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Readiness for Practice and Associated Factors
Among Baccalaureate Nursing Students in
Mongolia: A Mixed Methods Study

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Readiness for Practice and Associated Factors
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Mongolia: A Mixed Methods Study

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ABSTRACT

Readiness for Practice and Associated Factors Among Baccalaureate Nursing Students in Mongolia: A Mixed Methods Study

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Introduction: The increasing complexity of an ever-changing healthcare system, coupled with pervasive economic limitations, rising medical demands from an aging population, and an anticipated nursing shortage, all contribute to the expectation that new nurses should be adequately prepared for practice. Readiness for practice denotes the competence and

ability to possess the necessary information, skills, and judgment required for role performance. Identifying the influencing factors of nursing students' readiness for practice can yield implications for effective nursing curricula and clinical learning environments. Therefore, this study aims to derive an integrated understanding of the factors affecting readiness for practice among baccalaureate nursing students by employing a convergent mixed-methods approach.

Methods: In quantitative research, an online survey was conducted with 150 baccalaureate nursing students. Multiple regression and multiple mediating analyses were performed using the SPSS 26.0 process macro version 3.4 program to identify influencing factors and mediating effects on readiness for practice. In qualitative research, focus group interviews were conducted with two groups of 25 participants, and qualitative data was analyzed using content analyses. After analyzing the data, the results from both methods were integrated using the joint display method to provide a detailed explanation of the factors affecting readiness for practice.

Result: In the quantitative research, multiple regression analyses found that clinical learning environment, clinical competence, and critical thinking were significant factors affecting readiness for practice among nursing students; the model explained 40% of the variance in readiness for practice. Multiple mediating analyses found a significant indirect

effect of the clinical learning environment on readiness for practice through clinical competence and critical thinking. Hence, both clinical competence and critical thinking partially mediated the relationship between the clinical learning environment and readiness for practice. In the qualitative research, 158 items were coded, and 12 subcategories and six categories were extracted to understand the readiness for practice of nursing students in Mongolia: (a) maturity; (b) competence; (c) communication; (d) theory practice integration; and (e) professionalism.

Conclusion: This study is valuable as it holds implications for establishing interventions to improve nursing students' readiness for practice and for developing the nursing curriculum. In this regard, the study offers primary data and suggests strategies at the healthcare organizational level, such as enhancing collaboration with nursing schools to cultivate a positive clinical nursing environment and implementing a preceptor system and mentorship initiatives in hospitals

Key words: nursing students, readiness for practice, clinical practice

I. INTRODUCTION

1.1. Background

Advances in technology, uncertainties with new health issues, especially new pandemics, and unknown diseases, all impact how health care is offered around the world. In-patient length has decreased, while the increasing daily nursing procedures, chronic illness issues, and home care visits are increasing. These changes have increased the need for nurses, despite this alternative being seen to be better for patient outcomes (Rhodes et al., 2011). There is a worldwide shortage of 5.9 million nurses and requires the recruitment of 4.7 million more to keep the current workforce running (WHO, 2016). The increasing complexity of a continually changing healthcare system, pervasive economic limitations, the increasing medical demands of an aging population, and an anticipated impending nursing shortage all contribute to the expectation that new nurses are ready for practice (El Haddad et al., 2017). However, retention of new graduate nurses is a global challenge, and however, graduate nurses frequently leave their jobs due to the difficulties in transitioning to practice (Flinkman, 2014; P. Güner, 2015). According to recent research, 30-60% of

graduate nurses change jobs or leave nursing entirely during their first year of practice (Casey et al., 2011), and a worrying fact is that challenges with role transfer lead to plans to leave the workplace (Flinkman, 2014). When nursing students graduate and begin working as nurses for the first time, a process known as role transition takes place. Researchers have been interested in the role of transition from nursing student to graduate nurse for several decades, and they have suggested that nursing educators play a crucial role in facilitating a successful role transfer during the students' period (Jarvelainen et al., 2018). Also, Benner's theory in 1984 confirmed that professional growth will continue after graduation, therefore nurse educators can prepare students for the role transition by pointing this out (Benner, 1984). This concern regarding nursing students' readiness extends to globally studying the concept of readiness for practice.

Readiness for practice refers to the competence and ability to possess the necessary information, abilities, and judgment for the required role performance (Casey et al., 2011). Furthermore, some scholars defined readiness for practice as a combination of clinical knowledge, technical abilities, critical thinking, professionalism, and responsibility management (Berkow et al., 2009; Wolsky, 2014). Therefore, readiness for practice is essential during a nursing student's preparation period and researchers are paying attention to the factors that influence the preparation of nursing students for the workplace. However,

it is still unclear if students are prepared to fulfill the role and responsibilities of a registered nurse (Güner, 2015). Therefore, what factors contribute to the perceived preparedness of new graduates and how education and practice can more sufficiently prepare them are part of an ongoing discussion in the literature (Watt & Pascoe, 2013). Previous research studies have assessed factors related to nursing student's readiness for practice in several personal characteristics influence nursing students' readiness for practice, including receiving financial support (Li et al., 2020), prior working experience (Fitzgerald, 2019; Usher et al., 2015), age (Usher et al., 2015) and school type (Dudley et al., 2020; Li et al., 2020; Usher et al., 2015). Prior studies indicated good professional competence supporting readiness for practice (Güner, 2015; Woods et al., 2015), and likewise, studies have shown that graduate students' readiness to practice is influenced by their lack of professional competence and ability to perform basic clinical procedures (Sharma et al., 2020). In addition, the clinical learning environment's characteristics, the significance placed on nurses' work, the implementation of real nursing culture, and an awareness of the role of nurses were significant predictors of the student's readiness for practice (Kirkman et al., 2018; Salem, 2021) and clinical learning environment is explored as an education-related factor for nursing student's readiness for practice.

Furthermore, nursing students' critical thinking ability boosts their confidence to provide nursing care to multiple patients in unforeseen settings (Lee et al., 2023). Practice readiness requires clinical knowledge, technical skills, critical thinking, communication, professionalism, and responsibility management (Wolsky, 2014). As a result, among the determinants for nursing students' readiness for practice identified in the literature analysis and explored in this study are clinical learning environment, professional competence, critical thinking, professionalism, and some personal characteristics. A doctoral dissertation on Mongolia that found that nursing students' preparedness was one of the predicting factors influencing the quality of nursing care in Mongolia (Galan et al., 2019). However, the study did not investigate other potential predictors related to nursing students' readiness for practice. Hence, multilateral exploratory research from an essential perspective about readiness for practice is required for nursing education to prepare nurses.

The based on relevant literature review there is a lack of Mongolian information and studies on nurses' preparation for practice. Thus, this sought to explore his study explores the perceptual experiences of the concept of readiness for practice from the perspective of Mongolian nurses and faculty and identify factors related to nursing students' readiness for practice in the Mongolian context. This could provide evidence to effectively build a new

undergraduate nursing curriculum or revise an existing curriculum, as well as a new nurse orientation program, to help Mongolian nursing students get ready for practice.

1.2. Purpose

The purpose of this study is to investigate the factors associated with readiness for practice among baccalaureate nursing students in Mongolia using a convergent mixed-method approach. The specific aims are as follows:

1. To identify factors affecting baccalaureate nursing students' readiness for practice and to estimate the direct and indirect effects on nursing students' readiness for practice (Quantitative phase)
2. To explore the perceptual experiences of the concept of readiness for practice from the perspective of nurses and faculty in the Mongolian context using focus group interviews (Qualitative phase)
3. To derive an integrated understanding of the concept and associated factors of the nursing student's readiness for practice in the Mongolian context (Integration phase)

1.3. Definitions of terms

1.3.1. Readiness for practice

Readiness for practice is defined as “the competence and ability to possess the necessary information, abilities, and judgment for such role performance” by Casey et. al., 2011 (Casey et al., 2011). Readiness for practice in the study was measured by the Casey-Fink Readiness for Practice survey scale, developed by Casey et al., 2011 (Casey et al., 2011). A higher score indicates higher comfort and confidence with nursing activities.

1.3.2. Clinical learning environment

Clinical learning environment is defined as “a setting where students can put into practice the knowledge they've acquired in the classroom, enabling them to discern the distinctions between the theoretical realm of the classroom and the practical realities of clinical practice” by Palmer et al. (Palmer et al., 2005). Clinical learning environment in the study was measured by the clinical learning environment and supervision scale developed by Saarikoski (Saarikoski & Leino-Kilpi, 2002). A higher score indicates a

higher level of ward atmosphere, ward managers' leadership style, premises of nursing care and learning on the ward, and workplace relationships.

1.3.3. Nursing competence

Nursing competence is defined as “ the result of a series of attributes including personal characteristics, professional attitude, beliefs, knowledge, and techniques as related to nurses' professional accountability in clinical practice” by Cowan et al. (Cowan et al., 2005). Nursing competence the study was measured by the clinical Nursing competence questionnaire developed by Lee-Hsieh et al. (Lee-Hsieh et al., 2003). A higher score indicates higher clinical nursing competence in the practice.

1.3.4. Critical thinking

Critical thinking is defined as “the process of purposeful thinking and reflective reasoning where practitioners examine ideas, assumptions, principles, conclusions, beliefs, and actions in the context of nursing practice” by Brunt (Brunt, 2005). Critical thinking in

the study was measured by the critical thinking disposition of Shin et al. (Shin et al., 2015).

A higher score indicates a greater critical-thinking disposition.

1.3.5. Professional value

Professional value is defined as “the principles, beliefs, and standards that guide the behavior and decision-making of individuals within a particular profession” by American Nurses Association in 2008 (Fowler, 2015). Professional value in the study was measured by the Nurses Professional Values Scale-3 developed by Weis and Schank, 2017 (Weis & Schank, 2017). The higher the score indicates, the stronger the nurse’s professional value orientation.

II. LITERATURE REVIEW

This chapter summarizes the result of a literature review based on existing evidence about nursing students' readiness for practice as follows: (a) Current nursing education and practice in Mongolia, (b) the concept of readiness for practice, and (c) factors associated with nursing students' readiness for practice.

2.1. Current nursing education and practice in Mongolia

Historically, since 1924, nurse preparation in Mongolia has taken place in a hospital environment following an apprenticeship model, with direct supervision from practicing physicians following the model of the Soviet Union. From 1926 onwards, nurse education continued to be based on this apprenticeship model, primarily centered on hospital-based nursing courses was established but it emphasized hands-on learning over formal academics (Burmaa, 1996). A significant turning point occurred in 1931 when nurse education underwent a substantial transformation, transitioning from the apprenticeship

model to a certificate program in nursing and marking the establishment of Mongolia's first nursing school (Volodya, 2004). During this period, nursing students were assigned to nursing units, and being responsible for caring for patients or groups of patients was dominant. This early clinical education model ultimately evolved into the diploma nursing program introduced in 1935 (Burmaa, 1996; Volodya, 2004). Diploma programs, typically spanning three years, placed a strong emphasis on applying nursing skills in acute care settings, with students closely supervised by medical doctors (Volodya, 2004). Additionally, since 1960, short-term specialized courses for nurses, such as surgical nursing, anesthetic nursing, and neonatal nursing, have been offered (Volodya, 2004). Mongolia has experienced rapid change since the fall of the Soviet Union in 1990, it significantly increased nursing recognition in society as an independent science (Burmaa, 1996). As a result, in 1993, another significant shift occurred, transitioning nursing education in Mongolia from the apprenticeship model and diploma programs to a comprehensive, university-based program. Nursing educators and policymakers believed that nurses equipped with a broad liberal arts foundation, with a significant emphasis on theory and science, would deliver better nursing care. This new program awarded a four-year Bachelor of Nursing degree, requiring students to complete not less than 130 credit hours, including 110 credit hours of academic coursework with simulation-based practice, and 20 credit

hours of clinical experience within hospital settings during their study period. Also, the RN-BSN program, lasting two years and involving 90 credits, was established in 1995 to enable diploma-degree nurses to attain a baccalaureate degree(Volodya, 1999; Volodya, 2004). Since 2001, private institutional schools in Mongolia have also contributed to nursing education. Among them, the Mongolian National University of Medical Sciences (MNUMS) stands out as the country's sole national university with a nursing school and three medical school branches, responsible for preparing most of Mongolia's nursing students. Additionally, 13 private universities offer nursing education, with approximately 950 nurses graduating annually (HDC, 2022). Both public and private nursing schools in Mongolia continue to collaborate with hospitals to provide clinical practice opportunities for their students. These clinical placements offer invaluable practical training for student nurses, with experienced nurses serving as mentors to support, supervise, and assess the competence of undergraduate students during their clinical rotations without any official preceptor system (Volodya, 2004). While practice guidelines specify the types and quantity of clinical experiences required, actual implementation may be constrained by hospital policies and ethical considerations in healthcare.

Mongolia is in East Asia and is classified as an upper-middle-income country. The total population stands at 3,409,939, with a current life expectancy of 70.53 years in 2023,

reflecting a slight increase of 0.28% from the previous year (WHO, 2023). However, despite this population, the number of nurses available to cater to the healthcare needs of the entire country is very low, with only 12,773 nurses reported (HDC, 2022). This results in a concerning nurse population ratio, estimated at 3.75 nurses for every 1,000 Mongolians, as revealed in a 2022 report. Moreover, the physician-nurse ratio in Mongolia is extremely low by international standards, currently standing at 1:1.09, as reported by the WHO Representative Office for Mongolia in 2020 (WHO, 2020). Another evidence is that in the healthcare system in Mongolian nursing shortage the nurse-to-patient ratio, at 1:40–45, is notably five to ten times worse than that of countries like the United Kingdom (1:8) or Australia (Dovdon et al., 2022). This study noted that compounding this challenge, Mongolian nurses' meager salaries and heavy administrative workloads further hinder their ability to provide standardized, evidence-based care to patients. Head Nursing Officers (HNOs) stated that a contributing factor to the shortage of nurses is the trend of young nurses transitioning to become physicians. This occurs because nurses can enroll in private schools from a third course in Medical school (DGH, 2021).

2.2. Concept of readiness for practice

In nursing education, the concept of readiness for practice has garnered significant attention due to its pivotal role in shaping the effectiveness of future nursing professionals. Throughout the literature review, different ways of defining readiness for practice have been identified. Readiness for practice is the ability of a graduate nurse, to assume the roles of provider of care, designer/manager/coordinator of care, and member of the nursing profession as defined by AACN in the Essentials, 1998 (AACN, 1998). According to this definition, the American Association of Colleges of Nursing underscores the importance of readiness for practice as an outcome of nursing education and encompasses the assimilation of theoretical concepts, practical skills, ethical principles, and a commitment to patient-centered care (AACN, 1998). In addition, in 2009 Mary Hickey identified new graduate nurse readiness for practice however the results were based on preceptors' opinions of students' readiness for practice (Hickey, 2009). Two hundred preceptors were surveyed and specific areas "in need of improvement identified in this study are consistent with those in prior studies: complex or advanced skills, prioritization, organization, managing a caseload of patients and critical thinking" (Hickey, 2009). The next Wolff et al. defined readiness for practice as that assuming graduates meet the entry-level competencies for registration

which assures their capacity to: deliver safe patient care, exercise job-specific capabilities, and contribute to a healthcare team in their study (Wolff et al., 2010). Through the work of Wolff et al. (2010) four aspects of readiness for practice emerged including; (a) having a generalist foundation and some job-specific capabilities (b) providing safe client care (c) keeping up with current realities and future possibilities (d) possessing a balance of doing, knowing and thinking. A study by Casey and her colleagues was done to examine factors that influence senior nursing students' perceptions of their readiness for practice and also determined their comfort level performing skills independently (Casey et al., 2011). Much of the evidence shared a common theme that different perceptions of practice readiness exist between nursing students and new graduates, and other expectations of academia and employers, including administration and practicing nurses (Drasiku et al., 2021; Güner, 2015; Hickey, 2009; Usher et al., 2015; Wolff et al., 2010). In this study, we adopted Casey et al. (2011) definition of Readiness for practice refers to the competence and ability to possess the necessary information, abilities, and judgment for such role performance (Casey et al., 2011).

Currently, different countries have explored readiness for practice which are Australia (Dudley et al., 2020; Usher et al., 2015), the United States of America (Conley, 2023b; Ericson & Zimmerman, 2020; Kirkman et al., 2018; Schmitt & Lancaster, 2019), India

(Kaur et al., 2020; Sharma et al., 2020), Turkey (Güner, 2015), Egypt (Salem, 2021), and Korea (T. Lee et al., 2023). This study confirmed that most previous evidence was derived from descriptive research examining the correlations between readiness for practice and related factors (Basso et al., 2022; Lee et al., 2023; Ragsdale & Schuessler, 2021; Schmitt & Lancaster, 2019; Sharma et al., 2020; Usher et al., 2015; Woods et al., 2015) used measurement of the Casey-Fink Readiness for practice survey (CFRPS) tool. The CFRPS was originally developed for administration to baccalaureate nursing students as they completed a clinical internship experience and this study has demonstrated that the CFRPS. This study found four factors of readiness for practice: (a) clinical problem solving (b) learning techniques (c) professional identity (d) trials and tribulations (Casey et al., 2011). In recent years, researchers have attempted various research methods other than quantitative approaches. For instance, one qualitative study was used to explore nursing students' readiness for practice as nurses and nursing students' perceptions in Egypt (Salem, 2021). In addition, a recent systematic review of the 11 studies conducted from 2012 to 2022 showed that Multiple personal, educational, and community factors interact in diverse ways to influence nursing students' readiness to practice (Lee et al., 2023). The other two studies conducted mixed-method research on the factors influencing the readiness for practice of Turkey and Australian nursing students (Güner, 2015; Usher et al., 2015).

Despite various research on nursing students' readiness for practice, there remains a lack of evidence to fully explain nursing students' readiness for practice, particularly in the Mongolian context.

2.3. Factors associated with nursing students' readiness for practice

To critically examine recent literature on readiness for practice in nursing students, the research conducted a systematic literature review. A total of 19 articles were included for data analysis and revealed the following five factors associated with readiness for practice: individual characteristics, clinical learning environment, clinical competence, critical thinking, and professional value.

2.3.1. Identification of research questions

The specific research question was to identify the factors related to readiness for practice among undergraduate nursing students.

2.3.2. Identification of relevant studies

In-depth search of five electronic databases using predetermined search terms was conducted. The databases searched were PubMed Central, Cumulative Index to Allied Health Literature (CINAHL), Embase, Scopus, and Web of Science. The last search date

was August 1, 2023, and the search was conducted from January 2015 to July 2023. The search Outcome is detailed in Figure 1. The keywords adopted used Mesh terms (in PubMed), Emtree words (in EMBASE), synonyms, and other derivatives by combining them with the appropriate Boolean operators and truncation. An example of search terms like “Students” OR “Nursing” and “Professional practice” and keywords such as Student* or Train* and readiness OR preparedness OR work* was used as single terms or with the appropriate derivatives. the keywords were modified to suit each database search strategy. For an extensive literature search, all gray literature, such as contributions, and unpublished dissertations were included.

2.3.3. Selection of studies

The search yielded 638 articles and screened 559 titles and abstracts after excluding 24 duplicate articles. These selected papers were then used for full-text evaluation. The search excluded 17 articles for the following reasons: (a) the studies did not examine the factors affecting readiness for practice (n=5) (b) the study participants included those from other professions, nurses and graduate nurses (n= 8) (c) the study not writhing in English (n=2). Conference abstract (n=2). Finally, 19 studies written in English were chosen for the literature review. Figure 1 demonstrates the PRISMA flow diagram for the selection of the studies.

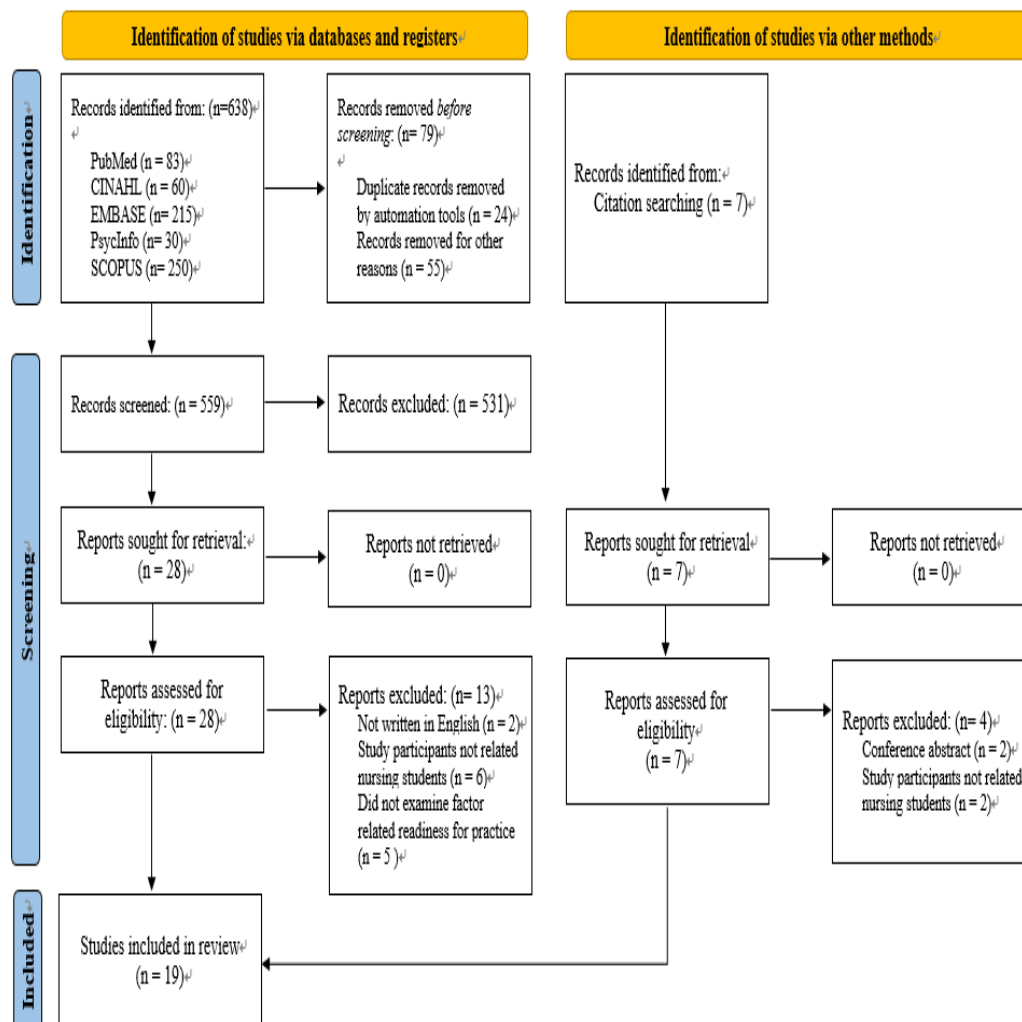


Figure 1. PRISMA 2020 flow diagram illustrating the selection of studies for the literature review

2.3.4. Data extraction and analysis

The researcher independently developed a matrix consisting of authors, publication year, country, research sample size, study design, factors that related to readiness for practice, and some barriers related to the main concept. The data analysis used a narrative synthesis design and categorized factors influencing nursing students' readiness for practice presented in each literature item into individual characteristics, educational characteristics, and work-related capabilities.

