Perspectives on the Role of the Nurse within the Interprofessional Team from Senior Practicum Nursing Students Who Received Interprofessional Education

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Abstract

Interprofessional education (IPE) can be defined as a program that allows two or more professions to learn about, from, and with each other to enable effective collaboration and improve health outcomes (World Health Organization [WHO], 2010). As undergraduate nursing students transition into practice, they may reflect on their IPE experiences and utilize the competencies and skills taught through IPE. The purpose of this study was to explore how IPE influenced undergraduate nursing students' perceptions on the role of a nurse within an interprofessional collaborative team, as they transitioned from a student to a registered nurse. Using a methodological approach of interpretive description, virtual interviews were conducted to examine the research question.

The research question was, "How do undergraduate students at the end of their nursing program perceive the influence of interprofessional education experiences on their understanding of the role of the nurse in the interprofessional team?" Fourteen participants took part in the virtual interviews. They were interviewed using a semi-structured interview guide. Using coding and thematic analysis, one overarching theme and three subthemes were found. The overarching theme was that perspective of the role of the nurse within the interprofessional team was evolving and developing throughout the program. Three subthemes were found to be a process of: knowledge of roles, confidence in practice, and finding one's voice. This progression led participants to evolve from receiving interprofessional education (IPE) to actively participating in collaborative practice (IPC). Through these findings, the perspectives in which nursing students view the role of the nurse on the interprofessional team can be used to further future research on IPE and undergraduate nursing students.

Chapter 1: Introduction

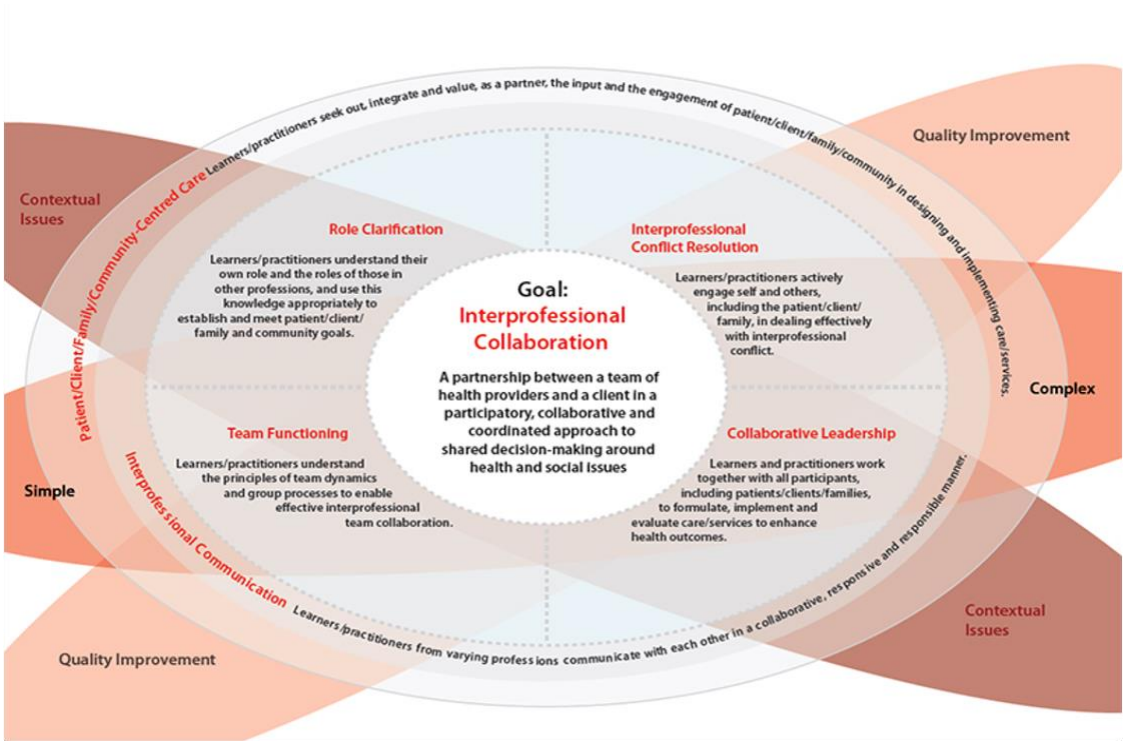
Interprofessional education (IPE) for collaborative practice is one of the primary solutions to strengthening the healthcare system and combating an ongoing healthcare shortage (WHO, 2010). According to the WHO (2010), IPE occurs when two or more professions learn about, from, and with each other to enable effective collaboration and improve health outcomes. IPE has been implemented in various health care curricula globally (Canadian Interprofessional Healthcare Collaborative [CIHC], 2010; WHO, 2010). Taking place in both post-secondary institutions and healthcare facilities, numerous healthcare providers and students continue to take part in programs to help advance their knowledge on implementing collaborative practice to increase patient safety, improve interprofessional communication, and create a more coherent flow within fragmented healthcare systems (Canadian Patient Safety Institute [CPSI], 2015; CIHC, 2010; WHO, 2010).

The implementation of IPE programs has supported Bodenheimer and Sinsky's (2014) "quadruple aim" concept, in which the increased demands for IPE have contributed to "the improvement of quality patient care, patient experiences within the healthcare system, reduce cost, and improve overall population's health" (Edwards, 2016, pg. 3). This concept now includes a fifth aim of health equity, made apparent by the inequitable experiences of health services during the COVID-19 pandemic (Nundy et al., 2022), as well as a sixth aim of environmental sustainability due to climate change (Alami et al., 2023). Through the concept of IPE, health care professionals and students can focus on creating an environment to provide better patient-centered care, while acknowledging the deficits within the health care system, thus starting to work on the closure of those gaps (Nundy et al., 2022).

Nursing is a vital and prominent player within the IPE movement (WHO, 2010). Nurses are normally the first and the last points of care for patients during their hospital stay, which may include patient's main access to interacting with other professions (Canadian Nurses Association [CNA], 2011; College of Registered Nurses of Manitoba [CRNM], 2017). In nursing and other healthcare professions, international and domestic guidelines have been formulated to help guide practice and education around IPE. Within Canada, the Canadian Interprofessional Health Collaborative (CIHC) (2010) created a framework to articulate the necessary competency domains of interprofessional collaborative practice. This framework was updated in 2024, but throughout this paper I will be utilizing the 2010 framework.

Canadian Interprofessional Health Collaborative Framework

Figure 1: Canadian Interprofessional Health Collaborative (CIHC) framework, 2010



The CIHC framework (Figure 1) describes six competency domains. According to the CRNM (2019, p.9), a competency is "an observable ability of a registered nurse at entry-level that integrates the knowledge, skills, abilities, and judgment required to practise nursing safely and ethically". These competencies include role clarification, interprofessional communication, interprofessional conflict resolution, patient/client/family/community-centered care, team functioning, and collaborative leadership (CIHC, 2010). The CIHC (2010) is one of four major IPC frameworks used internationally. In addition to this, the United Kingdom, United States, and Australia use their own IPE frameworks. The United Kingdom's Combined Universities Interprofessional Learning Unit (2004, from Thistlethwaite et al., 2014) created the Interprofessional Capability Framework which has four domains. This includes knowledge in practice, ethical practice, interprofessional working, and reflection (2004, from Thistlethwaite et al., 2014). These domains differ from the Canadian, American, and Australian frameworks.

The United States' Interprofessional Education Collaborative (IPEC) created the Core Competencies for Interprofessional Collaborative Practice (2016) which includes four domains of values and ethics for interprofessional practice, roles and responsibilities, interprofessional communication, teamwork, and team-based care. As of 2023, IPEC simplified their domains to values and ethics, roles and responsibilities, communication, and teams and teamwork (IPEC, 2023). Lastly, Australia's Curtin University (2011) created the Interprofessional Capability Framework with five domains that are communication, team function, role clarification, conflict resolution, and reflection. The domains within this framework share the most similarities with the CIHC (2010) framework since it was adapted from it (Thistlethwaite et al., 2014). Since its creation over a decade ago, these outcomes have shaped the implementation of national and

international programs. In addition to this, the regulation and accreditation of professions, including nursing, has been a driving factor for the creation of IPE outcomes (Black et al., 2008).

History of Interprofessional Education

IPE has been used informally within healthcare education for over a hundred years (Gilbert, 2010). Globally, one of the first organizations to promote IPE was the United Kingdom's Centre for Advancement for Interprofessional Education (CAIPE) in 1987 (CAIPE, 2023). In Canada, attempts to formalize it into a structured program started around the mid-twentieth century. As early as the 1960s, Canadian institutions began to cultivate these activities (CIHC, 2010; Gilbert, 2010). The University of Alberta was the first Canadian facility to create and implement a formal IPE program in 1992 (Philippon et al., 2005). This program included healthcare students from departments like nursing, medicine, pharmacy, physical education, dentistry, physiotherapy, and home economics (Philippon et al., 2005).

In 2003, the Pan-Canadian Health Human Resources Strategy provided the funding to organize a group of professionals to create the Canadian Interprofessional Health Collaborative (Health Canada, 2005). This group developed the above competencies and organized them within a framework to help guide educators on how to organize and facilitate IPE (CIHC, 2010; Health Canada, 2005). IPE soon became an accreditation for many healthcare professions, including nursing. From 2007 to 2011, the Accreditation of Interprofessional Health Education (AIPHE) Standards Development Working Group was funded by Health Canada to work with Accreditation Canada and eight health professional associations, including the Canadian Association of Schools of Nursing (CASN) to include IPE in educational accreditation standards (AIPHE, 2011).

