17, 19)

Students voiced that they were not ready to practice some nursing skills confidently because of limited clinical training time to practice all these skills. They also stated that sometimes they were assigned to hospital units that had limited learning opportunities, and on some occasions, they were not allowed to practice all types of procedures, especially the invasive ones. These issues had a negative influence on the ability of some of the students to practice confidently before graduation.

We are still hesitant because we did not have enough time to practice. (Student 1, 3)
Some units in hospitals do not have enough skills to practice. (Student 6, 7, 17, 18)
Some nurses did not allow us to practice these skills. (Student 1, 2, 7, 9, 16)

In the third theme *'clinical training experiences'*, students discussed thoroughly their clinical training experiences and the role of these experiences in building up their readiness to practice. Four sub-categories emerged from students' comments about clinical training experiences: *Learning opportunities*, *clinical learning environment*, *preceptors*, and *clinical learning model*.

In the first sub-theme *'learning opportunities'*, many students stated that hospital environments influenced their ability to learn and achieve their learning objectives, and affected their confidence during clinical training experiences. Students viewed the clinical

learning environments where they practiced as crucial in building up their knowledge and practical skills. They stated that supportive clinical learning environments could have helped them to apply the knowledge they learned in the classroom on real patients and improved their overall problem solving and critical thinking abilities. However, other students believed that their clinical learning experiences supported them to view the big picture of nursing and improve their confidence to practice nursing care.

> *Our clinical training experiences gave us knowledge of real nursing. (Student 1, 3)*
> *Clinical training improved our skills and knowledge. (Student 1, 3)*
> *We had the chance to apply all the knowledge we learned in the college on patients. (Student 1, 3)*
> *Clinical training experiences improved our communication skills. (Student 3)*
> *Clinical experience was fine. It made us ready to survive the job. (Student 7, 8, 16)*

Two students highlighted the importance of having appropriate learning opportunities during their clinical training. They were not satisfied with their experiences at the medical units and requested to allocate nursing student to units that have better and more learning opportunities.

> *The experience at medical units didn't facilitate a lot of learning. There were limited learning opportunities for us to practice. (Students 4, 5)*
> *Shifting us and changing our places of experience will improve our knowledge and skills. (Students 4, 5)*

In the second sub-theme ***'clinical learning environment'***, some students described the variation in clinical learning environments between healthcare facilities. They argued that some hospitals had very conducive learning environments, which were very helpful for the

student to learn. However, not all students had the same experience at other hospitals. Some students were not allowed to engage actively in nursing care, and they were not given enough chances to have 'hands-on' learning experiences.

We were asked only to observe. We did not have enough chances to practice (4, 5)
Some hospitals didn't allow us to do the skills; they asked us to observe. But other hospitals were much better and were very supportive. (Student 6, 9, 10, 17, 18)

Some hospitals had a good learning environment, but others no. In some hospitals we only observe, they had no work for us, and their staff does not include us in the care. (Student 11, 12)

In the third sub-theme **'preceptors'**, students described their experiences with their nurse preceptors during clinical training. They appreciated when their preceptors showed interest to teach and provide them with appropriate learning opportunities. Students felt more comfortable asking their preceptors questions when the preceptors showed a willingness to prepare the students.

Some preceptors that we had were very good. They respected us and gave us enough support and time to practice. (Student 1)
My preceptor helps me a lot. I observed how she behaves and thinks about the cases. (Student 3)

Some preceptors, according to students, were not interested in teaching or mentoring nursing students. They did not help prepare a good learning environment for students to engage in nursing care responsibilities.

Some preceptors asked us to do only bathing, vital signs, bed making, and positioning. We have other objectives to achieve and other skills to practice such as drug preparation and administration. (Student 2)

Some nurses abused us but asking us to do the hard work only, and do not allow us to so all the skills we have to learn. (Student 5)

Some nurses abused the students by asking them to do only bathing for patients. (Student 13)

Some nurses were not interested to teach us and they do not allow us to practice. (Student 15)

Students also argued that some hospitals reduced the workload of nurses when they supervise nursing students, but that was not the case at all hospitals. Some of the hospitals did not lessen the load of preceptors and considered supervising nursing students as part of the professional responsibility of nurses.

A lot of nurses were busy and they informed us that they do not have time for students. (Student 12)

In some hospitals, most preceptors were supportive and helpful. Whereas other hospitals have no support of students at all. (Student 14)

Students stated that some preceptors did not know the learning needs of the students. They were not oriented to students' learning objectives and were not able to differentiate between different levels of nursing students.

Some preceptors were not prepared. They do not know our levels or objectives or anything about us. (Student 11)

In the last sub-theme *'clinical learning model'*, two students stated that the model of clinical learning and supervision were traditional and did not inspire the ability of students to improve their clinical reasoning skills before graduation. Most of the students stated that their preceptors and faculty members used to ask them to perform nursing skills, but they did not focus on improving students' problem solving and critical thinking skills.

> *Our clinical learning helped us to survive but didn't prepare us to learn outside the box. (Student 6)*
> *We didn't learn how to connect things together. (Student 8)*
> *We focused only on skills. Knowledge should be given more attention. (Student 17)*

4.2.1.2 Perceptions of nursing faculty members on the readiness of nursing students to practice at the point before entry to the workforce.

In the first theme *'communication confidence'*, most faculty members agreed that senior students had better communication skills compared with other students at lower levels of nursing study. They added that senior students' overall communication skills improved with more exposure to clinical training.

> *Students showed outstanding improvement in their communication skills when they moved to year 4 level. They had limited skills during their second year training, but they reached a competent level when they became senior students. So, I think they are ready in terms of communication effectiveness. (Faculty 3)*
> *Year 4 students are more comfortable than all other students in terms of communication skills. But the more clinical experience they have, the better communication abilities*

they will build. Senior students before their graduation have a good level of communication abilities. (Faculty 2)

Faculty member 4 stated that senior students had excellent communication skills. However, they faced some challenges with some preceptors and medical staff who did not show a willingness to work with students or teach them during their interaction with patients.

Senior students have adequate communication skills. They showed good improvement since their first clinical training exposure. In general, they have good and smooth communication abilities with their peers, faculty members, and staff members. However, sometimes they face some challenges with some of the staff nurses and physicians who don't show interest to teaching nursing students or to have them during the medical rounds, but it is not a major issue. (Faculty 4)

In the second theme, ***'clinical practice skills',*** faculty members had different opinions regarding the clinical experiences needed for students to improve their readiness to practice. One faculty member argued that students need more experience at medical-surgical units. Another faculty stated that students need clinical training at critical care units such as ICU, emergency unit, and operating theater to develop their nursing practice knowledge and skills.

Students need more clinical time in medical-surgical units and more support of their faculty members and preceptors to practice more clinical skills. (Faculty 4)
The use of clinical areas such as OT, ICU, and EU would improve students' knowledge and practice skills. (Faculty 3)
Allocating students at critical care units will motivate them to learn and will encourage them to have better preparation. (Faculty 3)

The nursing faculty members emphasized that students need to have more learning opportunities and clinical training hours to improve their readiness to practice upon graduation. They considered that students would have performed better in drug calculation, preparation, and administration, IV medications and pumps, wound care, Foley's catheter care and insertion, aseptic techniques, isolation techniques, physical assessment, and leadership skills if they had more learning opportunities and clinical training hours.

> *Students need to practice more IV medication preparation and administration, in addition to IV cannulation. (Faculty 1)*
>
> *Students should have more opportunities to practice a number of clinical skills such as safety measures, medications administration, drug calculation, aseptic techniques, wound care, Foley's catheter care, and suctioning. They also have limited leadership skills such as time management skills. They have major issues regarding punctuality and respect of time. (Faculty 2)*
>
> *Students need to have more clinical time and better support during their training to improve their clinical skills especially in medication preparation and administration, IV cannulation and care, endotracheal suctioning, wound care, and physical assessment. (Faculty 4)*

In the third theme, **'clinical training experiences'**, faculty members considered that these experiences had a major role in building students' readiness to practice. They mentioned that effective clinical training experiences were necessary to build students' professional identity, to improve their problem-solving and critical thinking skills, and to consolidate their knowledge at the real-life clinical settings. There were four sub-categories emerged from faculty members' comments about students' clinical training experiences: ***Clinical learning environment***, ***preceptors***, ***faculty members' role***, and ***students' support***.

In the first sub-theme '***clinical learning environment and learning opportunities'***, faculty members discussed thoroughly the learning environment where students had their clinical training. Most of them considered learning environments as positive in terms of faculty members' support and learning opportunities. Two faculty members had positive perceptions regarding clinical learning environments. They considered them well organized and appropriate for students' learning to achieve their learning needs.

> *The learning environments are conducive for our students' learning in terms of understanding of students; needs. There is good support from the hospitals' nursing administration for students. (Faculty 3)*
>
> *The learning environments are generally effective in terms of suitability for learning. The units selected for students are most suitable for them to achieve their learning objectives. However, sometimes students are placed in units where they can't achieve all of their objectives due to the increased number of students. As such rotating these students to different units will be helpful. (Faculty 4)*
>
> *The learning environment is suitable for students' learning. Students had good learning opportunities in hospitals. (Faculty 2)*

Only one faculty argued that students could not achieve all their learning objectives because of the lack of learning opportunities at the clinical training settings.

> *Students practiced approximately 70% of the skills. The rest could not be practices and students are not ready to practice them yet because of lack of opportunities in the units. (Faculty 1)*

In the second sub-theme *'preceptors'*, faculty members appreciated the responsibility and receptiveness of staff nurses who were willing to have students with them side by side to teach and secure proper learning opportunities for students. They stated that these preceptors were very helpful in improving students' confident and building up their professional identity as future registered nurses.

> *Preceptors were well oriented and prepared to work with the students. The active involvement of preceptors in the teaching and evaluation of students is appreciated and also encouraging for students. (Faculty 3)*
> *Most preceptors were oriented to students' learning needs. (Faculty 4)*

However, some concerns were expressed on the overall effectiveness of the preceptorship process in terms of preparedness and willingness of some of the appointed preceptors to having students and how much were the students able to achieve what was requested from them.

> *Preceptorship in general is effective. Most of the preceptors were supportive. However, some of them were not certified or qualified enough to supervise nursing students. A lot of preceptors were not well oriented to students' learning objectives and needs. (Faculty 2)*

> *Not all preceptors showed willingness to teach students. Effective preceptors are very important in students' clinical learning, and without them students cannot be well exposed to appropriate learning opportunities. (Faculty 4)*

Faculty members suggested improving the overall preceptorship of nursing students during their clinical training. They advised more collaboration between the educational and healthcare facilities to plan, prepare, and deliver more quality learning experiences.

More efforts should be done between the college and nursing education leaders in the hospitals to deliver proper orientation and education for registered nurses in the hospitals to become certified preceptors for nursing students. (Faculty 2)

Some preceptors considered students as an extra burden on them and they were not showing willingness to teach. Others were not prepared enough to supervise students. So it is the duty of both the colleges and hospitals to look at these deficiencies and try to come up with a plan to improve preceptors' knowledge, skills, and overall performance. (Faculty 4)

In the third sub-theme ***'faculty members' role'***, participants stressed on the importance to have faculty members at the clinical setting during students' clinical training. They believed that the availability of college faculty member at the clinical setting helped provide students with useful clinical experiences. They added that the support of faculty members during clinical training allowed students to progress to more complex experiences and gain confidence in caring for patients in different learning situations.

The college faculty members have essential role during students' clinical training. They can facilitate the relationship between students and preceptors. Also, overcome possible conflicts, help students achieve their learning needs, and help in evaluation of students' performance. (Faculty 3)

Involvement of the college faculty members in students' clinical training will improve students' learning and have positive effect on students' overall performance (Faculty 2)

Students need continuous support of their faculty to improve their learning initiative. (Faculty 1)

In the fourth sub-theme *'students' support'*, faculty members highlighted the importance of collaboration between the nursing colleges and the hospitals to prepare learning environments that are conducive to students' learning.

> *Collaboration between colleges and facilities is essential. Preparing conductive learning environments at the clinical facilities is mutual responsibility. (Faculty 3) Hospitals support for students while on practice is very important to improve their learning achievements. (Faculty 2)*

4.2.1.3 Perceptions of nursing education leaders on the readiness of nursing students to practice at the point before entry to the workforce.

In the first theme, *'communication confidence'*, nursing education leaders shared their experiences on senior nursing students' ability to communicate confidently before graduation. Leader 1 stated that students build their confidence in clinical training. The more the students are exposed to clinical settings, the better they communicate with staff members, patients, and members from other healthcare disciplines.

> *Students in general were reasonably comfortable to communicate with patients but probably not all are so when it comes to nurses. Confidence comes with training, level of student's maturity and even the culture. Some students were not used to interact with other people. Some students did not have an inter-gender interaction experience. (Leader 1)*

Leader 2 also had the same perception as leader 1. She argued that some students were very confident to communicate, but others were not at the same level.

You get some students very confident, but a lot are not. Those who grow up in this area don't have experience speaking with people from other gender. This has negative influence on students' communication abilities. Also, it showed be noted that high scoring students were more confident and more assertive in communication. (Leader 2)

Leader 3 highlighted the ability of students to work with difficult staff members or even reporting critical cases. She stated that students were not confident to report changes in patients' conditions to nurse managers or physicians, especially if they had critical cases.

Students got confused how to deal with difficult members. They don't have confidence to report or communicate with clients and doctors. Some of them were scared to report their cases to physicians or unit managers. Other students resisted to communicate their critical cases issues to the physicians. They have to learn to report/communicate especially the critical issues effectively and efficiently. The college has to reinforce the skills of reporting and communicating with senior nurses and physicians. But this will improve, with time their confidence will improve. Our preceptors also need to support students to become competent in communication. (Leader 3)

In the second theme **'clinical practice skills'**, nursing education leaders considered students' clinical experiences congruent with the international nursing education standards around the world and were enough to prepare students'' for their professional role as registered nurses. They stated that students had good exposure to different nursing units during their studies, such as adult nursing, maternity nursing, pediatric nursing, and mental health nursing units. However, they voiced that students were unable to practice competently and confidently some nursing skills such as IV cannulation, catheter insertion, tracheostomy care, and injections.

Students are not competent enough in cannulation, catheter insertion, tracheostomy care, PCA and injections. (Leader 1)

Students are weak in a number of nursing skills such as IV medication preparation and administration, NG tube insertion and feeding, IM injections, and intravenous catheter care. (Leader 2)

Students are weak in cannulation, IV medication, dressing, suctioning, vacuum care… (Leader 3)

The leaders agreed that these weaknesses were not acceptable before students' graduation. They referred this weakness to the inability of students to practice these skills either due to lack of training opportunities, or lack of proper supervision and guidance during their clinical training experiences.

The lack of clinical skills is due to inappropriate supervision and preceptorship of students. They did not have enough learning opportunities to practice on real patients. (Leader 2)

Building up students' psychomotor skills is the responsibility of faculty members and preceptors. Students need to be given the opportunity to practice and have hands-on experiences. (Leader 3)

Leader 3 added that,

Students will have better performance if they had enough practice in the labs. In the hospital, each student should document how many times she performed the skills and these evidence must be followed up by faculty and preceptors to make sure that all students are competent upon graduation. Students should have all opportunities to practice nursing skills to be ready upon graduation, they should not spend their clinical training watching the nurses how they practice. They have to practice themselves and apply the skills learned in their school.

In the third theme, **'clinical training experiences'**, nursing education leaders described their experiences with students' clinical training and the influence of training on students' readiness to practice before graduation. Three sub-categories emerged from leaders' comments on students' clinical training experiences. These sub-categories were ***learning opportunities***, ***preceptors***, and ***clinical learning model***.

In the first sub-theme ***'learning opportunities'***, leader 2 argued that students had limited learning opportunities because some patients and their family members refuse to allow students to perform necessary nursing care. Some patients and family members prefer a registered nurse to do this job. Accordingly, the leader considered that preceptors have to reassure the patients and their family members that students can render quality nursing care under their direct supervision.

> *Some patients are not open enough to give learning opportunities to students. This is common among community members and has to be changed, the community should be more supportive to students' learning. Also, preceptors have to communicate with students in a more reassuring way so that students show more confidence and the families consider students to be safe. (Leader 2)*

In the second sub-theme ***'preceptors'***, the leaders explained the role of nursing preceptors in supervising and guiding nursing students thoroughly. They also discussed the traits of useful preceptors. Leader 1 voiced that there was a varying degree of nursing preceptors supervising

the students. Some of them were very supportive, but others were not at the same level of support.

> *There are varying degree of preceptors. They motivate students and encourage them to learn. The more they trust the students, the more learning opportunities they will offer to them. (Leader 1)*

Leader 2 explained that nursing preceptors have an essential role in preparing nursing students to practice safely. She added that when nursing preceptors do not act as role models for students, this would negatively influence their performance and readiness to practice before graduation. The shortage of nursing staff members and the inability of preceptors to give enough time and attention for students was another factor that had negatively influenced students' clinical learning and their overall readiness to practice.

> *Some nursing preceptors are not role models for students, and this is causing the education gap. Staff shortage and high workloads were also negatively affecting the preceptorship process of nursing students. (Leader 2)*

Leader 3 agreed that some preceptors were not prepared to supervise and teach nursing students during their clinical training. However, she confirmed that students received good support from most of the unit managers and education nurses who were aware of students' needs and supported them to achieve their learning objectives.

> *Some preceptors were not at a good level. However, there was enough support for students to improve. All CRNs and nursing managers were aware and supportive for students to achieve their objective. (Leader 3)*

In the third sub-theme *'clinical learning model'*, two leaders mentioned that students' clinical learning model and the number of clinical hours they spend at the clinical setting have a positive influence on their readiness to practice before graduation. Leader 1 stated that the block clinical learning model, where students complete their theoretical knowledge and clinical laboratories before the actual real-life clinical training, is more appropriate to improve students' overall readiness to practice. Also, leader 1 and 3 stressed on the need for students to spend more time at the real clinical settings to improve their knowledge, skills, and build their professional identity.

> *The block placement is beneficial for students to consolidate the knowledge taken in the classroom at the clinical setting. Also, students need to spend more time at the clinical setting to build trusting relations with staff members. (Leader 1)*
>
> *The time spent in hospitals is not enough. Allowing more time of clinical experiences will fill the theory-practice gap and prepare students well for the future. (Leader 3)*

4.2.2   How to improve students' readiness to practice before their graduation from nursing programs?

This question was answered by examining participants' perceptions that were shared during face-to-face and focus group interviews. Two themes were emerged after analyzing the data. These themes were *'students' academic preparation'* and *'receptive environment'* during clinical practice. Participants' quotes were labeled with the number of each participant (student, faculty, or leader). The first theme, "students' academic preparation" pertains to the

academic and clinical learning measures and strategies that could be done to improve students' readiness to practice. Whereas, "receptive environment" pertains to the actions and the support needed during students' clinical training to encourage their active learning and improve their overall safety performance.

4.2.2.1 Perceptions of senior nursing students on how to improve their readiness to practice before graduation from the nursing program.

In the first theme **'academic preparation'**, students described many suggestions to improve their readiness to practice before graduation during the interviews. These suggestions focused mainly on the academic and clinical skills needed for students' safe and confident practice during clinical training experiences. Some students suggested having more classroom preparation, especially in pharmacology. They argued that more and extended pharmacology course would prepare students to have good knowledge about patients' medications, dosages, side effects, and drug interactions. When students have enough knowledge of drugs used in the units, they will be able to practice safely and confidently.