2.3.5. Findings

General characteristics of the publication. Table 1 provides a summary if the included publications. Among 19 articles, the majority were quantitative studies (n=16), and others included qualitative studies (n=1), mixed method studies (n=1), and A quasi-experimental pretest-posttest study(n=1) published within the five years (n=16), showing an increasing trend in number of publication. These publications were from 10 countries: United States (n=7), India (n=2), Australia (n=2), Korea (n=1), New Zealand (n=1), Ireland (n=1), United Arab Emirates (n=1), Portugal (n=1), Turkey (n=1) and Italy (n=1).

Factors associated with readiness for practice among nursing students. Data analysis revealed three dimensions of aspects of nursing students' readiness for practice: individual characteristics, clinical learning environment, and work-related capabilities.

Individual characteristics. Several individual factors, including age (higher), sex (female), school attended (graduate of university), work experience (having hospital work experience), access to scholarship, anxiety, self-efficacy, and level of self-confidence, were essential determinants of readiness to practice. Twelve studies focused on the student's characteristics that influenced readiness for practice. These individual characteristics of the students included age was especially related to an individual's ability to manage many patients concurrently influencing their overall readiness to practice (Usher et al., 2015), prior working experiences (Usher et al., 2015), prior degree of nursing (Fitzgerald, 2019) and having a scholarship and other support (Dudley et al., 2020), Students' having selected the profession willingly and being happy to have done so are predictor variables for readiness for nursing (Hacer et al., 2020; Kaur et al., 2020; Mekkawi & Khalil, 2022). Other personal factors influencing students' readiness for practice are confidence related to the clinical expertise of the nursing students (Fitzgerald, 2019; Schmitt & Lancaster, 2019), self-esteem (Conley, 2023b; Lee et al., 2023), anxiety during clinical practicum (Lee et al., 2023; Leufer et al., 2021; Schmitt & Lancaster, 2019) and personal attitude and self-efficacy (Hacer et al., 2020; Munroe & Loerzel, 2016). In addition, students' concerns about professional life were a predictor of their readiness for the profession (Hacer et al., 2020).

Educational characteristics. Some studies explored educational characteristics related factors like theory-practice integration (Dudley et al., 2020; Leufer et al., 2021; Rusch et al., 2019; Usher et al., 2015), clinical learning environments (Basso et al., 2022; Dudley et al., 2020; Leufer et al., 2021; Mekkawi & Khalil, 2022; Schmitt & Lancaster, 2019; Usher et al., 2015) timely to reevaluate students' simulation methods, hours, and scenarios to ensure that they contribute to graduates' readiness to practice and simulations and reflecting journals had helped nursing students prepared for clinical practice (Conley, 2023a; Jamieson et al., 2019; Kirkman et al., 2018; Mekkawi & Khalil, 2022; Ragsdale & Schuessler, 2021; Woods et al., 2015) and learning performance behavior (Dudley et al., 2020; Usher et al., 2015). In addition, the lack opportunity of to practice advanced nursing skills is negatively influencing nursing students' readiness for practice (Sharma et al., 2020) and nurse educators' effective teaching-learning strategies for senior nursing students so they are ready for practice upon graduation (Ragsdale & Schuessler, 2021). Also, some studies explored that increasing undergraduate nursing students' readiness for practice requires taking a broad view of the knowledge and optimal learning experiences required to transition from university to the healthcare field v(Kaur et al., 2020; Munroe & Loerzel, 2016; Rusch et al., 2019; Usher et al., 2015). Other factors that influence nursing students' readiness for practice are the appropriate content of a curriculum including elective courses

a Passion, and increasing and changing healthcare demands (Brown & Crookes, 2016; Sharma et al., 2020).

Work-related capabilities. Studies explored that some work-related capabilities influence to nursing students' readiness for practice including cognitive capability, clinical capability, and professional capability.

Cognitive capabilities that are related to readiness to practice. Studies identified nursing students' cognitive capability preparedness by working with preceptors and clinical care professionals in the clinical units to contribute to readiness to practice significantly and placement (Kirkman et al., 2018; Ragsdale & Schuessler, 2021; Sharma et al., 2020). One study identified that ability to see the big picture can support students' application of the relationship between content and nursing care priorities, help them see the big picture, and make appropriate decisions in patient care (Rusch et al., 2019; Usher et al., 2015) and other cognitive factors influencing readiness to practice are students' critical thinking and preparedness during pre-graduation (Mekkawi & Khalil, 2022; Ragsdale & Schuessler, 2021). In addition, other cognitive skills that decision-making and clinical judgment in different clinical situations promote nursing students' readiness for practice (Usher et al., 2015).

Clinical capabilities that are related to readiness to practice. Students can compose professional work competencies during clinical years, trained in interpersonal skills, and have good communication skills through training influenced the readiness for practices (Dudley et al., 2020; Ericson & Zimmerman, 2020; Leufer et al., 2021; Mekkawi & Khalil, 2022). In addition, the study explored that nursing students' readiness for the profession is also related to the extent to which they think they have the competencies that are expected of them (Hacer et al., 2020). Also, nursing students' psychomotor skills, which included complicated technical skills, time management, intervention prioritization, and management of multiple or complex patients were poor, and those competencies were the primary emphasis of the practicum.

Professional capabilities that are related to readiness to practice. Professional capabilities that influence readiness for practice include a professionalism context that encompasses valuing nursing work, professional self-concept, and personal work characteristics (Dudley et al., 2020; Usher et al., 2015). In addition, nursing students' self-esteem (Conley, 2023b; Lee et al., 2023) and professional value had a positive effect on nursing students' readiness for practice (Ragsdale & Schuessler, 2021).

Table 1 Summary of the included studies (N= 19)

№	Author (s) (Year)	Country	Sample size	Study design	Factors related to nursing students' readiness for practice		
					Individual characteristics	Educational characteristics	Work-related characteristics
1	(Dudley et al., 2020)	Australia	26	Pre-post study survey	- Scholarship support - Learning performance behavior	- Theory practice integration - Clinical learning environment	- Work competence - Professional value
2	(Schmitt & Lancaster, 2019)	USA	46	Descriptive cross-sectional study	- Anxiety - Self-confidence	- Clinical learning environment	- Clinical judgment
3	(Kirkman et al., 2018)	USA	214	Mixed method study		- Simulated clinical experience	
4	(Conley, 2023b)	USA	498	Descriptive cross-sectional study	- Self-efficacy	- high-fidelity simulation	

5	(Ericson & Zimmerman, 2020)	USA	203	A quantitative study						<ul style="list-style-type: none"> - Competence - Professional identity - Management of multiple patients - Advanced skills
6	(Jamieson et al., 2019)	New Zealand	245	Descriptive cross-sectional study				<ul style="list-style-type: none"> - Simulations - Clinical learning environment 		
7	(Kaur et al., 2020)	India	176	Descriptive cross-sectional study	- Interest choices	career	-	Clinical learning experience	-	Work atmosphere factors
8	(Lee et al., 2023)	Korea	838	Descriptive cross-sectional study	<ul style="list-style-type: none"> - Self-esteem - Work and life balance - Anxiety during clinical practicum 		-	Clinical learning environment		

9	(Leufer et al., 2021)	Ireland	24	Qualitative study	-	Anxieties and concerns	-	Clinical practice environment	-	Communication skill
10	(Sharma et al., 2020)	India	173	Descriptive cross-sectional study	-	Clinical experience for a longer duration	-	The opportunity to practice advanced skills		
11	(Mekkawi & Khalil, 2022)	United Arab Emirates	117	Descriptive cross-sectional study	-	Choose nursing as a career	-	Simulation and scenario Clinical learning environment	-	Critical thinking Professional competence
12	(Rusch et al., 2019)	USA	569	Descriptive cross-sectional study			-	Optimal learning experiences	-	Decision-making skills
13	(Usher et al., 2015)	Australia	235	Descriptive cross-sectional study	-	Age Prior working experiences	-	Supportive learning environment	-	Critical thinking

					-	Qualitative clinical placement	-	Professional judgements Clinical knowledge
14	(Hacer et al., 2020)	Turkey	46	Descriptive cross-sectional study	-	Professional choice Self-efficacy Concern about professional life	-	Competence
15	(Ragsdale & Schuessler, 2021)	USA	40	A quasi-experimental pretest-posttest	-	learning style	-	Simulation Preceptorship Professional value Clinical problem solving Critical thinking
16	(Brown & Crookes, 2016)	Portugal	26	Descriptive cross-sectional study	-		-	Elective courses

17	(Fitzgerald, 2019)	UK	64	Descriptive cross-sectional study	- Confidence - Prior degree of nursing	- Competence
18	(Basso et al., 2022)	Italy	126	Descriptive cross-sectional study	- Duration of the clinical placement	- Clinical placement
19	(Munroe & Loerzel, 2016)	USA	120	Descriptive cross-sectional study	- Attitude - Clinical knowledge	

III. CONCEPTUAL FRAMEWORK

The conceptual framework of this study seeks to explore the readiness for practice during their transition from education to the professional practice setting within the specific context of Mongolia. Through a systematic literature review on nursing students' readiness for practice, a conceptual framework was developed, identifying antecedents such as maturity, clinical learning environment, cultural background, and attributes including clinical nursing competence, critical thinking, and professional values. Previous studies have established a connection between these variables, considering them as predictors, and nursing students' readiness for practice as an outcome. However, the current study also the investigation focuses on examining the mediating factors that influence the relationship between the clinical learning environment and readiness for practice. Hypothetically, mediation is deemed necessary to adjust the link between independent and dependent variables, to comprehend these intricate relationships (Sekaran & Bougie, 2016). Consequently, this conceptual framework a structured approach to exploring the various factors that contribute to nursing students' readiness for practice in Mongolia, as shown in Figure 2.

Antecedents:

Maturity: Age plays a crucial role in an individual's capacity to manage multiple patients simultaneously, which directly influences their overall readiness for practice. Life experiences both within and outside academic settings significantly contribute to a student's preparedness. Previous work experiences, irrespective of the field, can foster vital skills such as communication, teamwork, and problem-solving, which are essential in nursing practice (Dudley et al., 2020; Fitzgerald, 2019; Usher et al., 2015). Additionally, strong academic performance and the ability to grasp nursing concepts and skills during education are integral to a student's readiness, as high learning performance establishes a firm foundation that translates into clinical competence (Dudley et al., 2020; Munroe & Loerzel, 2016; Rusch et al., 2019; Usher et al., 2015).

Clinical Learning Environment: The quality of the clinical practice experience within the learning environment plays a pivotal role in shaping nursing students' readiness for practice (Conley, 2023b; Jamieson et al., 2019; Kirkman et al., 2018; Mekkawi & Khalil, 2022; Ragsdale & Schuessler, 2021; Woods et al., 2015).

Backgrounds: Understanding a student's motivation for choosing the nursing profession can provide insights into their commitment and enthusiasm. Studies have indicated that students who willingly choose the nursing profession and are happy with

their choice tend to exhibit higher levels of readiness for nursing (Hacer et al., 2020; Kaur et al., 2020; Mekkawi & Khalil, 2022).

Attributes:

Attributes encompass the core capabilities (Cognitive, Clinical, and Professional value) and qualities that nursing students must possess to excel in the clinical setting. These are critical to understanding the factors that influence nursing students' readiness to practice. The key attributes include critical thinking, clinical competence, and professional identity.

Critical thinking: Critical thinking skills are fundamental for nursing students to analyze complex healthcare scenarios, make informed decisions, and provide safe and effective patient care (Mekkawi & Khalil, 2022; Ragsdale & Schuessler, 2021; Usher et al., 2015).

Clinical Competence: This refers to the attainment and effective utilization of knowledge and relevant skills by nursing students through training or learning both in clinical and classroom settings. This involves the practical skills and knowledge necessary for nursing students to deliver evidence-based, patient-centered care effectively (Dudley et al., 2020; Ericson & Zimmerman, 2020; Hacer et al., 2020; Leufer et al., 2021; Mekkawi & Khalil, 2022).

Professional Value: Reflecting a nursing student's commitment to the nursing profession's values and accountability (Dudley et al., 2020; Ragsdale & Schuessler, 2021; Usher et al., 2015).

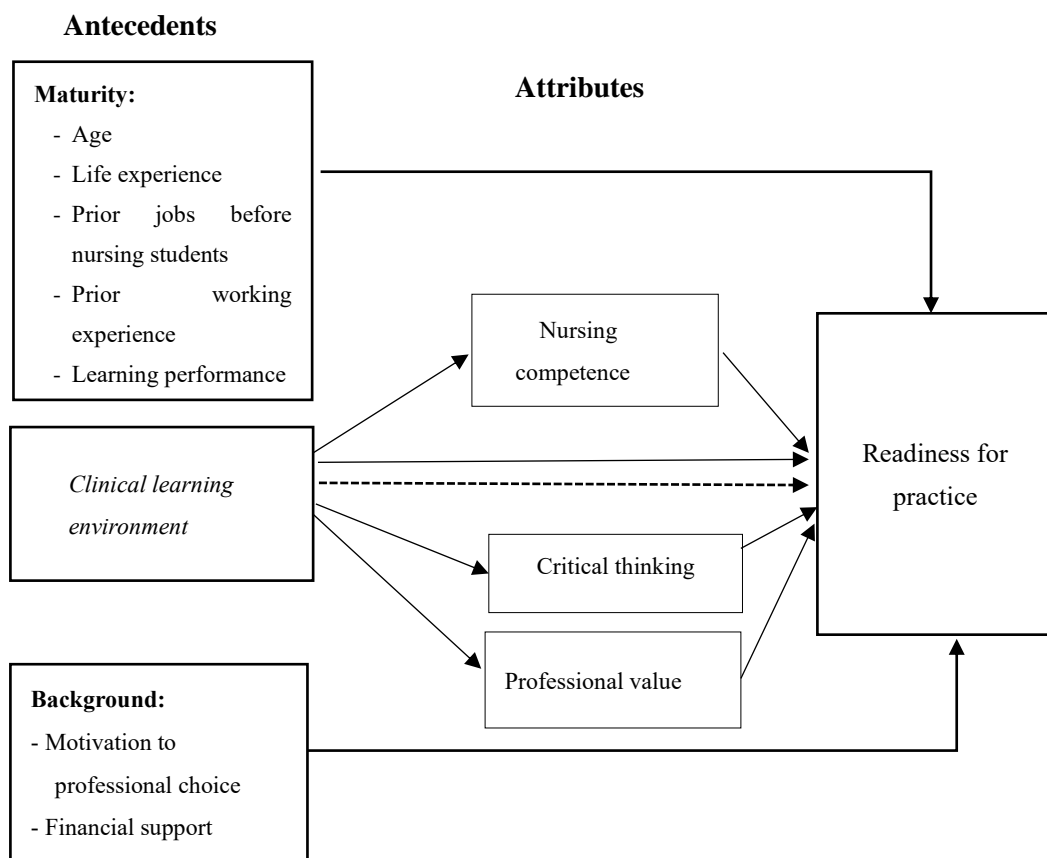


Figure 2. A conceptual framework of this study

IV. METHODS

Most studies have used a quantitative approach to explore nursing students' readiness for practice; few followed quantitative and review approaches and given the limited studies in the Mongolian context, we sought to obtain more comprehensive and perspective data by using a convergent mixed method design. The convergent mixed methods research enables researchers to explore a concept and have a greater emphasis on addressing the study's purpose, and to compare quantitative results with qualitative findings for complete understanding of the research problem (Creswell & Zhang, 2009).

4.1. Study design

This study used a convergent mixed methods design (Creswell & Zhang, 2009) to explore the factors related to readiness for practice among baccalaureate nursing students in Mongolia through qualitative and quantitative methods (Figure3). The procedure involves first gathering the quantitative data and qualitative data about the topic of interest and second analyzing the two data sets separately and independently from each other using

quantitative and qualitative analytic procedures. Lastly, the two data sets were merged (Creswell & Clark, 2017). Recognizing that the two data are concurrent and but have equal importance for the research objectives the final step was integrity of the results. This study adhered to the reporting guideline for the Mixed Methods Article Reporting Standard (MMAS) (Levitt et al., 2018).

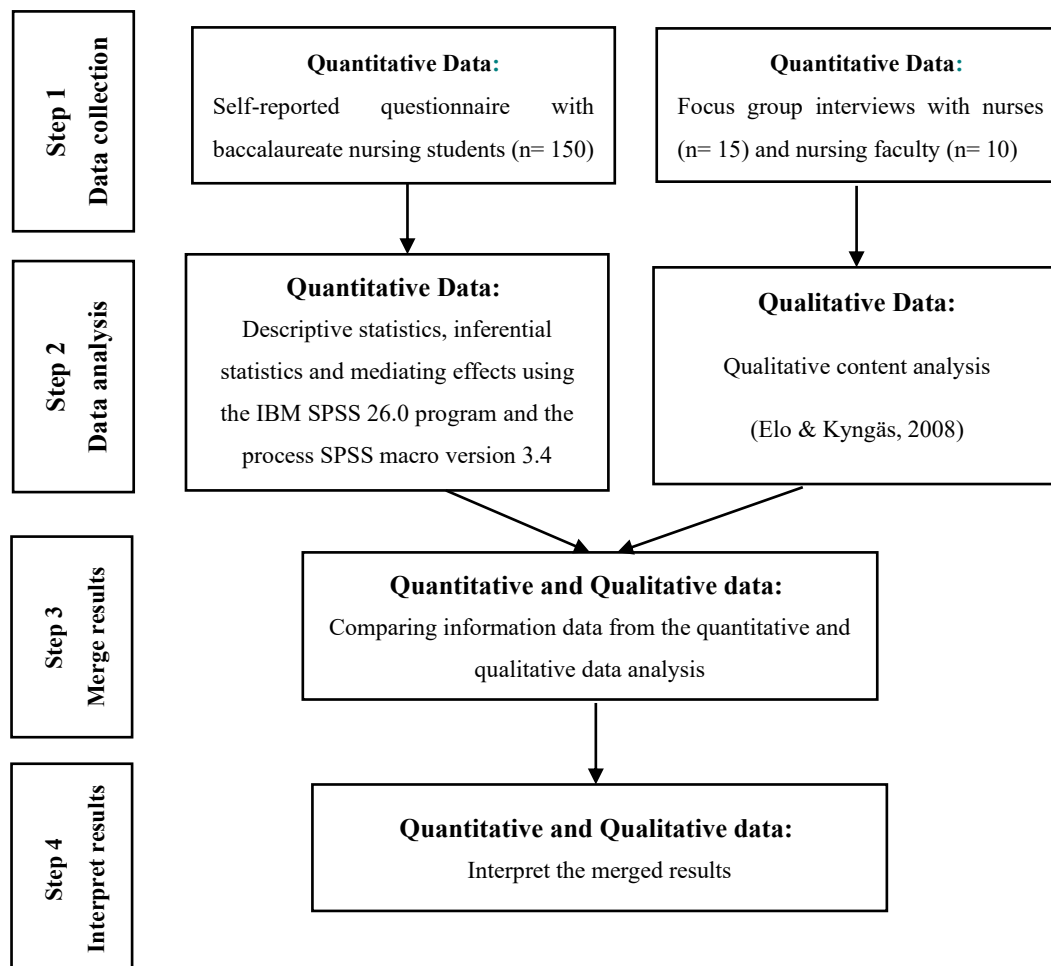


Figure 3. Flowchart of the convergent mixed methods design of this study: adapted from

Creswell & Plano Clarck (2011)

4.2. Quantitative research phase

4.2.1. *Design*

The phase employed a cross-sectional survey in a descriptive correlational design.