AIPHE used the competencies from the CIHC framework for the standards and criteria for these associations to evaluate their professionals (AIPHE, 2011). The CIHC created six competency domains within a conceptual framework. As previously noted, these competencies included role clarification; interprofessional communication; interprofessional conflict resolution; patient/client/family/community-centered care; team functioning; and collaborative leadership (CIHC, 2010).

Multiple post-secondary institutions and healthcare facilities across Canada have based their current IPE programs on this framework, including the University of Manitoba (2022). The University of Manitoba's Rady Faculty of Health Sciences Office of Interprofessional Collaboration (OIPC) uses all competencies within this framework as objectives intertwined across the two-year multidisciplinary education curriculum provided (University of Manitoba, 2022). The Rady Faculty of Health Sciences' College of Nursing have woven these competencies throughout their undergraduate curriculum (University of Manitoba, 2022).

Research Question

As nursing students move through these IPE activities and transition into practice, their experiences with IPE may impact their overall understanding of the role of the nurse in the context of the interprofessional team as a profession. The purpose of this study was to explore how IPE influenced undergraduate nursing students' perceptions on the role of a nurse within an interprofessional collaborative team, as they transition from a student to a registered nurse. IPE includes all clinical experiences; simulation experiences; a fourth-year nursing course on interprofessional collaboration called Professional Foundations 5: Interprofessional and Collaborative Practice; and their time in the two-year multidisciplinary IPE program delivered through the Rady Faculty of Health Science's Office of Interprofessional Collaboration.

The research question was, “How do undergraduate students at the end of their nursing program perceive the influence of interprofessional education experiences on their understanding of the role of the nurse in the interprofessional team?” The research question goes beyond asking what clinical skills nurses have and includes how IPE influences undergraduate nursing students’ perspectives on the role of the nurse within the interprofessional team, by highlighting their experiences from the IPE they received. Throughout the following chapters of this thesis, this question will be discussed in relation to a literature review on this topic, the methodology of interpretive description used, findings, discussion, limitations, and impact on future nursing research and education.

Chapter 2: Literature Review

Throughout this chapter, a review of literature pertaining to this topic will be presented. IPE is a well-researched topic, with a vast number of findings. A literature search was completed, focusing on the role of the nurse and IPE's impact. Many of the findings align well with the CIHC (2010) framework. Two main gaps were found. These two gaps include firstly the lack of a comprehensive perspective of IPE throughout a post-secondary program, rather than the focus of an evaluation of a specific IPE activity or program. The second gap was no specific mention was found of how the perspectives of nursing students' understanding on the role of the nurse within an interprofessional team were impacted by the IPE they received.

When considering IPE studies, students from multiple healthcare specialties have been studied together and individually. Many studies review the IPE programs and events themselves, resulting in using tools to measure and evaluate students' experiences, specifically quantifying attitudes, and readiness for learning. Examples of such tools include the Readiness for Interprofessional Learning Scale (RIPLS) (Parsell & Bligh, 1999) and the Interprofessional Socialization and Valuing Scale (ISVS) (King et al., 2016). An example of this is Moore et al.'s (2023) study on the use of a telehealth simulation to increase readiness for interprofessional collaboration. Participants were given a portion of the RIPLS scale to fill out pre and post simulation, resulted indicated an increased learner's readiness (Moore et al., 2023).

Prior to commencing the literature search, a PICo question was created to help guide the process. PICo stands for the population, interest being studied, and the context in which it is studied (Richardson et al., 1995). The PICo question that guided this process was "Does the implementation of IPE influence pre-convocation undergraduate nursing students' perspectives

of the role of nurse on the interprofessional team?". Within this search, pre-licensure nursing context was their perspectives of the role of the nurse in the interprofessional team.

For the literature search, two databases were used: CINAHL and PubMed. The search parameters included articles published between 2013-2023. Key search words and terms were variations of nursing student, interprofessional collaboration education, experiences, role, and used a qualitative subject heading (Wilczynski et al., 2007). Upon greater analysis, there were approximately 50 articles that examined the experiences nursing students had within IPE, specifically discussing their perceptions on the role of nurses. These articles were published between 2006 and 2022. In addition to this, one structured literature review by Lim and Noble-Jones (2018), a systematic review by Visser et al. (2017), and one integrative review by Labrague et al. (2018) were explored, emphasizing the overall experiences of nursing students in IPE. These reviews use data from quantitative, qualitative, and mixed studies, but present outcomes in a streamlined and straightforward approach. These literature reviews included articles from 2003-2018.

There were no studies identified that focused primarily on the influence that IPE had on nursing student's perspectives on the role of the nursing within the interprofessional team. Based on an overview of the literature on the perspectives on their IPE itself, three main topics were highlighted: improvement of communication, improvement of team functioning, and improvement of role clarification. These topics align with the CIHC's framework and competencies of communication, role clarification, and team functioning. In addition to this, two gaps from the literature will be highlighted. As previously mentioned, these two gaps include the lack of a comprehensive perspective of IPE throughout a post-secondary program and no focus

on how perspectives of nursing student's understanding on the role of the nurse within an interprofessional team were impacted by the IPE they received.

Improvement of Communication

One of the most common outcomes of IPE cited in the literature was improvement of communication. Communication between nursing and other healthcare students was primarily studied as a competency or outcome within numerous IPE programs (Labrague et al., 2018; Lim & Noble-Jones, 2018; Visser et al., 2017). Improvement and frequency of communication skills was a significant finding within numerous reviews (Labrague et al., 2018; Lim & Noble-Jones, 2018; Visser et al., 2017). Although not all studies quantitatively measured communication, there were specific tools used (Ganotice et al, 2021; Mink et al., 2021). Using specific IPE tools like TeamSTEPPS (CPSI, 2015) allowed anticipated outcomes, which were increased dialogue between nursing and medical undergraduate students to increase patient safety (Mahmood et al., 2021).

In most cases, communication was always considered to be improved after IPE took place, as students would have a shared experience to discuss and build values for future IPE activities or practices (Brault et al., 2015; Dennis et al., 2017). Communication was also considered a precursor for collaborative practice and better team functioning overall (Jackman et al., 2017; Shorey et al., 2018; Wright et al., 2012). Additionally, communication was found to be foundational in understanding roles, setting care goals on behalf of the patient, and giving time and space for all dialogue, including conflict resolution (Visser et al., 2017). Due to an improvement of communication between nursing students and other professions, conflict resolution was easier to achieve during simulations and other IPE events (Hallin & Kiessling, 2016; Wang et al., 2015). Conflict resolution itself was not heavily discussed or focused on

within many studies at the undergraduate level: this may be due to students not having enough time or knowledge to disagree on care goals. As reviewed in the previous chapter, the CIHC (2010) framework highlights interprofessional communication as a main competency domain.

Students were able to not only improve communication with other members of the allied health team, but patients, allowing students to build better rapport with patients (Meffe et al., 2012). This is significant because the CIHC (2010) notes that patients are also considered valued members of the interprofessional collaborative team. Trust and respect between patients and the nurse highly depend on the communication established at the start of the professional relationship (CIHC, 2010; Meffe et al., 2012).

Improved interactions with family members from improved communication may also enhance self-confidence (Furr et al., 2020; Meffe et al., 2012; Shorey et al., 2018). Increased self-confidence when interacting with patients created not only a better relationship between the nurse, team, and patient, but better overall team dynamics through improved team functioning (Furr et al., 2020; Shorey et al., 2018). Recognition of including the patient and family within the care goals was also an apparent outcome, which included better overall patient engagement (Fawaz & Anshasi, 2019; Wright et al., 2012).

Improvement of Team Functioning

Within the team, all members are seen as essential figures that are equal in both importance and perspective (CIHC, 2010). As noted previously, throughout the literature, team function was normally grouped together within the realms of communication and conflict resolution (Hallin & Kiessling, 2016; Wang et al., 2015). Valuing and listening to all members of the team, allowed the team to effectively make decisions together (Fawaz & Anshasi, 2019; Hallin & Kiessling, 2016; Wang et al., 2015). It is important to note, although there were

instances in which nursing students felt like a valuable member of the team, feeling inferior to other professions may have been a barrier to communication and team functioning (Furr et al., 2020; Lee et al., 2020; Visser et al., 2017; Wright et al., 2012).

One additional aspect that perpetuates a similar focus on team dynamics is the concept of having confidence within one's practice. Confidence within one's discipline can be strengthened by IPE through engagement with other professions (Furr et al., 2020; O'Carroll et al., 2012; Visser et al., 2017). Nursing students found it easier to communicate and participate as a member of the team in IPE when they felt heard (Furr et al., 2020; O'Carroll et al., 2012; Mahmood et al., 2021; Shorey et al., 2018; Visser et al., 2017). An overarching appreciation for nursing was held by nursing students once many interactions took place (Furr et al., 2020; Lee et al., 2020). Expressions of gratitude and value from students in other professions helped nursing students feel assured of their choice of career (Furr et al., 2020).