> *We need more knowledge of pharmacology. Medication administration in the hospital is a serious issue, and we are afraid to administer a medication that we know. (Student 3) Pharmacology course can improve our knowledge and readiness for practice. (Student 2) We need a pharmacology course over two semesters. (Student 12)*

Some students suggested having a medical terminology course during their study. They stated that this course is necessary for students to read and comprehend the cases during their clinical training experiences.

Medical terminology is a very important course that we need. It helps us understand all the terminology used in the hospital. (Student 4)
We need more knowledge of medical terminology. (Student 5)

Other students stated that they need critical care nursing course during their study and considered this course important for students to help them take care of complicated cases during their clinical training.

A critical nursing course can help us function better with critical cases. (Student 13)

Additional students preferred to do a block clinical training; they considered the block system better than the 2-days system of learning to achieve better continuity of nursing care during their training.

The block clinical training system is more convenient for us. We don't like to do distracted learning. (Student 15)

One student mentioned the need for more simulation laboratory sessions. She considered that this type of learning improves critical thinking and clinical reasoning skills necessary for students to practice safely and confidently during their clinical training.

The use of simulation sessions will improve our critical thinking needed for hospital practice. (Student 17)

Similarly, one student stated the need to prepare students to think critically and learn to solve clinical problems.

We didn't learn to think outside the box. We don't learn how to connect things together. (Student 19)

In the second theme *'receptive environment*, some of the students stated their concerns on the social environment at some of the hospitals. They were not too concerned about the physical environment, but rather the receptiveness of students by some staff nurses at the units. Students voiced that sometimes they did not feel welcomed at some units. This experience had negatively influenced their confidence to interact with team members and to learn effectively during clinical training. Furthermore, students felt also nervous and less likely to seek new learning opportunities in the units that have tension between staff members, and their confidence to learn and perform was influenced negatively. Students voiced real appreciation when staff members exposed them to new learning opportunities. Students felt more comfortable to learn and ask questions when staff members showed a willingness to teach and offer them learning opportunities.

Some nurses welcomed us, but others showed no welcome, and they were not ready to teach us. (Student 4)
Sometimes we didn't feel welcomed and this made us stressed to learn or seek learning opportunities. (Student 5)
Some preceptors were not supportive at all; they don't even know what to teach us. (Student 8)

4.2.2.2 Perceptions of nursing faculty members on how to improve students' readiness to practice before graduation from the nursing program.

In the first theme *'academic preparation'*, faculty members believed that students needed more academic support. They suggested some measures to improve students' overall readiness to practice. One of the suggestions was to increase students' clinical training hours before graduation.

> *Students need to spend more time in clinical settings. The independent training duties had a very positive effect on students' readiness to practice. (Faculty 1)*

Another suggestion was to deliver additional knowledge of pharmacology to improve students' overall understanding of medications.

> *Students need academic support to improve their knowledge especially in pharmacology, medical terminology, and critical care nursing. (Faculty 2)*

Furthermore, most of the participants suggested adding critical care nursing and medical terminology courses to the curriculum.

> *Pharmacology and medical terminology are very important courses that need to be given more weight in the curriculum. (Faculty 4)*
> *Nursing students should focus more on pharmacology during their study. This will help them practice safely after graduation. (Faculty 2)*

One faculty member discussed the influence of well-structured simulation training on students' overall critical thinking and clinical reasoning skills during clinical training experiences.

Simulation labs should be actively involved/considered in students' academic teaching plan. Preparing students' through problem-based scenarios and critical thinking activities in the simulation labs will improve their knowledge, skills, and overall readiness to practice. (Faculty 4)

In the second theme **'receptive environment**, faculty members expressed many concerns on the ability of students to practice in a receptive clinical environment. They argued that some nursing preceptors were not ready to teach and supervise nursing students because they lack the knowledge of student' clinical learning needs, or they were not interested and willing to work with students. Besides, some of the learning facilities were not appropriate to meet students' learning needs either because of lack of learning opportunities or the majority of learning cases did not match with students' learning objectives. They suggested that all these factors need to be considered when planning clinical training experiences to improve students' readiness to practice.

Some preceptors were not ready to supervise nursing students. A lot of preceptors were not well oriented to students' learning objectives and needs. (Faculty 2)

Not all preceptors showed willingness to teach students. Effective preceptors are very important in students' clinical learning, and without them students can't be well exposed to appropriate learning opportunities. (Faculty 4)

More efforts should be done between the college and nursing education leaders in the hospitals to deliver proper orientation and education for registered nurses in the hospitals to become certified preceptors for nursing students. (Faculty 2)

Some preceptors considered students as an extra burden on them and they were not showing willingness to teach. Others were not prepared enough to supervise students. So it is the duty of both the colleges and hospitals to look at these deficiencies and try

to come up with a plan to improve preceptors' knowledge, skills, and overall
performance. (Faculty 4)

Some students didn't have enough chances to achieve their learning objectives because
of lack of opportunities in the units. (Faculty 1)

4.2.2.3 Perceptions of nursing education leaders on how to improve students' readiness to
practice before graduation from the nursing program.

In the first theme *'academic preparation'*, nursing education leaders suggested some measures

to improve students' readiness to practice before graduation. These measures focused on the

nursing curriculum, classroom support, simulation labs, and actions during students' clinical

training. The leaders suggested focussing more on pharmacology, life support, critical care

nursing, mental health nursing, oncology nursing, and emergency health topic in the nursing

curriculum.

> *The nursing curriculum should provide a broad spectrum of topics needed for beginner*
> *practitioners. Students are in need for more pharmacology courses. They also need to*
> *recognize the signs and symptoms of deteriorating patients, and life support measures.*
> *(Leader 1).*
>
> *Students don't have enough knowledge of mental health nursing, critical care nursing,*
> *critical analysis, oncology nursing, pharmacology, and emergency health topics. They*
> *have weakness especially when it comes to drug indications and side effects. (Leader*
> *3)*
>
> *Students need more time in the clinical setting to build up their professional identity*
> *and nursing skills. (Leader 1)*

Besides, they requested to increase students' total number of clinical hours and faculty support during clinical training to improve student' clinical performance, problem-solving, and clinical reasoning skills. Moreover, leaders highlighted the importance of well-structured simulation training before the actual clinical training to improve students' critical thinking and clinical reasoning skills, and to attain safe practice.

> *The final clinical placement composed of 27 shifts is very helpful to enroll students into their graduation page. This will improve their confidence, relationships, knowledge, and clinical reasoning skills needed for safe practice. Spending more time at the clinical setting will help them attain all these skills. (Leader 1)*
>
> *Students need more time in clinical and better support from their faculty and preceptors. (Leader 2)*
>
> *The ratio of college faculty at the clinical setting is low. There should be more faculty helping to supervise the students with the hospital preceptors. (Leader 3)*
>
> *Students should be engaged more indirect nursing care to build their confidence. Simulation labs are very important; when student spend enough time in simulation labs, their performance will be better and safer in the clinical setting. (Leader 3)*

In the second theme ***'receptive environment***, nursing education leaders argued that some students had negative experiences during their clinical training either because they did not have enough attention and follow-up from their preceptors and faculty members, or because they had limited learning opportunities at the hospital units. To improve students' readiness to practice, the leaders recommended preparing enough learning opportunities and close supervision and continuous follow up of students to make sure that appropriate learning is taking place at the hospital units.

The nursing faculty members and nursing preceptors need to be more available at the bedside to improve students' teaching and evaluation of their performance. (Leader 1)

Hospitals need to recruit senior and specialized nurses to supervise and help nursing students achieve their learning. (Leader 2)

More clinical preceptors and college faculty members needed to support students during their placements. Adjunct facilitators may be required in each hospital unit to work closely with students. (Leader 2)

Active engagement of the college faculty members in nursing bedside care and more visibility of faculty members have a positive influence on students' readiness to practice. (Leader 3)

4.3 Summary of Qualitative Findings

Interviews were conducted to collect qualitative data from a sample of 19 senior nursing students, four faculty members, and three nursing education leads. Data analysis started after the first interview and continued until the last one until the researcher reached data saturation. The researcher used thematic analysis to identify patterns and themes in the collected data.

4.3.1 Senior Nursing Students

Analysis of students' perceptions on their readiness to practice at the point before entry to the workforce showed that they could communicate confidently with patients and families, but they sometimes get hesitant whether to answer questions related to the medical condition of patients. Most of the students were not comfortable to communicate with physicians. They did

not prefer to be with physicians during the unit rounds, and they felt unready to answer physicians' questions regarding patients' medical condition. Students did not express any concern related to their ability to communicate with peers, nursing staff members, and faculty members. Moreover, some students raised some matters related to their relationship with nursing preceptors.

Students also expressed that they did not have enough chances to practice all nursing skills/tasks during their clinical training experiences. They requested more clinical training time and opportunities to practice and master all nursing psychomotor skills. Students felt particularly weak in performing some nursing skills/tasks such as IV medication administration, drug calculation, IV pumps, wound care, Foley's catheter care and insertion, management of PEG tube, and management of drains. They also stated that they were sometimes assigned to hospital units that have limited learning opportunities, and on some occasions, they were not allowed to practice all types of nursing procedures.

Further, students discussed thoroughly their clinical training experiences and the role of these experiences in building up their readiness to practice. They stated that practicing at hospitals, which had supportive learning environments, had positively influenced their ability to learn, achieve their learning objectives, and improve their overall confidence to practice. Some students were not satisfied with their experiences and requested an allocation to different units that have better and more learning opportunities as sometimes they were not allowed to engage actively in patient care and they were not given enough chances to have 'hands-on' learning experiences. Also, some students reported that some nursing preceptors were not interested in

supervising and teaching nursing students. They added that some preceptors were not oriented to the learning needs of students and were not able to differentiate between nursing students at different levels of learning.

Regarding academic preparation, students described some suggestions to improve their readiness to practice during the interviews. They suggested having more classroom preparation, especially in pharmacology, medical terminology, critical care nursing, and more simulation sessions. Also, students preferred to do block system clinical training instead of the 2-days system of learning to achieve more continuity of nursing care during their training.

4.3.2   Faculty Members

Most faculty members agreed that senior students have better communication skills compared with students at lower levels of study. They reported that senior students faced some challenges with nursing preceptors and medical staff who were not interested or willing to supervise students. Besides, faculty members emphasized that students need to have more learning opportunities and more practice time to improve their readiness upon graduation. They argued that with proper opportunities and time at the clinical facilities, students could perform better in drug calculation, preparation, and administration, IV medications and pumps, wound care, Foley's catheter care and insertion, aseptic techniques, isolation techniques, physical assessment, and leadership skills.

Moreover, faculty members discussed thoroughly the learning environments where students had their clinical training. They raised some concerns related to students' ability to achieve their learning objectives because of the lack of learning opportunities at the clinical training settings. Also, they expressed some concerns related to the overall effectiveness of students'' preceptorship in terms of preparedness and willingness of some of the appointed preceptors to supervise students. Also, faculty members stressed the importance of having faculty support during students' clinical training. They believed that the availability of college faculty members facilitate useful clinical training experience and beneficial to help students gain more confidence in caring for patients at different levels of complexity.

Faculty members believed that students needed more academic support during their study. They suggested some measures to improve students' overall readiness to practice. They suggested increasing students' exposure to clinical training by raising the total number of clinical hours required for students' graduation. They also suggested adding critical care nursing, medical terminology, pharmacology as a separate course, and well-structured simulation training to improve students' critical thinking and clinical reasoning skills upon graduation from the nursing program.

4.3.3 Nursing Education Leaders

Nursing education leaders agreed that students build their confidence gradually with more exposure to clinical training experiences. They believed that the more the students are exposed to clinical experiences, the better they will communicate with staff members, patients, and

members from other healthcare disciplines. They also highlighted the ability of students to work with difficult clinical situations, and their decreased confidence to report changes in patients' conditions to the nurse managers or physicians.

Education leaders argued that students had good exposure to different nursing units and specialties during their study, but some of them were still unable to practice some nursing skills such as IV cannulation, catheter insertion, tracheostomy care, and injections confidently. The leaders agreed that these weaknesses were not acceptable at the level of graduation. They referred this weakness to a lack of training opportunities and ineffective students' supervision and guidance during their clinical training experiences.

Moreover, leaders stated that at some occasions, students had limited learning opportunities because patients or family members did not allow them to practice; they preferred registered nurse to do the nursing care. Accordingly, they highlighted the responsibility of preceptors to reassure patients and their family members that students can render quality nursing care. Further, nursing leaders explained thoroughly the role of nursing preceptors in supervising, teaching, and guiding nursing students. They also discussed the traits of useful preceptors. They told that nursing preceptors have an essential role in preparing nursing students to practice safely and independently. However, they argued that the shortage of nursing staff members and the inability of preceptors to give enough time and attention for students had negatively influenced students' clinical learning and their overall readiness to practice.

Leaders also mentioned that students' clinical learning model and the number of clinical hours that students spend at clinical settings have a positive influence on their readiness to practice before graduation. They preferred the block clinical learning model, where students have to complete their theoretical knowledge and labs then perform their clinical training. They also recommended that students spend more time at the real clinical settings to improve their knowledge, skills, and build their professional identity.

Nevertheless, the leaders suggested some measures to improve students' readiness to practice before graduation. These measures focused on the nursing curriculum, classroom support, simulation labs, and actions during students' clinical training. They suggested focussing more on pharmacology, life support, critical care nursing, mental health nursing, oncology nursing, and emergency health topic in the nursing curriculum. Also, they requested to increase students' total number of clinical hours and faculty support during clinical training to improve student' clinical performance, problem-solving, and clinical reasoning skills. Moreover, the leaders highlighted the importance of well-structured simulation training before clinical training to improve students' critical thinking and clinical reasoning skills and attain safe practice during clinical training.

4.4   Chapter Summary

The study used semi-structured and focus group interviews that focused on participants' perceptions of the adequacy of students' clinical training experience, academic and clinical proficiency, and factors that influence students' readiness to practice.   The researcher interviewed 19 senior nursing students and seven nursing faculty members and nursing

education leaders. Open-ended questions were used to encourage rich and descriptive responses (Minichiello Aroni & Hays 2008). Question guides were developed after an extensive review of the literature on the study topic and reviewed by a penal of 3 to 4 expert nursing educators to maintain the trustworthiness of the instrument (Creswell 2009). Semi-structured interviews were a simple and flexible tool for data collection, which produced a wealth of information about the phenomenon under study (Marczyk, DeMatteo & Festinger 2005). It enabled the researcher to uncover both verbal and non-verbal responses while still maintaining enough space for spontaneity. Whereas, focus group interviews, according to Polit and Beck (2014) involves groups of 5 to 10 participants whose experiences and opinions are explored at the same time. This type of interview, according to Morgan (1998) relies on the interaction within the group in the discussion of the research topic. Students were able to interact with each other during the discussion rather than only with the interviewer to yield emerging views and opinions rather than the researcher's agenda was able to predominate.

Qualitative results showed that students communicate confidently with patients and families, but they sometimes get confused about whether to answer their questions about the medical situation of the patients or not. However, students were not comfortable to communicate with physicians. They did not prefer to be with physicians during the unit rounds, and they felt unready to answer physicians' questions regarding patients. Students also expressed that they did not have enough chances to practice all nursing skills/tasks during their clinical training experiences. They requested more clinical training time and opportunities to practice and master all nursing psychomotor skills. Besides, some students were not satisfied with their clinical training experiences and requested to be allocated at units that have more learning opportunities as sometimes they were not allowed to engage actively in patients' care and they

were not given enough chances to have 'hands-on' learning experiences. Also, some students reported that some nursing preceptors were not interested in supervising students and were not oriented to the learning needs of students. Finally, students highlighted the need for more pharmacology, medical terminology, and critical care nursing courses and more simulation sessions.

CHAPTER FIVE: QUANTITATIVE RESEARCH FINDINGS

5.1   Findings from Quantitative Data

To answer the third research question 'The factors that foster or hinder students' readiness to practice before graduation', quantitative data was collected from senior nursing students using 'Casey-Fink Readiness to Practice Survey 2008 – CFRPS (Appendix 3) to identify the factors that influence students' readiness to practice before graduation. An online version of CFRPS was sent to all senior nursing students in August 2018 via direct email. One hundred twenty surveys were sent to senior nursing students, and the researcher received 90 completed surveys.

The survey items were designed, according to Casey et al. (2011), to mark specific nursing skills and activities that senior nursing students were expected to perform before graduation. The survey consisted of four sections. The first section collected demographic data of nursing students. The second section focused on students' comfort to perform a list of nursing skills. The third section asked students to identify their level of confidence in managing (two, three, and four) patient's assignments. This section had a 5-point Likert scale ranging from 1= not confident to 5= very confident. The last section asked the students to self-report their level of comfort/confidence in key nursing practice skills using a Likert scale ranging from 1= strongly disagree to 5= strongly agree. This section also had one open-ended question on 'what could be done to help students feel more ready to enter the nursing profession'. Casey et al. (2011) argued that the last section of the survey should be used to specifically identify the domains of

readiness in the development of senior nursing students clinical practice confidence. These domains were students' 'clinical problem solving', 'learning techniques', 'professional identity', and 'trials and tribulation.

5.2   Demographic Data

Students' age ranged from 21 – 35 year old with a mean age of 23.21 ± 1.95 years (Table 4.). 99% of the students' age was 21-27. All students were females (100%), 71 were single (78.9%) and 19 married (21.1%). They were all enrolled in the traditional BSN program (100%) with an average GPA of 2.77 ± 0.474. Students were distributed at 5 nursing colleges, 16 were at COHS - Abu Dhabi (17.8%), 26 at COHS - Al Ain (28.9%), 28 at COHS - Al Dhafra (31.1%), 18 at COHS - Ajman (20%), and 2 at University A (2.2%). Five students only reported having previous nursing work experience (5.6%) (Table 5.).

Table 4. Participants' Age

Age		
Mean	23.21	
Std. Deviation	1.957	
Range	14	
Minimum	21	
Maximum	35	
	Frequency	*Percent*
21	15	16.7
22	22	24.4
23	15	16.7
24	22	24.4
25	9	10.0
26	5	5.6
27	1	1.1
35	1	1.1
Total	**90**	**100.0**

Table 5. Demographic Characteristics

|	*Frequency* *(N = 90)*	*Percent* *%*
Gender		
Female	90	100
Marital Status		
Married	19	21.1
Single	71	78.9
Type of Nursing Program Enrolled		
BSN	90	100
School of Nursing Attended		
COHS - Abu Dhabi	16	17.8
COHS - Al Ain	26	28.9
COHS - Al Gharbia	28	31.1
COHS - Ajman	18	20.0
University A	2	2.2
Prior Nursing Experience		
Yes	5	5.6
No	85	94.4
	Mean	*Std. Deviation*
GPA	2.77	.474

5.3   Performance of Nursing Skills/Procedures

Students were asked to list three skills/procedures that they were most uncomfortable performing independently. The results (Table 6.) showed that students were not comfortable to perform bladder catheter insertion/irrigation (65.56%), blood draw/venipuncture (40%), central line care (32.22%), responding to an emergency/CODE/changing patient condition (28.89%), chest tube care (25.56%), EKG/Telemetry monitoring and interpretation (14.44%), Trach care/suctioning (11.11%), giving verbal report (10%), assessment skills (7.78%), and IV pumps/PCA pump operation (7.78%).