4.2.2. *Study participants*

The study participants were senior baccalaureate students in nursing studying at private and public universities with baccalaureate science in nursing (BSN) program in Mongolia. All participants independently agreed to participate in the study. The inclusion and exclusion criteria were as follows.

Inclusion criteria. This study included nursing students in their last year of the BSN program and nursing students have satisfactory completed more than two clinical nursing courses.

Exclusion criteria. Nursing students who have not yet satisfactorily completed at least one clinical nursing course were excluded from the study.

Sample size. A total of 150 baccalaureate nursing students from nine nursing institutions participated in this study through convenience sampling. The sample size was determined based on a calculation using the G-power program. The medium effect size was set at .10, the significance level of .05, the power of .80, and the number of selected predictors was

26 in the multiple linear regression analysis, the minimum sample size for statistical analysis was 135. Thus, considering a 10 % dropout rate (Grove et al., 2012), 150 participants were required for the study.

4.2.3. *Measurements*

A self-reported questionnaire was composed of 97 items. The questions covered five major topics: readiness for practice (20 items), clinical learning environment (27 items), clinical nursing competence (22 items), critical thinking (20 items), and general characteristics (8 items). The original authors approved use of the instruments via email.

Measurements were translated in accordance with the following steps.

The first step was the measurements translated from English to Mongolian by researcher and second step was two experts reviewed the first draft of the questionnaire which was in Mongolian. The two experts included two nursing faculty members interested in the subject of this study. Final questionnaires were modified only contextually based on the feedback given by two experts. Through this process, the number of items was not changed. The third step was to translate the measurements from Mongolian to English. This was based on Mongolian participants were accessible for the pilot study and the translated version was reviewed by bilingual expert who held the post of a director at Dream Land Translation Bureau, and who had long been working in a medical university as an English teacher.

Finally, a pilot study to pretest was conducted with 15 nursing students from three nursing institutions which were the Nursing School of MNUMS, Darkhan Medical School of MNUMS, Nursing School of IUU, from February to March 2023. The questionnaires took 25–30 minutes to complete. After the pilot test, the questionnaire was finalized for the data collection.

Table 2 Measurement of the study

Constructs	Concepts	Measurements	First author (year)	Items	Response style
Outcome variable	Readiness for practice	CFRPS	Casey et al., (2011)	20	Likert scale (1-4)
Antecedents	Clinical learning environment	CLE-S	Saarikoski and Leino-Kilpi, (2002)	27	Likert scale (1-5)
Attributes	Clinical nursing competence	Clinical nursing competence scale	Lee-Hsieh et al, (2003)	22	Likert scale (1-5)
	Critical thinking	Critical thinking disposition scale	Shin et al, (2015)	20	Likert scale (1-5)
	Professional Value	Nurses Professional Values Scale-3 (NPVS-3)	Weis & Schank, (2017)	28	Likert scale (1-5)
	Sample characteristics	Developed from literature	8		

Note: CFRPS = Casey-Fink Preparation for Practice Survey, CLE-S = Clinical learning environment- Supervision

Readiness for practice. Readiness for practice was measured by the Casey-Fink Preparation for Practice Survey (CFRPS) including 20 items developed by Casey et al., (2011). The items consisted of four domains: clinical problem-solving, learning techniques, professional identity, and trials and tribulations. The response rates ranged from 1 (strongly disagree) to 4 (strongly agree) based on a liker scale. Total score is calculated as the average of item scores. Cronbach's alpha ranged from 0.50 to 0.80 for the four subscales (Casey et al., 2011) and .71 for this study.

Clinical learning environment. Clinical learning environment was measured by the Clinical learning environment- Supervision scale, using 27 items developed by Saarikoski and Leino-Kilpi., 2002. This instrument includes five sub-dimensions: ward atmosphere, leadership style of the ward manager, premises of nursing care on the ward, premises of learning on the ward and supervisory relationship. The responses ranged from 1 (fully disagree) to 5 (fully agree). The score of each sedimentation is the average of item scores in that sedimentation. Cronbach's alpha ranged from 0.73 to 0.94 for the five sub-dimensions (Saarikoski & Leino-Kilpi, 2002) and .93 for this study.

Clinical nursing competence. Clinical nursing competence was measured using 22 items developed by Lee-Hsieh et al. 2003 (Lee-Hsieh et al., 2003). This instrument includes four dimensions: caring, communication and coordination, management/

teaching, and professional self-growth. The responses ranged from 1 (never) to 5 (always). The total score possible in all 22 items ranged from 22 to 100. Cronbach's alpha was 0.93 for all items (Lee-Hsieh et al., 2003) and .94 for this study.

Critical thinking. Critical thinking was measured by the Critical thinking disposition of Shin et al. 2015, including 20 items (Shin et al., 2015). Critical thinking disposition composed of intellectual eagerness/ sound skeptical (7 items), intellectual honesty (6 items), prudence (4 items), and objectivity (3 items). This instrument's range from 20 to 100 points. The Cronbach's alpha for the previous study was .73, and that of the current study was .85.

Professional Value. Professional Value was measured by the Nurses Professional Values Scale-3 (NPVS-3) including 28 items developed by Darlene Weis and Mary Jane Schank. 2017 (Weis & Schank, 2017). The items consisted of three domains: caring (10 items), activism (10 items), and professionalism (8 items). The response rates ranged from 1 (not important) to 5 (most important). The range of the total score is 28–140. Cronbach's alpha range is 0.94 for the instruments (Weis & Schank, 2017) and .91 for this study.

Readiness for practice related sample characteristics. Sample characteristics were measured with 8 items. Maturity included age, gender, marital status, pursuing second

degree, prior working experiences, learning performance (GPA), cultural background included motivation to choose the nursing profession, and financial support that were derived from the literature.

4.2.4. Data collection

Data collection for this study involved obtaining cooperation from nursing schools in Mongolia through official letters and phone communication. Subsequently, a comprehensive guideline and orientation meeting about the data collection procedure was carried out for the three recruited research assistants via Zoom. Following this, the research assistants disseminated the research subject recruitment notice and informed students about the opportunity to participate. Then, research assistants announced the research subject recruitment notice and informed students of opportunity to participate. Data was collected through an online survey targeting students who understood the purpose of the study and agreed voluntary participation. All participants received conduct information in case they had questions about survey questionnaire.

4.2.5. Data analysis

Data analysis was performed in this study using the IBM SPSS 26.0 program and the process SPSS macro version 3.4 program. A detailed description of the data analysis is given below:

1. Descriptive statistics, including the means, standard deviations (SD), and proportions were calculated using the IBM SPSS 26.0 program to study the general characteristics of the participants.
2. Sample normality was verified by calculating the sample mean, SD; and Pearson's correlation coefficient was used to identify the relationship amongst variables, which was calculated using the IBM SPSS 26.0 program.
3. The differences of measurement variables according to general characteristics were analyzed using a t-test, one-way ANOVA, and post-hoc test, which were calculated using the IBM SPSS 26.0 program.
4. The internal consistency of instruments was analyzed using Cronbach's α , which was calculated using the IBM SPSS 26.0 program.
5. To examine the factors influencing readiness for practice multiple regression analysis was done using the IBM SPSS 26.0 program.

6. Multiple mediator analysis was done using the SPSS process macro version 3.4 program and conducted to estimate the bootstrapping for testing used and identify direct, indirect, and total effects that were considered to be significant in its 95% bootstrap confidence intervals (CIs) from 5,000 bootstrap samples did not include zero and the effect is said to be significant with $p < .05$ (Hayes & Rockwood, 2017).

4.3 Qualitative research phase

4.3.1. Design

This phase employed focus group interviews (FGI) to generate a comprehensive range of information, insights, and ideas of participants. Moreover, an advantage of focus group interviews is that they can stimulate active participation to elucidate participants' reflections or ideas they have not thought about facilitating them to share their opinions with many others.

4.3.2. Researcher background

I developed and implemented a "Clinical coach and student collaboration " project for an academic interest in nursing students' readiness for practice while working at Darkhan Medical School of Mongolian National University of Mongolia for the last several years. Also, I am strongly interested in and motivated to starting work as a research assistant during my PhD study period as a part of the E-cohort project team of Yonsei Nursing College in Seoul and I conducted a systematic review on factors related to readiness for practice among undergraduate nursing students and several studies over

the last ten years including cross-sectional studies (n=7), qualitative studies (n=2), and mixed methods studies (n=2) to confirm the latest evidence on the factors related to nursing students' readiness for practice.

In terms of qualitative research preparation, I took a qualitative research methodology course in the Ph.D. program and broadened my knowledge of related research methods through workshops on mixed-method research and peer interview practice. I had experience working as a researcher on a research team in collecting research data in focus group interviews study to explore the need for advanced nursing practice courses in Mongolia. Also, I have participated workshop from Nagoya University of Japan focused on qualitative researches in medical sciences and medical professionals' education in 2019. No disclosure of any potential conflicts of interest in this study such as financial interests, or personal relationships for the researcher.

4.3.3. Study participants

Purposive sampling was used for recruiting participants. The participants include nurses and nursing faculty in both public and private nursing schools in Mongolia. The main criterion for the inclusion of nurses was having at least five years of work experience in the hospital setting providing direct care to patients and hold a diploma or

bachelor's degree in nursing. For the nursing faculty, their professional background as a nurse, having five or more years of working experience at a nursing school as a nursing faculty, and holding at least a master's degree in nursing were required. Finally, 15 nurses (3 groups) and 10 faculty (2 groups) participated in the interviews.

4.3.4. Data Collection

For the qualitative phase, through the reserved telephone contact, the researchers and the participants agreed on a time and university classroom or hospital nurses' practicum room, and the opinions of the participants were fully respected. Prior to data collection, an organized comprehensive training was carried out for the three recruited co-moderators maintain uniformity in data collection. Participants were advised that the sessions would be recorded prior to beginning the actual interview. Participants were reminded that the interview was confidential, and were assured that all information used in the study would remain anonymous. Then, the formal written consent form was signed by the participants and the formal interview started. Researcher was responsible for the interview using the interview outline and the other research coordinator was responsible for observing and recording the participants' nonverbal behaviors to ensure comprehension and specific information assimilation focus group interview. The

questions for the focus group interview consisted of an introductory, transition, key, and ending questions were as follows.

Table 3 Focus group interview questions

Item	Interview questions
<i>Introductory questions</i>	
1	Please share your clinical experience ready to work place as a nurse?
<i>Transition question</i>	
2	In your experience, how have you observed the transition from student to nurse, and what challenges have you noticed?
<i>Key questions</i>	
3	In your interactions with nursing students, have you observed any specific factors that influence their readiness for practice?
4	What skills and behaviors do you think are reflected in well-prepared nurses?
<i>Ending question</i>	
5	Do you have any other thoughts on nursing students' readiness for practice?

The interview continued with clarifying and deepening questions such as “Would you clarify more?” or “What do you mean?”. Average length of each focus group interview was approximately 90 min (range was 75-105 min). During the interview, participants could answer freely but ensured that the content did not deviate from the research topic and interfere with the interview flow. The participants had enough time to think about their experiences and share their opinions. Saturation was reached after 5 focus group interviews and analysis from 3 nurse groups and 2 faculty groups. Data of

saturation was determined when information obtained from participants was repeated and no new information could be obtained (Paul et al., 2011). The interviews were audiotape recorded upon agreement of participants. Audiotapes were transcribed verbatim by the researcher who had been trained in qualitative transcription procedures.

4.3.5. Data analysis

The audio-recorded interviews (undertaken in the Mongolian language) were transcribed verbatim by the researcher. The participants' names were replaced by number codes to ensure anonymity. Participants were shown the transcripts and invited to comment, but none commented. Data were analyzed with a qualitative content approach using an inductive analytic approach (Elo, & Kyngäs., 2007). The transcript data within the transcripts were coded, which entailed condensing the text while retaining its core meaning and after that independent coding by the researcher, verified the coding as a whole to identify any commonalities and differences in the coding. Finally, in the categorization process, coded data with similar meanings were combined the name of perceptions of nursing students' readiness for practice that could encompass the categories. Selected quotations were translated into English. through the process of double forward.

4.3.6. Rigor

The trustworthiness criteria of Guba and Lincoln (1986) guided the rigor of this study as follows. First, for credibility the study employed a purposive sampling technique to select nurses and nursing faculty who represented diverse backgrounds, experiences, and perspectives in Mongolia. This ensured that the focus group participants were highly relevant to the research topic. Research reliability was secured by recording entire interviews and transcribing them without omission. To enhance credibility, researcher checking was carried out, allowing participants to review and verify the data gathered during the focus group interviews, ensuring their voice records were accurately represented. The research and research coordinators engaged in regular discussions to reflect on the data collection process and identify potential biases. Second, to improve transferability provide a detailed description of the research context, participants, and data collection process. Third, detailed records of the study design, data collection, and analysis procedures were maintained and discussed with an advisor and qualitative research method expert to derive consistent results to ensure the dependability of the research process. Fourth, for confirmability, before conducting interviews, preunderstanding, assumptions, and corrections to the researchers' interpretations of this study were banned by describing participants in a personal note.

By adhered to Guba and Lincoln's trustworthiness criteria (Lincoln & Guba, 1986), these efforts enhanced the rigor and quality of the research, ultimately contributing to the trustworthiness of the findings regarding readiness for practice among nursing students in Mongolia.

4.4. Integration phase

For the integration phase, the results of the quantitative and qualitative analyses were integrated through merging. In order to draw meta-inferences on the following three constructs, the data were analyzed to determine how they confirmed, expanded, or were in discordance with one another. Confirmation means that one analysis supports the results of the other. Expansion means that the two analyses diverged and provided additional insights by describing complementary aspects of the construct in question. Discordance refers to cases in which the quantitative and qualitative results disagreed (Fetters et al, 2013). Joint display analysis was used to integrate the two types of data to achieve a comprehensive understanding of both (Fetters et al., 2013).

4.5. Ethical considerations

The approval of the Institutional Review Board of the Mongolian National University of Medical Sciences (Y-2022/3-09) was obtained prior to the study.

For the quantitative research phase, all participants were informed of the study's goals, methodology, confidentiality, voluntary nature of their participation, and the opportunity to withdraw from the study at any time without enduring any consequences on the first page of the survey. Only those who agreed to participate in the online survey were able to answer the questions on the next page.

For qualitative research phase the focus group interview process was presented including guarantee of confidentiality and anonymity. After that, the participants' agreement was obtained to record to interview. In addition, it was explained that if the participants wanted to withdraw during the interview, they could drop out of the study with no disadvantages.

V. RESULTS

5.1. Quantitative research results

5.1.1. *Sample characteristics*

The participants consisted of 150 baccalaureate nursing students in Mongolia. The mean age of the participants was 24.15 (SD = 4.56) years old, ranging from 19 to 42 years old. Most of the participants were female 146 (97.3%) and married 85 (57.6%). Approximately, 98 (65.3%) of participants studied in the capital area and most of participants was from public universities 79 (52.7 %). In total, only 8 (5.3%) of them were pursuing a second degree, and 20 (13.3%) of participants were previously employed in health care settings. Academic interest and aptitude 85 (57.7 %), as well as a suggestion of parents 33 (22.0 %), were the major reasons for the participant's motivation to choose the nursing profession. Regarding mean enrollment score of participants was 485.25 (SD = 59.15) and their current total GPA was 3.12 (SD = 0.32) out of the ranging from 2.30 to 3.80 (Table 4).

Table 4 Sample characteristics

(*N* = 150)

Characteristics	Categories	n (%)	Mean \pm SD	Range
Gender	Female	146 (97.3)	24.15 \pm 4.56	19-42
	Male	4 (2.7)		
Age (year)				
Marital status	Single	65 (43.3)		
	Married	85 (56.7)		
Pursuing Second degree	Yes	8 (5.3)		
	No	142 (94.7)		
Location of school	Capital area	98 (65.3)		
	Rural area	52 (34.7)		
School status	Public	79 (52.7)		
	Private	71 (47.3)		
Previous employed experiences	Yes	20 (13.3)		
	No	130 (86.7)		
Pervious job experiences	Assistant nurse	6 (4.0)		
	Volunteer worker	1 (0.7)		
	Dentist assistant	1 (0.7)		
	Other	12 (8.0)		
Current employed	Yes	39 (26.0)		
	No	111 (74.0)		
Motivation to choose the nursing profession	Academic interest and aptitude	85 (57.7)		
	Suggestion of parents	33 (22.0)		
	Easy to get scholarship	10 (6.7)		
	Depending ES	13 (8.7)		
	Other	12 (8.0)		
Enrollment score			485.25 \pm 59.15	400 - 650
Current GPA (total)			3.12 \pm 0.32	2.30 - 3.80

Note. *SD* = standard deviation, *n* = number, ES = enrollment score

5.1.2. Descriptive statistics of readiness for practice and its associated factors

1) Descriptive statistics of readiness for practice

Table 5-1 shows the item of readiness practice. The readiness for practice had four subscales: clinical problem solving, learning technique, professional identity, and trials and tribulations. The mean score for readiness for practice was 2.89 ± 0.29 (out of 4), and the mean of subscales were as follows; Learning technique (3.17 ± 0.52) was the highest, followed by professional identity (3.12 ± 0.33), Clinical problem solving (2.91 ± 0.36), and trials and tribulations was the lowest mean (2.47 ± 0.54) out of 4 among the subscales in readiness for practice. The item “I feel comfortable knowing what to do for a dying patient” in clinical problem solving subscale was the lowest at 2.67 (0.74), “Writing reflective journal logs provided insights into my own clinical decision-making skills” in learning technique subscale was the lowest at 3.12 (0.57), “My clinical instructor provided feedback about my readiness to assume RN role” in professional identity subscale was the lowest at 2.86 (0.70), and I feel overwhelmed by ethical issues in my patient care responsibilities in trials and tribulations subscale was the lowest at 2.86 (0.70). The item “I feel comfortable communicating with patients and their families” had the highest mean at 3.30 (0.46) among readiness for practice.

Table 5-1 Descriptive statistics of readiness for practice

(N = 150)

Items	Mean (SD)	Strongly disagree	Disagree	Agree	Strongly agree
		N (%)			
I feel confident communicating with physicians	3.02 (0.59)	4 (2.7)	12 (8.0)	110 (73.3)	24 (16.0)
I am confident in my ability to problem solve	3.10 (0.48)	0 (0.0)	11 (7.3)	113 (75.3)	26 (17.3)
I use current evidence to make clinical decision.	2.90 (0.63)	5 (3.3)	23 (15.3)	103 (68.7)	19 (12.7)
I am comfortable communicating and coordinating care with interdisciplinary team members.	3.00 (0.54)	1 (0.7)	19 (12.7)	109 (72.7)	21 (14.0)
I feel comfortable knowing what to do for a dying patient	2.67 (0.74)	7 (4.7)	53 (35.3)	72 (48.0)	18 (12.0)
I feel comfortable taking action to action to solve problems	2.83 (0.66)	4 (2.7)	36 (24.0)	91 (60.7)	19 (12.7)
I feel confident identifying actual or potential safety risks to my patients	2.89 (0.55)	0 (0.0)	32 (21.3)	102 (68.0)	16 (10.7)
Clinical problem solving			2.91 ± 0.36		
Simulations have helped me feel prepared for clinical practice	3.22 (0.64)	3 (2.0)	9 (6.0)	90 (60.0)	48 (32.0)
Writing reflective journals/logs provided insights into my own clinical decision-making skills	3.12 (0.57)	1 (0.7)	13 (8.7)	102 (68.0)	34 (22.7)
Learning Techniques			3.17 ± 0.52		
I feel comfortable communicating with patients and their families.	3.30 (0.46)	0 (0.0)	0 (0.0)	104 (69.3)	46 (30.7)

My clinical instructor provided feedback about my readiness to assume RN role	2.86 (0.70)	7 (4.7)	28 (18.7)	94 (62.7)	21 (14.0)
I am comfortable asking for help	3.09 (0.53)	0 (0.0)	15 (10.0)	106 (70.7)	29 (19.3)
I am satisfied with choosing nursing as a career	3.21 (0.59)	0 (0.0)	14 (9.3)	90 (60.0)	46 (30.7)
I feel ready for the professional nursing	3.14 (0.66)	3 (2.0)	15 (10.)	90 (60.0)	42 (28.0)
Professional Identity			3.12 ± 0.33		
I am comfortable delegating tasks to the nursing assistant	2.94 (0.62)	4 (2.7)	22 (14.7)	103 (68.7)	21 (14.0)
I have difficulty documenting care in the electronic medical record	2.42 (0.80)	17 (11.3)	65 (43.3)	55 (36.7)	13 (8.7)
I have difficulty prioritizing patient care needs	2.32 (0.89)	23 (15.3)	66 (44.0)	51 (34.0)	10 (6.7)
I feel overwhelmed by ethical issues in my patient care responsibilities	2.31 (0.81)	35 (23.3)	41 (27.3)	65 (43.3)	9 (6.0)
I have difficulty recognizing a significant change in my patient's condition	2.38 (0.76)	20 (13.3)	59 (39.3)	65 (43.3)	6 (4.0)
I had opportunities to practice skills and procedures more than once	3.08 (0.62)	2 (1.3)	18 (12.0)	96 (64.0)	34 (22.7)
Trials and tribulations			2.47 ± 0.54		

2) Descriptive statistics of readiness for practice associated factors

The average score for clinical learning environment was 4.01 ± 0.61 (out of 5), and the scores of subscales were as follows; Premises of learning on the ward (4.10 ± 0.64) was the highest, followed by premises of nursing care on the ward (4.05 ± 0.71), Supervisory relationship (4.01 ± 0.69), ward atmosphere (3.92 ± 0.66), ward manager (3.92 ± 0.76), and ward atmosphere (3.92 ± 0.66). For competence, the average score of clinical nursing competence was 3.87 ± 0.60 (out of 5) and the highest average was in professional self-growth ($4.02 \pm .064$), followed by management and teaching (3.95 ± 0.69), communication and coordination (3.87 ± 0.61), and caring was the lowest score (3.85 ± 0.69) among the components. Moreover, the average score for critical thinking was 3.55 ± 0.60 (out of 5), and the highest average score of the components was for Intellectual honesty (3.63 ± 0.62), followed by intellectual eagerness (3.58 ± 0.62), prudence (3.57 ± 0.70), and the lowest score was for the component of objectivity (3.26 ± 0.83). In addition, the average score for professional value was 4.11 ± 0.55 (out of 5), and the scores for each subscale ranked from highest to lowest were caring (4.21 ± 0.59), activism (4.06 ± 0.60), and professionalism (4.05 ± 0.55). The average score for readiness for practice was 2.89 ± 0.29 (out of 4) (Table 5-2).