Clarification of the Role of the Nurse

The role of the nurse itself was not independently discussed outside of role clarification. There were no specific articles stating how nursing students felt about the role of the nurse on the interprofessional team, rather the general role of the nurse within the healthcare system. Aligning within the competencies provided by WHO (2010) and the CIHC (2010), learning about the roles of other professions was consistently an expected outcome within many studies. Role clarification of other providers and their job descriptions were expected outcomes, as they would allow nursing students to deepen their understanding of the dynamics of healthcare collaboration, thus increasing workplace productivity (Furr et al., 2020; Stewart et al., 2019). Understanding the roles of other professions, like physicians, physiotherapists, pharmacists, physician assistants, respiratory therapists, occupational therapists, dentists, and dental hygienists was discussed and

explored to comprehend dynamics of roles and role blurring (Hallin & Kiessling, 2016; Visser et al., 2017).

Recognizing some healthcare professions may feel inferior or superior to others, and how it affects team dynamics, were discussed amongst nursing students after interactions at only the student level (Furr et al., 2020; Lee et al., 2020; Visser et al., 2017; Wright et al., 2012). Feeling inferior to other professions, like physicians or physician assistants, was mainly due to the difference in medical knowledge (Furr et al., 2020).

Role clarification highlighted not only role descriptions, but appreciation of all professions. Appreciating each team member and their specific role on the team is foundational and essential for students to create a relationship in which everyone can feel heard and understood, allowing all perspectives to be presented (Dennis et al., 2017; Fawaz & Anshasi, 2019; Furr et al., 2020). In addition to this, nursing students discussed difficulties nurses faced on the care team. They noted having a greater understanding of the struggles practicing nurses feel, feeling unheard by other professions, but still being seen as a valued member of the team (Furr et al., 2020).

Discussion of Gaps within Literature

Based on an examination of the literature on nursing students' experiences with IPE, with an examination of the IPE competencies, some conclusions can be drawn about the current state of research around the understanding of IPE activities for undergraduate nursing students. These include reviewing IPE holistically rather than as an isolated activity and specifically studying the influence IPE had on the nursing student’s understanding of the role of a nurse within the interprofessional team.

Comprehensive Perspective of IPE

The outcomes and competencies highlighted by IPE programs, such as the OIPC at the University of Manitoba (2022) are based on IPC frameworks like the CIHC (2010) framework. Evaluating the entire state of IPE is based on meeting objectives for one program, course, activity, or event. This may highlight a gap within the literature because it may be difficult to understand the student's full experiences of IPE by only evaluating one source of IPE. IPE can take many forms, simulation, clinical, theory work, and IPE-specific programs (CIHC, 2010; Lim & Noble-Jones, 2018; Visser et al., 2017; WHO, 2010). Students can gain their IPE knowledge from multiple sources combined. This concept, of IPE from multiple sources, was neglected within the literature reviewed and may possibly be a gap that needs to be examined further.

This perspective may have been neglected because it is difficult to determine all forms of IPE throughout a post-secondary educational program. With that being said, the University of Manitoba's IPE curriculum is woven throughout multiple courses over the baccalaureate nursing program. As previously noted, this included all clinical experiences, simulation experiences, a fourth-year nursing course on interprofessional collaboration called Professional Foundations 5: Interprofessional and Collaborative Practice, and their time in the two-year multidisciplinary IPE program through the Rady Faculty of Health Science's Office of Interprofessional Collaboration.

Much of the literature focuses on the evaluations of IPE and its expected outcomes immediately after a program, course, or event. Most studies interview students as they are still completing their studies to evaluate a specific IPE activity or event (Furr et al., 2020; Lee et al., 2020; Lim & Noble-Jones, 2018; Visser et al., 2017). Not only are students still learning, but they have not had time to implement and reflect on their IPE experiences as much as they could

have if they were transitioning into practice. While they are practicing it may be difficult to examine IPE experiences due to the amount of time between undergraduate education and practice. But as they transition into practice, they are still a novice and may start using any education from IPE experiences. Instead of evaluating the content or form of IPE, they may use IPE content to question their role within the interprofessional team and how that may influence the care they provide.

Role of Nurse in Interprofessional Team

The general role of the nurse was clarified by skills, tasks, and through definition within multiple IPE programs. As reviewed in the previous chapter, nursing has a rich history of being active in IPE programs and activities. Defining a role and the tasks associated with that role is a significant competency within the CIHC framework (2010). Within Manitoba, the College of Registered Nurses of Manitoba (2019) does outline the guidelines on what consists of the role of the nurse in the healthcare setting. These roles include groupings of the clinician, professional, communicator, collaborator, coordinator, leader, advocate, educator, and scholar (CRNM, 2019). The CRNM also expands on how nurses should collaborate. Nurses should initiate collaboration in all settings, determine their Interprofessional role, apply their knowledge, and contribute to team functioning (CRNM, 2019).

As previously presented, all literature that was examined only spoke to role clarification to understand the definition of a nurse within the healthcare system. As per the CIHC (2010) framework, role clarification allows professionals to understand what their tasks are and what are the tasks of others. This gives a foundation to a respectful relationship, in which all team members are listened to and valued (CIHC, 2010). There are many variations in which nurses

can be defined; IPE may change or influence the way in which undergraduate nursing students perceive the role of a nurse on an interprofessional team.

Throughout this section, a literature review has been presented to understand the state in which IPE impacts undergraduate nursing students. It was found there was significant research on IPE's influence on the improvement of communication, improvement of team functioning, and helped provide both undergraduate nursing students and other health care students with a clarification of nursing skills and tasks. There were two major gaps found, the lack of a comprehensive overview of IPE within an undergraduate nursing program and studying the nurse's role within the interprofessional team. While these two gaps influenced the formulation of the research question, the study will focus on how IPE influenced undergraduate nursing students' perceptions on the role of a nurse within an interprofessional collaborative team, as they transition from a student to a registered nurse. With the research question being, "How do undergraduate students at the end of their nursing program perceive the influence of interprofessional education experiences on their understanding of the role of the nurse in the interprofessional team?".

Chapter 3: Methodology

Within this chapter, the methods and procedures utilized in this study will be discussed. The research objective, explanation of the research design, procedures, and ethics will be presented.

Research Objective

As previously mentioned, the purpose of this work is to understand how IPE influenced undergraduate nursing students' perceptions on the role of a nurse within an interprofessional collaborative team, as they transition from a student to a registered nurse. During their time in their Bachelor of Nursing undergraduate program, they received IPE through many methods. The IPE included all clinical experiences, simulation experiences, a fourth-year nursing course on interprofessional collaboration called Professional Foundations 5: Interprofessional and Collaborative Practice, and their time in the two-year multidisciplinary IPE program through the OIPC. The research question is, "How do undergraduate students at the end of their nursing program perceive the influence of interprofessional education experiences on their understanding of the role of the nurse in the interprofessional team?". The objective of this study was to explore undergraduate nursing students' perspectives of their interprofessional education experiences, and its influence on their understanding of the role of the nurse in the interprofessional team. This research question was answered by following the methodological approach of interpretive description.

Design

A qualitative approach to research was used within this study because qualitative studies focus on exploring the topic of interest holistically and understanding the experiences and opinions of participants (Polit & Beck, 2019). Qualitative studies are the best way to formulate a

study around the experiences of the participants, by using broad sampling and individualized interviews for data collection (Kim et al., 2017). Interpretive description is a qualitative research design that was developed by Thorne et al. in 1997. This methodology was created to address the complexity and broadness within the nursing practice and how to directly apply research to the healthcare environment (Thorne, 2016).

Interpretive description uses a qualitative approach on a smaller scale to interpret and study questions that arise within the healthcare setting (Thorne et al., 2004). Questions produced using this methodology are usually based on current and apparent issues within practice, allowing the researcher to create a more streamlined approach to learning about the problem. Nursing researchers have borrowed from methodologies, but interpretive description was formulated with the continuously changing nursing profession in mind (Thorne et al., 1997). Thorne (2016) found conventional qualitative methods of ethnography, phenomenology, and grounded theory, fell short of describing the true nature of clinical phenomena. Healthcare research can use these methods, but interpretive description does meet healthcare's demands of improving current and ongoing phenomena within the system (Thompson et al., 2021).

Inductive in nature, interpretive description allows researchers to apply findings to the clinical setting (Thorne et al., 2004). Thorne (2016) stated interpretive description allows researchers to explore a "real world question" (p. 40), by using empirical reasoning and focusing on a target audience for results. Questions can stem from current phenomena in research and lead to more productive and strategic planning (Thompson et al., 2021). Through determination of a researchable problem, the above research question was created to align with characteristics of interpretative design. Thorne (2016) advocates for a design to give awareness to a phenomenon

and, “putting that analysis back into the context of the practice field” (p. 57). Therefore, the posed research question aligns, as its purpose, to understand the experiences of undergraduate nursing students who have received IPE and their understanding of the role of the nurse within the interprofessional team, as they continue into practice and may utilize the IPE they received. For a novice researcher, interpretive description is an appropriate methodology because it provides a clear, yet flexible framework that guides the research process (Doyle et al., 2020). Doyle et al. (2020) also notes the transparency of this approach, aiding in understanding and interpreting data during the analysis, contributing to the credibility of the findings. According to Thorne (2016), the design must be able to explore the various elements of a research problem, while understanding them on a level that “honours their inherent complexity” (p. 83). Thorne (2016) also believed studies be “conducted in a naturalistic context” (p.83). This allows participants to be studies without any manipulation from the researcher, which was followed through within this study.

Procedure

Throughout the following sections, the data collection and analysis will be discussed. Data collection consists of the sample and setting, while data analysis discusses the analytical process, data management, and trustworthiness.