Table 6. Top 10 Skills/Procedures that Cause Students' Discomfort

Skills/Procedures	Frequency N=90	Percent %
Bladder catheter insertion/irrigation	59	65.56
Blood draw/venipuncture	36	40.00
Central line care (dressing change, blood draws, discontinuing)	29	32.22
Responding to an emergency/CODE/changing patient condition	26	28.89
Chest tube care	23	25.56
EKG/Telemetry monitoring and interpretation	13	14.44
Trach care/suctioning	10	11.11
Giving a verbal report	9	10.00
Assessment skills	7	7.78
IV pumps/PCA pump operation	7	7.78

Figure 5. All Skills/Procedures that Cause Students' Discomfort

All Skills/Procedures that Caused Students' Discomfort
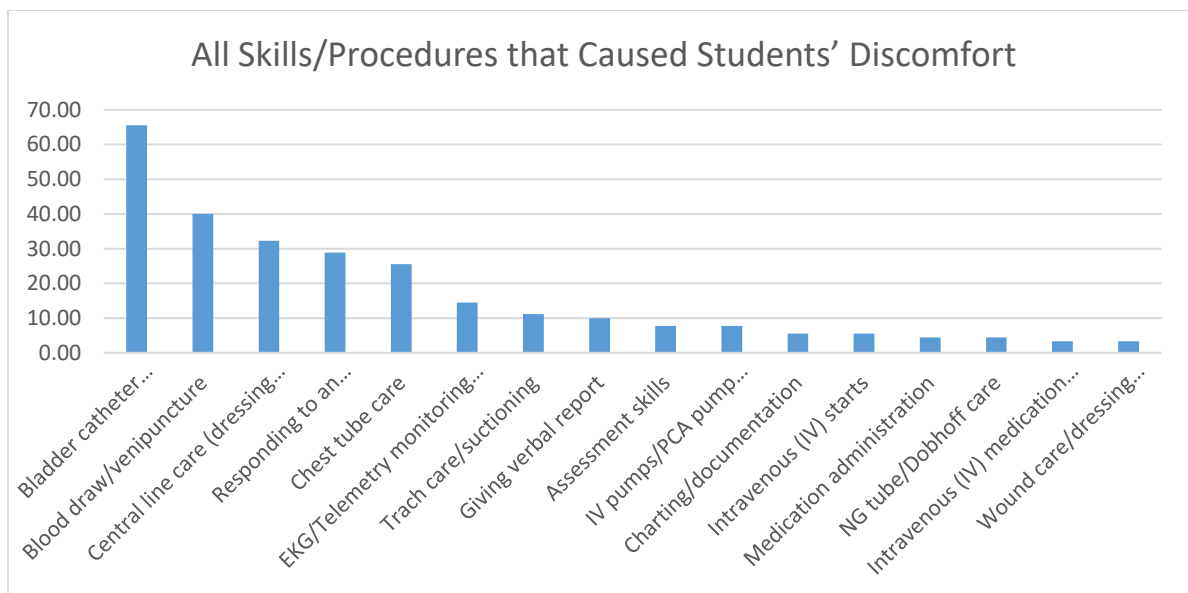
5.4 Patient Care Assignment

Section 3 of the survey asked students to identify their level of confidence in managing patient care (two, three, and four) patient's assignment on medical-surgical units. Students (Table 7.) were confident managing 2 patients (*Mean = 3.75, SD = 1.04*). Students were also confident in managing 3 patients (*Mean = 3.25, SD = 1.00069*). However, the mean was less with the confidence to manage four patients (*Mean = 2.67, SD =1.02*).

Table 7. Level of Confidence Managing Multiple Patient Assignments

		Caring for 2 patients	*Caring for 3 patients*	*Caring for 4 patients*
N	*Valid*	90	90	90
	Missing	0	0	0
Mean		3.7556	3.2556	2.6778
Std. Deviation		1.04194	1.00069	1.02582

The level of correlation between combined students' confidence in managing multiple patient assignments with different variable was measured using Pearson correlation. The results showed no correlation between combined students' confidence and the area of students' senior clinical practicum experience, or cumulative GPA, or past nursing experience, or school of nursing attended.

5.5 Comfort/Confidence Domains

This section of the survey asked the students to self-report their level of comfort/confidence in essential nursing practice skills using a Likert scale ranging from 1= strongly disagree to 5= strongly agree. Casey et al. (2011) identified a four-factor set of correlated subscales after

performing exploratory factor analysis using the Kaiser criterion on the 20 items of this section. These subscales were: clinical problem solving, learning techniques, professional identity, and trials and tribulations. Each subscale or domain had two to six items that were included in the domain based on their "factor loadings and theoretical considerations regarding which items seemed to tap similar constructs" (Casey et al. 2011, p. 648). All the items of the domains were related to students' use of simulation and reflective writing during clinical training experiences, aspects of students' clinical care with patients, interactions with supervisors and coworkers, and systems of care.

Analysis of this section (Table 9., Figure 6.) showed that students reported acceptable level of confidence in nursing skills such as communication with physicians, interdisciplinary teams, and patients, delegation, receiving feedback, ability to problem solve, opportunities to practice, asking for help, ability to make clinical decisions, identifying safety risks, and readiness to assume professional nursing roles. Students were relatively less comfortable in using electronic medical record, recognize significant changes in patient's condition, the influence of simulation experiences on their readiness for clinical practice, writing reflective journals, and caring for dying patients. Cronbach's alpha was performed to determine the total items and domains' internal consistency reliability. Cronbach's alpha was performed, and the item-total correlation was assessed. Cronbach's alpha was 0.932 (Table 10.).

Table 9. Item Analysis of Comfort/Confidence Domains

Questions	*Mean*	*SD*	*Sig. (2-tailed)*
1. I feel confident communicating with physicians	3.044	0.686	1.000E-013
2. I am comfortable communicating with patients from diverse populations.	3.356	0.659	1.000E-013
3. I am comfortable delegating tasks to the nursing assistant.	3.011	0.727	1.000E-013
4. I have difficulty documenting care in the electronic medical record.	2.422	0.912	1.000E-013
5. I have difficulty prioritizing patient care needs.	2.389	0.844	1.000E-013
6. My clinical supervisor provided feedback about my readiness to assume an RN role.	3.056	0.725	1.000E-013
7. I am confident in my ability to problem solve.	3.078	0.691	1.000E-013
8. I feel overwhelmed by ethical issues in my patient care responsibilities.	2.578	0.821	1.000E-013
9. I have difficulty recognizing a significant change in my patient's condition.	2.411	0.733	1.000E-013
10. I have had opportunities to practice skills and procedures more than once.	3.189	0.717	1.000E-013
11. I am comfortable asking for help.	3.111	0.694	1.000E-013
12. I use current evidence to make clinical decisions.	3.100	0.582	1.000E-013
13. I am comfortable communicating and coordinating care with interdisciplinary team members.	2.978	0.687	1.000E-013
14. Lab Simulations have helped me feel prepared for clinical practice.	2.700	0.930	1.000E-013
15. Writing reflective journals/logs provided insights into my own clinical decision-making skills.	2.789	0.757	1.000E-013
16. I feel comfortable knowing what to do for a dying patient.	2.544	0.889	1.000E-013
17. I am comfortable taking action to solve problems.	3.067	0.614	1.000E-013
18. I feel confident identifying actual or potential safety risks to my patients.	3.144	0.591	1.000E-013
19. I am satisfied with choosing nursing as a career.	3.256	0.712	1.000E-013
20. I feel ready for the professional nursing role.	3.056	0.725	1.000E-013

Figure 6. Item Analysis of Comfort/Confidence Domains
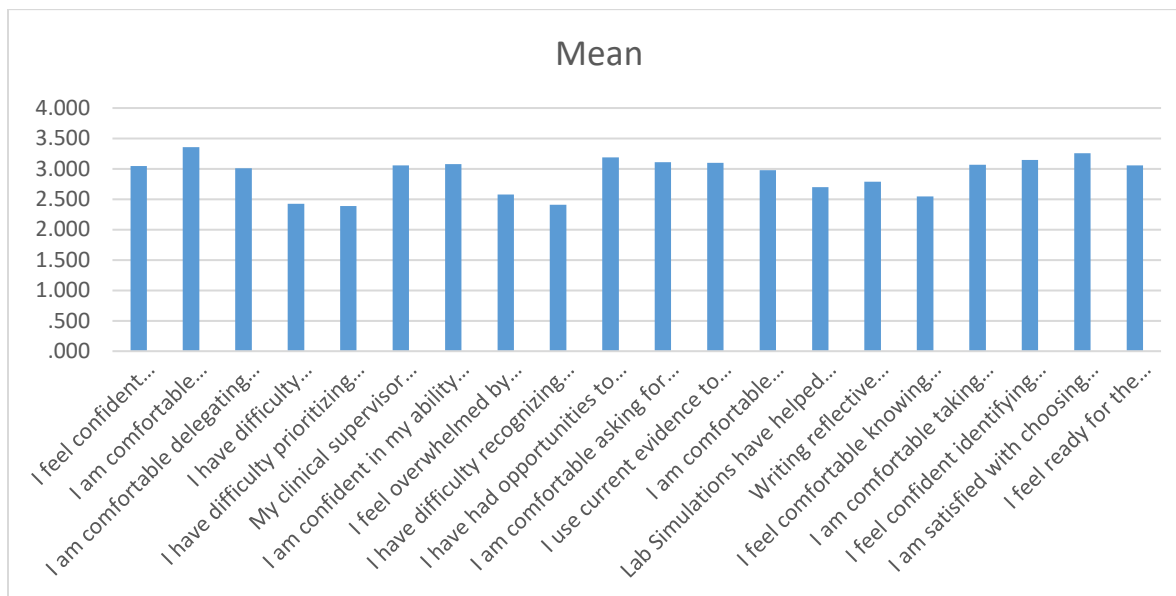
Table 10. Total Item Reliability Statistics

Cronbach's Alpha	N of Items
0.932	20

5.5.1   Students' Clinical Problem Solving Skills (Table 11.)

Students felt confident when communicating with physicians (*Mean = 3.044*, *SD = 0.686*), but they were less comfortable communicating and coordinating the care with interdisciplinary teams (*Mean = 2.978*, *SD = 0.687*). Also, students were confident in their ability to problem solve during clinical practice (*Mean = 3.078*, *SD = 0.691*), use current evidence to make clinical decisions, and identify actual and potential safety risks to patients (*Mean = 3.144*, *SD = 0.591*). They were less comfortable knowing what to do for a dying patient (*Mean = 2.544*, *SD = 0.889*).

Table 11. Students' Clinical Problem Solving Skills

Question	Mean	SD	Sig. (2-tailed)
1. I feel confident communicating with physicians	3.044	0.686	1.000E-013
7. I am confident in my ability to problem solve.	3.078	0.691	1.000E-013
12. I use current evidence to make clinical decisions.	3.100	0.582	1.000E-013
13. I am comfortable communicating and coordinating care with interdisciplinary team members.	2.978	0.687	1.000E-013
16. I feel comfortable knowing what to do for a dying patient.	2.544	0.889	1.000E-013
18. I feel confident identifying actual or potential safety risks to my patients.	3.144	0.591	1.000E-013

5.5.2 Students' Learning Techniques (Table 12.)

Students felt that simulations were not helpful to prepare them for clinical practice (*Mean = 2.700*, *SD = 0.930*) and did not feel that writing reflective logs provided them with insights into their clinical decision-making skills (*Mean = 2.789, SD = 0.757*).

Table 12. Students' Learning Techniques

Question	Mean	SD	Sig. (2-tailed)
14. Lab Simulations have helped me feel prepared for clinical practice.	2.700	0.930	1.000E-013
15. Writing reflective journals/logs provided insights into my own clinical decision-making skills.	2.789	0.757	1.000E-013

5.5.3 Students' Professional Identity (Table 13.)

Students were comfortable to communicate with patients from diverse populations (*Mean = 3.356*, *SD = 0.659*) and to ask for help when needed (*Mean = 3.111*, *SD = 0.694*). Besides,

they agreed that their supervisor provided feedback about their readiness to assume the role of a nurse (*Mean = 3.056, SD = 0.725*). They were also satisfied with choosing the nursing profession as their career (*Mean = 3.256, SD = 0.712*). Finally, students felt that they were somehow ready for the professional nursing role (*Mean = 3.056, SD = 0.725*).

Table 13. Students' Professional Identity

Question	*Mean*	*SD*	*Sig. (2-tailed)*
2. I am comfortable communicating with patients from diverse populations.	3.356	0.659	1.000E-013
6. My clinical supervisor provided feedback about my readiness to assume an RN role.	3.056	0.725	1.000E-013
11. I am comfortable asking for help.	3.111	0.694	1.000E-013
19. I am satisfied with choosing nursing as a career.	3.256	0.712	1.000E-013
20. I feel ready for the professional nursing role.	3.056	0.725	1.000E-013

5.5.4   Students' Trials and Tribulations (Table 14.)

Students reported that they were comfortable to delegate tasks to the nursing assistant (*Mean = 3.011, SD = 0.727*). However, students reported difficulty to document care in the electronic medical record (*Mean = 2.422, SD = 0.912*), to prioritize patient care needs (*Mean = 2.389, SD = 0.833*), and to recognize significant changes in their patients' condition (*Mean = 2.411, SD = 0.733*). Moreover, some students reported that they were overwhelmed with ethical issues associated their patient care responsibilities (*Mean = 2.578, SD = 0.821*) and most of them had the opportunity to practice skills and procedures more than once (*Mean = 3.189, SD = 0.717*).

Table 14. Students' Trials and Tribulations

Question	Mean	SD	Sig. (2-tailed)
3. I am comfortable delegating tasks to the nursing assistant.	3.011	0.727	1.000E-013
4. I have difficulty documenting care in the electronic medical record.	2.422	0.912	1.000E-013
5. I have difficulty prioritizing patient care needs.	2.389	0.844	1.000E-013
8. I feel overwhelmed by ethical issues in my patient care responsibilities.	2.578	0.821	1.000E-013
9. I have difficulty recognizing a significant change in my patient's condition.	2.411	0.733	1.000E-013
10. I have had opportunities to practice skills and procedures more than once.	3.189	0.717	1.000E-013

5.6   Open-Ended Question

This section also had one open-ended question on 'what could be done to help students feel more ready to enter the nursing profession'. Seventy-eight students completed these questions. Three themes emerged from the analysis of this question: '***Clinical competency'***, '***Academic preparation***', and '***Clinical supervision'***.

5.6.1   Clinical Competency

36% of the students indicated the need to increase the total number of clinical training hours to have more opportunities to practice nursing skills. Also, 12.8% of students highlighted the need to have more simulation training to improve students' critical thinking and nursing practice skills before the actual training in hospitals. 3% of students suggested having more independent training at various specialty nursing departments to improve their engagement with clients and overall readiness to practice.

We need more time to practice nursing skills in well-prepared labs. (Student 12)

We need more clinical training days. (Student 17)

We need more simulation labs, skills lab sessions, and clinical practice days. (Student 62)

We need to have a more clinical practice. (Student 58-71, 75, 77)

More exposure to the different departments in the hospital. (Student 15, 18, 71)

5.6.2   Academic Preparation

21.7% of the students requested a greater emphasis on the knowledge of medical-surgical nursing, pharmacology, medical terminology, and pathophysiology during their study.

Focus on medical terminology, diseases, skills, medications during the study. (Student 17)

Improve our knowledge during the study. (Student 2, 8, 13)

Emphasizing on the importance of major subjects such as medical-surgical nursing and pharmacology. (Student 18)

We need to learn more about medications and medical-surgical cases. (Student 24, 33, 43)

I need more knowledge on medications (uses, side effects, and interactions). (Student 37)

Some courses are not useful for the nursing study, we need more focus on medical-surgical and critical care nursing. (Student 42)

I suggest more academic preparation, especially in pathophysiology. (Student 72)

To have more knowledge of pharmacology, this can help us practice safely and confidently. (Student 73)

To have more pathophysiology and pharmacology lessons at the college. (Student 77, 78)

5.6.3 Clinical Supervision

10.2 % of the students cited the need for better clinical support during clinical training experiences. Students highlighted the need to have more positive encouragement and engagement from clinical supervisors. They requested faculty members who have recent clinical experience and nursing preceptors who are interested and willing to work with students. Also, they highlighted the need for better availability, guidance, and support of their clinical supervisors and better educational quality clinical training experiences.

> *More availability of the college teachers to make us feel more confident to practice. (Student 11)*
>
> *Our supervisors need to motivate and support us instead of delivering negative feedbacks. (Student 14)*
>
> *More engagement of students' clinical supervisors. Assigning students to good nurses who are willing to teach students, not those who ignore and teach us nothing. Our supervisors have to be positive, encourage the students to become better, let them feel proud of being students nurses. (Student 17)*
>
> *Training with teachers who got more experience. (Student 19)*
>
> *The clinical supervisors need to be available most of the time to guide and teach us. (Student 41)*
>
> *We need to work with different nursing preceptors to have better experience. (Student 52)*
>
> *To have more support from our preceptors. (Student 72)*
>
> *To have more support from our faculty members during our training. (Student 74)*

5.7 Summary of the Quantitative Findings

Quantitative data was collected from senior nursing students using 'Casey-Fink Readiness to Practice Survey 2008 (CFRPS) to identify the factors that influence students' readiness to practice before graduation. An online version of CFRPS was sent to 120 senior nursing

students in August 2018 via direct email. Ninety surveys were completed and returned to the researcher.

Demographic data showed that students' age ranged from 21 – 35 year old with a mean age of 23.21 ± 1.95 years. All students were females (100%), 71 were single (78.9%) and 19 married (21.1%). They were all enrolled in the traditional BSN program (100%) and had an average GPA of 2.77 ± 0.474. Students were distributed among five nursing colleges, 16 were from Abu Dhabi (17.8%), 26 from Al Ain (28.9%), 28 from Al Dhafra Region (31.1%), 18 from Ajman (20%), and two from University A (2.2%). Five students only reported having previous nursing work experience (5.6%).

Students were asked to list three skills/procedures that they were most uncomfortable performing independently. Results showed that students were not comfortable to perform Bladder catheter insertion/irrigation (65.56%), Blood draw/venipuncture (40%), Central line care (32.22%), Responding to an emergency/CODE/changing patient condition (28.89%), Chest tube care (25.56%), EKG/Telemetry monitoring and interpretation (14.44%), Trach care/suctioning (11.11%), Giving verbal report (10%), Assessment skills (7.78%), and IV pumps/PCA pump operation (7.78%).

Regarding students' level of confidence in managing two, three, and four patient's assignment. Students were confident managing 2 patients (*Mean = 3.7556, SD = 1.04*). Students were also confident in managing 3 patients (*Mean = 3.25, SD = 1.00069*). However, the mean was less with the confidence to manage four patients (*Mean = 2.67, SD =1.02*).