Table 5-2 Descriptive statistics of readiness for practice and its associated factors

(N = 150)

Variables	Possible range	Actual range	Mean \pm SD
Readiness for practice	1-4	1.95 – 3.95	2.89 \pm 0.29
Clinical learning environment	1-5	2.11 - 5.00	4.01 \pm 0.61
Ward atmosphere		2.00 - 5.00	3.92 \pm 0.66
Ward Manager		1.75 - 5.00	3.92 \pm 0.76
Premises of nursing care on the ward		1.25 - 5.00	4.05 \pm 0.71
Premises of learning on the ward		2.00 - 5.00	4.10 \pm 0.64
Supervisory relationship		2.00 - 5.00	4.01 \pm 0.69
Clinical nursing competence	1-5	1.00 – 5.00	3.87 \pm 0.61
Caring		1.38 – 5.00	3.85 \pm 0.69
Communication and coordination		1.00 – 5.00	3.87 \pm 0.61
Management / Teaching		1.00 - 5.00	3.95 \pm 0.69
Professional self-growth		1.50 – 5.00	4.02 \pm .064
Critical thinking	1-5	1.25 – 5.00	3.55 \pm 0.60
Intellectual eagerness		1.00 – 5.00	3.58 \pm 0.62
Intellectual honesty		1.50 – 5.00	3.63 \pm 0.62
Prudence		1.50 – 5.00	3.57 \pm 0.70
Objectivity		1.00 – 5.00	3.26 \pm 0.83
Professional value	1-5	2.68 – 5.00	4.11 \pm 0.55
Caring		2.80 – 5.00	4.21 \pm 0.59
Activism		2.40 – 5.00	4.06 \pm 0.60
Professionalism		2.50 – 5.00	4.05 \pm 0.55

5.1.3. Differences in readiness for practice and its associated factors by sample characteristics

The significant differences in readiness for practice were observed based on two sample characteristics: marital status ($t = 2.18$, $p = 0.035$), with married individuals scoring higher; school status ($t = -3.38$, $p = 0.001$), with private school students scoring scored higher compared to public. The clinical nursing environment was not differed by any sample characteristics. There was a statistically significant difference in clinical nursing competence by school status ($t = -2.20$, $p = 0.026$), with public school students having lower clinical nursing competence scores on average. As a result of the post-hoc analysis, there was a significant difference between nursing student's motivation to choose the nursing profession ($F = 8.12$, $p = 0.000$), and those with academic interest and aptitude scored higher in clinical nursing competence. Other sample characteristics were not show a significant difference in clinical nursing competence. There were no significant differences in critical thinking according to the sample characteristics. Their professional value average score was higher than previous job experience for nursing students. In addition, critical thinking did not show statistically significant differences within other sample characteristics (Table 6-1,2).

Table 6-1 Differences in Readiness for practice, and clinical learning environment by sample characteristics

(N= 150)

Characteristics	Categories	N	Readiness for practice		Clinical learning environment	
			M ± SD	t or F (p)	M ± SD	t or F (p)
Gender	Male	146	2.83 ± 0.28	-0.37 (.709)	3.80 ± 0.21	- 0.68
	Female	4	2.89 ± 0.30		4.01 ± 0.61	(.494)
Marital status	Married	87	2.93 ± 0.31	2.18 (.035)	4.05 ± 0.61	0.97 (.332)
	Single	63	2.83 ± 0.27		3.95 ± 0.60	
Pursuing second degree	Yes	8	2.76 ± 0.58	-1.26 (.207)	3.77 ± 0.40	-1.17 (.266)
	No	142	2.90 ± 0.30		4.02 ± 0.61	
Location of school	Capital area	98	2.91 ± 0.32	1.10 (.269)	4.00 ± 0.64	-0.20 (.839)
	Rural area	52	2.85 ± 0.25		4.02 ± 0.53	
School status	Public	79	2.81 ± 0.21	-3.38 (.001)	3.98 ± 0.53	-0.57 (.578)
	Private	71	2.97 ± 0.04		4.04 ± 0.68	
Previous job experiences	No experienced	13	2.89 ± 0.30	0.85 (.493)	4.00 ± 0.59	0.76 (.551)
	Assistant nurse	6	2.86 ± 0.26		3.93 ± 0.92	
	Volunteer worker	1	3.35 ± 0.00		5.00 ± 0.00	
	Dentist assistant	1	2.60 ± 0.00		3.74 ± 0.00	
	Other	12	2.86 ± 0.25		4.10 ± 0.62	

Motivation to choose the nursing profession	Academic interest and aptitude	82	2.94 ± 0.30	0.11 (.773)	4.04 ± 0.60	0.40 (.808)
	Suggestion of parents	82	2.88 ± 0.28		4.03 ± 0.61	
	Easy to get scholarship	10	$2.60 \pm .026$		3.85 ± 0.60	
	Depending on enrollment score	13	2.81 ± 0.21		3.97 ± 0.51	
	Other	10	2.87 ± 0.28		3.87 ± 0.67	

Table 6-2 Differences in clinical nursing competence, critical thinking, and professional value by sample characteristics

(N= 150)

Characteristics	Categories	N	Clinical nursing competence		Critical thinking		Professional value	
			M ± SD	t or F (p)	M ± SD	t or F (p)	M ± SD	t or F (p)
Gender	Male	4	3.47 ± 0.78	-1.33 (.183)	3.76 ± 0.27	0.70 (.480)	4.43 ± 0.34	1.17 (.240)
	Female	146	3.88 ± 0.59		3.54 ± 0.61		4.10 ± 0.55	
Marital status	Married	87	3.89 ± 0.61	0.55 (.583)	3.56 ± 0.66	0.27 (.782)	4.10 ± 0.59	-1.69 (.866)
	Single	63	3.84 ± 0.58		3.53 ± 0.51		4.12 ± 0.49	
Pursuing second degree	Yes	8	3.80 ± 0.30	-0.31 (.750)	3.11 ± 0.61	-2.09 (0.38)	3.89 ± 0.43	-1.14 (.253)
	No	142	3.87 ± 0.61		3.57 ± 0.59		4.12 ± 0.55	
Location of school	Capital area	98	3.93 ± 0.61	1.68 (.095)	3.57 ± 0.66	0.76 (.444)	4.10 ± 0.62	-0.25 (.796)
	Rural area	52	3.76 ± 0.57		3.49 ± 0.49		4.13 ± 0.40	
School status	Public	79	3.77 ± 0.52	-2.20 (.002)	4.09 ± 0.44	-1.87 (.063)	4.09 ± 0.44	-0.45 (.652)
	Private	71	3.98 ± 0.66		4.13 ± 0.65		4.13 ± 0.65	

Previous job experiences	No experienced	13	3.88 ± 0.60	0.79 (.528)	3.56 ± 0.60	0.29 (.884)	4.15 ± 0.52	2.44 (.049)
	Assistant nurse	6	3.56 ± 0.63		3.57 ± 0.64		3.79 ± 0.75	
	Volunteer worker	1	4.31 ± 0.00		3.55 ± 0.00		4.09 ± 0.00	
	Dentist assistant	1	4.40 ± 0.00		3.45 ± 0.00		4.13 ± 0.00	
	Other	12	3.79 ± 0.51		3.37 ± 0.68		4.10 ± 0.62	
Motivation to choose the nursing profession	Academic interest and aptitude	82	3.90 ± 0.53	8.12 (.000)	3.67 ± 0.63	1.50 (.182)	4.43 ± 0.34	
	Suggestion of parents	82	4.10 ± 0.47		3.46 ± 0.54		4.10 ± 0.55	
	Easy to get scholarship	10	2.99 ± 1.09		3.21 ± 0.80		4.10 ± 0.59	
	Depending on enrollment score	13	3.84 ± 0.37		3.46 ± 0.43		4.12 ± 0.49	
	Other	10	3.74 ± 0.33		3.55 ± 0.60		3.89 ± 0.43	

5.1.4. Correlation between readiness for practice and its associated factors

Pearson's correlation analysis was conducted to identify the correlations between the main variables, as shown in Table 7. The result confirmed that not statistically significant relationship between all continues sample characteristics, including age, enrollment score and students' current GPA. However, readiness for practice was significantly correlated with clinical learning environment ($r = .42, p < .05$), clinical nursing competence ($r = .48, p < .05$), critical thinking ($r = .44, p < .05$), and professional value ($r = .18, p < .05$).

Table 7 Correlation between readiness for practice and its associated factors

(N= 150)

Variables	1	2	3	4	5	6	7
	r (p)						
1. Age							
2. Enrollment score	-.190*						
	(.020)						
3. GPA	.213**	.083					
	(.009)	(.315)					
4. Clinical learning environment	.160	.037	-.143				
	(.050)	(.650)	(.082)				
5. Clinical nursing competence	.006	.211**	.152	.476**			
	(.094)	(.009)	(.064)	(.000)			
6. Critical thinking	-.161*	.129	-.001	.272**	.494**		
	(.049)	(.116)	(.989)	(.001)	(.000)		
7. Professional value	-.183*	.109	-.058	.306**	.449**	.321**	
	(.025)	(.183)	(.482)	(.000)	(.000)	(.000)	
8. Readiness for practice	.094	.027	.016	.424**	.483**	.449**	.188*
	(.252)	(.743)	(.848)	(.000)	(.000)	(.000)	(.021)

5.1.5. Factors affecting nursing students' readiness for practice

Test of the multicollinearity of variables was done before analyzing the multiple regression. The tolerance ranged from 0.50 to 0.91, and the variance inflation factor ranged from 1.09 to 1.97, not exceeding 10, confirming that there was no independent variable to cause multicollinearity in this study. Table 12 displays the results of multiple linear regression analyses after entering the main variables and marital status and clinical practice duration as sample characteristics that were statistically significantly associated with readiness for practice. Multiple linear regression analysis confirmed that clinical learning environment ($\beta = 0.24$, $p = 0.001$), clinical competence ($\beta = 0.17$, $p = 0.005$), and critical thinking ($\beta = 0.28$, $p = 0.000$) were significant factors affecting readiness for practice among nursing students, accounting for 40 % of the variance in readiness for practice. However, professional value ($\beta = -0.04$, $p = 0.537$) was not a statistically significant factor affecting nursing students' readiness for practice (Table 8).

Table 8 Factors affecting nursing students' readiness for practice

(N = 150)

Variable	β	b	SE	t	p
Previous employed experience	0.10	0.00	0.06	0.12	.898
Current employed	0.14	0.09	0.05	1.74	.083
Gender	-0.02	-0.04	0.12	-0.38	.702
Marital status	-0.16	-0.09	0.04	-2.10	.057
Reason to choose the profession	-0.09	-0.01	0.01	-1.40	.161
School of status	0.13	0.08	0.05	1.59	.112
School of location	-0.03	0.01	0.05	-0.35	.721
Financial support	0.01	0.00	0.02	0.14	.885
Clinical learning environment	0.24	0.11	0.03	3.28	.001
Clinical competence	0.17	0.86	0.04	1.95	.005
Critical thinking	0.28	0.13	0.03	3.72	.000
Professional value	-0.04	-0.02	0.04	-0.61	.537
F=8.92 (p<.001), R ² = .460, Adjusted R ² = .409, VIF = 1.09 – 1.97					

Note. B = Standardized regression coefficient; b = Unstandardized regression coefficient.

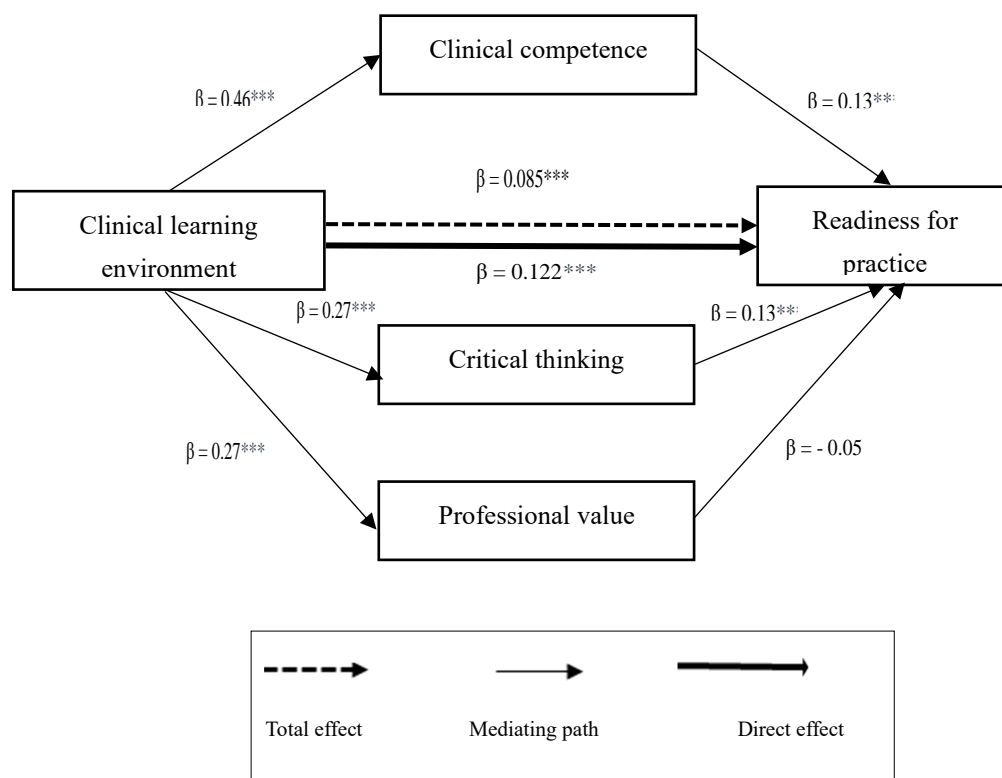
SE = Standard error; VIF = Variance inflation factor.

5.1.6. Mediating effects of variables

This study assessed the mediating role of clinical competence, critical thinking and professional value on the relationship between clinical learning environment and readiness for practice. The study results found that clinical learning environment was positively associated with clinical competence ($\beta = 0.46$, $SE = 0.07$, $p < 0.000$), critical thinking ($\beta = 0.27$, $SE = 0.78$, $p < 0.000$), and professional value ($\beta = 0.27$, $SE = 0.07$, $p < 0.000$). Also, clinical competence ($\beta = 0.13$, $SE = 0.04$, $p = 0.002$) and critical thinking ($\beta = 0.13$, $SE = 0.03$, $p = 0.000$) were significantly related to readiness for practice. Despite, professional value does ($\beta = -0.05$, $SE = 0.04$, $p = 0.194$) not significantly predict to readiness for practice, as shown in Figure 4.

Furthermore, the result relieved a significant indirect effect of impact of clinical learning environment on readiness for practice through clinical competence ($\beta = 0.633$, LLCI, ULCI; 0.016- 0.114). The study also found a significant in direct effect of impact of clinical learning environment on readiness for practice through critical thinking ($\beta = 0.037$, LLCI, ULCI; 0.004- 0.090). Hence, both clinical competence and critical thinking partially mediated the relationship between clinical learning environment and readiness for practice. However, the study result relieved a not significant indirect effect of impact of clinical learning environment on readiness for practice through professional

value ($\beta = -0.015$, LLCI, ULCI; $-0.389 - 0.082$). Furthermore, the total effect of clinical learning environment on readiness for practice ($\beta = 0.085$, $p < 0.001$) (Table 9).



Note. $** p < 0.01$. $*** p < 0.001$.

Figure 4 Multiple- mediating bootstrap analysis of relationship between clinical learning environment and readiness for practice as mediated by clinical competence, critical thinking, and professional value

Table 9 Result of Mediating Analysis

(*N* = 150)

Total effect (CLE ⇨ RFP 0.085 (0.001))	Direct effect (CLE ⇨ RFP 0.122 (0.001))	Relationship		Indirect effect	CIs		SE	Conclusion
					LLCI	ULCI		
		CLE ⇨ Competence ⇨ RFP	Clinical	0.063	0.018	0.116	0.024	Partial Mediating
		CLE ⇨ thinking ⇨ RFP	Critical RFP	0.037	0.004	0.091	0.022	Partial Mediating
		CLE ⇨ Value ⇨ RFP	Professional RFP	-0.015	-0.389	0.082	0.011	No mediating

Note. CLE = Clinical learning environment; RFP = Readiness for practice; CIs = Confidence intervals; LLCI = lower limited CI;

ULCI = upper limited CI; SE = Standardized coefficient; bootstrap samples = 5000.

5.2. Qualitative research results

5.2.1. Participants characteristics

1) Nurse's characteristics

Table 10 presents the nurse participant's demographic characteristics, including age, gender, working experience, and unit type. There were 15 nurses consisting of three groups. The average age was 30.8 years old with a ranges of 26 and 36 years old. They also had 9.2 years of clinical experience with a range of 5 to 15 years of experience. Most of the nurse participants worked in the general wards and intensive care units of secondary hospitals.

Table 10 Characteristics of the nurse participant in the focus group interviews

(N=15)

<i>ID</i>	<i>Age</i>	<i>Gender</i>	<i>Year of nursing experience</i>	<i>Current position</i>	<i>Unit type</i>
Group 1					
A	36	F	15	Nurse	OR
B	29	F	8	Nurse	Psychiatric
C	26	F	5	Nurse	ER
D	31	F	10	Nurse	ICU
F	32	F	10	Nurse	Neurology
G	30	F	9	Nurse	Pediatric
H	28	F	7	Nurse	Orthopedic
I	31	F	13	Nurse	Palliative
J	26	F	5	Nurse	Internal
K	26	F	5	Nurse	TBC
L	32	F	11	Nurse	Surgery
M	35	F	9	Nurse	Neurology
N	33	F	12	Nurse	Pediatric
O	31	F	8	Nurse	Emergency
P	36	F	12	Nurse	Obstetrics

Note: OR= Operation room; ER= Emergency room; ICU= Intensive care unit; F= female; TBC= Tuberculosis.

2) *Nursing faculty's characteristics*

Table 11 presents the faculty participant's demographic characteristics, including age, gender, working tenure, current position, and unit type of their school. Ten nursing faculty members with two groups participated. The average age was 46.1 years old with an age range of 25 and 65 years old. Their average years of experience in education was 13.0 with a ranged from 5 to 42 years and worked at both private and public universities.

Table 11 Characteristics of the faculty participant in the focus group interviews

(N=10)

<i>ID</i>	<i>Age</i>	<i>Gender</i>	<i>Years of Current experience in position education</i>	<i>School type</i>
Group 2				
A	65	F	42	Lecturer Public
B	55	F	20	Lecturer Public
C	54	F	10	Lecturer Public
D	51	F	10	Lecturer Public
F	47	F	5	Lecturer Public
G	55	F	15	Lecturer Private
H	45	F	10	Lecturer Private
I	39	F	8	Lecturer Private
J	25	F	5	Lecturer Private
K	25	F	5	Lecturer Private

5.2.2. Nurses' perception a concept of nursing students' readiness for practice

This analysis yielded five categories, eight subcategories, and 34 narratives. The categories were: (a) maturity (b) competence (c) theory practice integration and (d) professionalism. Table 12 describes these categories and subcategories.

Table 12 Nurses' perception in terms of nursing students' readiness for practice

Categories	Subcategories
Maturity	Coping ability to challenging clinical experiences Adaptability to adjust the workplace place
Competence	Communication competence on navigating challenging nursing environment
Theory practice integration	Practical application to nursing practice Practicing total aspect of care
Professional value	Passion for nursing In-depth recognition of nursing

Category 1. Maturity

Subcategory 1. Coping ability to challenging clinical experiences

Participants stated that nurses' career paths reported difficult experiences, reacting to patients' deaths, disconnecting patients from life support equipment, and heavy workloads every single time. So, nurses pointed out the importance of nursing students possessing good coping ability in terms of their readiness for the workplace. According to nurses, good coping ability students are more likely to develop close connections with clinical environments, which results in better clinical experiences and builds positive working relationships during their study period. There are some participants' narrations:

“...one of our young nurses was a student came to help us almost like a nurse in our ward, and we had an excellent relationship with nurses and doctors. After his graduation he was easy to adjust to the hospital compare than other new nurses”

(Group 1- E).

“In our emergency room, most students run away because they are afraid and nervous from critical patients during their clinical practicum” (Group 1-N).