Sample

The chosen population focus for this study was the undergraduate nursing students at the University of Manitoba who were completing or just completed their senior practicum placements; they were all pre-convocation. During their senior practicum placements, they may have been given a chance to interact with other healthcare providers, depending on their senior practicum setting. There was no limitation to area of practice during senior practicum, as all

areas must have nursing interactions with allied health and/or physicians. Being in senior practicum, the interprofessional education they received is also fresh compared to someone who graduated years before. As previously noted, the interprofessional education that senior practicum students received encompasses all IPE within their undergraduate studies, which includes clinical experiences, simulation experiences, a fourth-year nursing course on interprofessional collaboration, and their time in the two-year multidisciplinary IPE program.

It is important to note these students had been in online studies, except for clinical courses, from March 2020 to September 2022. This may have influenced the type of IPE activities they were exposed to due to the COVID-19 pandemic restrictions and move from in-person to virtual education. The only inclusion criteria were that participants must have completed their full Bachelor of Nursing program at the University of Manitoba. Participants were homogenous in the IPE they received, so there are no other exclusion criteria for participants.

In total, 14 participants were interviewed. These participants were in two different cohorts. The first group completed their senior practicum during the summer 2023 term and the second during the fall 2023 term. All participants varied in age, gender, ethnic backgrounds, and some spent time working as a healthcare aide, an undergraduate nursing employee, or clerk, prior to or during to nursing school.

Sampling Size. According to Thorne (2016), convenience sampling may be appropriate, "in that the group of people who are closest at hand may well be an excellent source of insight" (p.98). A smaller sample size may produce a dense and robust amount of data (Thompson et al. 2021). The population of nursing students in senior practicum during the summer 2023 session was 120, with a second round of data collection that took place after the fall 2023 cohort, there were an

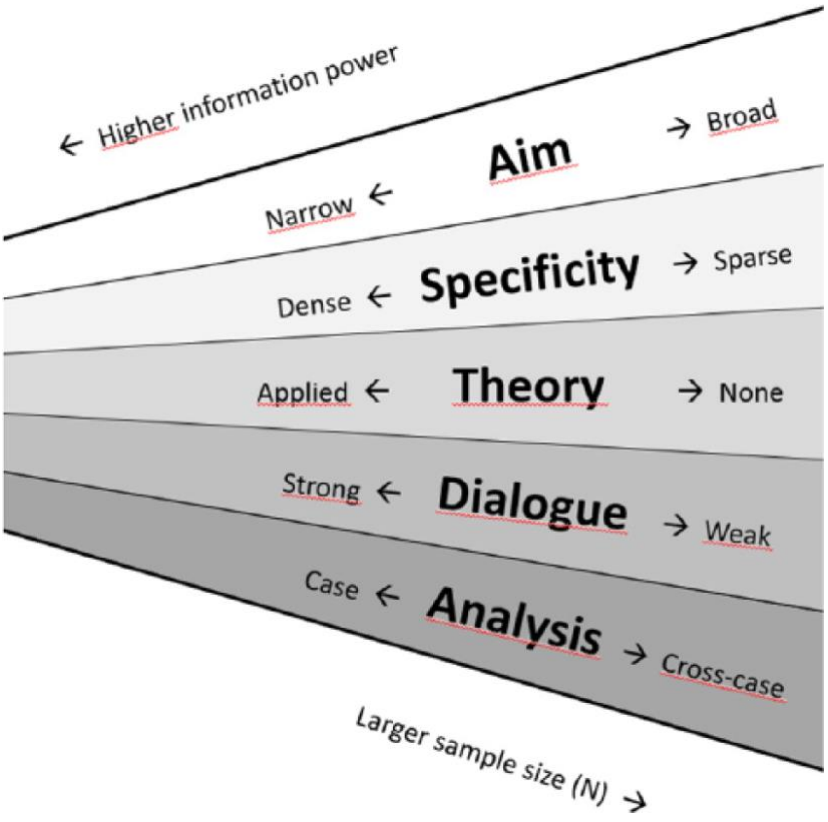
estimated additional 60 students finishing senior practicum. Qualitative studies with in-depth interviews usually use five to fifty participants (Dworkin, 2012). Within this study, knowing the exact number of participants within the sample was difficult due to not knowing when saturation would be complete (Sim et al., 2018; Sandelowski, 1995). Thorne (2016) believes reaching saturation is challenging because one should not, "close the door on new variations and diversities on a theme." (p. 107). So, it was difficult to estimate saturation, but it was appropriate for smaller studies, like this one, to set limits on sample sizes if, "they demonstrate appropriate recognition that there would always be more to study" (Thorne, 2016, p. 108).

Based on this, using an information power model can help determine sampling. This model is a recognized model for qualitative sampling. Malterud et al. (2016) designed a model to help researchers organize their sample based on information power (Figure 2). Information power refers to the amount of insight participants, through data collection, have on the topic of interest (Malterud et al., 2016). The lower the information power, the higher the sample size. There are five key factors: the aim of the study, specificity of the study, theory behind the study, dialogue of the study, and analysis of the data (Malterud et al., 2016). The aim of the study was narrow, focusing solely on IPE influences on University of Manitoba's senior practicum nursing students, allowing for a smaller sample size. Specificity was dense based on the use of only University of Manitoba senior practicum students who underwent the same IPE, allowing for stronger information power, thus a smaller sample size. There is no theory used to analyze data, but the methodology use guided the researcher's design, allowing for a smaller sample size. The dialogue of the interview questions and communication during the interviews was strong, based on the researcher having been a former student of the University of Manitoba's nursing program and undergoing the same IPE. Finally, the analysis of data is based on this study alone, not

across studies, allowing for a smaller samples size. Based on this, this study may hold higher information power, and the sample size was able to be smaller.

Smaller sample sizes have been used in various interpretive description studies involving the nursing practice and interviewing participants. One study by Chiu et al. (2022) on the COVID-19 pandemic policy advocacy responses had a sample size of eight. Another study by Peter-Watral et al. (2021) examined the moral distress of oncology nurses with a sample size of 25. A sample size of 10 to 15 participants was chosen prior to commencement of this study. All honoraria were provided by grant funding through the MCNHR.

Figure 2
Information Power, Malterud et al., 2016



Recruitment. According to Thorne (2016), most of interpretive description designs utilize purposive or theoretical sampling techniques, but convenience sampling can serve well when the

population is easily accessible. Thorne (2016) also mentions convenience sampling is easier for the earlier stages of research and allows for an in-depth perspective of local clinical phenomena. This aligns with the researcher studying students from a specific university. According to Polit and Beck (2019) convenience sampling is the most widely used sampling within research and in diverse populations, it can lead to sampling bias. Due to this sample being similar in the only component being studied, IPE, this did not greatly affect any biases. Since participants attended the same university and had access to their emails, they were recruited via email advertisements. The course leaders for both the summer 2023 and fall 2023 cohorts were contacted directly and asked to send the poster (Please see Appendix D) to all students in senior practicum. This recruitment strategy was sufficient to obtain participants for this study.

The course leaders were emailed twice, once in September 2023, and again in December 2023, with the same poster. From September 2023, ten participants were interviewed. From December 2023, four participants were interviewed. All participants were given a $50.00 gift card to Amazon. According to a study done with physician participants, increasing the monetary value to $50.00 increased the interest in participants (Keating et al., 2008). The gift cards were a form of thank you to the participants and were distributed to all participants.

Data Collection

This study was executed through virtual interviews, allowing for participants to feel at ease and comfortable during data collection (Khan & MacEachen, 2022). This comfort can be enhanced by the participant feeling they have the choice in what physical setting they are being interviewed in (Keen et al., 2022). Using the structure of semi-structured guided interviews, in addition to a demographic questionnaire (Please see Appendix B), data was collected. This

questionnaire was co-designed by the advisor and researcher to collect essential background information that would contribute to the contextualization of the interview data.

As per the consent form (please see Appendix C), the Zoom videos were recorded, on the researcher's laptop and on their audio application on their phone. Zoom was a free service provided to all students and staff, so this was used. Interviews were done at any time of the week that was available to both the researcher and participants. This is due to the participants' possible nursing shiftwork schedules. The first 10 participants were interviewed in September 2023. Interviews were conducted over a two -week period, each interview lasting under 30 minutes. The average interview time was 20 minutes. Due to the methodology being used and the need for reflection between interviews, four additional participants were recruited in December 2023. The four additional interviews took place over a week.

Interviewing participants with an interview guide is very common data collection method within interpretive design, as it allows for an in-depth conversation (Thorne, 2016). See Appendix A for the interview guide. The interview guide was constructed by the writer and revised by committee members prior to its use. COVID-19 impacted many qualitative studies, allowing space for online video interviews (Khan & MacEachen, 2022). Online video interviews can minimize research expenses, like travel or booking a space, as well as create an environment in which participants feel heard and not judged by others (Khan & MacEachen, 2022). Within this study, all interviews were done via Zoom. Zoom was accessible for both the participant and researcher and allowed both parties to focus on the interview rather than other environmental stimuli, allowing them to feel comfortable in their chosen space (Wahl-Jorgensen, 2021). Many participants choose to leave their videos off. This was due to the interviewer only recording the audio of the participant. Audio was also recorded on a second device, the writer's voice

recording application. This was done to ensure there were two copies of each recording in case of one copy malfunctioning. All participants were made aware of this.