Students were asked to self-report their level of comfort/confidence in essential nursing practice skills. The findings were categorized into four subscales reflecting students' clinical problem solving, learning techniques, professional identity, and trials and tribulations. The results showed that students were relatively less comfortable in using electronic medical record, recognizing significant changes in patient's condition, the effect of simulation experiences on their readiness for clinical practice, writing reflective journals, and caring for dying patients. Students reported an acceptable level of confidence in the rest of the nursing skills. Cronbach's alpha for internal consistency reliability of total items and domains correlation was 0.932.

Seventy-eight students completed one open-ended question on 'what could be done to help students feel more ready to enter the nursing profession'. Analysis of students' responses showed that 36% of students indicated the need to increase the total number of clinical training hours to have more opportunities to practice nursing skills. Also, 12.8% of students highlighted the need to have more simulation training to improve students' critical thinking and nursing practice skills before the actual training in hospitals. Moreover, 3% of students suggested having more independent training at various specialty nursing departments to improve their engagement with clients and overall readiness to practice.

Moreover, 21.7% of the students requested a greater emphasis on the knowledge of medical-surgical nursing, pharmacology, medical terminology, and pathophysiology during their study. Moreover, 10.2 % highlighted the need for better clinical support during clinical training

experiences, more positive encouragement of their clinical supervisors who have recent clinical experience and nursing preceptors who are interested and willing to work with students.

5.8   Chapter Conclusion

Quantitative data was collected from senior nursing students using 'Casey-Fink Readiness to Practice Survey 2008 (CFRPS) to identify the factors that might foster or hinder their students' readiness to practice before graduation (Fraenkel et al. 2015; Gay, Mills & Airasian 2009). The CFRPS was selected after completing the analysis of qualitative data of the first qualitative phase. The items of the survey were consistent with the qualitative phase findings and with the nature of research questions (Creswell 2009). In order to be used in the UAE, CFRPS validity and reliability was maintained through an extensive review of literature on undergraduate nursing students' readiness to practice, a review by a panel of expert nursing educators from the UAE, and performing of a pilot study (Fraenkel et al. 2015, Parker et al. 2014). Internal consistency of the survey items was measured by calculating Cronbach's alpha (Polit & Beck 2014).

Quantitative results students were not comfortable to perform a number of nursing skills such as bladder catheter insertion/irrigation, blood draw/venipuncture, central line care, responding to emergency/CODE/changing patient condition, chest tube care, EKG/Telemetry monitoring and interpretation, Trach care/suctioning, giving verbal reports, assessment skills, and IV pumps/PCA pump operation. Students were also less confident to manage the care for four

patients; they were more comfortable to do so with 2 and three patients. Also, the results showed that students were less comfortable in using electronic medical record, recognizing significant changes in patient's condition, the effect of simulation experiences on their readiness for clinical practice, writing reflective journals, and caring for dying patients

CHAPTER SIX: DISCUSSION OF THE STUDY RESULTS

6.1   Introduction

The nursing profession has rapidly developed in the last two decade in response to the huge advancements in healthcare systems and healthcare technology, physical science, and pharmacology. All these advancements required nurses to have a high level of intellectual abilities to perform simple and complex nursing tasks. The movement of nursing into a unique discipline also needed a specific body of knowledge for the profession, which was identified and complied with nurses' own efforts in education and research. This body of knowledge continued over time to form the theoretical basis of today's nursing practice (Tiffin 2013; Catalano 2015). Nursing today has augmented emphasis on evidence-based practice as a basis to deliver nursing care. Patients today are more knowledgeable and demand a higher level of knowledge and skills from their care providers (Catalano 2015).   Today's nurses are changing the notion of modern medicine and healthcare delivery. The healthcare field is also growing, and so are the opportunities for nurse educators, researchers, practitioners, and PhD holders. The increasing healthcare demands have made it imperative for a new generation of nurses who have critical thinking and reasoning abilities, and function as agents of care innovation (Tiffin 2013).

Nursing education and healthcare institutions have made enormous efforts in the last two decades to prepare and graduate nursing students who are ready to practice safely and independently (Pitt et al. 2012). However, employers continued to voice the need for graduates

who can "hit the floor running" and practice as expected upon entry to the workplace (Dlamini et al. 2014). Many studies on senior nursing students and new graduate nurses identified both educational and practice gaps affecting their readiness to practice despite all the significant improvements that were introduced to nursing education in the last two decades (Mellor, Gregoric & Gillham 2017). Many practice gaps were correlated to students' academic preparation, type of students' clinical training environments, and students' supervision and support during students' clinical training experiences (Wolff, Pesut & Regan 2010).

Many studies have explored the concept of senior nursing students and new graduates' readiness to practice prior and upon transition from educational to practice settings (Joolaee et al. 2015; Usher et al. 2015; Lea & Cruickshank 2014; Casey et al. 2011; Oermann et al. 2010; Berkow et al. 2009; Wolff, Pesut & Regan 2010; Fink et al. 2008). Most of these studies specified the need for before graduation strategies to improve students' academic preparation and clinical training experiences to achieve readiness to practice safely and independently upon graduation. Clinical training experiences aim to enhance nursing students' engagement with real-life situations, improve their ability to use clinical reasoning (Banneheke et al. 2016; Benner et al. 2010), and nurture their acquisition of knowledge, skills, and professional behavior (Rogan 2009). These experiences are multifaceted entities that have a crucial role in the learning outcomes of nursing students. They provide rich learning opportunities that are helpful to build students' cognitive, psychomotor, and professional skills and attitudes (Joolaee et al. 2015; Pitt et al. 2012).

In this chapter, the study findings are discussed, interpreted, and compared with results from the literature. The first section presents an overview of the study, which includes the significance of the research, purpose, theoretical framework, sampling methods, and data collection methods. The second presents a summary and discussion of the study findings.

6.2 Overview of the Study

Several batches of baccalaureate nurses graduated from the UAE in the last eight years. However, no known evidence-based literature explored senior students' or graduates' readiness to practice upon the completion of their baccalaureate programs in terms of the knowledge and skills they possess to achieve the UAE vision for high-quality healthcare services. At the same time, there are mounting concerns in nursing education literature on the ability of educational and practice entities to prepare nursing students that meet the expectations of the nursing workforce (Missen, McKenna & Beauchamp 2015; Buerhaus, Staiger & Auerbach 2009). The complexity of practice readiness requires a high degree of collaboration between education providers and healthcare facilities (Wolff, Pesut & Regan 2010). Therefore, exploring students' readiness to practice and identifying possible education-practice gaps is a shared responsibility (El Haddad, Moxham & Broadbent 2013) that requires improving delivery of educational programs, clinical training environments, students' supervision and learning models to build students' confidence, competence, and thus readiness to practice upon graduation (Usher et al. 2015; Dlamini et al. 2014; El Haddad, Moxham & Broadbent 2013; Casey et al. 2011).

Consequently, this study aimed to investigate undergraduate nursing students' readiness to practice in the UAE. The study explored students' academic knowledge and clinical skills needed to meet the entry-level competence to nursing workforce, which assures their ability to practice safely and independently, perform job-specific responsibilities, and contribute effectively to the healthcare teamwork. Exploring nursing students' readiness to practice in terms the academic knowledge and clinical skills they possess to practice safely and independently before graduation were hoped to contribute to the UAE and to the international body of nursing knowledge with the strategies and practices to examine and improve students' preparation to practice.

To achieve the purpose of this research study, the study answered the following questions:

1. What are the perceptions of nursing students, faculty members, and health care education leaders about/on the readiness of nursing students to practice at the point before entry to the workforce?
2. How could nursing students' readiness to practice improve before their graduation from nursing programs?
3. What are the factors that foster or hinder students' readiness to practice before graduation?

The theoretical framework of the study was guided by Bandura's 1994 Self-efficacy theory and Benner's 2001 Novice-Expert theory to investigate nursing students' readiness to practice. Bandura's self-efficacy theory explains the relationship between self-efficacy and students' learning (Bandura 1999). Bandura argued that to achieve the desired learning outcomes,

students must believe that they can successfully perform the behaviors necessary to achieve the outcome. Students have to "trust on their abilities to act efficiently in different situations" (Bandura 1999). This theory was used to explain how clinical learning experiences can influence nursing students' thoughts, beliefs, and behavior.

Bandura assumed that there is an interaction between student thoughts and behaviors, and the learning environment where they practice, and the capability of this environment to influence their performance. The four aspects of self-efficacy, namely, mastery of experience or performance, vicarious experience, verbal persuasion, and emotional arousal can change nursing students' ability to learn and affect their overall readiness to practice (Bandura 1997). In mastery performance, which is the strongest aspect influencing the development of self-efficacy, students begin during their clinical experiences to assume the role of the professional nurse with enough support of an experienced nurse. Secondly, they will also have the opportunity to observe the performance of experienced nurses and socialize into the role of a professional nurse, which is referred to as vicarious experience. Thirdly, verbal persuasion is achieved when students receive immediate feedback from their preceptors to enhance their practice. The fourth aspect of Bandura theory that impact students' self-efficacy is emotional arousal. Students' socialization into the professional role during clinical experiences assists them in comprehending the needs and expectations upon graduation. Socialization will improve students' confidence before graduation and reduce the amount of anxiety that might take place during their transition to the professional role (Lundberg 2008). Delivering quality academic and clinical placement experiences will positively influence students' self-efficacy,

which is reflected by their ability to critically think and successfully enact the required nursing competencies that make them practice-ready (Sebaee, Aziz & Mohamed 2017).

Benner's novice-to-expert theory identified nursing knowledge, experience, and skills as the foundation for practice growth resulting in clinical expertise. Benner (2001) divided skills acquisition into five stages based on a set of acquired competencies and skills development. The *novice* is when beginner nurses have no previous clinical experience in real-life situations, and they have limited ability to use clinical judgment. When nursing students enter a new clinical area, they have a limited understanding of the contextual meaning learned in classrooms. However, when they start gaining knowledge and experience, in addition to confidence, they can then progress into the second, *advanced beginner* stage.   In this stage, nurses have marginally acceptable clinical performance. They can note the components or aspects of repeated real situations that can be identified only through previous clinical experience. Advanced beginners need the assistance of their mentors when prioritizing nursing care as they are not yet competent enough to distinguish between the priority patients' tasks. *Competent* nurses are those who have two to three years of experience in similar clinical situations gained through their practice and developed when they started recognizing their actions in terms of long-term goals. Competent nurses can organize their responsibilities and able to make clinical decisions in real situations. *Proficient* performers are expert nurses who have many years of clinical experience. Proficient nurses perceive situations as wholes rather than specific aspects to be achieved. They acquire problem-solving abilities and focus of patients' holistic care and long-term outcomes that would be achieved with high-quality nursing care (Benner 2001).

Senior nursing students, according to Benner, Tanner and Chesla (2009) are not expected to perform as experienced nurses as they are still at the novice level. However, due to the high demand of graduates who perform as advanced beginners and the continuous rise in costs of training, an intense burden was exerted on educational institutions to graduate students who are ready to practice (Wolff, Pesut & Regan 2010). Advanced beginners exhibit an acceptable level of knowledge and performance of skills needed at hospitals for safe and effective care delivery (Benner 2012). The clinical training experiences enable reflective teaching-learning experiences for students to consolidate their theoretical knowledge and develop their practice skills (Bambini 2009). Students working under the supervision of experienced nurses will gradually improve their skills acquisition and move to a higher level of mature performance (Benner 2012). Such performance will be composed of psychomotor, cognitive, and attitudes abilities, in addition to management skills such as communication, teamwork, and situational awareness (Khan & Ramachandran 2012). New nurses' acceptable level of competency relies not only on the skills and abilities they have but most importantly on their ability to use these skills to perform satisfactorily and reasonably in clinical situations (Humphreys 2013; Khan & Ramachandran 2012).

The two theories served as a theoretical framework to guide and answer the study questions by looking at perceptions of students and stakeholders involved in preparing students to explore their readiness to practice. Benner's Novice to Expert theory identified the knowledge, skills, and competencies that served as the basis towards students' professional practice growth. Benner's theory was used to guide the revelation of the psychomotor, cognitive, attitudes, and

management skills and abilities that could be acquired during students' study and practice experiences whereas Bandura's Self-Efficacy theory revealed the factors that encouraged students' engagement in learning and performance during their professional practice, such as the practice learning environment, preceptorship, and students' support.

The study followed a sequential exploratory mixed method design to investigate undergraduate nursing students' readiness to practice in the UAE. Data was collected sequentially over two phases. In the first phase, qualitative data was collected from a sample of nursing students in their final year of study, and a sample of nursing faculty members and hospital education leads. Purposive sampling was used to select participants who have knowledge and experience with nursing students' needs to practice for the aim of acquiring a deep understanding of the study phenomenon (Fraenkel et al. 2015). A total of 19 senior nursing students, 4 Nursing faculty members, and three nursing education leaders participated in semi-structured and focus group interviews. Participants' experiences of nursing students' readiness were explored to obtain qualitative themes (Ponce & Pagan-Maldonado 2014). These themes were vital to building an in-depth understanding of students' readiness to practice (Creswell 2009) and to guide the selection of a proper survey for the quantitative phase (Gay, Mills & Airasian 2009). The researcher transcribed all interviews during the time of the meeting. All transcripts were double checked with participants to ensure information accuracy. Analyses of data started after the first interview and continued until the last one to be able to achieve data saturation. Thematic analysis, as described by Clarke and Braun (2013), was used to identify patterns and themes in qualitative data.

In the second phase, quantitative data was collected from a larger group of senior nursing students to examine their readiness to practice before graduation. The quantitative phase examined senior students' level of confidence/comfort to perform a set of nursing clinical skills/tasks before their graduation. One hundred seventeen students were invited to complete an online version of the Casey-Fink Readiness to Practice Survey CFRPS that was modified to meet the UAE context. 90 students out of the 117, completed the study survey. The researcher used IBM SPSS Statistics software version 21 to perform the analysis of quantitative data. Descriptive statistics were used to calculate the means and standard deviations of the variables in sections 1, 2, 3, and 4 of the survey. Section 1 collected demographic data of nursing students. Section 2 focused on students' comfort to perform a list of nursing skills. Section 3 asked students to identify their level of confidence in managing patient care (two, three, and four) patient's assignment on medical-surgical units. This section used a 5-point Likert scale ranging from 1= not confident to 5= very confident. Section 4 focused on students' readiness to practice using 20 questions on students' ability to perform nursing skills ranging from 1= strongly disagree to 5= strongly agree. Analysis of quantitative data facilitated reporting students' level of confidence in caring for more than one patient and the nursing skills that they did not feel ready to perform before their graduation. The open-ended question at the end of the survey was analyzed to highlight students' opinions on how to improve their readiness before graduation.

6.3 Highlights of the Findings of the Study

The study was conducted in two phases. In the first phase, qualitative data collection and analysis was performed with three groups of nursing participants: senior students, faculty members, and hospital education leads. Analysis of the senior nursing students' perceptions showed that students were able to communicate confidently with patients, family members, peers, nursing staff members, and faculty members. However, they were not confident to answer questions on the medical situation of the patients. Students were also not comfortable to communicate with physicians. They did not like to be with physicians during the unit rounds, and they felt not ready to answer physicians' questions regarding patients' medical conditions.

Additionally, students were not comfortable to perform some nursing skills/tasks such as IV medication administration, drug calculation, handling IV pumps, wound care, Foley's catheter care and insertion, management of PEG tube, and management of drains. They related these weaknesses to the limited learning opportunities at some of the hospital units where they could not practice all types of nursing procedures. Students discussed thoroughly their clinical training experiences and the role of these experiences in building up their readiness to practice. They stated that practicing at supportive learning environments had positively influenced their ability to learn, achieve their learning objectives, and improve their overall confidence to practice.

Concerning the role of nursing preceptors towards students' learning, students reported that some of the nursing preceptors were not interested in supervising and teaching students. They added that some preceptors were not oriented to the learning needs of students and were not

able to differentiate between nursing students at different levels of learning. Regarding the adequacy of academic preparation, students reported the need for more classroom preparation, especially in pharmacology, medical terminology, critical care nursing, and nursing simulation labs. Also, they voiced that the block system of clinical training was more helpful to facilitate their learning and to achieve more continuity of nursing care during their training.

The second group of participants, nursing faculty members, stated that senior students had better communication skills compared with students at different levels of study, but they had some challenges with some preceptors who were not interested in supervising and guiding them during their training. Faculty members emphasized that students need to have more learning opportunities and more practice time to improve their readiness upon graduation. They believed that with better learning opportunities and more clinical training hours at the clinical facilities, students would perform better in drug calculation, preparation and administration, handling IV pumps, wound care, Foley's catheter insertion and care, aseptic techniques, isolation techniques, physical assessment, and will gain better leadership skills.

Moreover, faculty members raised some concerns related to students' ability to achieve all their learning objectives during clinical training settings because of the lack of appropriate learning opportunities. They also highlighted the importance to have more supportive preceptors who are prepared and willing to supervise nursing students. In addition to effective preceptorship, faculty members stressed on the importance to have faculty support during students' clinical training. They stated that the availability of the college faculty members during students' practice would facilitate better quality training experience, which helps

students gain more confidence in caring for patients at different levels of complexity. Moreover, faculty members believed that students needed more academic support during their study and suggested to add some courses to the curriculum. These courses were critical care nursing, medical terminology, pharmacology as a separate course, and well-structured simulation training to improve students' critical thinking and clinical reasoning skills. Lastly, they suggested increasing students' exposure to clinical training settings by increasing the total number of clinical hours required for students' graduation.

The third group of participants, hospital nursing education leaders, stated that students had good exposure to different nursing units and specialties during their study, but some of them were unable to practice some nursing skills such as IV cannulation, catheter insertion, tracheostomy care, and injections confidently. They referred this weakness to a lack of training opportunities and ineffective students' supervision and guidance during their clinical training experiences. Nursing education leaders also indicated that students sometimes have limited learning opportunities because patients or their family members do not allow students to practice; they prefer registered nurse to do nursing care. Accordingly, they suggested that preceptors reassure the patients and their family members that students can render quality nursing care. The leaders explained that nursing preceptors have an essential role in preparing nursing students to practice safely and independently. However, the shortage of nursing staff and the inability of preceptors to give enough time and attention for students had negatively influenced students' clinical learning and their overall readiness to practice.

The leaders indicated that the block clinical learning model, where students have to complete their theoretical knowledge and labs then perform their clinical training, can have a better influence on students' learning. They suggested that students spend more time at the real clinical settings to improve their knowledge, skills, and build their professional identity. They also recommended delivering more pharmacology, life support, critical care nursing, mental health nursing, oncology nursing, and emergency health topics in the nursing curriculum. Moreover, they emphasized the importance of well-structured simulation training before clinical training to improve students' critical thinking and clinical reasoning skills and attain safe practice during clinical training.

In the second phase of the study, quantitative data was collected from senior nursing students using the Casey-Fink Readiness to Practice Survey 2008 (CFRPS) to identify the factors that influence students' readiness to practice before graduation. Demographic data showed that students' age ranged from 21 – 35 year old with a mean age of 23.21 ± 1.95 years. All students were females (100%), 71 were single (78.9%) and 19 married (21.1%). They were all enrolled in the traditional BSN program (100%) and had an average GPA of 2.77 ± 0.474. Students were distributed among five nursing colleges, 16 were from Abu Dhabi (17.8%), 26 from Al Ain (28.9%), 28 from Al Dhafra Region (31.1%), 18 from Ajman (20%), and two from University A (2.2%). Five students only reported having previous nursing work experience (5.6%).