“in my opinion, it seems current new graduates and students have poor ability to tolerate workload and critical conditions... one new nurse leaves her job immediately after a first night shift at ICU due to case of the patient died. Nursing department offered him to work in another department. He disagreed and just went out” (Group 1-O).

“I observed that some student nurses are immediately depressed by the nurse’s workload during their clinical practice. One of the students I mentor told me that, I am terrified of cannot use my knowledge to help many patients in such busy situations. I felt sad that she also said that after I graduate, I will reconsider working as a nurse.” (Group 1-D).

Subcategory 2. Adaptability to adjust the workplace place

Participants stated that one of the most important indicators of a nursing student's maturity in terms of readiness for practice is their capacity to learn new skills, adapt their knowledge to different healthcare scenarios, incorporate emerging technologies, and adapt to new clinical environments. Below are some participants' narration:

"In my opinion, their lack of ability to transfer knowledge that they have learned in school is due to their lack of ability to adjust quickly in clinical practice and their lack of ability to transfer that knowledge from the student mind to the practical nurse." (Group 2-I).

"...new nurses nowadays lack the ability to express their experiences due to unclear tasks and other challenges at work... they can't easily get out of their student mindset... it is challenging in the clinical settings" (Group 1- D).

“When I started as a nurse, I was able to adapt to my job quickly. The reason is that I was always in the hospital to try to help nurses when I was a student. So I adjusted to the hospital environment and got some experience with communicating with the health care team” (Group 1 - H).

Category 2. Competence

Subcategory 1. Communication competence on navigating challenging nursing environment

Participants stated that high competence in communication positively impacts nursing students' interactions with the patient and healthcare team and empowers them in their healthcare decisions. Also, they mentioned that high competence in communication enables nursing students to navigate conflicts and challenging situations effectively even when they are entering the working place and however, it is challenging. This can be confirmed by the following participants' statements:

“... the students need to have well-prepared self-confidence when performing manual procedures and communicating with others during their school period”
(Group 1-D).

“Most new nurses lack confidence to communicate with doctors and nurse managers. They are often handled by other experienced nurses or someone else. In my opinion, when our students are assured and mature in all areas of communication during their time as students, they will be able to easily adjust in the workplace” (Group 2-J).

“I noticed that students and new nurses are not directly opposed to making demands, but they are almost ready to decide to leave the job or profession due to poor communication and some unexpected clinical environments. They are not confident in their communication skills. It is a very sensitive issue for current new nurses too.” (Group 3-O).

“When I first became a new nurse, I was very discouraged because I couldn’t be confident to communicate with assistants to demand a job. I felt like quitting my job because I used to be very insecure when dealing with old people. It was so terrible and scary. However, likely our new generation nurses are more confident compared to our time. Because they can make demands immediately if their job description is not clear about their responsibility” (Group 2-J).

Category 3. Theory and practice integration

Subcategory 1. Practical application to nursing practice

Most nurses noted that if nursing students are able to apply their theoretical knowledge gained in the classroom to actual clinical practice, they easily adapt to clinical practice. Also, participants criticized and noted that, they are insufficiently prepared during their student time and those challenges negatively affect colleagues’ workload and the quality of nursing care. Therefore, participants believed that students should experience more of the reality of nursing during their academic preparation: These statements from these participants support these finding:

“In my opinion, even though they graduated, they are not yet prepared to practice. They have the theory but are not based in clinical practice, making them quite immature in terms of clinical practice. They lack the ability to apply the knowledge they have gained to clinical practice, which is something we would like them to have.” (Group 1-B)

“I don't want to seem judgmental, but the people I've met cannot put their knowledge into practice. I regret so much to see this recent graduate unable to even set up an IV line. Although they have already graduated with good grades, received a license, they are lack performing to the expected level in reality” (Group 1-H).

“The main thing graduates seem to be lacking in is the reality of how much is required to do the job” (Group 1-D).

“The first days of my nursing career I was assigned to Internal Disease department, there were a lot of serious patients and a lot of injections. But some of the things I

was taught when I was a student were different. This situation made me shocked. I was not ready” (Group 1-K)

Subcategory 2. Practicing total aspect of care

The participants were concerned about fulfilling nursing students' total responsibility for care to readiness for practice. They noted that our job is not limited only to nursing procedures and it can be responsible for direct patient care, indirect patient care including administrative duties, and some ad hoc management for emergency situations and incidents. Participants expected and were concerned that the nursing students established acquired skills in providing the whole aspect of care through their adequate educational approaches. These statements from these participants support these finding:

“Due to recent official policy, nursing students are not permitted to perform injections and several manual nursing procedures during their clinical practice. So, I think more effective teaching approaches are needed for nursing students to practice as nurse” (Group 1-D).

“I noticed that I was so shocked when I entered as a new nurse. Because, I still needed to learn about the most critical procedures implemented in the hospital and health ministry orders, which were completely new for me” (Group 3-O).

Category 4. Professionalism

Subcategory 1. Passion for nursing

Most participants perceived that passion for nursing is a very important and highly requires an essential part of nurses. Participants are concerned that, however, the current generation of nurses, does not enjoy the practical side of nursing and does not regard it as a lifelong career. Actually, they said that they regretted the current generation of nurses that the profession is used as a gateway to other professions especially in medicine. So, they were criticized a bit for nursing education because students cannot have been prepared to get the motivation to be a passionate nurse during their educational period. These statements from these participants support this finding:

“I think currently most nursing students are very lazy. We saw them in the nurses’ station during their clinical practicum. Immediately, they go out somewhere and they do not enjoy nursing” (Group 1-B).

“I noticed that most students do not like bedside nursing, they are highly interested in how to run away to office work or outpatient department” (Group 1-J).

“I think that a nurse needs to acquire the skills and passion for nursing appropriate to their professional value to prepare for being a student.” Group 1-B).

“I noticed that, due to inadequate communication (nurses don't get enough recognition), and some poor pressure regarding notice during their school period, some recent new graduates are almost ready to decide to change professions when they are starting their nursing career” (Group 2 -J).

“As a result of private institutions beginning to prepare nurses to become doctors in their third year, there is currently a greater interest in medicine among nursing students. So, some nursing students want to use it as a gateway to medical school. This negative aspect makes it challenging for nursing students and also they cannot adequately have prepared to understand the passion in nursing during their study period” (Group 2 -I).

Subcategory 2. In-depth recognition of nursing image in the existing context

Participants noted that nursing students need to realize the current nursing situation while they are a student and learned the value of the nursing profession. Also, participants were concerned about the current image of nursing being negative in the Mongolian context and which might negatively affect students' readiness for practice. Participants noticed that many students and new nurse's apathy for nursing because they not realizing the value of the profession as a nurse. These statements from these participants support these findings:

“Some clients also disrespect nurses. Most of the time do not immediately accept the nurses' demands but only take what the doctor says and trust. Nursing students

do not try to realize and pursue any approach to handle the real situation... they just want to finish their practice quickly” (Group 3- K).

“...in my opinion, if students are made to understand the value of the profession, more enthusiastic nurses will appear. It is very important to become a nurse” (Group 3-J).

“I think it would be easy to adapt to working place when students master and are able to understand and experience the value of the nursing profession while studying” (Group 1-E).

“New nurses and nursing students want to change their job because perceive doctors' power is higher than nurses and nurses' reputation in the health care settings” (Group 3- M).

In addition, participants noted that some nursing facts are not recognized in real situations and this misalignment with nursing values may impact their confidence, motivation, and commitment to the nursing profession.

“I think the professional reputation of nurses is very important. There is still a value difference between doctors and nurses and still some doctors feel like nurses are their assistants. For this reason, nursing students cannot gain the motivation from the clinical environment” (Group 1-C).

“Keeping a nursing intervention record for nurses has a complicated obligation in reality. Some physicians do not accept the nursing intervention procedure that nurses do it. They ask why nurses must do the patient assessment the same I did already. – practical students who see this face a lot of doubts. School authorities never care about it” (Group 1-B).

“It is seen as sad that many nurse’s dissatisfactions with their work and are ready to leave their profession” (Group 1-A).

“We lack the opportunity to independently do nursing intervention. For some tasks that nurses can decide on their own, some procedures must be performed according to the doctor's prescription. Students may sometimes find it difficult to understand this situation related to value of the nursing profession” (Group 2- I).

5.2.3. Nursing faculty’s perception, a concept of nursing student’s readiness for practice

Nursing faculties’ perception of the readiness for practice of nursing students were categorized as four categories, five subcategories, and 22 narratives. The categories were: (a) maturity (b) competence (c) theory practice integration and (d) professional value. Table 13 describes these categories and subcategories.

Table 13 Nursing faculty's perception in terms of nursing student's readiness for practice

Categories	Subcategories
Maturity	Genuinely desiring to learn
Competence	Essential Clinical Skills and Proficiency Ethical and Cultural Competence
Theory practice integration	Adaptability to Clinical nursing practice
Professional value	Passion for nursing

Category 1. Maturity

Subcategory 1. Genuinely desiring to learn

Participants recognized that students who genuinely desire to learn actively seek opportunities for learning, engage in self-directed study, and express curiosity about various clinical aspects. The personal characteristic of genuinely learning to desire can be developed during their study period and it is seen as a sign of their commitment to becoming educated and competent nurses. There are some participants' narration:

“I noticed that from many students, their enthusiasm for learning, curiosity, and commitment contribute to their readiness to provide safe, effective, and patient-centered care. Also, this type of student is more successful in the working place after graduation” (Group 2- C).

“... on the other hand, the student's desire to learn is also fundamental for their readiness for practice” (Group 2- H).

“... lecturers’ should do so, and the student’s desire to learn should be created during the training process” (Group 2- J).

“on the part of the students, their genuine desire to learn is very influential to the nursing student’s readiness for practice. A maturity is very important in their future nursing career because nursing is a lifelong learning job” (Group 1-A).

Category 2. Competence

Subcategory 1. Essential Clinical Skills and Proficiency

Nursing faculty members stressed the importance of nursing students acquiring a comprehensive set of clinical skills in terms of the nursing student's readiness for practice.

"...however, our graduate students need professional competence key concept to meet the hospital requirements. High professional competence students are supposed to easily transit to real nursing practice" (Group 2- A).

Participants believed that nursing students who can critically assess patient situations, analyze data, and make informed decisions demonstrate a higher level of professional competence.

"I think that it is possible to learn more professional competence going to the working place, and nursing students' critical thinking and decision-making skills

are key to possessing professional competence during preparedness as a nurse”

(Group 1-B).

“Actually, professional competence is a key indicator that how students are ready for nursing practice and hospital requirements to enter the hospital after their graduation. Also, decision-making, and critical thinking skill are essential to express and proceed with their professional competencies” (Group 2- C).

Subcategory 2. Ethical and Cultural Competence

Participants pointed out that there is a need to acquire cultural and ethical competence in terms of preparing nurses at this time. The reason is that there are many ethnic groups in Mongolia, and they have their own beliefs, religions, and values. Recently, the religion and beliefs of Mongolian people tend to change and expanded. Participants also mentioned that the current nursing education is not progressive and there is a need to reform the curriculum and to improve our faculty's capacity to provide ethical and cultural competence to possess nursing students. Below are some participants' narrations:

“While I was checking our students' clinical practice, my students and nurses encountered a case regarding a customer. One elderly woman wishes to drop her son off at the hospital, as her son is a critical patient. Because the shaman advised him to discontinue the medication because of their religion. However, the nurse felt that she should only administer the medication according to the doctor's prescriptions. I found that neither the nurses nor my student could recognize this situation as a religiously based ethical issue in nursing” (Group 2-H).

“It is very important to provide ethical competence in terms of preparing nurses for clinical practice and so we need to improve our curriculum to embed nursing ethical subjects” (Group 2-G)

Category 3. Theory practice integration

Subcategory 1. Adaptability to Changing clinical nursing practice

Participants agreed that students who are able to integrate theory and practice are more prepared to deal with unexpected changes in patient circumstances, modify nursing interventions, and move effectively in evolving healthcare scenarios.

“Some of our graduates face challenges that put them in situations where they are unable to adapt to some differences between educational content and real-life patient circumstances” (Group 2-F).

Participants acknowledged that some students might face challenges in effectively translating theory to practice and they emphasized the need for nursing education programs to offer advanced clinical experiences, and simulation exercises that facilitate theory-practice integration.

“We must be proactive and constantly update our teaching approaches and course contents should be linked between theory and practice is vital. It observed that our students are still unable to translate their knowledge to nursing practice even after graduation” (Group 2-H).

Category 4. Professional value

Subcategory 1. Passion for nursing

Nursing faculties pointed out that nursing students' passion for nursing underscores its pivotal role in shaping students' readiness for practice. From their viewpoint, students with a passion for nursing exhibit a unique blend of dedication, resilience, sincerity, compassion, and potential for leadership as they become a nurse. Below are some participants' narrations:

“Nursing students need to be aware of the value of their profession, in other words, our students are trained to be nurses by being sincere, compassionate, and caring.

It seems impossible to be a nurse without these behaviors” (Group 2-H)

“...teaching a good personality to nursing students, such as being sincere and compassionate, is very important for their future nursing career and retention as new nurses” (Group 2-B).

“I observed passionate nursing students who exhibited advocacy qualities and leadership potential. They actively engage in activities to address professional disparities and improve nursing professionals' reputations after graduation”

(Group 2- A)

“The value of the profession should have been well understood by nursing students. They cannot enjoy caring for individuals while expecting them to comprehend and recognize the essence of nursing” (Group 2-B).

3) Overall findings from two groups

Nurses, drawing upon their extensive experience as practicing nurses, focused their discussions on their own encounters with nursing students, their observations during the clinical practice of current nursing students in hospital settings, and their understanding of the crucial skills and attitudes demanded of nurses in the contemporary workplace. In contrast, nursing faculty shaped their perceptions based on their teaching experiences, observations during nursing students' clinical placements, and insights derived from the experiences of their previous graduates. The significance of maturity

in nursing students' readiness for practice was consistently recognized by both groups. Nurses viewed nursing students' maturity for their readiness for practice can reflect as a measure of coping ability with challenging clinical experiences, and adaptability to adjust to handle complex situations. Nursing faculty, on the other hand, perceived nursing students' personal behavior as a genuine desire to learn the indication of their maturation as good nurses. Nurses believed that high communication skilled students were more likely to take initiative, engage with patients, and collaborate within the healthcare team after their graduation. Nursing faculties believed that students with high competence were more confident in their practice and could contribute effectively to patient care. Both participants frequently noted the importance of integrating theoretical knowledge into practical situations. However, their perception of this category was a bit different for both groups. For example, nurses recognized that students who could apply classroom learning to real patient care scenarios and total aspects of care were better prepared for practice. Nursing faculty emphasized the need for students to adapt to changing scenarios to bridge the gap between theory and practice effectively. In addition, all participants consistently emphasized the importance of professional values including students' passion for nursing and in-depth recognition of current nursing conditions in society in nursing students' readiness for practice. Overall findings from the FGI of

nurses and nurse faculty groups identified five categories with 12 subcategories on readiness for practice of nursing students in Mongolia: (a) maturity; (b) competence; (c) communication (d) theory practice integration; and (e) professionalism (table 14).

Table 14 Perception of student's readiness for practice

Categories	Subcategories
Maturity	Coping ability to challenging clinical experiences
	Adaptability to the workplace place
	Genuinely desiring to learn
Competence	Essential Clinical and proficiency
	Ethical and Cultural competence
	Communication competence on navigating challenging nursing environment
Theory practice integration	Theory application to nursing practice
	Practicing total aspects of care
	Adjust to changing patient situation
Professional value	Passion for nursing
	Understanding the value of nursing

5.3. Integration of quantitative and qualitative results

The joint display presents quantitative results alongside qualitative categories for each related construct (Table 15). First, the quantitative results identified the clinical learning environment as a significant factor influencing readiness for practice. Subsequently, the mediating analysis findings expanded on this, revealing that clinical learning environment had a direct effect on readiness for practice of nursing students. Moreover, it indirectly affected readiness for practice through clinical competence and critical thinking. The more positively students perceived their clinical learning environment, the more they improved their clinical competence and critical thinking, ultimately indicating better readiness.

Second, clinical nursing competence was identified as a factor influencing nursing students' readiness for practice, a finding also confirmed in the FGI findings. Furthermore, the qualitative results expanded on the quantitative analyses, emphasizing the significance of nursing students' ethical and cultural competence within a specific context. Focus group participants emphasized the need for nurses who possess an understanding of patients' diverse cultures and beliefs, including religion, and who can provide care with respect and ethical consideration. Consequently, it is imperative to

incorporate ethical training into the nursing curriculum to equip students in Mongolia not only with nursing expertise and communication skills, but also with the ethical sensitivity necessary to respect patients' cultures and beliefs. The competence of students in these areas reflects their ability to apply knowledge in specific contexts or situations, which can ultimately contribute to better readiness.

Third, the quantitative results also indicated that the critical thinking of nursing students was a significant factor affecting their readiness for practice. Confirmation and expanded understanding emerged through the FGI findings. Participants highlighted that a higher level of theory-practice integration ability underscored the importance for recognizing the content of nursing students' readiness for practice, which adds to our understanding of the quantitative results.

Fourth, professional value was not significantly associated with nursing students' readiness for practice, as evidenced by lack of correlation between professional value and readiness for practice in the survey. However, nurses and participants in the FGI explained these findings in detail, suggesting a discord with the quantitative results. FGI participants emphasized the importance of recognizing the professional value of nursing students, including their passion for nursing and understanding the value of the nursing profession. Additionally, participants expressed concerns about the current negative

image of nursing in the Mongolian context, which could potentially impact students' readiness for practice negatively. Therefore, in clinical practice, nurses are encouraged to be mindful of and strengthen the professional values of students. Moreover, there should be strategies to enhance the professional attitude and ethics of nursing students in Mongolia and the nursing curriculum should incorporate knowledge and attitudes aligned with these values.

Finally, we identified factors of maturity through the FGI, such as age, life experience, previous employment before becoming a nursing student, and prior work experience, that could impact the sense of readiness for practice. While the quantitative results did not reveal a significant effect of these maturity characteristics, nursing students' coping ability, adaptability, and genuine desire to learn were highlighted in the interviews, providing an expansive understanding on readiness for practice. Regarding these components related to personal maturity, nursing educators can play a crucial role in supporting students to develop resilience and a genuine desire to learn during their academic journey. To achieve this, schools of nursing can focus on employing appropriate teaching strategies, establishing extracurricular student support clubs, and providing psychological support services.

Table 15 Joint display with merged results of factor affecting nursing student's readiness for practice

Quantitative findings (n=150)	Qualitative findings (nurse n=15, faculty n=10)	Mixed method interpretation
<p>Clinical learning environment ($\beta = 0.24$, $p = 0.001$)</p> <p>Partial mediating effects:</p> <p>Clinical competence ($\beta = 0.633$, LLCI, ULCI; 0.016- 0.114)</p> <p>Critical thinking ($\beta = 0.037$, LLCI, ULCI; 0.004- 0.090)</p> <p>Clinical competence ($\beta = 0.17$, $p = 0.005$)</p>	<p>Competence</p> <ul style="list-style-type: none"> - Essential Clinical and proficiency - Ethical and Cultural competence - Communication competence on navigating challenging nursing environment 	<p><i>Expansion:</i></p> <ul style="list-style-type: none"> - The clinical learning environment was influential in readiness to practice, expanded by quantitative findings. - Partial mediating effects of the clinical nursing competence and critical thinking the relationship between clinical learning environment and readiness for practice were expanded by quantitative findings <p><i>Confirmation:</i></p> <ul style="list-style-type: none"> - Clinical competence, encompassing clinical proficiency and communication, was highly emphasized throughout the quantitative results, confirmed by qualitative findings <p><i>Expansion:</i></p> <ul style="list-style-type: none"> - The qualitative results expand on the higher competence by highlighting the importance of Ethical and Cultural Competence

Critical thinking ($\beta = 0.28$, $p = 0.000$)	Theory-practice integration - Theory application to nursing practice - Practicing total aspects of care - Adjust to changing patient situation	<i>Confirmation:</i> - Quantitative findings with factor of critical thinking was confirmed by qualitative category as a theory-practice integration ability in contextually <i>Expansion</i> - The qualitative results expand on the higher levels of theory-practice integration ability by highlighting the importance of content of the nursing students' readiness for practice
Professional value ($\beta = -0.04$, $p = 0.537$)	Professional value - Passion for nursing - Understanding the value of nursing Maturity - Coping ability to challenging clinical experiences - Adaptability to the workplace place - Genuinely desire to learn	<i>Discordance:</i> - The professional value level of the qualitative findings that are divergent from the quantitative findings <i>Expansion:</i> - Maturity including nursing students coping ability, adaptability and their genuinely desire to learn was expanded by qualitative findings.

VI. DISCUSSION

The present study aimed to address specific inquiries: describing the readiness level of nursing students in a Mongolian context for practice, identifying the most crucial factors influencing their readiness, and understanding how nursing professionals and faculties perceive this readiness. To achieve this, we employed a convergent mixed-method design, incorporating a quantitative core component and a supplementary qualitative component (Creswell & Clark, 2011). Based on findings, the discussion chapter is organized into two sections, aligning with the specific objectives of the study. The first section discusses the level of nursing students' readiness for practice and provides insights into how nurses and nursing faculties perceive and explain students' readiness, while the second section delves into the factors influencing nursing students' readiness for practice in Mongolia.