Data Analysis

From coding, a pattern is sensed, and insights can be drawn (Thorne, 2016). Based on a reread after the first cycle of transcripts, this determined how the data was coded (Saldana, 2009). The coding was inductive and iterative, allowing themes to emerge. The researcher immersed themselves within the data by reviewing it and linking each line to label significant statements. These categories were initially labelled confidence and role clarification, but as more data was examined, categories became themes. Open coding was done by the researcher and reviewed by the academic advisor. Codes were then categorized into an overarching theme and three major subthemes. This will be discussed in the findings section, and in greater detail in the discussion section.

During this process, the researcher reviewed the transcriptions once to fully comprehend what the participants were saying, this allowed the researcher to familiarize herself with the content of the responses. After this, they reread all interview transcriptions again, assigning one word to each line to encompass what was being discussed on that line. The interview transcriptions were then reviewed a third time and lines with certain words of phrases were highlighted. This method is called in vivo coding, allowing various categories to be developed (University of Connecticut, 2023). The interview transcriptions were reviewed for a fourth time to match codes from each line to each other to create an overarching theme.

Data management is “iterative and nonlinear” (Polit & Beck, 2019, p.536). This allows for the examination of data to be continuous. This is the reason behind the data being collected in two rounds. Data analysis was completed using thematic analysis through Clarke and Braun’s

method (2006). Braun and Clarke also believed the term saturation may not always be suitable, and instead agree information power may be a more "useful way of thinking through data samples" (2021, p.212). Thematic analysis allows the researcher to code the data using a constructivist and interpretive method to find patterns that are in relation to the research question (Braun & Clarke, 2014). Using this approach, the data is reflexive, in which data was reviewed, initially coded, generated initial themes, then reviewed again once the second batch of participants were interviewed, so themes could be redefined, and then discussed (Braun & Clarke, 2006). The reflexivity used within this analysis will be discussed in the following section. It is important to note, the CIHC framework (2010) was used within the discussion of the study, but not the analysis of the results. It was not part of the process to develop themes but did allow for a larger conversation to happen around how current competencies connect to the findings. This process took place between the researcher and advisor over the course of several meetings over a few months.

Trustworthiness

To ensure credibility of one's research, trustworthiness is needed (Lincoln and Guba, 1985). According to Shenton (2004), credibility can be reached by utilizing common research methodologies, such as interpretive description. According to Polit and Beck (2019), Morse's (2002) work on quality-rich qualitative studies, allows researchers to create more robust and trustworthy research. Research must be transparent, thorough, verified, reflexive, participant-driven, and insightfully interpreted (Morse, 2002). To achieve attributes like these, the researcher must be self-reflexive (Tracy, 2010). This was achieved through the interviewer doing a self-interview with the interview guide in Appendix A (Polit & Beck, 2019). This allowed the analysis on oneself and the evaluation of biases that could be highlighted during the data analysis

process (Thorne, 2016). Memo notes were taken. Memos can provide the researcher with the ability to try to hold their own influences accountable, rather than influencing the research process (Thorne, 2016). This will also be helpful for leaving an audit trail (Thorne, 2016). Leaving a clear audit trail will allow for transparency of the work (Tracy, 2010). An audit trail also gives the study confirmability, which allows the researcher to make sure there is objectivity within the study (Shenton, 2004).

The study was insightfully interpreted through the creation of themes using thematic analysis (Braun & Clarke, 2006). Verification and thoroughness were achieved through methodological coherence, in which the methodology of interpretive description aligns well with the research question and study design (Morse, 2002). Rigor in qualitative studies is difficult but can be reached by the participant following a certain methodology on interview practices, memos, and analysis procedures (Tracy, 2010). This was met using a methodological approach of interpretive design and Braun and Clarke's thematic analysis method (2006).

According to Thorne (2016), "health science research must therefore be somewhat different from standards in more theoretical fields" (p.233). This is due to healthcare being a "social mandate that entails a moral obligation toward benefitting individuals and the societal collective" (Thorne, 2016, p.233). There are ways in which researchers can hold credibility. These include epistemological integrity, representative credibility, analytic logic, and interpretive authority (Thorne, 2016). Through epistemological integrity, researchers must hold their biases accountable and reflect on any predispositions to the field being studied; this allows for the researcher to understand there are many perspectives on the field and answers to the research question (Thorne, 2016). Within this study, this was attained by the researcher doing a self-reflective interview prior to conducting any participant interviews.

To ensure representative credibility participants were asked if they wanted to review their results. No participants have asked to review results. Analytic logic occurs when the reader is given evidence the researcher did more than complete "an inductive reasoning process" (Thorne, 2016, p. 234). This includes leaving an audit trail. Lastly, interpretive authority assures the researchers interpretation is trustworthy by the researcher providing ways in which reflexivity took place during the interviews (Thorne, 2016). This was conducted throughout this study using field notes.

Ethics

Throughout this study, three ethical concerns were highlighted. Firstly, the researcher has taught students who may be completing their senior practicum. So, students may have felt an obligation to participate in the study. This was minimized by clearly indicating on the advertisement and consent form there is no mandatory participation. Participation was voluntary. Secondly, participants were anonymous, and they had a choice to have the results shared with them once the study is complete. This was outlined in the informed consent. Lastly, all participants' information was stored on a secure site on MS teams, to allow for confidentiality, but still allows data to be present from two access points, the researcher, and the advisor. There are no known sources of harm noted within this study.

Ethics was met by approval from the Research Ethics Board (REB) on the Fort Garry campus at the University of Manitoba. Demographics of all participants was noted on the consent form and asked at the beginning of the interview guide, this was for information purposes only. Demographics included race, gender, age. All participants were over the age of 18 and not be able to waive anonymity but the transcriptions will hide any identifiable traits. The data was kept only by the researcher and advisor and will be destroyed after the thesis defense of

the researcher, approximately the end of 2024. There were minimal risks to participating, as it was unknown whether students may be reminded of possible negative experiences in IPE. The benefits are knowing that they contributed to growing evidence around IPE. Participants were referred to as pseudonyms, for anonymity purposes. Participants were given the ability to withdraw at any time.

Transcription took place in two forms. The first transcription was done by the researcher to enhance their knowledge on interpretive description and immerse themselves within the study. The rest of the audio recordings were sent to Transcription Heroes. Transcription Heroes is a Canadian company, allowing the data to be safely and securely stored in Canada (Transcription Heroes Transcription Services, 2023). Both transcripts and audio recordings were stored on MS team that was only accessed by the researcher and advisor.

All members of the research team reviewed the application and were sent a confirmation that the research project was approved. As per the approved application, and after the completion of an oral defense of the researcher's masters project, all data will be removed of off the MS teams account and destroyed. The data has been kept by the researcher and advisor on MS Teams and will be destroyed after the researcher's defense and graduation. At the time of the interviews, all participants were given the opportunity to review a summary of their responses and told they could reach out via email to the researcher with any additional questions they had. No participants have chosen to review their responses.

Throughout this chapter the methodology of the study was presented All components were discussed, which included the methodology of interpretive description, data collection, and data analysis. In addition to this, the ethical concerns were examined, and the approval was discussed.

Chapter 4: Findings

Throughout this chapter the demographics and interview findings will be discussed. A demographic questionnaire was given to all participants prior to interviews being conducted. Interviewing findings include one overarching theme of the *evolution of the role of the nurse within the interprofessional team*. *Evolution of the role of the nurse* within the interprofessional team is described by the ongoing change in perspective on how the nurse's role can be defined, as participants gained more experiences moving through their undergraduate programs. This evolution of the role of the nurse within the interprofessional team involves the change in participants' perspectives as moved through the program based on three steps.

These steps created a progression of the perspective that the participants developed as they moved throughout their program. Three subthemes create these steppingstones as the role of the nurse changes and grows (Figure 1). The first subtheme is *knowledge of roles*. *Knowledge of roles* describes the time spent in IPE, in which participants learned about their own roles and the roles of others. These role descriptions provided a general foundation for the development of the role of the nurse. The second subtheme is *confidence in practice*. This describes how the participants examined nursing and came to appreciate the profession. The last subtheme is *finding one's voice*. This includes participants' individual journey to understanding how they are situated within not only the interprofessional team, but the healthcare system. During this last subtheme, participants were able to continue their evolving perceptions of the role of the nurse. Occurring simultaneously, participants transitioned from receiving interprofessional education to being active participants in interprofessional collaboration. Throughout this chapter the data collected will be examined in relation to the research question posed, "How do undergraduate

students at the end of their nursing program perceive the influence of interprofessional education experiences on their understanding of the role of the nurse in the interprofessional team?”.

Demographics

Data was collected through a demographic questionnaire given to participants via email prior to the virtual interview. The demographic questionnaire consisted of questions on gender, age, ethnic background, healthcare employment as or prior to being a student, clinical placement rotations, clinical placement interactions with other professions, employment clinical interactions with other professions, and employment clinical areas or specialties.