Students were asked to list three skills/procedures that they were most uncomfortable performing independently. Results showed that students were not comfortable to perform

Bladder catheter insertion/irrigation (65.56%), Blood draw/venipuncture (40%), Central line care (32.22%), Responding to an emergency/CODE/changing patient condition (28.89%), Chest tube care (25.56%), EKG/Telemetry monitoring and interpretation (14.44%), Trach care/suctioning (11.11%), Giving verbal report (10%), Assessment skills (7.78%), and IV pumps/PCA pump operation (7.78%). Regarding students' level of confidence in managing two, three, and four patient's assignment, students were confident managing 2 patients (*Mean = 3.7556, SD = 1.04*) and 3 patients (*Mean = 3.25, SD = 1.00069*). However, the mean score was less with the confidence to manage four patients (*Mean = 2.67, SD =1.02*).

Students were asked to self-report their level of comfort/confidence in essential nursing practice skills. Results were categorized into four subscales reflecting students' clinical problem solving, learning techniques, professional identity, and trials and tribulations. Analysis of the results showed that students were relatively less comfortable in using electronic medical record, recognizing significant changes in patient's condition, the effect of simulation experiences on their readiness for clinical practice, writing reflective journals, and caring for dying patients. Students reported an acceptable level of confidence in the rest of the nursing skills. Cronbach's alpha for internal consistency reliability of total items and domains correlation was 0.932.

Seventy-eight students completed one open-ended question on 'what could be done to help students feel more ready to enter the nursing profession'. Analysis of students' responses showed that 36% of students indicated the need to increase the total number of clinical training hours to have more opportunities to practice nursing skills. Also, 12.8% of students highlighted

the need to have more simulation training to improve students' critical thinking and nursing practice skills before the actual training in hospitals. Moreover, 3% of students suggested having more independent training at various specialty nursing departments to improve their engagement with clients and overall readiness to practice. Moreover, 21.7% of the students requested a greater emphasis on the knowledge of medical-surgical nursing, pharmacology, medical terminology, and pathophysiology during their degree. Also, 10.2 % highlighted the need for better clinical support during clinical training experiences, more positive encouragement of their clinical supervisors who have recent clinical experience and nursing preceptors who are interested and willing to work with students.

6.4 Discussion of Findings

The study aimed to investigate undergraduate nursing students' readiness to practice in the UAE by exploring students' knowledge and clinical skills needed to meet the entry-level competence to the nursing workforce. This level of competence assures students' ability to practice safely and independently, perform job-specific requirements, and contribute effectively to the healthcare team.

Numerous studies in the nursing literature explored senior nursing students' readiness to practice before graduation. Exploring students' readiness took place in terms of some variables such as students' ability to perform nursing skills and nursing tasks, their communication skills, and academic preparation. Also, researchers explored students' clinical training opportunities during clinical experiences, the effectiveness of clinical supervision, and suitability of learning

environments. This section presents the findings of the study for discussion in three categories to bring some perspective on students' readiness to practice and the challenges encountered during this study. These categories are students' clinical competence, clinical training experiences, and academic preparation. The findings of both qualitative and quantitative phases of the study are combined for discussion.

6.4.1   Students' Clinical Competence

Nursing practice requires a combination of different characteristics such as complex clinical knowledge, clinical competence, critical thinking, and problem-solving skills (Nehrir et al. 2016). Therefore, nursing students need a high level of competencies to practice safely and accurately determine the needs of the patients, their status, and cope with the new clinical problems that might occur during nursing care (Fan et al. 2015; Seekoe 2016; Wolff, Pesut & Regan 2010). Readiness to practice, according to Wolff, Pesut & Regan (2010, p. 1) is achieved when students have "a generalist foundation and some job capabilities, providing safe client care… and they are possessing a balance of doing, knowing and thinking". Casey et al. (2010) also described students' readiness to practice in terms of having enough clinical competence, adequate knowledge, and clinical judgment skills required for nursing role performance. Most employers expect nursing students newly joining the workforce to be prepared to perform a full range of clinical skills, communicate effectively, and perform safe nursing care based on current evidence-based practices (Missen, McKenna & Beauchamp 2015).

In this study, 79% of the students either agreed or strongly agreed when questioned if they felt ready for the professional nurse role. Students were confident to communicate with patients, family members, peers, and nursing staff members. However, they were not comfortable to communicate with physicians during the medical rounds, and they felt not ready to answer physicians' questions regarding patients' medical conditions. They were also not confident to answer questions on the medical situation of the patients. These results were similar to other studies that examined students' readiness of practice. Heslop, McIntyre and Ives (2001) surveyed 105 third year nursing students at a large Metropolitan University in Australia to identify their expectations of the graduate nurse role and determine how prepared they feel to fulfill this role. The study found that students were prepared to communicate with patients, their family members, and with the other healthcare professionals. However, significate number of students were unprepared to communicate with doctors and handle patients with complex health problems. In another Australian study, Usher et al. (2015) assessed senior nursing students' perceptions of readiness to practice and their level of confidence before and after the introduction of a Capstone subject of 240 clinical training hours at the end of their study. The Capstone subject was introduced for nursing students at an Australian university in 2013. The authors examined the perceptions of readiness to practice of final year students in 2 cohorts, one of them only undertook a capstone subject. The study found that students were confident to communicate with patients from different backgrounds, but they reported low levels of confidence to communicate patients' medical issues with the physicians. The authors highlighted participants' concerns on students' confidence to perform some nursing procedures such as venipunctures, insertion of airways, assisting in intubation, and caring for dying patients.

Also, students in this study were not comfortable to perform some nursing skills such as IV medication administration and IV pumps, drug calculation, wound care, Foley's catheter care and insertion, management of PEG tube, and management of drains. They were also less comfortable in using electronic medical records, recognizing significant changes in patient's condition, writing reflective journals, and caring for dying patients.   The nursing faculty members and nursing education leads stated that with more amount of clinical training and proper learning opportunities at the clinical facilities, students will be able to perform better in drug calculation, preparation, and administration, IV medications and pumps, wound care, Foley's catheter care and insertion, aseptic techniques, isolation techniques, physical assessment, and leadership skills.

Nursing students develop their clinical competence through learning in authentic clinical training settings, where they have proper learning opportunities to perform on real patients the skills learned at simulation labs under the supervision of experienced nursing supervisors (Mikkonen 2017). These clinical settings help to build student's real professional identity in preparation for their future role (Maranon & Pera 2015). Students' overall communication and psychomotor skills develop more when they perform their clinical training in real clinical settings that have conductive learning environments. These settings assist students in gaining in-depth knowledge and understanding of the importance of performing quality and safe nursing care.

In a study to examine students' perceptions towards their readiness to practice in the USA, Casey et al. (2011) developed *'Casey-Fink readiness to Practice Survey (CFRPS)'* to measure

students' self-perceived readiness to practice. The study included 429 senior undergraduate

nursing students and showed that students were most confident in communicating with their

patients and family members. However, students had a relatively low level of confidence to

communicate with physicians on patients' care issues. Students were also uncomfortable to

independently perform some nursing skills such as responding to emergencies, reporting

changing patient situations, blood draw, IV starts and medication administration, chest tube

care, suctioning, and EKGs monitoring and interpretation. Casey et al. concluded that the

biggest need of the students was to focus on their confidence to perform nursing tasks,

communicate with physicians, and respond to changes in patients' conditions. In another study

on students' readiness to practice, Woods et al. (2015) used CFRPS to explore the perceptions

of 133 Australian nursing students on their readiness to practice post-graduation. The study

showed that students were comfortable to communicate with patients from different

backgrounds, comfortable to communicate with all interdisciplinary team members, and

confident to report changes in patients' medical situation and in knowing how to care for dying

patients. The study identified many nursing skills that students were uncomfortable to perform,

such as venipuncture, assist in intubation, and care for patients with physical trauma, and

insertion of airways. Students were also less confidence to prioritize patients' needs and

recognize significant changes in patients' conditions.

In a similar study, Brown (2016) examined baccalaureate-nursing students' readiness for

practice as a registered nurse. The author used a convenience sample of 26 seniors at southern

Colorado University to complete the Casey-Fink Readiness for Practice Survey. The study

showed that students rated themselves to be ready for practice, but highlighted some weakness

areas such as communication with physicians and caring for dying patients. Students were uncomfortable to perform chest tube care, IV insertion, tracheostomy care, and respond to emergency codes. Likewise, Batch-Wilson (2016) used the Casey-Fink Graduate Nurse Experience Survey on a sample of 35 new graduate nurses to explore their practice preparedness. The study showed that the new graduates had a decreased level of comfort in performing bladder catheter insertion/irrigation, blood product administration/transfusion, and intravenous (IV) starts.

Moreover, Reagor (2011) performed a mixed method study to explore the effects of clinical internship experience on the perceptions of readiness for the practice of 483 senior baccalaureate-nursing students in Kansas and Missouri. The study showed that students were uncomfortable to perform some clinical skills such as intravenous (IV) starts, responding to an emergency/Code/Changing patient conditions, and Chest tube care. Similarly, Hickey (2010) studied the perceptions of 200 nursing preceptors to explore students' readiness to practice. Most of the participants in the study specified that students were not ready to perform sophisticated and advanced nursing skills, perform prioritization and organization of tasks, and manage the load of complex cases.

This study measured the students' level of confidence in managing two, three, and four patient's assignment. Students were confident managing two patients (Mean = 3.7556, SD = 1.04) and three patients (Mean = 3.25, SD = 1.00069). However, the results showed that they were less confident to manage four patients (Mean = 2.67, SD =1.02). These results were similar to Woods et al. (2015) study where 60% of the students were very confident managing

a two patients' assignment, 48% were very confident managing a three patients' assignment, and only 31% were very confident managing four patients. Usher et al. (2015) also found that students felt confident managing two and three patients' assignments. However, the significant difference was in the significant less confidence in managing four patients' assignment. The results were also consistent with Casey et al. (2011) findings where the overall trend of the study showed less confidence with the increase in patient care assignments.

These results were also supported by the findings of Wray (2017) study who used Casey-Fink Readiness for Practice Survey to identify senior undergraduate nursing students' level of comfort in performing various nursing skills and their perception of readiness for practice. The study found that students felt most uncomfortable to perform 18 nursing skills, but the top skills reported were NG tube/Dobhoff Care, responding to an emergency/CODE/changing patient condition, and chest tube care and trach care/suctioning. Students were comfortable communicating and coordinating care with interdisciplinary team members. However, they were less confident to communicate with physicians. Their level of confidence to manage multiple patient care assignments decreased as the number of patients increased. The study summarized that students might have felt uncomfortable to perform these skills due to limited clinical training opportunities to practice with real patients in the clinical setting. While these students had numerous opportunities to practice nursing skills on mannequins in the university labs, but practicing on a real patient at the clinical setting is considered a different experience.

Consequently, it can be argued based on the results of this study and finding of other studies that nursing students build their clinical skills through exposure to real clinical settings. The

more time they spend at real clinical settings, the better confidence they gain to perform nursing skills. Clinical training experiences facilitate students' acquisition of professional abilities to enter the nursing profession and develop the role of professional nurses (Jonsen, Melender & Hilli 2013). Inadequate exposure to quality clinical settings will make it difficult for nursing students to consolidate their academic knowledge in real clinical settings and to become competent in performing clinical nursing skills (Wolff, Pesut & Regan 2010). According, when these students graduates and are put in a position with full responsibility of the professional nurse, they find challenging to practice autonomously and require more time to adapt to their new role (Missen, McKenna & Beauchamp 2015). Researchers found that while nursing students believe that they are ready to enter their professional position as professional nurses, they still lack the confidence to perform some nursing skills. New nursing graduates are usually competent to practice the routine nursing tasks, but they need more clinical exposure to practice and build their confidence with more advanced nursing tasks, which they did not learn during their previous clinical experiences (Usher et al. 2015).

6.4.2   Students' Clinical Training Experiences

Nursing education is a 'practice-focused' study where knowledge and skill are acquired and consolidated through formal education in the clinical training areas (Gaberson, Oermann & Shellenbarger 2015). Clinical training is an essential component of nursing students' study to help them achieve clinical competence through the integration of theory and clinical practice skills (Lamont, Brunero & Woods 2015) during exposure to complex real-life situations (Coyne & Needham 2012). Clinical training is crucial to prepare students for the reality of

nursing professionals' role. To become ready to practice, undergraduate nursing students need 'hands-on' experience in well-supervised training environments. This preparation qualifies students to undertake their practical professional role upon graduation (Gaberson, Oermann & Shellenbarger 2015). Building student' knowledge and clinical competencies are based on the quality of academic education they receive during their study and their clinical training experiences (Kalyani et al. 2011).

6.4.2.1   *Learning Environment and Opportunities during Clinical Experiences*

During clinical training experiences, nursing students' are actively involved with real and complex clinical cases (Sandars & Patel 2015). Clinical training offers students with the opportunity to consolidate theory with practice, which is necessary to develop their professional communication, clinical competence, problem-solving, decision making, and clinical reasoning skills (Walker et al. 2014; Sandvik, Eriksson & Hilli 2014). The development of students' cognitive reasoning and practice skills requires learning at open and safe clinical learning environments (Twigg & McCullough 2014; Bisholt et al. 2014). Hence, students need diverse learning opportunities and enough duration of clinical training to engage in active learning tasks and reflect on their learning (Fotheringham et al. 2015). Creating positive clinical learning environments for students is influenced by the nurses' attitudes and behaviors towards students, students' ability to be part of the units' teamwork, and the support of faculty members, unit managers, the clinical learning model implemented to guide students' learning, and the number of clinical training hours they spend during nursing study programs (Mettiäinen & Vähämaa 2013; Flott & Linden 2015).

In this study, senior students highlighted the need for more learning opportunities during their clinical training placements to practice all types of nursing procedures. They indicated the need to increase the total number of clinical training hours to have more learning opportunities at different clinical facilities to improve their overall clinical competence. Students discussed thoroughly their clinical training experiences and the role of these experiences in building their readiness to practice. They positively perceived training at supportive clinical learning environments, which they considered helpful to achieve their clinical learning objectives and enhance their overall confidence and readiness to practice.

Students stated that they felt to be part of the nursing team when they were able to have excellent learning opportunities during their practice. They explained that clinical learning opportunities helped them comprehend nursing knowledge and gave them the chance to develop their clinical confidence. These statements were also supported by the faculty members and education leaders who emphasized that students need to have more learning opportunities and more practice time to improve their readiness to practice upon graduation. Faculty members were concerned about the students' ability to achieve their learning objectives because of the lack of learning opportunities at some of the clinical training settings. Nursing education leaders explained that students might have limited learning opportunities when some patients and family members' prefer registered nurses to give them the care rather than student nurses.

The literature well supports these results. Missen, Mckenna & Beauchamp (2015) performed a qualitative exploratory study to investigate the perceptions of graduate nurse program coordinators on the work readiness of nursing graduates and identify the strengths, weaknesses, and challenges that existed during this program. The study indicated that new nursing graduates were not able to work efficiently in acute medical/surgical settings when they have less time and opportunity to practice clinical skills during their clinical placements. The study found that when undergraduate nursing students have the poor quality of clinical exposure, it would be difficult for them to become competent and apply theory to practice after graduation. In another study by Heslop et al. (2001), a sample of nursing students was asked if they were adequately prepared to assume their professional role upon graduation. 47% of the students felt inadequately prepared, and the reasons given were too limited learning opportunities during clinical experiences.

Moreover, Usher et al. (2015) conducted a study to assess the changes in perceptions of confidence and preparedness for the practice of nursing students. The study found that clinical placements were most frequently cited as an area that needs improvement. The study participants' stated that conductive clinical placements represented an excellent opportunity for students to link theory with practice and to gain the confidence to feel work-ready. In the nursing literature, the clinical learning environment is considered extremely useful to stimulate students' critical thinking skills, familiarize them to clinical judgment, and expose them to different physiological, mental, and sociocultural aspects of nursing care (D'Souza et al. 2015; Vaismoradi et al. 2014). In a quantitative correlational study, Papastavrou et al. (2016) investigated the satisfaction of 463 undergraduate nursing students with their clinical settings

as learning environments. The sample represented three universities in Cyprus. The study found that nursing students' satisfaction with their practice learning environment was significantly related to the pedagogical atmosphere, the managers' leadership style, and the role of the nurses supervising the students. Students' satisfaction with their ability to achieve their learning needs and expectations was positively related to the factors comprising the learning environment at the clinical settings. These results confirmed the findings of Karabulut et al. (2015) study to explore the relationship of the clinical learning environment to nursing students' academic motivation. The study found a positive correlation between the clinical learning environment and nursing students' academic motivation.

6.4.2.2   Clinical Supervision

The participants of this study highlighted clinical supervision as another essential aspect to improve students' clinical training experiences and their readiness to practice upon graduation. The senior students reported that some of the nursing preceptors were not interested in supervising and teaching them and others were not oriented to their learning needs and were not able to differentiate between the learning objectives and abilities of nursing students at different levels of learning. 10.2 % of the students who completed the study survey agreed with the need for better support from nursing preceptors who are interested and willing to work with students during clinical training experiences and requested more positive encouragement from the clinical supervisors. Faculty members also agreed on the importance to have more supportive preceptors who are prepared and willing to supervise nursing students during clinical training experiences. In addition to effective preceptorship, faculty members voiced

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that students need to have more faculty support during their training.   They stated that more availability of college faculty members is needed to facilitate effective clinical training experiences help students gain more confidence in caring for patients at different levels of complexity.   The nursing leaders confirmed the need for better students' supervision and guidance during clinical training experiences. They argued that it is the responsibility of nursing preceptors to reassure the patients and their family members that students can render quality nursing care. The nursing leaders explained that nursing preceptors have an essential role to help nursing students practice safely and independently. However, the shortage of nursing staff and the inability of preceptors to give enough time and attention for students had negatively influenced students' clinical learning and their overall readiness to practice.

These results are well supported in the literature, which confirms that with improper supervision, nursing students develop feelings of non-inclusiveness on their units (Hickey 2010). When nursing preceptors create a challenging and appropriate learning opportunities, students will be able to achieve a better understanding of the complex clinical cases, and therefore students can become more competent and confident in their nursing practice (Newton et al. 2009). Heslop et al. (2001) study showed that that preceptors' support of students would facilitate their transition to the professional role. Building nursing students' clinical confidence requires good working relationships with preceptors and regular feedback on students' performance. Likewise, Papastavrou et al. (2016) found that nursing students supervised by effective preceptors were more satisfied with their learning experiences and achieved increased sensitivity towards their patients' needs. Similarity, Kaihlanena et al. (2018) in their study to describe newly graduated nurses' perceptions of final clinical practicum, reported that effective

preceptors need to have the skills and willingness to support and guide nursing students during their clinical education. The study participants identified several concerning behaviors of preceptors which can negatively influence students' learning such as excessive micromanagement of students, poor supervision skills, performing the nursing tasks on behalf of the students, and not explaining complex issues. The study recommended that nursing preceptors have enough experience and excellent communication skills needed to supervise and interact well with nursing students.