6.1. Readiness for Practice Among Nursing Students in Mongolia:

The findings of this study revealed an average readiness for practice score of 2.89 \pm 0.29 out of 4, indicating that nursing students are not perceived as highly ready for practice. In contrast to earlier research employing the same instrument (Casey et al.,

2011), our study identified a lower level of readiness among the Mongolian sample compared to other countries. For example, Schmitt & Lancaster (2019) reported a readiness score of 3.40 ± 0.39 for United States nursing students, while another study found a score of 3.05 ± 0.72 for United Arab Emirates nursing students (Mekkawi & Khalil, 2022). Conversely, a study on Korean nursing students demonstrated a readiness score of 2.86 ± 0.31 (Lee et al., 2023), aligning closely with our study and slightly lower than the results from the United States and United Arab Emirates. Overall, nearly 60% of senior students in our study felt ready for their professional nursing role and reported satisfaction in choosing nursing as a career. This finding aligns with other studies conducted in the United Arab Emirates and Turkey (Güner, 2015; Mekkawi & Khalil, 2022) and is lower than the rate of readiness for practice reported by Australian nursing students (Woods et al., 2015). A comparison with international studies reveals a lower readiness level in Mongolia, emphasizing potential cultural influences on students' perceptions and preparedness.

Subscale analysis revealed that nursing students in our study were more confident in professional identity and learning techniques but less so in addressing challenges, consistent with the findings of the Korean study (Lee et al., 2023). However, the readiness to problem-solve, as indicated by subscales, was lower in this study compared

to the United States and United Arab Emirates studies (Mekkawi & Khalil, 2022; Schmitt & Lancaster, 2019). Cultural differences, as emphasized by Güner in 2015, likely play a role in shaping students' perceptions and readiness. The study further disclosed that nursing students felt uncomfortable and lacked confidence in addressing trials and tribulations, echoing findings from other studies (Casey et al., 2011; Lee et al., 2023; Mekkawi & Khalil, 2022; Schmitt & Lancaster, 2019; Woods et al., 2015). Despite expressing confidence in communication and clinical decision-making, a noticeable discomfort emerged when dealing with dying patients. This hesitancy resonated with findings from other studies focusing on professional communication (Mekkawi & Khalil, 2022; Schmitt & Lancaster, 2019; Woods et al., 2015). The discrepancy is attributed to the limited exposure to caring for dying patients during clinical practice, as noted by Jamieson et al. (2019). Nonetheless, many students acknowledged reflective journals and simulations as valuable tools in preparing for nursing practice, contrasting with findings from Jamieson et al. (2019). Contradictory findings from studies by Casey et al. (2011) and Schmitt & Lancaster (2019) suggest that senior students may be unprepared for the professional role. Subscale analysis highlights variations in confidence levels across professional identity, learning techniques, and problem-solving, reflecting the nuanced nature of nursing readiness.

Notably, discomfort in addressing challenges and interacting with dying patients suggests areas for targeted intervention. While the readiness level of senior students aligns with international counterparts, the study underscores the need for tailored strategies to address identified gaps and enhance overall readiness for the professional nursing role in the Mongolian context.

In addition, the qualitative insights gleaned from focus groups with nurses and nursing faculty shed light on multifaceted concerns regarding nursing students' readiness for practice. Participants highlighted the pivotal areas of maturity, competence, theory-practice integration, and professional values as requiring significant attention. Emphasizing the need for nursing students to effectively cope with challenging clinical experiences, adapt to the working environment, and possess a genuine desire to learn, these concerns underscore the complex demands of the nursing profession. The recognition that mature students exhibit emotional maturity and intrinsic motivation aligns with existing literature (O'Brien et al., 2009). Competence, covering clinical, ethical, cultural, and communication subcategories, emerged as a crucial category, with participants noting a mismatch between employer expectations and students' perceived readiness, raising doubts about the demands of the nursing role in the Mongolian context. Challenges faced during the preregistration course and the lack of support were

highlighted, similar concerns in previous study (Gerrish, 2000). The study highlighted the difficulties faced by nurses completing their preregistration course and the lack of support. Professional competence socialization, particularly the challenge of 'fitting in' and gaining acknowledgment from experienced colleagues, was identified as an additional hurdle (Clary Muronda, 2016). A Study discovered that the socialization process of developing professional competency during students' final placement was eased by the presence of a mentor and the characteristics of the learning environment (Gray & Smith, 1999). Focus group interviews on the integration of theory and practice emphasized the importance of applying theoretical knowledge to nursing practice, revealing variations in students' critical thinking levels. A study conducted in Turkey revealed that nearly all students felt adequately prepared in terms of theoretical knowledge but lacked competence and critical thinking in clinical practice skills (Güner, 2015). Various studies emphasized the need for nurses to be competent in both academic achievements and nursing care. The continuous need for nurses to be competent in both academic achievements and nursing care was underscored, emphasizing the imperative for students to remain updated on nursing developments (Lofmark et al., 2006; Watkins, 2000). Lastly, participants reflected on the influential role of professional values, including nursing students' passion for nursing field and awareness of the value of

nursing, in contrast, as crucial factors shaping students' readiness for practice, with negative experiences in nursing practice identified as potential contributors to these sentiments. Overall, the qualitative findings underscore the multifaceted nature of readiness for practice and emphasize the importance of continuous learning and staying updated on nursing developments, as well as the crucial role of professional values, passion for the field, and awareness of the value of nursing in shaping students' readiness for the nursing profession.

6.2. Factors associated with the readiness for practice among nursing students

The integrated findings of this study confirmed that factors associated with readiness for practice among baccalaureate nursing students in Mongolia include: (1) Clinical learning environment: (2) Clinical nursing competence: (3) critical thinking: (4) Professional value: and (5) Maturity. These factors were identified through the synthesis of both quantitative and qualitative data.

6.2.1. Clinical learning environment

The quantitative result of this study reveals that the clinical learning environment is an influential factor in nursing students' readiness for practice, a finding consistent with prior studies (Dudley et al., 2020; Lee et al., 2023; Mekkawi & Khalil, 2022). Furthermore, the mediating analysis in this study expands on this result, indicating a direct effect of the clinical learning environment on nursing students' readiness for practice. The mediating analysis reveals a direct impact of the clinical learning environment on readiness, further mediated through the enhancement of clinical nursing competence and critical thinking. Similar to Dudley et al. (2020), our study identifies key elements of the clinical learning environment, such as being student-focused, providing individualized education, valuing nurses' work, and fostering an innovative and adaptive learning culture, that significantly impact perceived work readiness in graduates. A positive clinical learning environment correlates with increased clinical competence and critical thinking during clinical practicum, ultimately indicating better readiness. Conversely, a poor clinical learning environment induces worry, diminishes confidence, and reduces the effectiveness of clinical practice education (Kovner et al., 2014). Despite challenges, a supportive clinical environment is crucial for building students' skills, confidence, and preparation for practice (Edwards & Nash, 2023). Studies emphasize the importance of a supportive team atmosphere, with feeling valued

as a team member and actively contributing to patient care being significant contributors to a positive clinical experience (Edwards et al., 2004; Papp et al., 2003). Motivation is heightened when students perceive their importance to the clinical team (Güner, 2015), emphasizing the ward team atmosphere when selecting practice environments. Faculty support, identified as crucial in various studies (Gidman et al., 2011; Mekkawi & Khalil, 2022), is recommended as the most important during students' practice. The collaborative review of curricula and enhanced collaboration with healthcare facilities are also recommended to provide students with better learning opportunities, guidance, and support during their placements.

6.2.2. Clinical nursing competence

The quantitative phase of this research reveals that clinical nursing competence significantly influences readiness for practice, a finding consistent with previous studies (Güner, 2015; Hacer et al., 2020; Porter et al., 2020; Walker et al., 2013). The qualitative findings delve into essential clinical and proficiency skills, ethical and cultural competence, and communication competence within complex nursing environments, aligning with previous qualitative studies (Güner, 2015; Lofmark et al., 2006; Serafin et al., 2022; Walker et al., 2013). Interestingly, students in this study overestimated their competence (3.87 ± 0.60), mirroring findings in previous studies (Chung et al., 2008;

Lee-Hsieh et al., 2003). While organizational representatives in Walker et al.'s (2013) study believed graduates possessed highly adequate clinical skills, this study's experienced nurses assessed recent graduates' competence as lower, suggesting potential gaps in skill acquisition during their study period, aligning with Lofmark et al.'s (2006) findings. The qualitative study, similar to Leufer et al.'s (2021) work, emphasizes the perceived adequacy and confidence of nursing students in communication. However, this study highlights the need for novice nurses to attain effective communication competencies, potentially indicating uncertainty about the expectations of the nursing role in the present context. Ethical and cultural competence, identified by study participants, aligns with the importance of ethical knowledge, teamwork, and interprofessional communication skills in readiness for practice (T. Lee et al., 2023). Additionally, reviews emphasize students' significant interpersonal and professional challenges, such as fear of harming patients, unethical practices, and neglect of patient care by nurses (Inayat et al., 2021), underscoring the importance of fostering an environment that encourages open communication and questioning to develop interpersonal communication skills among student nurses (Timmins, 2011).

6.2.3. Critical thinking

This study reveals that nursing students' critical thinking significantly influences their readiness for practice. The quantitative result demonstrates that critical thinking is a key factor in nursing students' readiness, aligning with recent and previous studies (Mekkawi & Khalil, 2022; Ragsdale & Schuessler, 2021; Usher et al., 2015) and the qualitative findings expanded on the quantitative result of critical thinking concerning the theory-practice integration ability, emphasizing the importance of content in relation to nursing students' readiness in this research. A Canadian study similarly found that critical thinking is a characteristic of professional nurses, influencing the application of knowledge to perform nursing skills, manage workload, prioritize, and make clinical judgments (Wolff et al., 2010). Previous study emphasized how critical thinking enhances students' confidence in providing care in unpredictable settings and integrating theory into practice (Lee et al., 2023). A study on new graduate nurses found that those with higher critical thinking abilities were less confident in decision-making, suggesting a tendency to think deeply before acting (Hoffman & Elwin, 2004). Literature indicates that caring for multiple patients during the nursing program improves students' ability to prioritize, delegate, make objective decisions, and think critically (Blodgett et al., 2016; Chunta & Edwards, 2013). Those literatures align with participants' perception in this study underscored theory-practice integration as crucial for nursing students'

readiness, emphasizing the role of critical thinking in clinical practice. Some acknowledge existing gaps but view them as inevitable and even positive indicators of professional progression, suggesting that a certain gap between theory and practice is necessary for the field's advancement.

6.2.4. Professional value

Based on the available literature, we hypothesized that elements associated with professional value could impact how nursing students perceive their readiness for practice. Nevertheless, the quantitative analysis did not reveal a substantial impact of professional value on readiness for practice, and no mediating effect was identified in the relationship between the clinical learning environment and readiness for practice concerning professional value. However, insights from the qualitative findings in this study revealed the significance of nursing students' awareness of professional values, including their passion for nursing and understanding of the profession's value, as crucial for their transition to nursing practice and ongoing career development. These findings align with previous research in nursing education, which suggests that factors such as a genuine desire to choose nursing as a profession and a clear understanding of the nursing role can impact the readiness of nursing students for professional practice (Güner, 2015; Järvinen et al., 2018; Lee et al., 2023). On the other hand, a studies

indicates that challenges in the transition from nursing students to nurses may stem from unrealistic expectations about the profession's future (Ersoya & Ayaz-Alkaya, 2023; Güner, 2015; Järvinen et al., 2018). This result highlights that the responsibility for introducing professional values in nurses goes beyond nursing educators. Earlier research has shown that the expectations of newly graduated nursing students about their professional life often differ from the actual reality (Duchscher, 2008), and the study also explored that many students felt responsible for changing the nursing image and presenting a more positive perception of nursing (Güner, 2015). Research conducted earlier has demonstrated that the expectations of newly graduated nursing students regarding their professional life often diverge from the actual reality (Duchscher, 2008; Güner, 2015) and also study explored that many students felt responsible for changing the nursing image and providing a more positive perception of nursing (Güner, 2015). Finally, this gap between the quantitative and qualitative results suggests that while professional value may not have demonstrated a statistical significance in the quantitative data, its qualitative importance cannot be overlooked. Also, nursing education institutions play a vital role in enhancing both academic and clinical guidance, as well as providing social context support, to ensure the preparedness of nursing students as they enter the workforce.

6.2.5. *Maturity*

This study reveals that certain participants in the qualitative study hold the view that nursing students' readiness for practice encompasses category as maturity. In fact, we speculated that factors related to maturity, including age, life experience, prior employment before entering nursing school, and previous work experience, might influence the perception of readiness for practice. Nevertheless, the readiness for practice was not statistically significant in quantitative results as factors based on these maturity characteristics. Nonetheless, the concept of maturity emerged during the focus groups and expanded to an enriched understanding of the study's outcomes. Most of the participants noted that nursing students felt prepared in terms of theoretical knowledge, but unprepared in terms of maturity in this study. This finding is congruent with previous studies (O'Brien et al., 2009; Steele et al., 2005) which found that support from mature students played a pivotal role in their survival in clinical practice. The maturity was content analysis and the first sub-categories emerged from the data in this study: to cope with challenging clinical experiences and this finding is consistent with previous studies (Minen et al., 2021; Watt & Pascoe, 2013). Understanding the coping perceptions of

mature students towards their study, and work is important in order to maximize retention and improve performance (Bhatnagar & Rajadhyaksha, 2001). Whilst not unique the experiences of mature nursing students may be very distinctive in comparison to other mature women students in disciplines such as medicine or sociology (Steele et al., 2005). The second subcategory derived from the data investigated the significance of adapting to the workplace, a crucial aspect of nursing students' readiness as examined in this study. Findings in this study were similar other studies also identified adaptability as important in preparing new graduates to assume a professional nursing role (Hezaveh et al., 2014; Missen et al., 2015). During the focus group interview, a participant in the study reflected on the difficulties they said nursing graduates faced in adaptability and coping from being nursing students to practicing nurses. Additionally, they highlighted the lack of strategies for new nurses to address these challenges. This is consistent with other studies in which new graduates found adjusting and coping to real clinical practice difficult and mentally (Missen et al., 2015). Adding to this concern, a study conducted by Halfer and Graf in 2006 indicates that nursing graduates also experience a grieving process associated with the retreat of their academic routine and the support system of fellow peers and academics (Halfer & Graf, 2006). A study recommends that universities and healthcare institutions should

prioritize clinical placements, ensuring that nursing students are exposed to the authentic realm of nursing through opportunities to engage in different shifts and weekend work experiences (Minen et al., 2021). In addition, participants in this study deliberated on the significance of nursing students' maturity, emphasizing the crucial role of their genuine desire to learn in their preparedness. Earlier research explores that nursing students' desire to learn behavior not only facilitates adaptation to the new role but also supports more effective management of the transition process (Gerrish, 2000; Lofmark et al., 2006) and these findings were similar to this study. Therefore, the motivation of students to learn is a factor that can impact their readiness for learning in clinical practice (Purnamasari & Setyawan, 2021). The results of the study emphasized that the nursing students' genuine desire to learn is crucial for their preparedness for practice. Additionally, the nursing profession considers lifelong learning so vital that it is a mandatory requirement for nurses (AACN, 1998). The findings underscore the complex interplay between maturity, coping mechanisms, adaptability, and the intrinsic motivation to learn, all of which contribute significantly to nursing students' readiness for the demands of professional practice.

6.3. Limitation and recommendation of the study

While this study contributes valuable insights into the factors influencing readiness for practice among baccalaureate nursing students in Mongolia, several limitations should be acknowledged. First, the study's scope focused on a baccalaureate nursing student only so the result should have generalized with caution. Second, the study limited by social desirability in all self-reported measures may introduce response bias. Third, the study did not account for external factors such as changes in healthcare policies or educational curricula that may have occurred during the research period, potentially impacting the results.

The quantitative and mediating analysis confirmed that the clinical learning environment significantly influenced nursing students' readiness for practice. A positive learning environment was associated with increased clinical competence and critical thinking, contributing to overall readiness. Recommendations include frequent curriculum reviews, better collaboration with healthcare facilities, and providing students with supportive learning opportunities. Clinical nursing competence emerged as a significant factor influencing readiness for practice. In addition, health care organization need to support undergraduates by permitting them to access hospital

systems during clinical practice so that they can become familiar with their use before commencing practice in the workplace as graduates.

Ethical, cultural, and communication competencies were highlighted, emphasizing the need for ongoing learning and updates in nursing practice. Critical thinking was identified as a key factor influencing nursing students' readiness for practice. The study emphasized the importance of theory-practice integration and the application of critical thinking in clinical settings. The findings suggest that nursing students with higher critical thinking abilities are more confident in various aspects of nursing care. In addition, participants in the qualitative study highlighted the importance of maturity and professional values (passion for nursing) in nursing students' readiness for practice. Maturity was associated with the ability to cope with challenging clinical experiences and adapt to the workplace. The genuine desiring to learn and the awareness of professional values were deemed crucial for preparedness.

6.4 Significance of this study

6.4.1. Nursing education

Educational institutions should consider incorporating interventions aimed at strengthening clinical nursing competence, critical thinking skills, and ethical and

cultural competence into their curricula. Additionally, fostering an awareness of the professional value of nursing, including a passion for the profession and an understanding of its broader societal impact, should be integrated into nursing education programs. Moreover, given the potential impact of maturity characteristics on readiness for practice, nursing schools may explore tailored strategies and extracurricular activities to support students in developing coping abilities, adaptability, and a genuine desire to learn. Continuous evaluation and adaptation of nursing education programs to align with evolving healthcare demands and policies are crucial to ensuring that graduates are well-prepared for the dynamic nature of nursing practice. In addition, to curriculum reviews, better collaboration with healthcare facilities, and ongoing support for students.

6.4.2. Nursing practice

The findings convey significant implications for nursing practice, emphasizing the importance of fostering a positive clinical learning environment to enhance nursing students' competence and critical thinking skills during their clinical practice. In this regard, the study holds value by offering primary data and suggesting strategies at the healthcare organizational level, such as enhancing collaboration with nursing schools to

cultivate a positive clinical nursing environment and implementing a preceptor system and mentorship initiatives in hospitals politically.

6.5. Suggestion for future studies

Although this study provides a significant and comprehensive understanding of factors influencing nursing students' readiness for practice, there are still numerous gaps in the literature that necessitate further research. Further research exploring views from different samples, such as senior nursing students and head nurses, would be beneficial to better understand and evaluate the validity of the findings. We also suggest the future studies could delve deeper into the specific mechanisms through which clinical nursing competence and critical thinking mediate the relationship between the clinical learning environment and readiness for practice. Additionally, this study did not explore factors such as nursing curricula, simulation-based learning, teaching experience, and learning experience, which could impact readiness for practice. Therefore, it is essential for future research to investigate these factors. Furthermore, this study employed an original readiness-for-practice instrument after face validity, and future researchers may conduct methodological psychometric testing of the instrument in the Mongolian context. Additionally, exploring interventions, such as targeted training programs and improvements in clinical learning environments, could enhance nursing students' readiness for

practice. Longitudinal studies tracking the impact of these interventions on students' preparedness and success in their nursing careers could provide valuable insights.

VII. CONCLUSION

This study illuminates the intricate interplay of factors influencing readiness for practice among baccalaureate nursing students in Mongolia. The integration of quantitative and qualitative results enhances the depth of understanding, emphasizing the complementary nature of these research approaches. While recognizing the study's limitations, the findings provide a foundation for targeted interventions and improvements in nursing education, ultimately contributing to the preparation of competent and resilient nursing professionals.