Table 1: Participant Demographics

Characteristics	***Frequency***	***Percent***
Gender		
Male	3	21.4
Female	11	78.6
Age		
18-24	10	71.4
25-29	4	28.5
35-39	1	7.1
Ethnic Background		
Asian	4	28.6
Black	1	7.1
Indigenous	3	21.4
White	6	42.9

Table 2: Participant Practice Characteristics

Characteristic	***Frequency***
Healthcare Employment	
Healthcare Aide	9
Clerk	1
Undergraduate Nursing Employee	6
Camp Counsellor	1
None	1
Interactions During Clinical Placements	
Medicine	13
Pharmacy	13
Rehabilitation (Physiotherapy/Occupational)	11
Other (Radiology, Respiratory Therapy, Nutrition, midwifery, optometry, PA, SW)	5
Dentistry/Dental Hygiene	2
No response	1
Where Interactions During Clinical Placements Happened	
Long Term Care	5
Sub-Acute Medicine	9
Medicine	11
Surgery	10
Labour & Delivery	3
Pediatrics	3
Mental Health	2
Community	3
Rural Placement	4
No response	1
Employment Interactions	
Medicine	8
Pharmacy	8
Rehabilitation (Physiotherapy/Occupational)	8
Other (SLP, RTs, Homecare)	6
No response	5
Employment Interactions Clinical Area	
Long Term Care	4
Sub-Acute Medicine	2
Medicine	2
Surgery	6
Pediatrics	1
Palliative Care	1
Mental Health	1
No response	5

Interview Findings

Interview data was analyzed based on the research question, "How do undergraduate students at the end of their nursing program perceive the influence of interprofessional education experiences on their understanding of the role of the nurse in the interprofessional team?". Throughout this section the overarching theme of *evolution of the role of the nurse,* and subthemes of *knowledge of roles, confidence in practice,* and *finding one's voice* will be examined in relation to the interview findings.

In addition to the overarching theme and subthemes presented in Figure 1, participants underwent a parallel evolution. Participants transitioned from learners in IPE to active participants in interprofessional collaboration (IPC). Once all participants transitioned through the steps previously explored, they were able to attain collaborative practice.

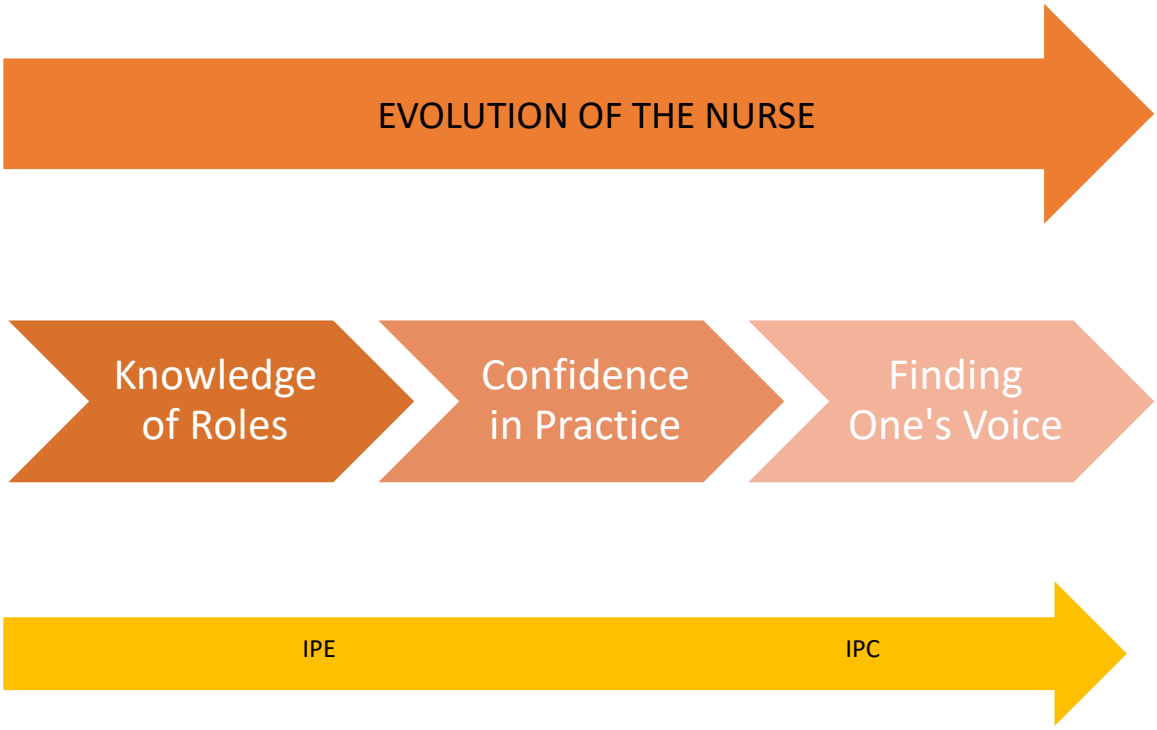
> As mentioned by one student*, "I feel like it helped me realize that to be able to give the best possible care everyone has to work together, it can't just be one person doing everything…. It's like the patients would ask the nurse for everything, but obviously the nurse can't do everything for the patient. So, seeking help from other healthcare professionals would really make the job of a nurse easier" (S14P3).*

By moving through the process of IPE to evolve one's perception of the role of the nurse on the interprofessional team, participants were able to use the *knowledge of roles, confidence in practice,* and *finding one's voice* to consolidate their understanding of collaborative practice and be an active participant. This is further evident by other participants.

> *"…Encouraging your nursing student…. to participate in the interprofessional activities is so important because you're learning how to work with others even in the small amounts each time you do it" (S13P8).*

The gradual development allowed participants to successfully move through the evolutionary process and accomplish collaborative practice.

Figure 1: Evolution of the role of the nurse



Evolution of Roles

This overarching theme is a trajectory and follows the participants' journey from receiving IPE and moving into collaborative practice. The *evolution of the role of the nurse* is described as the constant development of the understanding on what the nurse's role was within an interprofessional team. This was determined over the course of participants' entire undergraduate degree. As participants continued within their program, they gathered more experiences, in which their understanding of the role of the nurse evolved.

One student stated*, "Because we we're given scenarios and we're able to hear the different perspectives of students from different faculties, it helps kind of like solidify what being a healthcare team is all about" (S14P2).*

As previously mentioned, IPE was given to participants in many forms. These forms included all clinical experiences, simulation experiences, a fourth-year nursing course on interprofessional collaboration called Professional Foundations 5: Interprofessional and Collaborative Practice, and their time in the two-year multidisciplinary IPE program through the OIPC. Due to IPE offerings through multiple methods, participants had the ability to fully immerse themselves in as many forms of teamwork as possible.

IPE itself may not have been a known or well understood term for all participants but it merged with theory courses to help advance participants' understanding of concepts that were learned within their undergraduate program. It allowed them to experience these holistic care and team dynamics that formed more informative conclusions on what quality nursing care is. IPE gave participants an outlet to develop their understanding around the role of the nurse while providing safe patient-centered care which was ultimately the goal of the interprofessional healthcare team.

Overall, IPE consolidated not only concepts, but the creation of effective team dynamics. IPE activities aided participants in the understanding of an effective interprofessional team and the importance of team dynamics.

Noted by this participant, *"I think it really solidified how to reach out for extra supports and who to reach out for… it really ingrained in us that it is a team effort" (S6P2).*

Changing one's perspective from an individual lens to that of a team's, allowed participants to challenge themselves by engaging with other students to build towards the common goal of quality patient-centered care.

In addition to this, the learning activities during the IPE process gave participants the perspective that all professions within the healthcare team are also growing as they transition throughout their programs.

As one participant noted, *"…We're all developing as professionals, and that maybe made it a little less intimidating to talk to those professionals in reality…" (S9P2).*

IPE created a safe space for all team members, including undergraduate nursing students to learn and grow themselves, and their practice.

IPE gave participants the ability to develop themselves and their perspective on how they fit into a healthcare team. One participant describes the advancement of confidence in one's abilities due to IPE activities.

"But with like the IPC, it made me feel more confident and reassured that in the healthcare team everyone is pretty much willing to lend a helping hand. So, when I got to senior practicum obviously like throughout the years, I've gained more skills, I've gained more confidence" (S14P4).

Participants felt an increase in confidence from these activities, allowing them to find their own voice as they developed their own practice, and own perspectives. As seen through these three quotes, participants felt growth within themselves and their understanding of the role of the nurse in the interprofessional team.

Subtheme 1: Knowledge of Roles. *Knowledge of roles* describes the theoretical learning of role clarification or how the nurse was represented within interprofessional collaboration educational

activities. Participants felt they were given direct clarifications of what the healthcare system believed was the textbook answer for how nurses interact with other healthcare professionals. Knowledge of roles created a space for students to define, interpret, and implement their own understanding of allied health roles and nurses' position within the interprofessional team

As noted by this participant, *"It [IPE] can clarify what others do and don't… if you're reading online about what a professional can or can't do, or you're doing a case study that's specific to one situation … but that's an aspect of starting the process of role clarification that can clarify what's only your job versus what is potentially overlapping or belonging to somebody else. I think that understanding other's roles can help you understand your own role as well" (S3P2).*

Boundaries and blurring between varying professional competencies could have made the learning process of interprofessional team work more difficult, but IPE learning activities outlined these roles and highlighted similarities and differences adequately, allowing for a collaborative leadership perspective on care

"I would say the one that resonated with me more [when asked about the CIHC's competencies] was collaborative leadership, which to me, means when each different specialty takes part, when we need their expertise regarding a certain case. And I definitely saw more of that in my work" (S8P3).

Participants were given the ability to use the role clarification of other professionals to formulate a better understanding of their own professions. Using learning activities involving other health professionals, participants were able to piece together their own understanding of the role and scope of the nurse within the interprofessional team.