Additionally, in a study to explore the effective clinical instructors' characteristics as perceived by undergraduate nursing students in Oman, Madhavanprabhakaran et al. (2013) argued that students' clinical instructors (nursing preceptors or faculty members) should have effective teaching characteristics such as professional theoretical knowledge, clinical competence, communication skills, and role modeling abilities in order to facilitate students' ideal clinical training experiences. The study results also showed that effective instructors should provide adequate time for students' discussion, have to be approachable, helpful, and maintain a supportive relationship with students. The study highlighted that students hoped to be respected by each clinical teacher. Furthermore, the influence of clinical teaching behaviors on nursing students' learning was also studied by Ludin and Fathullah (2016), who conducted a cross-sectional correlational study on a sample of 120 student nurses in Malaysia. The study showed a strong positive association between students' learning and clinical teachers' behavior. The students indicated clinical teachers' feedback and encouragement as the essential characteristics of good teachers. Sabog et al. (2015) also studied the perceptions of 224 student nurses on effective clinical teaching behaviors. The study found professional competence as

the most striking characteristic that helped nursing student to bridge the gap between theory and practice.

Clinical supervision is an essential aspect to facilitate nursing students' learning in clinical settings. The nursing literature emphasized that clinical supervision improves students' integration of theory and practice, increase their clinical competence and readability to practice safely, and enable their personal and professional growth (Kaphagawani 2015; Lindgren & Athlin 2010; Holmlund et al. 2010). To achieve this, clinical supervisors, whether preceptors or faculty members have an essential role in providing students with adequate guidance, support, fair and timely feedback, and enough learning opportunities (Hickey 2010).

The results of this study revealed that inadequate supervision was the result of the attitude of clinical staff towards students, their heavy workloads, and lack of knowledge of the learning needs of students. The nursing preceptors at some training facilities did not have enough time to perform both roles of student teaching and care for patients. This situation where preceptors perform dual heavy duties might affect the fulfillment of their preceptor's role (Holmlund et al. 2010) negatively and might also compromise the whole process of students' clinical supervision (Evans et al. 2013). Besides, research studies highlighted the importance of supervisor-students relationship in facilitating students' learning, leading to improved students' self-confidence and professional development, and thereby accomplishing clinical competency (Papastavrou et al. 2016; Warne et al. 2010). Moreover, supervisors' frequent and timely feedback on students' performance is a requirement for effective learning. Effective feedback is a collaborative process of providing awareness to learners about their level of performance (Clynes & Raftery 2008). Nursing students should receive timely, respectful, and

fair feedback from their preceptors and clinical faculty members on their performance during clinical training experiences. Good feedbacks help students recognize their progress and deficiencies during their practice. Regular and constructive feedback and follow-up improve students' confidence, self-esteem, and motivation to learn. Therefore, students will be able to focus on their weaknesses, which will finally lead to professional growth (Ironside & McNelis 2010).

6.4.3 Students' Theoretical Preparation

The last factor affecting students' readiness to practice highlighted by the participants of this study was the level of students' academic preparation. Senior students reported the need for more classroom preparation, especially in pharmacology, critical care nursing, medical terminology, and nursing simulation labs. Also, 21.7% of the surveyed students requested greater emphasis during their study on medical-surgical nursing, pharmacology, medical terminology, and pathophysiology, and 12.8% highlighted the need to have more simulation training sessions to improve students' critical thinking and nursing practice skills before the actual training in hospitals. These findings were supported by faculty and nursing education leaders who believed that students needed more academic support during their study and suggested to add different topics to the curriculum such as critical care nursing, medical terminology, pharmacology as a separate course, and well-structured simulation training to improve students' critical thinking and clinical reasoning skills. They emphasized the importance of well-structured simulation training before clinical training to improve students' critical thinking and clinical reasoning skills and attain safe practice during clinical training.

These results were consistent with Wong et al. (2018) study that explored the challenges encountered by new nursing graduates during their transition period. The study found that the knowledge learned at the nursing schools is not sufficient to prepare new graduates to handle emergencies and handover complex cases properly. The study participants indicated that lack of knowledge was the primary challenge that profoundly affects their ability to perform during real-life practice. Usher et al. (2015) also argued that nursing students need more educational support to deal with stressful clinical situations. Also, students needed more knowledge and training in conflict resolution, negotiation, and assertiveness. Usher et al. (2015) study concluded that students' lack of knowledge and experience in managing clinical situations such as initiating multidisciplinary care, patients discharge, pharmacy, and follow-up care was cited as a barrier to feeling prepared to practice. In another phenomenological study that explored student nurses' perceptions of preparedness for final practice placement, Morrell and Ridgway (2014) found that students needed more academic preparation in medicines management, anatomy and physiology, and nursing leadership. Several other studies highlighted academic preparation issues affecting students' confidence and competence to practice. Casey et al. (2010) found that undergraduate nursing students have knowledge deficits in areas such as pharmacology, pathophysiology, leadership and management topics, and delegation skills.

Furthermore, Nash et al. (2009) identified that undergraduate nursing students have lack of knowledge in areas such as life sciences and pharmacology. Woods et al. (2013) also found in a study on undergraduate students nurses' preparedness for practice that nursing students need more and more extended clinical placements throughout their nursing study to apply the academic theory to practice and have necessary experiences needed to feel confident and ready

for practice. The authors also referred that undergraduate students need more clinical skills labs, simulation sessions, and smaller sizes of clinical skills classes. Similar to the current study, there was also a need for more pharmacology and pathophysiology classes, more knowledge of drugs, and more clinical understanding of diseases and health disorders.

The participants of this study also highlighted the need to have more simulation training sessions to improve students' critical thinking and nursing practice skills. Woods et al. (2013) suggested that the effective use of clinical simulation that resembles real-life scenarios with the problems arise during the shift are necessary to improve students' critical thinking, decision making, and time management skills. Active clinical simulation at the university laboratories would encourage students' participation in learning and develop their feeling of independence and readiness for workplace realities. Huston et al. (2018) in a review of literature to explore contemporary practices used to bridge academic and training partnerships, confirmed that the use of clinical simulation for nursing students during their study is highly successful and is a unique experience that can expose students to specific healthcare clinical experiences where the need to know precisely how to function is critical. Simulation sessions allow students to immerse actively in analyzing the clinical case scenarios with intentional feedbacks from educators resembling natural clinical environment.

6.5   A Final Empirical Model

The study proposed an empirical model to improve undergraduate nursing students' readiness to practice before graduation (Figure 7.). This model is based on the study findings and congruent with Benner's Novice-to-Expert and Bandura's Self-Efficacy theories. The model suggests eight elements to improve students' readiness to practice before graduation. These elements are students' adequate academic preparation, students' effective management skills, students' clinical competencies, students' professional attitudes, conducive learning environment, effective students' supervision, effective and timely feedback, and students' emotional support.

The nursing curriculum should facilitate building up students' knowledge, skills, and professional attitudes. The theoretical and clinical education components of the nursing curriculum should meet the clinical competency expectations of beginning graduate nurses and the needs of the healthcare industry. This is achieved through the ability of the curriculum to graduate nurses who have adequate knowledge, effective management skills, safe clinical skills, and professional attitudes. Also, the clinical training component of the nursing curriculum should be well structured, planned, and implemented. Clinical education should give the students enough time and opportunities to participate actively in the care of real-life and complex clinical situations.

Additionally, clinical learning environments should support students to achieve their learning needs and expectations. Clinical learning environments should expose nursing students to the realities of clinical settings and facilitate their development of psychomotor and technical skills, critical thinking skills, problem-solving abilities, and professional and ethical values. Moreover, nursing students must have adequate educational guidance, emotional support, and effective supervision during their clinical training experiences from qualified preceptors and clinical educators in order to learn to practice safely, independently, and timely, and to collaborate with multiple interdisciplinary teams. Clinical educators should facilitate students' exposure to complex and conflicting clinical problems to trigger their critical thinking and reasoning abilities.

Figure 7. Final Model to Improve Students' Readiness to Practice

CHAPTER SEVEN: CONCLUSION, IMPLICATIONS, AND RECOMMENDATIONS

This chapter presents the study conclusion, limitations, implications, contribution, and recommendations.

7.1   Conclusions of the Study

Moving nursing education to tertiary institutions have resulted in numerous challenges to ensure that students entering the nursing workforce are ready to practice safely and independently (Chang & Daly 2015; Missen, McKenna & Beauchamp 2015). New nursing graduates' readiness to practice was an area of debate since transferring nursing education to higher educational institutions. Students' readiness to practice upon graduation is a challenging area for nursing education and practice sectors who struggled to find solutions to the so-called 'theory-practice' (Dlamini et al. 2014). The ability of nursing graduates to practice safely, confidently, and independently is perceived as a limitation since the movement of education to higher education institutions. This is influenced by many factors such as undergraduate theoretical preparation, quality of clinical training environments, and students' supervision while on clinical placements (Woods et al. 2015).

This study showed that senior nursing students felt ready for the professional nurse role after graduation. However, they indicated some factors that affect this readiness. Students were not

comfortable to communicate with physicians during the medical rounds, and they felt not ready to answer physicians' questions regarding patients' medical conditions. They were also not comfortable to perform IV medication administration, drug calculation, wound care, Foley's catheter care and insertion, management of PEG tube, management of drains, and handle IV pumps. Additionally, they were less comfortable to use electronic medical records, recognize significant changes in patient's condition, write reflective journals, care for dying patients, and manage four patient assignment.

Senior students highlighted the need for more learning opportunities during their clinical training placements to practice all types of nursing procedures. They also indicated the need to increase the total number of clinical training hours to have more learning opportunities at different clinical facilities to improve their overall clinical competence. Moreover, they reported that some of the nursing preceptors were either not interested in supervising students or not oriented to their learning needs and objectives of students at different levels of learning. 10.2 % of the students who completed the study survey agreed with the need for more support from nursing preceptors who are interested and willing to work with students during clinical training experiences and requested more positive encouragement from the clinical supervisors. Furthermore, the study reported the need for more classroom preparation for students primarily in pharmacology, critical care nursing, medical terminology, and nursing simulation labs. 21.7% of the surveyed students requested a greater emphasis on medical-surgical nursing, pharmacology, medical terminology, and pathophysiology, and 12.8% highlighted the need to have more simulation training sessions to their critical thinking and nursing practice skills before the actual training in hospitals.

Nevertheless, clinical nursing experiences are useful for learning means to enhance nursing students' clinical competence, practice safety, and confidence to perform nursing tasks. Clinical training is crucial for students to become ready to practice and improve their hands-on experience. Also, the education of students is the foundation of safe and quality nursing practice. Building nursing student' knowledge and clinical competencies are based on the quality of academic education they receive during their study and their clinical training experiences (Kalyani 2011). Effective clinical supervision is an essential aspect to facilitate nursing students' clinical learning in real-life settings. The nursing literature emphasized that clinical supervision improves students' integration of theory and practice, increase students' clinical competence and readability to practice safely, and enable their personal and professional growth (Kaphagawani 2015; Holmlund, Lindgren & Athlin 2010). To achieve this, clinical supervisors, whether preceptors or faculty members have an essential role in providing students with adequate guidance, support, fair and timely feedback, and enough learning opportunities (Hickey 2010).

The study recommendations and implications for nursing education and practice will be discussed in the next section. It is hoped that the results of this study helped to explore students' academic knowledge and clinical skills needed to meet the entry-level competence to the UAE workforce. It is also hoped that the study contributed to the development of a better understanding of the factors that improve and hinder students' readiness to practice by all stakeholders participating in students' academic and clinical training to improve their overall readiness upon graduation.

7.2 Limitations of the Study

A variety of limitations were present in this study. The study could not get ethical approval from two nursing education institutions to collect data from nursing students. Also, the researcher could not interview the senior students or nursing faculty members at a third education institution because the process to get ethical approval took much more time than the planned duration of data collection.

The study participants were not randomly chosen, but they were selected based on the availability of undergraduate nursing institutes at specific geographical areas. To select nursing students who have the knowledge and experience needed to answer the study questions, only senior students were asked to volunteer in the qualitative phase of the study, which has necessitated purposive sampling method. Therefore, the sample of senior students consisted of those who voluntary decided to contribute to the research, leaving a possibility that those who did not participate may have had different opinions from those who volunteered to participate. Additionally, the study participants were only females as data was collected from four educational institutions that had only female students. Other institutions that had male students did not permit the researcher to collect data.

For the quantitative phase of the study, the response rate of senior students was high. Some students may have responded with the least confidence to questions on their level of comfort/confidence with a list of nursing skills and procedures. However, the nominated skills or procedures may be the ones that they rarely performed during their clinical training.

Therefore, participants may have based their answers on lack of experience rather than their level of confidence.

The geographical diversity of the educational sites may have permitted a more comprehensive view of the study phenomenon. Most of the participants were students at the same academic institution who learned the same nursing curriculum but at different geographical locations. However, this geographic diversity could have caused more variability of the clinical training environments in terms of different clinical training sites, learning opportunities, quality and quantity of clinical supervision, and varying levels of clients' acuity.

7.3   Implications of the Study

The results of this study have several implications. Many of the participants reported that students need more classroom academic preparation, especially in pharmacology. The delivery of pharmacology varies across different nursing programs. Some of them deliver pharmacology throughout the curriculum and usually integrated with medical-surgical topics, while others offer it as a stand-alone course. Pharmacology concepts can be delivered as suggested by Candela and Bowles (2008) using active teaching methods such as discussion and narratives, scenario case discussions, and collaborative learning exercises. Focused delivery of pharmacology, in addition to other courses such as medical terminology and critical care nursing, will help nursing students transfer knowledge to the application through a well-constructed sequence of theoretical concepts and clinical experiences.

The study participants highlighted the need for students to have more simulation training sessions to improve their critical thinking and nursing practice skills. Simulation sessions have numerous benefits to enhance students' critical thinking, decision making, and time management skills. Active clinical simulation at the university laboratories encourage active students' involvement and develop their feeling of independence and readiness for workplace realities. Also, the simulation sessions allow students to immerse actively in analyzing clinical case scenarios, which can improve their assessment skills and decision-making skills in a low-risk learning environment.

Many participants indicated the need for more learning opportunity during students' clinical experiences, so they will have more chances to practice nursing skills and procedures. They also indicated the need to increase the total number of clinical training hours to have more learning opportunities at different clinical facilities to improve students' overall clinical competence. More collaboration between academia and practice facilities is recommended to determine what is reasonably needed and expected before students' graduation. Increasing the number of clinical hours and creating more learning opportunities would enhance students' ability to consolidate theory with practice. This is necessary to develop students' professional skills, communication abilities, clinical competencies, and clinical reasoning skills. Students need diverse learning opportunities to engage in active learning tasks and reflect on their learning.

The participants of this study highlighted the clinical supervision of students as another vital aspect to improve their clinical training experiences and readiness to practice upon graduation.

Clinical supervision is an essential aspect to facilitate nursing students' learning in clinical settings, and it is recommended that students receive more support from their preceptors during clinical training experiences. Effective preceptorship improves students' integration of theory and practice, increase their clinical competence and readability to practice safely, and enable their personal and professional growth. To achieve this, clinical preceptors have to provide students with adequate guidance, support, fair and timely feedback, and enough learning opportunities. Nursing preceptors will need to provide adequate time for students' discussion, be more approachable, helpful, and maintain supportive relationships with students.

Faculty members will need to have more collaboration with nursing preceptors about the progress of students. It is noted that preceptors are busy with their patient care duties and their preceptorship role. Therefore, faculty members' availability at the clinical settings during students' clinical experiences need to be increased to provide direct supervision of students' learning, assist nursing preceptors, and deliver more guidance and facilitation for students. Consequently, nursing students should receive timely and objective feedback on their performance during clinical training from their preceptors and clinical faculty members. Constructive and timely feedbacks help students recognize their progress, strengths, and deficiencies during their practice. As such, they will be able to focus on their weaknesses leading to better motivation to learn, building confidence and professional growth. Hence, both nursing preceptors and faculty members will need to have better communication and collaboration to implement students' modeling and coaching strategies and to expand their skills in these areas.

7.4 Main Contribution of the Study

7.4.1 Contribution to Mixed Method Literature

The methodology for the research used in this study provides a design for similar studies in the context. This study used a sequential exploratory mixed method design to investigate undergraduate nursing students' readiness to practice in the UAE. The use of a mixed method, where both qualitative and quantitative methods are combined, facilitated attaining more insights on the senior students' readiness to practice safely and independently before graduation and generate comprehensive data, which supported presenting valid findings. Also, pairing both methods capitalized on the particular strengths of each method. In the first phase of the study, qualitative data was collected from a sample of nursing students, nursing faculty members, and hospital education leaders. In the second phase, quantitative data were obtained from a larger group of senior nursing students to examine their readiness to practice before graduation.

This approach provided the study with rich and complementary information that helped in gaining an in-depth understanding of nursing students' readiness in terms of participants' personal and experience perspectives at the UAE. Moreover, the use of only qualitative methods to collect data on nursing students' readiness to practice would not be enough to make conclusions on students' level of readiness in terms of their ability and confidence to practice a wide range of nursing procedures and skills. The use of Casey-Fink Readiness to Practice survey helped for measuring pervasiveness of students' readiness and for acquiring detailed

information on their confidence and abilities during nursing practice. The mixed method approach integrated the strengths of both approaches to answer the study questions and improved generalizability of the findings (Creswell et al. 2011; Teddlie & Tashakkori 2010).

7.4.2   Contribution to Nursing Theoretical Knowledge and Debate

As discussed in the earlier chapters, the ability of new nursing graduates to practice safely and independently upon graduation was a longstanding area of debate since transferring nursing education to higher educational institutions. It is a challenging area for nursing education sector who struggled to find appropriate solutions to the so-called 'theory-practice gap' leading to a deficiency in graduates' readiness to practice. Newly graduating nurses are expected to have enough knowledge, clinical reasoning skills, personal attributes, and high standards of ethical and professional practice required to perform the tasks expected from a competent nurse in real-life situations. However, many questions and claims are raised from healthcare employers on new graduates' work readiness and their level of academic and clinical education before they enter the workplace. Employers expect that new nursing graduates are ready to 'hit the ground running', which is perhaps unreasonable for novice graduates, but this debate remains intense across the globe.

Several studies also explored nursing students' readiness to practice before employment. Most of the students who participated in these studies believed that they had enough knowledge needed to start their real practice. However, they were not confident about their clinical skills and abilities needed for practice. Hence, the purpose of this study was to investigate

undergraduate nursing students' readiness to practice in the UAE. The study explored students' academic knowledge and clinical skills needed to meet the entry-level competence to UAE workforce to assure their ability to practice safely and independently and contribute effectively to the healthcare teams. To achieve the study purpose, a sequential exploratory mixed method design was used to collect both qualitative and quantitative data to reveal comprehensive information on nursing students' readiness to practice, factors associated with students' perceived readiness, and strategies to improve their readiness before graduation.

The findings of this study contributed to the literature on students' readiness to practice in nursing education within the UAE, and perhaps to the regional and international nursing literature. The findings could be used by both the education and healthcare sectors to improve nursing students' preparation and new graduates' readiness to practice in the UAE. The study recommended more collaboration between nursing education and healthcare facilities towards increasing clinical training hours, creating more learning opportunities, and delivering more comprehensive theoretical study to enhance students' ability to consolidate theory with practice. These recommendations are necessary to develop students' professional skills, communication abilities, clinical competencies, and clinical reasoning skills before graduation.

7.5 Recommendations of the Study

1. The study could be replicated to a larger and more diverse sample. Other universities could use the information obtained in this study to identify the strengths and weaknesses of their

senior nursing students and evaluate the effectiveness of the nursing curriculum and students' clinical training experiences.