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APPENDICES

Appendix 1 list of included studies for systematic literature review

No	Title
A1	Dudley, M., Khaw, D., Botti, M., & Hutchinson, A. F. (2020). The relationship between the undergraduate clinical learning environment and work readiness in new graduate nurses: A pre-post survey study. <i>Nurse Education Today</i> , 94, 104587
A2	Schmitt, C. A., & Lancaster, R. J. (2019). Readiness to practice in generation Z nursing students. <i>Journal of Nursing Education</i> , 58(10), 604-606
A3	Kirkman, T., Hall, C., Winston, R., & Pierce, V. (2018). Strategies for implementing a multiple patient simulation scenario. <i>Nurse Education Today</i> , 64, 11-15
A4	Conley, C. E. (2023a). Student nurses' end-of-life and post mortem care self-efficacy: A descriptive study [Article]. <i>Nurse Education Today</i> , 121, Article 105698
A5	Ericson, K. M., & Zimmerman, C. M. (2020). A retrospective study of the clinical capstone experience on perceptions of practice readiness in associate degree student nurses and preceptors. <i>Teaching and Learning in Nursing</i> , 15(1), 92-97
A6	Jamieson, I., Sims, D., Basu, A., & Pugh, K. (2019). Readiness for practice: The views of New Zealand senior nursing students. <i>Nurse Education in Practice</i> , 38, 27-33
A7	Kaur, V., Dhama, V., Kaur, K., MK, S., & Rawat, R. (2020). Budding nurses readiness for clinical practice: the future is now. <i>Int J Res Med Sci</i> , 8, 215-220
A8	Lee, Lee, S. J., Yoon, Y. S., Ji, H., Yoon, S., Lee, S., & Ji, Y. (2023). Personal Factors and Clinical Learning Environment as Predictors of Nursing Students' Readiness for Practice: A Structural Equation Modeling Analysis. <i>Asian nursing research</i> , 17(1), 44-52
A9	Leufer, T., Baghdadi, N. A., Almegewly, W., & Cleary-Holdforth, J. (2021). A pre-experimental pilot study exploring EBP Beliefs and EBP Implementation among post-graduate student nurses in Saudi Arabia [Article]. <i>Nurse Education in Practice</i> , 57
A10	Sharma, S. K., Arora, D., & Belsiyal, X. (2020). Self-reported clinical practice readiness of nurses graduating from India: A cross-sectional survey in Uttarakhand. <i>Journal of Education and Health Promotion</i> , 9

No	Title
A11	Mekkawi, M. A., & Khalil, R. E. (2022). Undergraduate nursing students' readiness to practice: views of the senior students in the United Arab Emirates. <i>Nurse Educator</i> , 47(4), E86-E90
A12	Rusch, L., Manz, J., Hercinger, M., Oertwich, A., & McCafferty, K. (2019). Nurse preceptor perceptions of nursing student progress toward readiness for practice. <i>Nurse Educator</i> , 44(1), 34-37
A13	Usher, K., Mills, J., West, C., Park, T., & Woods, C. (2015). Preregistration student nurses' self-reported preparedness for practice before and after the introduction of a capstone subject [Article]. <i>Journal of clinical nursing</i> , 24(21-22), 3245-3254
A14	Hacer, G., ORAK, O. S., & TEKGÜL, A. T. (2020). Readiness Of Final Year Nursing Students For The Profession And The Affecting Factors: Eastern Black Sea Region Sample. <i>Samsun Sağlık Bilimleri Dergisi</i> , 5(2), 143-151
A15	Ragsdale, M., & Schuessler, J. B. (2021). An integrative review of simulation, senior practicum and readiness for practice. <i>Nurse Education in Practice</i> , 55, 103087
A16	Brown, R. A., & Crookes, P. A. (2016). What level of competency do experienced nurses expect from a newly graduated registered nurse? Results of an Australian modified Delphi study. <i>BMC Nursing</i> , 15, 1-8
A17	Fitzgerald, M. (2019). <i>The Perception of Student Nurses' Progress towards Practice Readiness in a Revised Baccalaureate Nursing Program</i> . Northeastern University
A18	Basso, I., Gonella, S., Londa, M., Airoidi, C., Chilin, G., Follenzi, A., Dal Molin, A., & Dimonte, V. (2022). Readiness for practice in undergraduate nursing students during the COVID-19 pandemic: a cross-sectional study. <i>Annali di Igiene, Medicina Preventiva e di Comunita</i> , 34(6)
A19	Munroe, T., & Loerzel, V. (2016). Assessing nursing students' knowledge of genomic concepts and readiness for use in practice. <i>Nurse Educator</i> , 41(2), 86-89

Appendix 2 The Institutional Review Board approval letter

Professor Dr. Enebish. S.
Chairperson, Ethical and Research Committee
Mongolian National University of Medical Sciences

October 07, 2022

Ms. Dulamsuren Damiran, Student code 2020313343, is a student in the Doctoral program in Nursing at the Yonsei University Graduate School, South Korea. Her thesis proposal entitled "Factor Associated with Readiness for Practice Among Baccalaureate Nursing Students in Mongolia: A Mixed Methods Study" has been approved by Dissertation Committee. Professor Dr. Tae Wha Lee (RN, Ph.D., FAAN) is her Dissertation Chair and Dulamsuren Damiran would like to get ethics approval from the Ethical and Research Committee, Mongolian National University of Medical Sciences, Mongolia. The Approval will protect research participants' dignity, rights, and welfare. Following the requirements of the Ethical and Research Committee of the Mongolian National University of Medical Sciences, a Memorandum of Understanding on the Academic Exchange Program Agreement between Yonsei University and the Mongolian National University of Medical Sciences is attached.

The Nursing College of Yonsei University supports the students' request for ethical review, and we would greatly appreciate your cooperation.

Thank you in advance for considering the request.

Yours sincerely,



Jiyeon Lee, Ph.D, RN, NP

Associate Dean of Graduate Program & Graduate School of Nursing

College of Nursing

Yonsei University



**АШУУИС | СУДАЛГААНЫ ЁС ЗҮЙН
ХЯНАЛТЫН ХОРОО**

14210 Улаанбаатар хот, Сүхбаатар дүүрэг
С.Зоригийн гудамж, Шуудангийн хайрцаг-46/111
Утас: 7011 1372

E-mail: info@ashuuis.edu.mn

2022.10.21 № 2022/3-09

Талбай _____ны № _____-т

**АШУУИС-ИЙН СУДАЛГААНЫ ЁС ЗҮЙН
ХЯНАЛТЫН ХОРООНЫ ХҮРЛЫН ШИЙДВЭР**

Хэлэлцсэн асуудал: Судалгааны ажилд ёс зүйн зөвшөөрөл олгох тухай

ШИЙДВЭРЛЭСЭН НЬ: Дараах судлаачдын судалгааны ажлын арга аргачлал нь олон улсын болоч манай оронд мөрдөгдөж байгаа судалгааны ажлын ёс зүйн дүрэм, журмуудтай нийцэж байгаа тул судалгааны ажлыг эхлүүлэх ёс зүйн зөвшөөрөл олгож байна.

Үүнд:

№	Судлаачийн овог нэр	Горилж буй зэрэг	Сэдэв	Сургууль тэнхим
1	Лхагва-Очир Оюунгэрэл	Магистрант	Бэлгийн шүүрэл дэх гепатитын Дельта вирусийг судлах	АУС
2	Янжмаа Энхкаргал	Судлаач	Чихрийн шижинтэй үйлчлүүлэгчдийн амны хөндийн эрүүл ахуйн өрчилтөө, зан үйлийг эзэмшүүлэх сургалтын үр дүн	СС
3	Баттар Биндэръяа	Магистрант	Чихрийн шижинтэй хүмүүст зүрх судасны эмгэгийг эрсдэл ба натри хавчч пептидийн түвшинг тодорхойлох дүн	Эрдмийн сургууль
4	Батзориг Чинзориг	Магистрант	Бөөр, шээлгүүрийн чулуу үүсэх вөчтэй хүмүүст бөөрний тэмгэгийн маркер KIM1 үүргийг тодорхойлох нь	Био-АС
5	Билэгсайхан Золзаяа	Докторант	Эгэл башига (Odorites vulgaris Moench) ургамлын газрын дээд хэсгийн фармакологийн судалгааны үр дүн	МАУОУС
6	Ганбаатар Долгмон	Магистрант	Аутизмын эмгэгтэй хүүхдэд MTHFR генийн C677T, A1298C полиморфизмыг судлах	Био-АС
7	Чойжилжав Дорждэрэм	Судлаач	Сарын тэмдгийн өмнөх хам шинжийн асуумжийн Монгол хувилбарын хүчин төгөлдөр болон найдвартай байдлыг уналж, сарын тэмдгийн өмнөх хам шинж болон хэрэглэлтэн эмгэг хандлагын хамаарлыг судлах нь	СС
8	Дамиран Дуламсүрэн	Судлаач	"Монгол улсад сувилахуйн мэргэжлээр суралцаж байгаа оюутнууд сувилахуйн практикт бэлтгэгдэхэд нөлөөлөх хүчин зүйлс" (FACTOR ASSOCIATED WITH READINESS FOR PRACTICE AMONG BACCALAUREATE NURSING STUDENTS IN MONGOLIA: A MIXED-METHODS STUDY)	Бусад

Протокол гаргасан: Нарийн бичгийн дарга

C.Цэндсүрэн

С.Цэндсүрэн

Протокол хянасан: Хорооны дарга

С.Энэбиш

С.Энэбиш



АНАГААХЫН ШИНЖЛЭХ УХААНЫ
ҮНДЭСНИЙ ИХ СУРГУУЛЬ
СУДАЛГААНЫ ЁС ЗҮЙН
ХЯНАЛТЫН ХОРОО

С.Зоригийн гудамж, Сүхбаатар дүүрэг,
Улаанбаатар хот, ш/х-48/111, 14210
Утас: 77757575-1025

Цахим шуудан: irb@mnums.edu.mn

2022.10.21 № 2022/3-09
танай _____-ны № _____-Т

LETTER OF APPROVAL

To Whom It May Concern:

This is certifying that the Ethical Review Board at the Mongolian National University of Medical Sciences has reviewed and approved the research study entitled "Factor Associated with Readiness for Practice Among Baccalaureate Nursing Students in Mongolia: A Mixed Methods Study" has conducted by Ms. Dulamsuren Damiran is a student in the Doctoral program at the Nursing College of Yonsei University, Seoul, Republic of Korea, on 21 Oct 2022 (Approval numbers: 2022/3- 09)

Please feel free to contact me with any questions or concerns.

Sincerely yours,



Prof. Sundui ENEBISH, Ph.D
Chairman, Ethical Review Board
Mongolian National University of Medical Sciences
Zorig Street, Sukhbaatar District
Ulaanbaatar 14210, MONGOLIA
Tel: (976) 70111372

Email: enebish@mnums.edu.mn<http://www.mnums.edu.mn>

Appendix 3 Permission to use instruments



DULAMSUREN DAMIRAN 간호대학 BK21 <dulamsuren@mnums.edu.mn>

kindly ask about instrument permission

Casey, Kathryn RN <Kathryn.Casey@dhha.org>

Mon, Nov 28, 2022 at 9:43 PM

To: DULAMSUREN DAMIRAN 간호대학 BK21 <dulamsuren@mnums.edu.mn>

Cc: "Fink, Regina" <REGINA.FINK@cuanschutz.edu>

Hello Dulamsuren-

Thank you for your email and interest in using our survey in your PhD study. You are our first nursing research candidate from Mongolia to use this survey!

Here is the link to the website where you will be asked to complete a brief survey providing us with [your](#) contact information; we like to keep a database of users of any of the Casey-Fink instruments. After completion of the survey, you will be provided with the documents related to the tool (i.e., actual survey, psychometric information including reliability and validity, and original journal articles which discuss the tool).

<https://www.uchealth.org/professionals/professional-development/casey-fink-surveys/>

Please let us know if you have further questions. Please notify us of any modifications you wish to make in the survey.

We are very interested in reading your results.

Thanks again and best of luck in your study-

Kathy and Regina

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

Professor Emerita | School of Medicine and College of Nursing

Interprofessional MSPC & Palliative Care Certificate Programs

University of Colorado Anschutz Medical Campus

12631 E. 17th Avenue, AO1 - Room 8410, Box B-180

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<https://www.cuanschutz.edu/graduate-programs/palliative-care/home>

Kathy Casey PhD RN NPD-BC

Professional Development Specialist

Nursing Education Research and Innovation



DULAMSUREN DAMIRAN 간호대학 BK21 <dulamsuren@mnums.edu.mn>

NPVS instrument

Wang, Pengpeng <pengpeng.wang@marquette.edu>
To: "dulamsuren@mnums.edu.mn" <dulamsuren@mnums.edu.mn>
Cc: "Weis, Darlene" <darlene.weis@marquette.edu>

Wed, Jul 12, 2023 at 3:59 AM

Dear Dulamsuren,

Thank you for your interest in our work on professional values.

Our article, as well as The Nurses Professional Values Scale (NPVS-3) are enclosed. You have our permission to use the NPVS-3 in your proposed research. We are requesting persons who use the NPVS-3 to provide the following at the completion of the research:

An abstract of your research findings using the NPVS-3 which includes a description of the sample.

Our most recent publication regarding the NPVS-3 can be found in the Journal of Nursing Measurement:

Weis, D., & Schank, M.J. (2017). Development and Psychometric Evaluation of the Nurses Professional Values Scale-3. *Journal of Nursing Measurement*, 25(3), 400-410.

Best wishes for success with your research.

Sincerely,

Darlene Weis, PhD, RN

Associate Professor Emeriti

414-288-4424

414-288-1597 (fax)

darlene.weis@marquette.edu

Mary Jane Schank, PhD, RN

Professor Emeriti

414-288-4424

414-288-1597 (fax)



DULAMSUREN DAMIRAN 간호대학 BK21 <dulamsuren@mnums.edu.mn>

NPVS instrument

2 messages

Wang, Pengpeng <pengpeng.wang@marquette.edu>
To: "dulamsuren@mnums.edu.mn" <dulamsuren@mnums.edu.mn>
Cc: "Weis, Darlene" <darlene.weis@marquette.edu>

Wed, Jul 12, 2023 at 3:59 AM

Dear Dulamsuren,

Thank you for your interest in our work on professional values.

Our article, as well as The Nurses Professional Values Scale (NPVS-3) are enclosed. You have our permission to use the NPVS-3 in your proposed research. We are requesting persons who use the NPVS-3 to provide the following at the completion of the research:

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Best wishes for success with your research.

Sincerely,

Darlene Weis, PhD, RN

Associate Professor Emeriti

414-288-4424

414-288-1597 (fax)

darlene.weis@marquette.edu

Mary Jane Schank, PhD, RN

Professor Emeriti

414-288-4424



DULAMSUREN DAMIRAN간호대학 BK21 <dulamsuren@mnums.edu.mn>

kindly ask about critical thinking disposition instrument permission

윤진 <jyoon@jesus.ac.kr>

Tue, Nov 14, 2023 at 2:34 PM

To: DULAMSUREN DAMIRAN간호대학 BK21 <dulamsuren@mnums.edu.mn>

Dear Dulamsuren Damiran,

I allow you to use my instrument in your research.

I look forward to your good research results.

God bless you!

Jin Yoon, PhD, RN.
Professor, College of Nursing, Jesus University, Korea

보낸 사람: DULAMSUREN DAMIRAN간호대학 BK21 [dulamsuren@mnums.edu.mn]

보낸 날짜: 2023년 11월 14일 화요일 오후 1:30

받는 사람: 윤진

제목: kindly ask about critical thinking disposition instrument permission

[Quoted text hidden]



DULAMSUREN DAMIRAN간호대학 BK21 <dulamsuren@mnums.edu.mn>

kindly ask about instrument permission

Idrissa Beogo <kone23ide@gmail.com>

Wed, Apr 26, 2023 at 10:43 PM

To: DULAMSUREN DAMIRAN간호대학 BK21 <dulamsuren@mnums.edu.mn>

Dear Dulamsuren,

Yes, of course you are welcome to use it.

Good luck.

Idrissa Beogo , RN, MBA, PhD

[Quoted text hidden]

Appendix 4 Questionnaire (English and Mongolian) of this study

Part 1: Demographic Data Form

Please complete the following by making a cross (X) or filling as appropriately in the blank spaces provided

1. Age: (years)
2. Gender: Male () Female ()
3. Marital Status: Married () Single ()
4. **Another non-nursing degree** (if applicable)
5. Previously employed?
 - a. Yes b. No
6. If yes (question #5), are you employed in a healthcare-related position:
 - a. Yes b. No
7. What previous healthcare work experience have you had?
 - A. Nursing Assistant
 - B. Volunteer
 - C. Dentist assistant
 - D. Nurse intern or advanced care partner
 - E. Other
8. Currently employed.
 - a. Yes b. No
9. Current GPA...
10. Where was your clinical practicum experience located in:
 - a. Urban settings b. Rural settings
11. What is your university type?
 - a. Public b. Private
12. Clinical practicum duration
13. Motivation to choose the profession
 - a. By myself b. My parents c. Friends d. Other
14. Financial support
 - a. Parents
 - b. Governments scholarship
 - c. Part-time job
 - d. Other

Translation from English

Сувилахуйн төгсөх ангийн оюутнуудын ажлын байран дээр бэлтгэгдэхэд нөлөөлөх хүчин
зүйлсийг тодорхойлох судалгааны асуумж

Part I: Хүн ам зүйн мэдээлэл - Demographic Data Form

1. Нас: (years)
2. Хүйс: Эрэгтэй () Эмэгтэй ()
3. Гэр бүлийн байдал: Гэрлэсэн () Гэрлээгүй ()
4. Сувилахуйгаас өөр мэргэжлийн эрэгтэй юу (хэрэв байгаа бол бичнэ үү)
.....
5. Та өмнө эрүүл мэндийн салбарт ямар нэгэн ажил хийж байсан уу?
a. Тийм b. Үгүй
6. Хэрвээ 5-р асуултанд тийм гэж харуулсан бол ямар ажил эрхэлж байсан вэ?
a) Сувилагчийн туслах
b) Үйлчилгээч
c) Оффис-т ажиллаж байсан
d) Техникийн ажилтан
e) Бусад / тодорхой бичнэ үү/
7. Одоогоор сэрэлцахынхаа эрэгтэй ажил хийж байгаа юу?
a. Тийм b. Үгүй
8. Таны одоогийн голч дүн.....
9. Таны сурдаг сургуулийн байршил
a. Нийслэл хот суурин b. Орон нутаг
10. Таны сурдаг сургууль аль нь вэ?
a. Улсын b. Хувийн
11. Та сувилагч мэргэжлийг сонгоход нөлөөлсөн зүйл юу вэ?
a. Өөрийн хүсэл сонирхол
b. Аав ээж хамаатан садан
c. Найзууд
d. Бусад
12. Санхүүгийн дэмжлэг
a. Аав ээж
b. Засгийн гадрын тэтгэлэг
c. Цэгийн ажил хийдэг
d. Бусад



Translated and verified by the translation bureau "Dream Land"
Address: LKHA TV Building, 5th floor, Darkhan-Uul, Mongolia
Mobile: 976-99223754
E-mail: dmc.edu@gmail.com

Part 2. Casey-Fink Readiness for Practice Survey (CFRPS)

	Items	(1)	(2)	(3)	(4)
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 instructor provided feedback about my readiness to assume an RN role.				
7	I am confident in my ability to solve problems.				
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 a professional nursing role.				

Legend: 1= Strongly disagree, 2= Disagree, 3= Agree, 4= Strongly agree

Translation from English

Part 2. Сувилагчаар бэлтгэгдсэн байдлыг үнэлэх асуумж - Casey-Fink Readiness for Practice Survey

	Асуумж	(1)	(2)	(3)	(4)
1	Эмч нартай харилцахдаа итгэлтэй байж чаддаг				
2	Үйлчилүүлэгч болон бусад хүмүүстэй чөлөөтэй харьцаж чадна				
3	Би туслах сувилагчдаа ажил даалгахдаа итгэлтэй байж чадна				
4	Миний хувьд цахим эрүүл мэндийн системд тусламж үйлчилгээгээ бичиж, оруулах хэцүү санагдаж байна				
5	Миний хувьд өвчтөнийг тусламж авах хэрэгцээгээр нь эрэмбэлэх нь хүндэтгэлтэй санагдаж байна				
6	Намайг дагалдуулсан сувилагч маань намайг сувилагчаар бие даан ажиллахад бэлтгэ болсон байна гэж хэлсэн				
7	Би өөрийн асуудал шийдвэрлэх чадвартаа итгэлтэй байна.				
8	Өвчтөнд тусламж үзүүлэхдээ ёс зүйн хүрээнд явуулна гэдэг надад маш хэцүү санагдаж байна.				
9	Өвчтөний биед нэрх чухал өөрчлөлтүүдийг ялгаж танихад надад хэцүү байдаг.				
10	Суралцаж байх ба дадлага хийж байх хугацаанд сувилахуйн ажилбаруудыг нэгээс олон удаа хийж гүйцэтгэх боломж олгосон				
11	Би өөртөө итгэлтэйгээр бусдаас тусламж хүсэж чадна				
12	Би эмнэлгийн шийдвэрийг гаргахдаа сүүлийн үеийн нотолгоог хэрэглэж чадна				
13	Би олон мэргэжлийн багийн гишүүдтэй / эмч, сувилагч, эмийн мэргэжлэтэн бусад сувилагч / харилцаж, тэднд санаа бодлоо хэлж чадна гэдэгтээ итгэлтэй байна.				
14	Муялж дээр ажиллаж байсан маань эмнэлэгт дадлага хийхэд маань тус болсон				
15	Дадлагын тэмдэглэл хөтлөж байсан маань эмнэлгийн шийдвэр гаргах, эзэмшсэн ур чадвараа дахин нэг эргэцүүлэн харах боломж олгосон				
16	Би нас барж буй өвчтөнд хэрхэн тусламж үзүүлэхээ мэднэ гэдэгтээ итгэлтэй байна.				
17	Би клиник дээр асуудлыг шийдвэрлэх арга хэмжээг авч чадна гэдэгтээ итгэлтэй байна				
18	Би өвчтөний бодит болон үүсэж болзошгүй эрсдэлт хүчин зүйлсийг тодорхойлж чадна гэдэгтээ итгэлтэй байна				
19	Би сувилахуйг өөрийн мэргэжил болгон сонгосондоо сэтгэл хангалуун байна.				
20	Би мэргэжлийн сувилагчийн үүргийг гүйцэтгэхдээ бэлэн байна				



Translated and verified by the translation bureau "Dream Land"
Address: LKHA TV Building, 5th floor, Darkhan-Uul, Mongolia
Mobile: 976-99223754
E-mail: dmc.edu@gmail.com