As described by one participant, *"…what stood out to me was these were professionals that have been doing their jobs for a while. … they know exactly what their scope was, and they knew how nursing fit into that scope, and what our role as nurses should be when working with these other disciplines. So, for me to have it very clearly defined like that, was really helpful" (S11P2).*

Hearing the role of the nurse within an interprofessional team changed participants' perspectives on how the nurse fit into the team, by giving them an understanding on how others viewed nurses and the role of nursing through an interprofessional lens. Having the initial understanding and foundation of role clarification allowed participants to explore interprofessional relations more as they moved through the program.

As one participant noted, *"Knowing when to rely on the expertise of someone else and being comfortable doing that … though you do have some knowledge about it, there's always someone that's more experienced with in, that you can always ask questions" (S8P1).*

Participants saw nurses as equal team members, not only through advancement of communication skills, but through the exchange of knowledge. This was foundational for building better team dynamics.

Using these role definitions, participants knew when to implement and incorporate interprofessional collaboration during their senior practicum and in their current nursing practice.

As described by one participant, *"Sometimes things come up in conversation and in your assessments, where you're like, "Oh, you know what, I think we could benefit from interprofessional involvement here" … it's kind of like transparency of duties and responsibilities" (S11P6).*

Interprofessional learning activities produced a space in which all participants could gain a clear perspective on team dynamics and competencies of each program. This clarity allowed all team members to feel equally heard and respected.

Subtheme 2: Confidence in Practice. *Confidence in practice* involves how participants felt about the nursing profession. Their appreciation for the profession and confidence as a nurse grew throughout their educational experiences. There was an overall sense of growth amongst all participants. This aligned well with their perspectives of the evolution of the role of the nurse on the interprofessional team. Through their interprofessional learning activities, participants partially felt others respected complexities surrounding the role of the nurse within the interprofessional team, especially through their understanding of how nurses collaborated. As previously mentioned, respect was a highly valued quality when learning how to communicate. Once participants felt they communicated well with others, they felt more confidence within the nursing profession, feeling more valued for their knowledge and skillset.

> As one participant conveyed*, "I definitely do see myself as the liaison as a nurse, between a lot of the specialties during rounds… we're kind of responsible for letting all the other professionals know … what information may be valuable to them. I think everyone kind of takes a bit of wisdom from each other" (S1P3).*

As seen here, as participants gained not only new experiences, but new communication skills and confidence of themselves and the nursing profession, they began to describe in words the role of the nurse within the interprofessional team.

Dismantling prior beliefs of the hierarchy within healthcare, in which nurses resided at the bottom of the pyramid, allowed participants to gain confidence in their own profession as healthcare leaders, and what it represents. IPE learning activities became very advantageous for

undergraduate nursing students who had more clinical exposure than most other students in other health care faculties.

As seen by this participant, *"... the activities were very bio-medical focused, and because nursing students at the point were pretty much the only interprofessional team member who had clinical experience…. I almost felt nurses were heavily leaders, even when it came to stuff that the doctors would have been leading in" (S9P2).*

This experience not only allowed participants the space to build upon their confidence and communication skills, but it allowed them to establish and define the role of the nurse as a leader within the interprofessional team.

Throughout this process, many participants felt there was no longer a practice gap between nurses and other professionals. This led them to the belief all healthcare professionals, including nurses, practiced on an equal level, which was to be respected.

> This includes a story one participant told*, "... during my senior practicum, we had some U of M students in their surgical rotation. And one of them was very, she expressed a lot of anxiety and concern and just asked me the question…. "How does your communication change when you're talking with a doctor as opposed to another nurse?" and I basically said, "it doesn't". It really doesn't. I talk to them as if I talk to anybody else. And she was actually really surprised by that" (S11P7).*

As seen by this story, participants were able to dismantle prior beliefs of inequality amongst healthcare team members, allowing them to provide their own perspectives on the dynamics of a team, and the positionality of the nurse within the healthcare team.

Subtheme 3: Finding their Voice. Through the IPE experiences, participants felt immense growth within themselves. As participants progressed through their undergraduate programs and

gained more IPE experience, they developed their professional communication techniques and confidence in their nursing practice. One participant noted their growth was developed from understanding their own role and the knowledge nurses acquire and provide to other professions.

> *"And knowing what I bring, also like, that interprofessional communication skills, knowing what I bring to the table during our round tables, when we're having rounds. Knowing my profession brings this, this profession brings to the table, so that skill, and having that confidence would be something that I definitely learned from those activities" (S8P2).*

To increase their understanding of how nurses fit into the team, participants had to first understand nursing knowledge and develop confidence in applying that knowledge within the interprofessional team. To some participants, confidence was determined over time, and was based within developing confidence of the nursing profession, prior to determining their views on nurses' roles, or their own.

Teamwork and developing relationships with team members were concentrated on by some participants. The development of teamwork was dependent on the development of trust. IPE provided a space for these relationships to develop and for trust to be built. Trust became foundational in forming perspectives on patient care and how participants felt they fit into the team providing patient-centered care efficiently. Trust allowed participants to grow in their confidence in themselves, grounding them on their path to becoming practicing nurses.

As one participant notes, *"… like the more practice you have, the better you get working with a team and kind of building that trust with individuals. Because I feel like that's a big one, like developing trust that your things are going to get done, your assignments especially one – or like patient" (S13P4).*

IPE experiences, as well as many experiences within the undergraduate nursing program, was influential of the development of trust and finding's one place within the interprofessional healthcare team. With nursing being multi-faceted, there are many skills participants felt nurses had to master, but confidence was the most obvious and learned skill. Confidence in oneself was not the only confidence participants had to gain, but confidence in communication skills. In addition to this, confidence in oneself primarily stemmed from increased confidence in communication with other professionals.

As one participant mentions, *"…there's a lot of communication obviously, so I have maybe a lot of communication tools… I have become a lot more comfortable within the team… it can be very intimidating… so I found the little exercises that was done in the OIPC, speaking with other healthcare professionals who are obviously at different stages of their program than I was, I found that to make it a little less daunting" (S1P3).*

As noted here, IPE provided a safe environment to develop and learn these skills, allowing participants to confidently communicate with other students in health care professions, giving them a template on interprofessional conversations for future practice.

Communication became foundational for more efficient teamwork and enhanced participants' understanding of themselves and the role of the nurse on the interprofessional team. Effectiveness of communication skills allowed participants to think more robustly about the role of the nurse within the interprofessional team and how the nurse was viewed by other team members.

As noted by this participant. *"… good communication means that whatever I'm saying to another person is being comprehended that way I wanted it to be*

comprehended… it also means respect to me. If I'm a patient, good communication means that the healthcare professional understands my healthcare wishes…" (S14P1).

Through this participant's perspective, respect is equated to the understanding of each other through efficient communication, and development of relationships and roles. Through these developments, participants grew professionally.

Understanding and then implementing this during practice, allowed some participants to continue to grow throughout their final practicum. Seeing the growth within themselves, allowed them to link the improvement in communication and confidence in practice to them finding their own voices.

As one participant described, *"… When to consult someone, when to consult another healthcare professional, knowing when to – having the confidence… to reach out to them, to kind of get more understanding would be this one big skill." (S8P2).*

Confidence in oneself and confidence in one's profession aligned with the increased confidence in communication. IPE learning activities generated a space for one to do so at a steady and stable pace.

These three subthemes, *knowledge of roles, confidence in practice,* and *finding one's voice,* allowed the participants to develop their understanding of the role of the nurse within the interprofessional team. Based on these interview findings, there is no definitive answer to how IPE changed or influenced undergraduate nursing students' perspectives on the role of the nurse within the interprofessional team, but their perspectives are ever-changing and develop as they gain more experience and education. These perspectives use IPE as a foundation, allowing participants to transition and become active team members within collaborative practice and take on the role themselves, as the nurse within an interprofessional team.