2. The senior students did not feel confident of performing some nursing skills and procedures; it is recommended to increase the learning opportunities for students leading to improvement in confidence and readiness for practice. It is recommended to introduce educational strategies to improve students' clinical learning environments in terms of preparation, equipment, patients' acuity, supervision, evaluation, and feedback.

3. The findings of this study could be utilized by both educational and practice sectors to improve their collaboration and contribution to nursing students' readiness for practice. It is essential that both sectors build close relationships to prepare students who are ready to practice. Developing an education-practice collaborative understanding of the factors influencing students' readiness to practice will provide additional confirmation of the applied educational strategies to prepare graduates who are ready to practice safely and independently.

4. The collaborative understanding between education and practice personnel and a formalized communication system will ensure that students' level of learning needs, learning objectives, and learning abilities and expectations are being met during clinical training experiences.

5. It would be beneficial to repeat this study for the same sample during their first year of work experience. Immersion in the professional registered nurse role at the workplace might yield different perceptions on readiness to practice.

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APPENDIX A

Ethical Approvals

Fatima College Research Ethics Committee (REC)

20th August 2017

Mr Mohamed Mikkawi
Nursing department
Fatima College of Health Sciences
Al Ain Campus

Dear Mr Mikkawi

Re: Ethics approval for research – Research Ethics application FCHS/RECA/001/2016-17

Study Title:	An Investigation of Undergraduate Nursing Students' Readiness to Practice in the UAE
REC reference:	FCHS/RECA/001/2016-17
Protocol number:	2
Approval date	20th August 2017
Expiry date	20th August 2020
FCHS REC Decision	**APPROVED**

The FCHS Research Ethics committee members reviewed the above revised application on 17 July 2017.

The following documents were received electronically:
1. Application for Ethical approval (REC version FCHS-EC-APF-001-2016-17)
2. Full research proposal of study
3. Information sheet for research
4. Participant consent form

The Committee reviewed the revised application and on the basis of the information described in the application form and the accompanying documents, the members agreed that your research application now meets the requirements and that full ethical approval be granted.

This approval is based on the information provided and should any substantial amendments to any aspect of the study change, then it is incumbent on the investigators to notify the FCHS REC.

Statement of compliance

The Committee is constituted in accordance with the FCHS Director arrangements (11th November 2016) and the Terms of Reference for Research Ethics Committees (March 2017). The REC complies fully with the Research Policy, Section 13 of the FCHS, Policies and Procedures Manual, Version: REV-0, August 1st, 2016, Sections 13) and the international and local standards for research involving human subjects.

After ethical review

Now that you have completed the application process please familiarize yourself with the Research Policy, Section 13 of the *FCHS, Policies and Procedures Manual, Version: REV-0, August 1st, 2016, Section 13.*

Please quote this number in all correspondence: **FCHS/RECA/001/2016-17**

With the Committee's best wishes for the success of this project.

Yours sincerely

Dr Dhayaneethie Perumal

Chair, FCHS Research Ethics Committee

Jaishen Rajah <jrajah@seha.ae>   Mohamad Abdul Salam Al Mekkawi; Juliana James Tavares ▾

RE: Application for Ethics Approval

🛈 You replied to this message on 5/15/2018 10:02 AM.
Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

Dear Mohamed

Your study is approved. Congratulations. And Good luck.

We will issue the approval letter within the next few weeks but you are free to start from now.

Sincerely
Jaishen Rajah

Jaishen Rajah   جايشن رجا

Consultant Physician   طبيب استشاري

Medical Institute - Medical Affairs   الشؤون الطبية

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رسالتنا: تطوير نظام صحي متميز للارتقاء بالخدمات الصحية المقدمة إلى أعلى المستويات العالمية في الجودة الطبية وخدمة المتعاملين

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Research Research Ethics Form (Low Risk Research)

To be completed by the researcher and submitted to the Dean's nominated faculty representative

on the Research Ethics Committee

i.   **Applicants/Researcher's information:**

Name of Researcher /student	Mohamed Al Mekkawi
Contact telephone No.	0505836543
Email address	2015121037@student.buid.ac.ae
Date	28/2/2018

ii.   **Summary of Proposed Research:**

| BRIEF OUTLINE OF PROJECT (100-250 words; this may be attached separately. You may prefer to use the abstract from the original bid): | Mounting concerns were raised in the last few decades on the ability of educational providers and health care facilities to maintain adequate levels of collaboration and cooperation to graduate nursing students who are work-ready. The claims on the adequacy of education programs and clinical training experiences of nursing students exerted unremitting challenges for both nursing education providers and health care facilities in many countries. The purpose of the study is to investigate undergraduate nursing students' readiness to practice in the UAE and to identify factors that foster or hinder their readiness to practice during students' clinical training experiences. The study will follow a sequential exploratory mixed method design that begins with collecting qualitative data from a sample of nursing students in their final year of study, faculty members, and hospital education leads using semi-structured interviews. Quantitative data will later be collected in the second phase from a larger group of |

	investigator and his supervisor will have access to data during the study. All data will be retained for 5 years after completion of the study.
DURATION OF PROPOSED PROJECT (please provide dates as month/year):	Jan 2018 – May 2019.
Date you wish to start Data Collection:	March 2018.
Date for issue of consent forms:	March 2018. The investigator will distribute information sheet and consent form and present full explanation to participants prior to data collection.
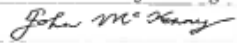
iii. **Declaration by the Researcher:**

I have read the University's policies for Research and the information contained herein, to the best of my knowledge and belief, accurate.

I am satisfied that I have attempted to identify all risks related to the research that may arise in conducting this research and acknowledge my obligations as researcher and the rights of participants. I am satisfied that members of staff (including myself) working on the project have the appropriate qualifications, experience and facilities to conduct the research set out in the attached document and that I, as researcher take full responsibility for the ethical conduct of the research in accordance with subject-specific and University Research Policy (9.3 Policies and Procedures Manual), as well as any other condition laid down by the BUiD Ethics Committee. I am fully aware of the timelines and content for participant's information and consent.

Print name: Mohamed al Mekkawi

Signature: _____ Date: 28/2/2018

If the research is confirmed as not medium or high risk, it is endorsed HERE by the Faculty's Research Ethics Committee member (following discussion and clarification of any issues or concerns)*...... ⌐John Mc Kenny⌐ ....and forwarded to the Research Office to be recorded.

AL AIN HOSPITAL

مستشفى العين

TO: Mohamed Al Mekkawi; Mohamed.mikkawi@fchs.ac.ae
                   Senior Lecturer and Lead Clinical Coordinator
                   Fatima College of Health Sciences, UAE

CC: AAH Research Ethics Governance Committee

Date: 24th June 2018

RE: **Proposed Research Study:** *Undergraduate Nursing Students' Readiness to Practice in the UAE.*

Ref: *AAHEC-06-18-099*

Dear Mr. Mohamed Al Mekkawi,

On behalf of the Al Ain Hospital Research and Ethics Governance Committee, I am pleased to confirm a favorable ethical opinion for the above research on the basis described in the application form and supporting documentation.

The favorable opinion is given provided that you comply as per the context set out in your research study.
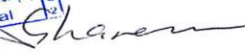
You are hereby advised to commence your research study at Al Ain Hospital. In keeping with our policy, the AAH Research and Ethics Governance Committee is kindly requesting you to report any ethical concerns/considerations that may arise during the course of your research, in a timely manner.

Annual Reports plus terminal reports are necessary and the Committee would appreciate receiving copies of abstracts and publications should they arise.

The REC approval is only valid for two years (24 months from the date of the approval letter issued) however it should be renewed yearly for the continuation of the approval. Two (2) months before expiry of the validity period, the Continuing Review Form should be submitted to REC. Late submissions may not be processed in time, and you are not allowed to continue the study without approval.

The Committee is wishing you a success for this project.

Respectfully yours,

Dr. Ghanem Ali Al Hassani
Chairman, AAH Research Ethics Committee
Acting Deputy Chief Medical Officer
Al Ain Hospital

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SEHA صحة
شركة أبوظبي للخدمات الصحية ش م ع
Abu Dhabi Health Services Co. PJSC

From: Vice Chancellor [mailto:vc@rakmhsu.ac.ae]
Sent: Sunday, March 25, 2018 11:15 AM
To: Mohamad Abdul Salam Al Mekkawi <Mohamed.Mikkawi@fchs.ac.ae>
Cc: 'Dr. Vijaya' <vijaya@rakmhsu.ac.ae>; dean.rakcon@rakmhsu.ac.ae
Subject: RE: Permission to collect data from senior nursing students.

Dear Dr. Mohamed,

Greetings from RAKMHSU!

Thanks for your email dated 17/03/2018.

Please note that the University has no objection and your request has been approved.

Thanks & Best Wishes,

Dr. S.Gurumadhva Rao
VICE CHANCELLOR

RAK Medical & Health Sciences University
PO Box 11172, Ras Al Khaimah, UAE.
Tel   : +971 7 2269000 Ext. 101
Fax   : +971 7 2269996
Mobile : +971 50 4877145
Email : vc@rakmhsu.ac.ae / gmrao@rakmhsu.ac.ae
Web   : www.rakmhsu.com

APPENDIX B

PARTICIPANT INFORMATION SHEET
Investigation of Undergraduate Nursing Students' Readiness to Practice in the UAE

Dear Student/Sir/Madam,

My name is Mohamed Al Mekkawi and I am a PHD student at the British University in Dubai (BUID) in the United Arab Emirates. As a requirement to complete my thesis for the doctoral degree, I am investigating the undergraduate nursing students' readiness to practice in the UAE.

The purpose of the study is to investigate undergraduate nursing students' readiness to practice in the UAE. It is also hoped that the study will contribute to development of better understanding and establishing realistic expectations of students' readiness for all stakeholders who participate in the academic and clinical training preparation of students. The findings of the study are intended to improve nursing students' readiness to practice safely and independently upon graduation in the UAE.

Your participation will be protected via the following actions:

1. All names and personal information will be treated confidentially and anonymously,
2. The information you provide can be anonymized quotations or reported narratives,
3. The interview and questionnaire information will be securely stored in a password protected laptop backed up to an external hard drive,
4. All data and materials will be retained for 5 years and then will be destroyed.

All participants of this study have the right:

1. Not to answer any questions,
2. To verify or check the questionnaire and interview notes and transcripts,
3. To ask for feedback on the results,
4. To withdraw from the study at any stage and if you choose to do so, any data collected from you will not be used in this study.

If you agree to participate in this research study, I would kindly request your signature and date on the consent form.

Should you need additional clarification, my supervisor can also be contacted at the following addresses:

Dr. Abdulai AbuKari

Professor
Faculty of Education
British University in Dubai
Email: abdulai.abukari@buid.ac.ae

Many thanks for your participation,

Mohamed Al Mekkawi

PHD in Education Student
British University, Dubai
Email: mohdmikkawi@gmail.com

APPENDIX C

PARTICIPANT'S CONSENT FORM

Name of the Study: Investigation of Undergraduate Nursing Students' Readiness to Practice in the UAE

Name of the researcher*: Mohamed Al Mekkawi, EdD program, British University, Dubai*

Consent to participate in the research:

I understand that the aforementioned study involves my participation and contribution to provide accurate information based on my beliefs, knowledge, practices and experience related to teaching. I also understand that:

1. I am well-informed about the purpose of this research study.
2. My identity and personal information will be treated confidentially and anonymously.
3. Interview information will be collected, which can be used as anonymized quotations or reported as narratives.
4. I have the right not to answer any interview question.
5. I have the right to check or verify my interview notes and transcriptions.
6. I have the right to request deleting or leaving specific information out for personal or professional reasons.
7. I have the right to ask for feedback on the results.
8. I have the right to withdraw from the study at any time.
9. The data collected will be used exclusively for the purposes of this study, will be safely stored and all the interview data materials will be destroyed upon 5years after conclusion of the study.

With full understanding of the information provided above, I agree to participate in this research project.

Name: _____

Signature: _____**Date:** _____

APPENDIX D

Interview Questions
Students' Version

Introduction by Researcher

I would like first to thank you for your participation in this interview. The purpose of this interview is to explore your perceptions on nursing senior students' readiness to practice before graduation. This will help the researcher develop better understanding of students' readiness based on students and stakeholders experiences who participate in the academic and clinical training preparation of students.

Please note that I will take notes during the discussion but your identity will remain anonymous. This will be help me to capture your ideas effectively during the conversation. Most importantly, your ideas and comments during this interview will remain confidential and your name will not be identified and/or attached to the results. Also, your consent to this agreement will be documented.

Signatures:

Participant number 1:

_____

1. How comfortable do you feel when talking to clients, staff members, colleagues? Describe specific examples.

2. How did your clinical training experiences (clinical practice environment, preceptors, and college staff, support) prepare you for your next career? Provide examples.

3. What are the skills/specific areas that you wish you had during your clinical training? How do you think they would benefit your readiness to practice?

4. Regarding your academic preparation:
    a. What courses or topics that were helpful to improve your readiness to practice, what would you suggest to add or delete?
    b. What type of learning methods or experiences would benefit in students' preparation for next career?

Interview Questions
Faculty and Leaders Version

Introduction by Researcher

I would like first to thank you for your participation in this interview. The purpose of this interview is to explore your perceptions on nursing senior students' readiness to practice upon graduation. This will help the researcher develop better understanding of students' readiness based on students and stakeholders experiences who participate in the academic and clinical training preparation of students.

Please note that I will take notes during the discussion but your identity will remain anonymous. This will be help me to capture your ideas effectively during the conversation. Most importantly, your ideas and comments during this interview will remain confidential and your name will not be identified and/or attached to the results. Also, your consent to this agreement will be documented.

Signatures:

Participant number 1:

_____

1. How comfortable are the students when talking to clients, staff members, colleagues? Describe specific examples.

2. How do you think clinical training experiences (clinical practice environment, preceptors, and college staff, support) prepare students for their next career? Provide examples.

3. What are the skills/specific areas that students should have had during their clinical training? How do you think they would benefit their readiness to practice?

4. Regarding your academic preparation:
   a. What courses or topics that were helpful to improve students' readiness to practice, what would you suggest to add or delete?
   b. What type of learning methods or experiences would benefit in students' preparation for next career?

APPENDIX E

Online Survey

Dear Nursing Student:

We are conducting a study to investigate undergraduate nursing students' readiness to practice in the UAE. The study will explore students' academic knowledge and clinical skills needed to meet the entry level competence to workforce, which assure their ability to practice safely and independently, perform job-specific requirements, and contribute effectively to the healthcare team.

The purpose of this letter is to ask you to take part in this study. If you agree to participate, please complete the attached survey, Casey-Fink Readiness for Practice Survey ©2008.

This survey should take approximately 10-15 minutes to complete. All of your answers will be kept completely confidential. The study results will have no identifying information on it and no individual identities will be used in any reports or publications that may result from this study.

The survey asks for your thoughts on being a nursing student at the end of your BSN program. There is no benefit to you for participating in this study and there will be no reimbursement provided. There will be no financial costs to you as a result of taking part in this study. The survey results may help schools and colleges of nursing better prepare nursing students in the future.

Thank you in advance for assisting with and taking the time to participate in this study.
Sincerely,

Mohamed Al Mekkawi

PHD Student

British University, Dubai

Email: mohdmikkawi@gmail.com

Please fill in the blank or circle the response that represents your individual profile.

1. **Age: _____ years**

2. **Gender:**
   a. Female
   b. Male

3. **Marital Status:**
    a. Married
    b. Single
    c. Divorced
    d. Widowed

4. **School of Nursing Attended:**

    a. Fatima College-Abu Dhabi
    b. Fatima College- Al Ain
    c. Fatima College- Al Gharbia
    d. Fatima College- Ajman
    e. RAKCON
    f. HCT
    g. Sharjah University
    h. Other

5.   **Type of BSN program enrolled:**

    a. Bachelor of Science in Nursing
    b. Bridging Degree in Nursing

6. **Have you worked as a Nurse in the past years?**
    a. Yes
    b. No

8. **If yes, what type of work experience did you have (Medical surgical, pediatric....):**
    _____

9. **Your GPA**: _____

10.   **When did you start your Nursing degree?**   _____

10. **What is the clinical Area of your Senior Practicum experience (Independent training):**
    a. Adult M/S
    b. Adult ICU
    c. Oncology/BMT

     d. OB (L&D, POST PARTUM)
     e. Pediatric M/S
     f. Pediatric ICU
     g. NICU
   h. Mental Health
   i. Ambulatory Care Setting
   j. Rehabilitation
   k. Emergency Department
   l. OR/Perioperative Setting
   m. Other: _____

11. Where was your clinical practicum experience located:
   a. Abu Dhabi
   b. AlAin
   c. Ajman
   d. Sharjah
   e. RAK
   f. other_____

12. How many clinical hours were you required to complete during your senior practicum?
   #_____ Hours

13. How many primary preceptors did you have during your senior practicum experience?
   #_____ Preceptors

14. What did YOU do to prepare for your senior practicum experience: (may select more than one answer)
   a. Practiced skills in learning lab
   b. Participated in simulation assignment
   c. Developed a care plan
   d. Brought medication reference or PDA to clinical
   e. Set daily goals with preceptor
   f. Met with preceptor prior to start of clinical experience
   g. Oriented to facility/tour unit
   h. Discussed personal learning needs with clinical faculty
   i. Did nothing to prepare
   j. Other: _____

15. List three skills/procedures you are most *uncomfortable performing* independently at this time?
   Select from list below.
   1.
   2.
   3.
   4. _____I am independent in all skills listed below

List of skills
Assessment skills
Bladder catheter insertion/irrigation
Blood draw/venipuncture
Blood glucose monitoring device

Central line care (dressing change, blood draws, discontinuing)
Charting/documentation
Chest tube care
EKG/Telemetry monitoring and interpretation
Giving verbal report
Intravenous (IV) medication administration
Intravenous (IV) starts
IV pumps/PCA pump operation
Medication administration
NG tube/Dobhoff care
Pulse oximetry
Responding to an emergency/CODE/changing patient condition
Trach care/suctioning
Wound care/dressing change/wound vac
Other_____

16. What is your current level of confidence in managing a patient care assignment on an adult Medical/Surgical unit?

	Not Confident				Very Confident
	1	2	3	4	5
Caring for 2 patients					
Caring for 3 patients					
Caring for 4 patients					

17. Please answer each of the following questions:

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. I feel confident communicating with physicians	☐	☐	☐	☐
2. I am comfortable communicating with patients from diverse populations.	☐	☐	☐	☐
3. I am comfortable delegating tasks to the nursing assistant.	☐	☐	☐	☐
4. I have difficulty documenting care in the electronic medical record.	☐	☐	☐	☐
5. I have difficulty prioritizing patient care needs.	☐	☐	☐	☐
6. My clinical supervisor provided feedback about my readiness to assume an RN role.	☐	☐	☐	☐
7. I am confident in my ability to problem solve.	☐	☐	☐	☐
8. I feel overwhelmed by ethical issues in my patient care responsibilities.	☐	☐	☐	☐
9. I have difficulty recognizing a significant change in my patient's condition.	☐	☐	☐	☐