Part 3. Clinical Learning Environment

	Items	1	2	3	4	5
1	The staff members were easy to approach					
2	There was a good spirit of solidarity among nursing staff on the ward during staff meetings					
3	I felt comfortable taking part in the discussions					
4	I felt comfortable going to the ward at the start of my shift					
5	There was a positive atmosphere in the ward					
6	The ward manager regarded the staff in their ward as a key resource					
7	The ward manager was a team member					
8	Feedback from the WM could easily be considered a learning situation					
9	The effort of individual employees was appreciated					
10	The ward's nursing philosophy was clearly defined					
11	Patients received individual nursing care					
12	There were no problems in the information flow related to care					
13	The documentation of nursing was clear					
14	Basic familiarization was well organized					
15	The staff were generally interested in student supervision					
16	The staff knew the student by their personal name					
17	There were enough meaningful learning situations on the ward					
18	The learning situations were multidimensional in terms of content					
19	The ward can be regarded as a good learning environment					
20	The mentor showed a positive attitude toward supervision					
21	I felt that I received individual supervision					
22	I continuously received feedback from my mentor					
23	Overall, I am satisfied with the supervision					
24	I received supervision that was based on a relationship of equality					
25	There was a mutual interaction in the supervisory relationship					
26	Mutual respect and approval prevailed in the supervisory relationship					
27	The supervisory relationship was characterized by a sense of trust					

Legend: 1= Fully disagree, 2= Disagree to some extent, 3= Neither agree, 4= Agree some extent, 5= Fully agree

Translation from English

Part 3. Клиник сургалтын орчин (Clinical Learning Environment and Supervision Scale)

Items	1	2	3	4	5
1 Дадлагын хугацаанд эмнэлгийн ажилчидтай харилцахад хялбар байсан					
2 Миний дадлага хийсэн тасгийн сувилагч нар маш сайхан харилцаатай					
3 Дадлагын явцад сувилагч нарыг ээлж хүлээлцэхдээ намайг оролцоход надад маш таатай байсан					
4 Дадлагын хугацаанд сувилагч нар үйлчилүүмчийн өрөөгөөр явж ээлж хүлээлцэхдээ намайг оролцуулдаг байсан					
5 Миний дадлага хийсэн тасгууд үнэхээр дулахан уур амьсгалтай байсан					
6 Тасгийн ахлах сувилагч тухайн ээлжийн сувилагчийг хамгийн гол хүн гэж хүлээж авдаг байсан					
7 Тасгийн ахлагч өөрөө лт багийн гишүүн шиг байсан					
8 Тасгийн ахлах сувилагчийн сувилагч нарт өгч байгаа санал зөвлөмжөөс суралцах боломж их байсан					
9 Миний дадлага хийж байсан тасгууд хүн нэг бүрийнхээ хичээл зүтгэлийг талархалтайгаар хүлээн авч үнэлж байсан					
10 Миний дадлага хийж байсан тасгууд тухайн тасгийн сувилахуйн тусламж үзүүлэх зарчим нь маш тодорхой					
11 Миний дадлага хийж байсан тасгууд үйлчилүүмч нэг бүрт чиглэсэн сувилахуйн тусламж үзүүлдэг байсан					
12 Дадлагын явцад асаргаа сувилагаатай холбоотой мэдээлэл олж авахад ямар нэгэн хүндрэл гараагүй					
13 Сувилахуйтай холбоотой бичиг баримтууд нь тодорхой байсан.					
14 Дадлагын хугацаанд тухайн тасгийн үйл ажиллагаатай танилцах ажлыг сайн зохион байгуулсан					
15 Сувилагч нар бидний дадлагыг хэрхэн хянаж чиглүүлэх ёстой талаараа анхаарал сайн хандуулдаг байсан					
16 Миний дадлага хийж байсан тасгийн сувилагч нар миний нэрийг мэддэг байсан					
17 Миний дадлага хийж байсан тасаг хангалттай суралцах нөхцөл болсон					
18 Дадлагын хугацаанд маш олон зүйлийг сурах боломжтой байсан					
19 Миний дадлага хийсэн тасгууд үнэхээр сайн суралцах орчин болж чадсан					
20 Намайг дагалдуулж байсан сувилагч маань миний дадлагын явцад хяналт тавихдаа үнэхээр эерэг хандлагатай байсан					
21 Би дагалдаж байсан сувилагчаасаа ганцаарчилсан чиглүүлэг хүлээж авч чаддаг байсан					
22 Би дагалдуулж байсан сувилагчаасаа зөвлөгөө, тусламж авдаг байсан					
23 Би дадлагын явцад дагалдаж байсан сувилагч нартаа сэтгэл хангалуун байна					
24 Би дагалдуулж байсан сувилагч нараасаа хүн нэг бүртэй тэгш харилцдаг харилцааг мэдэрч их зүйлийг сурсан					
25 Намайг дагалдуулж байсан сувилагч миний үгийг ч сайн сонсдог байсан					
26 Дадлагын хугацаанд манай сувилагч бид 2-и харилцаа бие бие биенээ хүндэтгэх, хүлээн зөвшөөрөх байдал давамгайлж байсан					
27 Дадлагын хугацаанд намайг дагалдуулж байсан сувилагч бид 2-ын дунд бие биендээ итгэх итгэлцэл маш сайн байсан гэж бодож байна					



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Part 4: Clinical nursing competence

	Items	1	2	3	4	5
1	Report the critical elements of clients' situations when turning over the work shift					
2	Communicate effectively with clients/ family					
3	Collect client/ and family subjective and objective data					
4	Assess the client/family's physical, psychological, social, and spiritual problems/needs					
5	Formulate holistic nursing care plans					
6	Implement nursing interventions according to the nursing care plan					
7	Perform nursing units' routine					
8	Explain nursing intervention to clients/families during implementation					
9	Explain nursing intervention to clients/families before implementation					
10	Evaluate the effectiveness of the nursing care plan					
11	Modify nursing care plan after evaluation					
12	Build a professional relationship with healthcare team					
13	Coordinate and cooperate with healthcare team					
14	Understand the priorities of problems and handle them accordingly					
15	Implement the concept of cost-effectiveness in nursing practice					
16	Implement the concept of infection control in nursing practice					
17	Use teaching principles and methods to provide individual/ group nursing instruction					
18	Evaluate the effectiveness of the nursing care plan					
19	Follow nursing ethics in nursing practice					
20	Actively display caring behaviors in interpersonal interactions					
21	Share reflections on nursing-related literature					
22	Accept constructive criticism and improve oneself					

Legend: 1= Never, 2= Rarely, 3= Sometimes, 4= Often, 5= Always

Translation from English

Part 4: Клиник үр чадварыг тодорхойлох асуумж – Clinical nursing competence questionnaire

	Items	1	2	3	4	5
1	Би ээлж солилцох үед үйлчлүүлэгчдийн чухал үзүүлэлтүүдийн талаар мэдээлж чадна					
2	Би үйлчлүүлэгч, тэдний ар гэрийнхэнтэй хангалттай харилцаж чадна					
3	Үйлчлүүлэгчийн шаардлагатай мэдээллийг цуглуулж чадна					
4	Үйлчлүүлэгчийн бие махбодь, сэтгэл санаа, нийгэм, оюун санаа, сүнсэлг хэрэгцээг үнэлж чадна					
5	Би сувилахуйн тусламж үйлчилгээний цогц төлөвлөгөө боловсруулж чадна					
6	Би сувилахуйн төлөвлөгөөний дагуу хэрэгжүүлэх чадвартай					
7	Ээлж хүлээнцэхэд үүргээ гүйцэтгэж чадна					
8	Сувилахуйн төлөвлөгөөг хэрэгжүүлэх явцад үйлчлүүлэгч ба тэдний гэр бүлд хийж байгаа үйлдлээ бүрэн тайлбарлаж чадна					
9	Сувилахуйн төлөвлөгөөг хэрэгжүүлэхийн өмнө үйлчлүүлэгч ба тэдний гэр бүлд хийж байгаа үйлдлээ тайлбарлаж чадна					
10	Сувилахуйн төлөвлөгөөний хэрэгжилтийн үр дүнг үнэлж чадна					
11	Сувилахуйн төлөвлөгөөг үнэлсэний дараа сувилахуйн тусламжийн хэрэгжүүлэлтийг бие даан өөрчилж чадна					
12	Би эрүүл мэндийн тусламж үзүүлэх баг хамт олонтойгоо мэргэжлийн харилцаа тогтоох чадвартай					
13	Эрүүл мэндийн тусламж үзүүлэх баг хамт олонтойгоо хамтран ажиллах чадвартай					
14	Нэн тэргүүний тулгамдаж байгаа асуудлыг олж харж шийдвэрлэж чадна					
15	Сувилахуйн практикт үр ашигтай байх гэдэг ойлголтыг хэрэгжүүлж чадна					
16	Хадвар хамгааллын дэглэм баримталж ажиллаж чадна					
17	Эрүүл мэндийн боловсрол олгох сургалт зохион байгуулж чадна					
18	Сувилахуйн төлөвлөгөөний үр дүнг үнэлэх, дүгнэлт хийж чадна					
19	Сувилахуйн ёс зүйн дагуу ажиллаж чадна					
20	Хүмүүстэй харилцахдаа тэдэнд анхаарал халамж тавьж байгаа дүр төрхөө идэвхтэй харуулж чадна					
21	Сувилахуйн холбогдолтой онолын мэдээллийн талаар бодол санаагаа хуваалцаж чадна					
22	Надад бүтээлч шүүмжлэлийг хүлээн авч, өөрийгөө сайжруулах чадвар байгаа					



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Part 5: Critical thinking

	Items	1	2	3	4	5
1	I prefer to discuss a topic with other people.					
2	I actively participate in discussions.					
3	I tend to simply go over a discussion.					
4	I enjoy intellectual discussions					
5	I will raise my questions about something even if it is something widely accepted and believed					
6	I have doubts about many things that are already generally accepted.					
7	I do not think it is difficult to solve something complicated					
8	I accept any criticism regarding my own ideas					
9	I do not try to accept ideas that are opposite to my own					
10	I listen and pay attention to what others say in a discussion					
11	I accept ideas or statements that contradict my own as long as there are sufficient sources supporting it					
12	I accept that it is possible for ideas that I strongly claim in a discussion to have errors					
13	It is difficult for me to understand people who have opposing values or ideologies as mine					
14	I analyze and review all the information thoroughly before coming out with a judgment or decision					
15	I review anything that is related to a statement or opinion from various perspectives before judging it					
16	I reserve any judgment before appropriate and sufficient sources are secured					
17	I tend to think carelessly and make hasty decisions					
18	When discussing something that is directly related to me, I fail to think objectively					
19	I tend to include my own subjective judgment and stereotypes when discussing or making decisions					
20	I tend to fall into difficult situations due to my overly subjective judgments or decisions					

Legend: 1= Strongly disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly agree

Translation from English

Part 5: Сэтгэн бодох чадварыг үнэлэх асуумж (Critical thinking ability scale)

	Асуумж	1	2	3	4	5
1	Би хүмүүстэй ямар нэгэн сэдвийн талаар санаа бодлоо хэлэлцэхийг илүүд үздэг					
2	Би хэлэлцүүлэгт идэвхтэй оролцдог.					
3	Би ер нь аливаа зүйлийн талаар нарийн яригдах хандлагатай					
4	Би овоун ухаанаа уралдуулсан хэлэлцүүлэгт дуртай					
5	Бүх нийтээрээ итгэн хүлээн зөвшөөрөгдсөн зүйл байсан ч би асуух зүйл байвал асууж чадна					
6	Аль хэдийн бүх нийтээрээ итгэн хүлээн зөвшөөрдөг зүйлд ч би заримдаа эргэлздэг					
7	Ямар нэг төвөгтэй зүйлийг шийдэхэд надад тийм ч хэцүү санагддаггүй					
8	Би өөрийнхөө үзэл бодолтой холбоотой аливаа шүүмжлэлийг хүлээн авдаг					
9	Би өөрийнхөөсөө эсрэг санааг хүлээж авах гэж оролддоггүй					
10	Хэлэлцүүлгийн үед бусдын хэвсэг үгийг анхааралтай сонсдог					
11	Өөрийнхөө санаатай зөрчилдөж буй санааг хангалттай эх үүсвэр бүхий мэдээлэлд тулгуурласан бол би хүлээн зөвшөөрдөг					
12	Зарим хэлэлцүүлгийн үед надад баттай мэт санагдаж байгаа санаанууд алдаатай байх боломжтой гэдгийг би хүлээн зөвшөөрдөг					
13	Минийхээс эсрэг үнэт зүйл, үзэл баримтлалтай хүмүүсийг ойлгоход хэцүү байдаг					
14	Би дүгнэлт, шийдвэр гаргахаасаа өмнө бүх мэдээллийг сайтар судалж, нягтгаж үздэг					
15	Би аливаа мэдээлэл эсвэл үзэл бодолтой холбоотой зүйлийг дүгнэхээсээ өмнө олон талаас нь харж чаддаг					
16	Тохиромжтой, хангалттай эх сурвалжийг баталгаажуулахаас өмнө би ямар ч дүгнэлт гаргах эрхтэй					
17	Би хайхрамжгүй бодож, яаран шийдвэр гаргах хандлагатай байдаг					
18	Надтай шууд холбоотой зүйлийг ярихад би бодитойгоор бодож чаддаггүй					
19	Аливаа зүйлийг хэлэлцэх, шийдвэр гаргахдаа би өөрийнхөө хийсвэр дүгнэлт, хэвшмэл ойлголтондоо тулгуурлах хандлагатай байдаг					
20	Би хэт хийсвэр дүгнэлт эсвэл шийдвэрээсээ болж хүнд хэцүү нөхцөл байдалд орох хандлагатай байдаг					



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Part 6: Professional value scale

	Items	1	2	3	4	5
1	Engage in ongoing self-evaluation					
2	Respect the inherent dignity, values, and human rights of individuals					
3	Protect the health and safety of the patient/public					
4	Assume responsibility for personal well-being					
5	Participate in peer review					
6	Establish standards as a guide for practice					
7	Promote and maintain standards where planned learning activities					
8	Initiate actions to improve environments of practice					
9	Seek additional education to update knowledge and skills					
10	Advance the profession through active involvement in activities					
11	Recognize the role of professional nursing associations in shaping health policy					
12	Establish collaborative partnerships to reduce healthcare disparities					
13	Assume responsibility for meeting the health needs of diverse populations					
14	Accept responsibility and accountability for own practice					
15	Protect the moral and legal rights of patients					
16	Act as a patient advocate					
17	Participate in nursing research and implement research					
18	Provide care without bias or prejudice to patients and populations					
19	Safeguard patient's right to confidentiality and privacy					
20	Confront practitioners with questionable or inappropriate practice					
21	Protect rights of participants in research					
22	Practice guided by principles of fidelity and respect for people					
23	Actively promote health of populations					
24	Participate in professional efforts to advance global health					
25	Promote mutual peer support and collegial interactions to ensure quality care and professional satisfaction					
26	Take action to influence legislators and other policymakers					
27	Engage in consultation/collaboration to provide optimal care					
28	Recognize professional boundaries					

Legend: 1= Strongly disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly agree

Translation from English

Part 5: Мэргэжлийн үнэ цэнэ - Professional value scale

	Items	1	2	3	4	5
1	Би өөртөө байнга дүгнэлт хийж чаддаг					
2	Би хүмүүсийн хувь хүний нэр төр, үнэт зүйл, тэдний эрхийг хүндэтгэдэг					
3	Өвчтөн/олон нийтийн эрүүл мэндийн хувьд аюулгүй байдал хангагдсан байх ёстой					
4	Бусдын сайн сайхны төлөө хариуцлага хүлээх хэрэгтэй					
5	Үе тэнгийнхэндээ дүгнэлт хийхэд оролцох хэрэгтэй					
6	Цаашид дадлага хийхэд зориулсан гарын авлага болгон стандартыг боловсронгуй болгох хэрэгтэй					
7	Оюутнуудад зориулж төлөвлөсөн сургалтын үйл ажиллагаа стандартыг сурталчлахад оролцмоор байна					
8	Дадлага хийх өрчинг сайжруулах арга хэмжээг бид эхлүүлэх хэрэгтэй					
9	Мэдлэг, ур чадвараа шинэчлэхийн тулд цаашид сурч боловсрохыг эрмэлзэж байна					
10	Эрүүл мэндтэй холбоотой үйл ажиллагаанд идэвхтэй оролцох замаар мэргэжлээ ахиулах болно					
11	Эрүүл мэндийн бодлогыг боловсруулахад мэргэжлийн сувилахуйн холбоодын гүйцэтгэх үүргийг хүлээн зөвшөөрч ажиллана гэж бодож байгаа					
12	Эрүүл мэндийн салбарын ялгааг багасгахын тулд хамтын ажиллагааг бий болгоход анхаарлаа хандуулан ажиллах болно					
13	Хүн амын эрүүл мэндийн хэрэгцээг хангах үүргээ хариуцлагатайгаар хүлээж ажиллана					
14	Өөрийн практикт хариуцлагыг хүлээн зөвшөөрч ажиллана					
15	Өвчтөнүүдийн хууль ёсны эрхийг ёс зүйн хүрээнд хамгаална					
16	Өвчтөний өмгөөлөх үүргээ нэр төртэй биелүүлэх болно					
17	Сувилахуйн судалгаанд оролцох болон практикт тохирсон судалгааны үр дүнг хэрэгжүүлж ажиллана					
18	Өвчтөн болон хүн амыг аюулд өргүүлэхгүйгээр тусламж үйлчилгээ үзүүлнэ					
19	Өвчтөний хувийн нууц, эрхийг хамгаалж ажиллана					
20	Дадлагажигч оюутнуудад тулгардаг асуудлуудад анхаарал хандуулж ажиллах болно					
21	Судалгаа хийхдээ оролцогчдын эрхийг хамгаалан ажиллана					
22	Үгнэж байх, бусдыг хүндэтгэх зарчмуудыг баримтлан ажиллана					
23	Хүн амын эрүүл мэндийг идэвхтэй дэмжинэ.					
24	Дэлхий дахины эрүүл мэндийг дэмжихэд чиглэсэн мэргэжлийн үйл ажиллагаанд оролцоно					
25	Чанартай тусламж үйлчилгээ, мэргэжлийн сэтгэл ханамжийг хангахын тулд үе тэнгийн харилцан дэмжлэг, хамтын ажиллагааг дэмжинэ					
26	Эрүүл мэндийн үйлчилгээг сайжруулахын тулд хууль тогтоогчид болон бусад бодлого боловсруулагчдад нөлөөлөх үйл ажиллагаанд оролцоно					
27	Оновчтой тусламж үйлчилгээ үзүүлэхийн тулд зөвлөгөө, хэлэлцүүлэг, хамтын ажиллагаанд оролцох					
28	Мэргэжлийн хил хязгаарыг хүлээн зөвшөөрөх					



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ABSTRACT IN KOREAN

간호실무준비도 및 관련 요인: 몽골의 간호 학생을 대상으로 한 혼합 방법 연구

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끊임없이 변화하는 의료 시스템의 증가하는 복잡성, 만성적인 경제
제약, 고령 인구로 인한 의료 수요의 증가, 예상되는 간호 인력 부족은
새로운 간호사들이 실무에 대비할 충분한 준비가 되어야 한다는 기대를
증가시킨다. 실무에 대한 준비는 역할 수행을 위해 필요한 정보, 기술 및
판단 능력을 갖추는 데에 관련이 있다. 간호학생들의 실무에 대한 준비도에
영향을 미치는 요인을 확인하는 것은 효과적인 간호 교육과 임상 학습
환경에 대한 함의를 가져올 수 있다. 따라서 본 연구는 수렴 혼합 방법을

이용하여 몽골 간호대학 학생들의 간호실무준비도 정도와 이에 영향을 미치는 요인에 대한 통합된 이해를 도출하기 위한 목적을 가지고 있다.

수렴적 혼합연구설계를 이용하였다. 양적 연구에서는 150 명의 학사 간호 학생을 대상으로 온라인 설문조사가 실시되었다. 영향을 미치는 요인과 실무에 대한 영향을 파악하기 위해 SPSS 26.0 프로세스 매크로 버전 3.4 프로그램을 사용하여 다중 회귀 및 다중 매개 분석이 수행되었다. 질적 연구에서는 두 그룹의 25 명 참가자를 대상으로 포커스 그룹 인터뷰가 진행되었고 내용 분석을 사용하여 질적 데이터를 분석했다. 최종적으로 간호실무준비도에 영향을 미치는 요인을 포괄적으로 이해하기 위해 양적 및 질적 연구결과를 통합하였다.

양적 연구에서는 다중 회귀 분석에서 임상 학습 환경, 임상 역량, 및 비판적 사고 가 간호학생들의 실무에 대한 준비에 영향을 미치는 중요한 요인으로 나타났다. 이 요인들은 몽골 간호학생들의 실무준비도를 40% 정도 설명하였다. 다중 매개 분석에서는 임상 학습 환경이 임상 역량 및 비판적 사고를 통해 간호실무준비도 간접적인 영향을 미치는 것으로 나타났다. 따라서 임상 역량과 비판적 사고 모두 임상학습환경과 간호실무준비도사이의 관계를 일부 매개했다. 질적 연구에서는 158 개

항목이 코딩되었으며 12 개 하위 범주와 여섯 가지 범주가 추출되어 몽골의 간호학생들의 간호실무준비도를 설명하였다: (a) 성숙; (b) 역량; (c) 의사소통; (d) 이론 실무 통합; 및 (e) 전문직관.

본 연구는 간호학생들의 실무에 대한 준비를 향상시키기 위한 중재 및 간호 교육과정 개발에 대한 근거자료를 제공하는데 의의가 있다. 또한, 병원수준에서학생들에게 긍정적인 임상간호환경을 조성하고, 프리서부터 시스템과 멘토십 프로그램을 시행하여 간호학생들의 실무준비도를 향상시키는 전략을 제시하였다.

키워드: 간호학생, 간호실무준비도, 임상실습