10. I have had opportunities to practice skills and procedures more than once. ☐ ☐ ☐ ☐

11. I am comfortable asking for help. ☐ ☐ ☐ ☐

12. I use current evidence to make clinical decisions. ☐ ☐ ☐ ☐

13. I am comfortable communicating and coordinating care with interdisciplinary team members. ☐ ☐ ☐ ☐

14. Simulations have helped me feel prepared for clinical practice. ☐ ☐ ☐ ☐

15. Writing reflective journals/logs provided insights into my own clinical decision-making skills. ☐ ☐ ☐ ☐

16. I feel comfortable knowing what to do for a dying patient. ☐ ☐ ☐ ☐

17. I am comfortable taking action to solve problems. ☐ ☐ ☐ ☐

18. I feel confident identifying actual or potential safety risks to my patients. ☐ ☐ ☐ ☐

19. I am satisfied with choosing nursing as a career. ☐ ☐ ☐ ☐

20. I feel ready for the professional nursing role. ☐ ☐ ☐ ☐

18. What could be done to help you feel more ready/prepared to enter the nursing profession?

APPENDIX F

APPENDIX G

Fink, Regina <Regina.Fink@ucdenver.edu>
To: mikkawi mohammad, caseykt@aol.com
Cc: Casey, Kathryn RN

Mohamed--
Best of luck with your work. You have our permission to adjust the demographics.
Here is our website if you need more information.
Best--
Regina
https://www.uchealth.org/professionals/professional-development/casey-fink-surveys/

Regina M. Fink, PhD, APRN, AOCN, CHPN, FAAN

Associate Professor, Adjunct

University of Colorado College of Nursing & School of Medicine

Anschutz Medical Campus

12631 E. 17th Avenue

Academic Office 1, Room 8410

Box B-180

Aurora, CO 80045

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APPENDIX H

Sample of Data

What could be done to help you feel more ready/prepared to enter the nursing profession?
1. Have more training to enhance the basic skills
2. Improve my knowledge
3. Encourage more engagement with clients, more contact and using reflection models to learn
4. At the end of the week we have to go to hospital to see the cases and try to apply what we already took during that week or at least 2 weeks.
5. Develop my skills
6. Independent practice
7. Increase the clinical period and mix it during the lectures day
8. More knowledge
9. give us some information what is nursing and how is the real nurses working and manage their personal life
10. Self-confidence and watching more videos and reading the books of nursing surgical and nursing skills
11. More readiness and availability from the college (equipment, labs) to make me feel confident enough to implement my skills.
12. Focus on the information which will help in the clinical instead of the research and general courses & more time to practice nursing skills in well prepared labs.
13. Revision (from my behalf)
14. Teachers that influence and motivate instead of giving negative thoughts
15. More exposure to the different departments of clinical practice
16. need more practice
17. Well prepared clinical practice with clinical supervisor. Increase training days. More engagement of clinical supervisor with students. Assigning students with good nurses who want to teach students not with nurses who ignore students and teach them nothing. Cancel some courses that me as student didn't get any benefit from it like physics, psychosocial, chemistry, biostatistics and English. Focus on terminology, diseases, skills, medication and practice or give students break to breath. Just remember when you were student what did you need? Please be positive, encourage students to become better, let them feel proud to be nurses. Let them know how great nursing is. Kind words cost nothing but it really matter.
18. First of all I will start by evaluating the courses we have learned and i personally think that we were more focused on finishing assignments, care plans which were all a repetition because since year 2 we are obligated to fill the same care plan without being corrected individually or even having discussions as a group where we exchange ideas and see where we are lacking, honestly speaking we were just filling it up because it was required where no one gathered us as a group and made a discussion about it, secondly our courses mainly aimed at improving our communication skills instead of emphasizing on the importance of the major subjects such as medical surgical nursing or pharmacology in addition to not practicing the skills effectively in the labs, we were only discussing the techniques instead of actually performing the skills repeatedly until we actually master it, the OSCA was basically a really easy one where we did minimal things and used very limited critical thinking skills. All in all I am stating all of the things I've always wished to be changed because improving them would improve our level of knowledge because we mainly need good strong education that aims at preparing us to what we are going to face in the real world instead of filling up tons of paper and numerous workbooks in which the point is to stare what we

accomplished instead of asking us and discussing the areas of improvement with us personally in addition to making a lot of assignments that are all the same thing, the topics only change, I would've loved it if we had debates or more interactional activities instead of copying the same ideas into every assignment. All of these are my personal ideas of change that come from my very own experience. THANK YOU!
19. More prepared lab section with teachers who got experience in teaching.
20. Be more competent in medication
21. General Orientation
22. I have to go to more clinical placement to be able to see the different between each unit
23. To get a Basic life support course before graduation.
24. Learn more about medication and medical surgical cases. Have a BLS course. Allow students to take simple cases independently.
25. General orientation
26. Need for BLS
27. Practice skills
28. Having more practice on problem solving and critical thinking
29. I preferred to have a book with all the polices of procedures giving to student to read
30. more practice
31. Practicing the skills more
32. Practice
33. Study more about patients cases
34. Being professionally able to do all skills
35. More experience in clinical area
36. Gaining more practical skills
37. I need more training about the medication (name, use, side effect and interaction)
38. Talking with senior student nurses
39. handover one patient in each day of clinic as registered nurse
40. List the most difficulty procedures and repeat them every year in the lab. Orient about the clinical obstacles, like what the student should do in difficult situations, like codes and patients' tough attitude.
41. practice more in labs , and the instructor should be with us most of the time to guide us and teach us for some new things
42. Some courses are not useful with the study of nursing we need more focus on medical surgical and critical care
43. Know more about medication
44. Increase my knowledge.
45. More Clinical training.
46. Start the clinical when we finished the lecture and at the end of the week or 2 weeks going to the hospital to see the cases in reality
47. Keep reading and practicing more and more
48. Honestly I don't know
49. Learning
50. More training
51. join the procedures with nurses
52. Keep the girls choose their hospitals and choose which ward they want to have clinical placement. As I experienced I learn more when I'm working with my colleague in same ward. In addition, one preceptor is not enough, the girls must work with different preceptors to have idea about people and to work with different kind of people...
53. increase the clinical and lab practice

54. Conference
55. More clinical hours
56. More independent practices
57. more knowledge
58. have more clinical practice and feedback
59. more clinical practice days and feedback
60. more clinical support and lab training
61. classroom preparation and skill labs
62. more simulation lab ,skill lab sessions and clinical practice days
63. to have more clinical practicum days
64. I need to have more skill training such as IV insertion
65. to have more clinical practical days
66. To have more medication calculation and administration 0ractice....to have simulation training
67. To have more clinical days and medication and skill training
68. To have better clinical training sites and more clinical training days
69. To have more clinical preparation at college
70. To have more clinical practicum days
71. I suggest more academic knowledge preparation and to have more clinical time in hospital.
72. To have more preceptor support and guidance .and have more classroom pathophysiology sessions
73. To prepare us more with drug knowledge in pharma course ...this can help us practice safely and confidently
74. To have more FCHS faculty members support during clinical and to have more training hospitals in Al Gharbia region
75. To have more clinical practical days and more facilitator support
76. To have more pathophysiology and pharma lessons at college
77. To have more clinical practical days
78. To have classroom sessions on diseases and drugs

Sample Interview Transcripts

Nursing Faculty
Staff 1

Q. 1
Language could be a barrier. But if they speak the same language, they communicate well. They can establish good relationships and collect data /history from clients.

Q. 2
They are 70% prepared because they couldn't see all type of cases, due to lack of cases. Critical care cases are not engaged with student because they don't do training in critical care units. Students perform routine work but with minimal critical thinking.
They have limited initiatives; they need more support of supervisors.

Q. 3
Students need more practice of:
Tracheostomy care/ intercostal drainage.
Critical thinking.
IV medication/ cannulation.

Q. 4
A:
80% of the students have weaknesses in pharmacology knowledge and maternity nursing (They take introductory only; they have limited knowledge).
Also, they need more topics such as Infection control (should be mandatory).
Minimize A/P and focus on MS nursing.
B:
Clinical hours are very limited; more training at OR. More Problem- Based Learning would be beneficial for students.
They also need more simulation laboratory sessions; we have to use full simulation scenarios.
Student performance improves a lot after the 27 days independent training.

Nursing Faculty
Staff 2

Q. 1
Year 4 students are more comfortable than all other students in term of communication skills, but still they need more experience to be at the staff nurse level. Before graduation, senior students have good level of communication skills.
The more the students is exposed to regular shifts of nurses, the more confident she becomes with clients and colleagues.

Q. 2
The learning (clinical) environment is suitable for the students. They had good opportunity to practice.
Preceptorship in general is effective. Most preceptors were supportive. However, some of them were not certified to precept students. However, some of the preceptors were not well oriented to students learning objectives and needs. But the CRNs were well oriented. Therefore, more efforts should be done towards:
Certifying more nurses to become preceptors
Performing more orientation to preceptors on students' needs.
Also, College faculty members should have specialty and experience to supervise and follow-up on the students. They should have more involvement in direct nursing care at least once per week. This will improve their clinical skills and link them with the clinical environment which will have the effect /input on preceptor/supervision of students.
The Hospitals' support of students should be improved. For example, securing rooms for teaching purposes.

Q. 3

Students should have applied skills for general practitioners such as safety practice. Communication skills are adequate. Also, the Medical surgical skills are adequate.

As for leadership skills: students lack a lot of leadership skills such as time management which is their main deficiency. Students have major issue regarding practicing and respect of time. More strict rules need to be applied to control this.

Therefore, students should have more Leadership skills, better skills and knowledge regarding medication administration and drug calculation, complicated aseptic procedures (wound care, wound suctioning, and Foley's care).

Q. 4
A:

It would be helpful to perform revision for all major courses during the last semester.

There is also need to add more topics to the nursing curriculum such as critical care nursing, microbiology, pharmacology, medical terminology, and English language.

I think we can also delete some topics from the curriculum such as: psychosocial course, advanced nursing course, communication course, ethics course, transition course. These topics could be added to other courses.

Simulation use is very limited and weak. More simulation sessions will improve students' performance, safety, and readiness.

B:

The medical-surgical courses needs revision in terms of content and sequencing of topics.

A more Integrated clinical might improve clinical experience of students.

Nursing Faculty
Staff 3

Q. 1

There is a very good improvement in students' communication skills when they moved to level 4. They have limited communication skills at the admission to the college, but they reach a competent level when they become senior students. So, they are ready to communicate effectively.

Q. 2

The learning environment is conductive in terms of good understanding of student's needs. There is more support from nursing administration to students' learning.

Preceptors are well oriented, prepared to work with students. The active involvement of preceptors in the supervision and evaluation of students will also encourage them.

The College faculty have essential role to facilitate relation between preceptors, nurses and students. They help in overcoming possible conflict, explain learning needs, and evaluating student performance.

Support of facility: collaboration between the college and facilities is essential. The preparation of facilities is essential to facilitate students' learning.

To become safe practitioners, they have to have a period of preceptorship post-graduation. During studentship, they have less ability to work independently. So, they are not safe to practice independently.

Simulation lab and conducive clinical experiences are needed to improve students' overall readiness to practice. There is deficiency in students' preparation in the laboratory and before sending them for clinical experiences. They have to show better competence during the lab sessions before they are allowed to go to real settings.

The use of clinics as an area of clinical experience is not beneficial. Using acute units would be more effective.

Clinical timing is effective. Students need to spend more time at the clinical settings to improve their competence, safety, and readiness to practice.

Q. 3

The use of some areas such as OR, ICU, ER would improve students' skills such as assessment skills and critical thinking skills.

Allocating students to critical care units would encourage them to prepare more and get more motivated.

Students need more preparation in some areas such as Physical assessment, medical terminology, and English language.

Q. 4
A:

To improve students' knowledge and practice, it is recommended to delete some topics from the curriculum such as psychosocial course and law and ethics course. These 2 courses are already embedded in different courses. So, this could be used to deliver new courses instead.

Also, it would be beneficial to expand the fundamental of nursing course, pharmacology course, medical terminology course, and critical care course.

B:

Students' critical thinking skills would improve when there is effective use of simulation laboratories.

The Block model of clinical learning is better for the students because they don't like to prepare and do extra reading.

Nursing Faculty
Staff 4

Q. 1

Senior students have adequate communication skills. They improved with the clinical experience since their first clinical exposure. In general, they have adequate smooth communication with their peers, faculty members and most of the nurses.

They sometimes face challenges with some patients/family members who request medical information details from them, but they usually refer to their preceptors.

Students have some other challenges with some medical staff who don't like student nurses to be with them during medical rounds. But it's not a major issue.

Q. 2

Clinical training has a major role in building student readiness to practice. With effective experiences, students can build up their professional identity, improve their critical thinking skills, problem solving skills and consolidate the knowledge taken in the classroom.

The learning environments at the hospitals are generally effective in terms of suitability for learning and preparation. The units selected are mostly suitable for students to achieve their learning objectives. However, sometimes due to increased number of students, they are placed in units where they can't achieve all their objectives. Thus, rotating them is the best solution. It is recommended to expose students to different units, this will be helpful to widen their experiences.

Preceptors: they are mostly oriented to students needs but not all of them show willingness to support and precept the students.

Preceptors are very important to in clinical learning. Without them, students can't be exposed to appropriate learning opportunities and can't learn to build their professional identity.

However, some preceptors consider students as burden. Others are not willing to teach, not prepared enough or don't have the skill of supervising and teaching nursing students.

Q. 3

Students need more exposure to MS units and more support from faculty and preceptors to practice more skills such as:
- Medication calculation, preparation and administration
- Some intravenous procedures
- IVs
- Foley catheter management
- Suctioning
- Wound care
- Assessments

Q. 4

A:

Pharmacology and medical terminology are very important courses, they need to be given more weight in the curriculum.

B:

Simulation laboratory sessions should be more actively involved in academic teaching plan. Problem based scenarios and CT activity in simulation laboratory sessions improve students' overall readiness to practice and improve their knowledge and skills as well.

Nursing Education Leaders
Leader 1

Q. 1
With clients, they are reasonably comfortable. With staff, probably a mix between some who are confident and some who are non-confident.
Now confidence comes from training, level of maturity and even the culture. Some students are not used to interacting with strange people. Some don't have inter-gender interaction experience.

Q. 2
I think that they are prepared to some degree, but there is a gap that exists. If you compare students in western country, they are more prepared to practice. Students here are less motivated to learn, they have less drive and low ability to learn and low interest in learning. In Australia, students are motivated due to different reasons such as financial, family and social factors.
There is various degree of preceptors. They motivate students and encourage them to learn. The more trust, the more they provide learning opportunities to students.

Q. 3
Students' needs to show better competence is a number of skills such as IV cannulation, venipuncture, catheter insertion, and tracheostomy care, catheter, PCA.
In addition, they have to show better Critical thinking and documentation skills. If they have all these skills, this can improve their confidence and reduce effort during their graduate program.

Q. 4
A
Student curriculum provides broad spectrum of topics needed for beginner practitioners. But it needs to focus more on delivering more comprehensive Pharmacology course, and facilitate better Recognition of deteriorating patients, clinical decision making and life support.
B:
Suggestions to change in the clinical placement:
Improve the presence of college faculty members during students' placements. Faculty members need to have better interaction at bedside. Thus improving teaching and assessment. Block assessment is more beneficial to consolidate knowledge.
Students need more time in their final placement to build trusting relationship with staff members. More time in their final placement can help to enroll them into their graduate program. This will improve their confidence, relationships, basic knowledge and clinical reasoning. They need more time at the clinical site.

Nursing Education Leaders
Leader 2

Q. 1
You get some very confident students by three-quarters of them are not. Those who grew up in Al Ain and don't have experience speaking with men. This has negative influence on student communication. The High scoring students are more confident and assertive. Thus, they are better at communication.

Q. 2
The quality of hospital staff, exported from different countries, is low. Some are not being a role model for students. This causes a gap for students.
Staff shortage, load, payment and anxiety are factors affecting the preceptorship program.
Students need high quality nurses. Hospitals should recruit specialized nurses to help student learning.
Learning opportunities: The type of patients is not open enough to give learning opportunities to students. The community needs to support learning. This could be solved through the way preceptors communicate with students in front of patient's family is important. The family then can consider the students safe. Nurses eat their young (job protection). In addition, more clinical preceptors and faculty members are needed to support students during their clinical placements. Recruiting adjunct facilitators in each clinical facility and in the training units to work with students could improve their knowledge, skills, and readiness to practice.

Q. 3
They lack clinical skills because preceptors didn't teach them or gave them opportunities to learn on real patients (IV, nasogastric tube care, Injections, catheters' care…)

Q. 4
A:

Students are weak in mental health, critical care, critical analysis, oncology, emergency topics, and pharmacology. They cannot relate indications and side effects of medications.
Medical terminology: it depends on the level of students. Good students have good use of medical terminology and vice versa.

B:
The more the students apply and practice in lab, the better practical skills they will have.
In general, most students are not ready to practice nursing skills properly. A lot of students spend their clinical training watching nurses performing nursing care instead of having hands-on experience. Thus, students' admission requirements and passing criteria should be modified to improve overall academic level of graduates.

Students
Focus Group

Q. 1
S1: It depends on the age of the clients.
S2: It depends on the level of the nurse. Higher people need special communication.
S1: Use verbal and non-verbal communication.
S3: We didn't involve with the physicians. Very limited. They don't have time to talk to student nurses. They're not confident to speak with students.
S4: Some doctors ask us to translate things. Some of them ask us to bring things that we don't know.
S5: Communication with colleagues is good. Very rare to have uncooperative staff. No obvious barrier with colleagues.
S1: I general, we are good at communication. It is not a major issue.

Q. 2
S1: In BN2 and BN3, some preceptors that we had were good. Some preceptors respected us and gave us enough time to work and supported us.
S3; Some welcomed us and others didn't.
S2: In general, environment was supportive and safe. We were welcomed.
S5: In the medical units, we didn't feel welcomed and this made us stressed. There were not enough learning opportunities in the medical units.
S1, S2, S3: Cannula insertion/blood collection/Foley catheter/ medication calculation, knowledge and preparation.
S5: PEG tube

Q. 3
S1: Give us knowledge of policies and regulations.
S2. Training starts early. We apply all knowledge learned in school directly in the clinical.
S3: Experience help in improving communication.
S1: Experience in medical units doesn't give a lot of learning. It offers us limited learning opportunities.
S4: Shifting us and changing our places of experience will improve our knowledge and skills.
S5: We learn from observing and watching how nurses behave and think in cases of crisis.
S2: Nurses abuse us in the medical units. We do bathing, vital signs, positioning, and bed making. We need to work more on medication preparation and administration. We need knowledge.
S3: Medication is a serious issue.

Q. 4
A:

S1: BHS is very important and biology course is good.

S3: Doing written assignment during clinical. Needs to be changed.

S1: NCP is very helpful.

S4: Add infection control because it is important.

S5: Add pharmacology course, medical term, and microbiology course. Medication knowledge, preparation and calculation.

S2: Medical term (equipment terms and abbreviation) is a very serious issue (all).

S4: No leadership skills or opportunity to improve our skills at area.

S1: GRU courses are not important. Needs deletion.

B:

S1: More laboratory sessions and simulation experience.

S3: Use simulation laboratories better.

S2: Case or scenarios- based discussions to improve critical thinking.

S4: More application (sending student a day per week to hospital to practice)

S3: More clinical experience time.