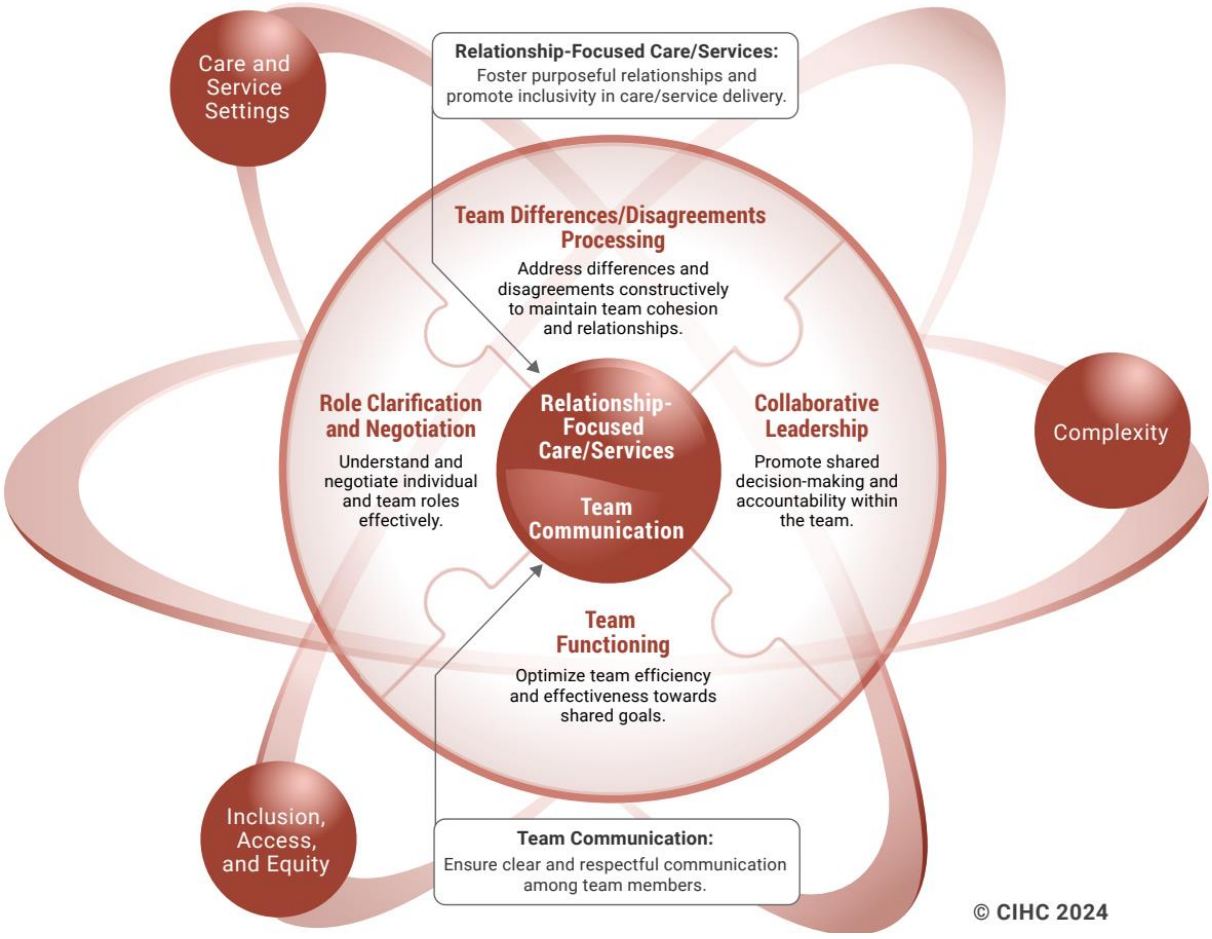
Chapter 5: Discussion

Throughout this chapter, the results of chapter four will be interpreted and linked to current literature. The purpose of the study was to understand how IPE influenced undergraduate nursing students' perceptions on the role of a nurse within an interprofessional collaborative team, as they transition from a student to a registered nurse. The research question was, "How do undergraduate students at the end of their nursing program perceive the influence of interprofessional education experiences on their understanding of the role of the nurse in the interprofessional team?". As per the findings, the overarching theme was the *evolution of the role of the nurse* within the interprofessional team. Three subthemes allowed for this progression. These subthemes were *knowledge of roles, confidence in practice,* and *finding one' voice.* As participants moved throughout their program and developed their perspectives on the role of the nurse, they also moved from learning IPE to actively using IPC. Within this chapter, knowledge of roles, communication, confidence, implications of the study, limitations of the study, and this study's recommendations and impact on future research will be discussed.

As per WHO (2010), collaborative practice is achieved when multiple health workers from different professional backgrounds provide comprehensive services by working with patients, their families, carers, and communities to deliver the highest quality of care across settings. As seen through the findings, collaborative practice was achieved by participants commencing their journey with IPE, moving through gaining the *knowledge of roles, confidence in practice, and finding one's voice*. This gives evidence to the WHO's (2010) claim that IPE is a precursor to collaborative practice and is foundational to its development. Following the data collection for this study, the CIHC released a new framework, the *Framework for Advancing Collaboration 2024*. This framework also presents the role of interprofessional education as a

link to attaining successful collaborative practice. As seen in figure 3, the process in which IPE leads to collaborative practice, highlights the major steps in which participants can effectively reach collaborative practice. This visualization can be used as a framework within future research and IPE implementation to help ensure collaborative practice can be met.

Figure 3: Canadian Interprofessional Health Collaborative (CIHC) *Framework for Advancing Collaboration* 2024



The new CIHC framework was published in 2024 and involves similar competencies to the 2010 version referenced throughout this paper. The current framework focuses on advancing collaboration further by using the competencies of role clarification and negotiation, team functioning, team differences and disagreements processing, and collaborative leadership (CIHC,

2024). These competencies are supported through relationship-focused care/services and team communication (CIHC, 2024). Some additional considerations noted include inclusion, access, and equity, complexity, and care and service settings (CIHC, 2024). In both the 2010 and 2024 CIHC frameworks, communication amongst team members was highlighted as fundamental and principal competencies which strengthen collaboration and generated more effective patient-centered care.

As seen in the previous chapter, this study has yielded results that comprise the process in which IPE influences undergraduate nursing students' perspectives on the role of the nurse within the interprofessional team setting. As students engaged in IPE, they were learning more about roles of varying healthcare providers, including their own. As per the CIHC (2010), the competency of role clarification can be defined as, "Learners understand their own role and the roles of those in other professions and use this knowledge appropriately to establish and achieve patient/client/ family and community goals" (p.12). To achieve this, the CIHC recommends IPE activities or programs commit to recognizing diversity, performing one's own role in a culturally respectful manner, communicating roles, describing your own role to others, and learning to consult other professions based on their role descriptions (CIHC, 2010).

Role clarification is often the most recognized competency of IPE, allowing students to meet the competency (Kleib et al., 2021). Defining one's own nursing role may be difficult based on practice setting (Aase et al., 2021). Instead of describing a concrete definition or description for the role, it has been beneficial for IPE activities to present real or simulated experiences in which students can experience situations in which nurses perform their role and students can generate their own understandings of the role of a nurse (Aase et al., 2021; Furr et al., 2020; Stewart et al., 2019).

As previously mentioned within the literature review, the knowledge behind role clarification could also be attained by appreciating other professions. Working with students from other healthcare professional programs can allow students to build rapport, kinship, and overall appreciation for that profession and its members (Dennis et al., 2017; Fawaz & Anshasi, 2019; Furr et al., 2020). In addition to this, during IPE activities nursing students may see difficulties nurses faced on the care team, which may include, but is not limited to, feeling undervalued as a member of the team due to varying medical knowledge and differences in program lengths (Furr et al., 2020). Role clarification may combat and may deconstruct embedded hierarches that exist within educational and healthcare systems around nursing students and other healthcare professions (Aase et al., 2021; Furr et al., 2020; Lim & Noble-Jones, 2018; Shorey et al., 2018; Visser et al., 2017, Zenani et al., 2023).

Participants highlighted the learning about roles as a foundational aspect of the IPE to IPC transition, as well as the foundation to their growth and their understanding of the role of the nurse within the interprofessional team. As noted within the findings, participants found making clarifications on the theoretical role, and the skills involved, of health care professionals, including nurses, allowed them to participate better within IPE activities. This allowed them to improve on themselves professionally and that their understanding of the role of the nurse has changed as they themselves have journeyed throughout their undergraduate program and engaged in IPE through multiple forms.

To aid in dismantling any prior hierarchical beliefs about relations between healthcare professionals, confidence in one's own profession can be beneficial. This was presented by participants, as they highlighted being confident in the nursing practice as an important element of the process to become an active participant in IPC. Confidence within one's discipline is

strengthened through IPE activities by the repetition of constantly performing within these activities (Furr et al., 2020; MacLeod et al., 2021; O'Carroll et al., 2012; Visser et al., 2017). Undergraduate nursing students have found it easier to communicate and participate in IPE activities when they felt heard by their team members (Furr et al., 2020; Mahmood et al., 2021; Shorey et al., 2018; O'Carroll et al., 2012; Visser et al., 2017). With assurance in one's own career, the team can freely function optimally and perspectives on care goals can be equally shared (CIHC, 2010).

Communication has been a foundational structure within IPE to uphold the roots of collaborative practice. As per the CIHC (2010), communication consists of, "learners/ practitioners from different professions communicate with each other in a collaborative, responsive and responsible manner" (p.3). Communication has been a constant competency in both the literature review and the study's findings. Increased communication is a primary factory of multiple IPE activities and programs (CIHC, 2010; WHO 2010). Increased communication is a precursor for increased patient safety, patient satisfaction, and nurse-patient rapport (Homeyer et al., 2018; Keiser et al., 2022; Zenani et al., 2023).

Communication techniques have been used by multiple IPE programs as a tool to guide students on how to better facilitate communication. An example of this is SBAR (Agency for Healthcare Research and Quality [AHRQ], 2019). SBAR is an acronym for describing the situation, background, assessment, and recommendation of a patient's condition, commonly used between a nurse and a physician (AHRQ, 2019). This tool is widely used by multiple healthcare professionals and taught in varying undergraduate nursing programs. Increased communication provides an avenue for undergraduate students to develop not only their communication skills, but their overall confidence in themselves and their profession by finding their voice and

understanding how they themselves fit in as a valued member of the interprofessional team (Lucas et al., 2020; MacLeod et al., 2021; Zenani et al., 2023). These actions lead to the common goal of IPE, collaborative practice. Throughout the findings, the participants referred to communication as a precursor for gaining confidence in nursing practice, in addition to participants growing individually. This was presented through their personal growth in finding their own voice. This aided in their transition from IPE into IPC.

Recommendations for Future Research

It is recommended for more research to be done in this area with a focus on the perspectives of other health professions. Students, or new graduates, in programs like medicine, pharmacy, physical therapy, occupational therapy, and respiratory therapy, can be explored using a similar research design. The focus of such a study would be the understanding these participants have of the role of the nurse within the interprofessional team, and how their IPE experiences influence this. There would also be a focus on communication amongst the participants and nurses, or nursing students. This may yield a better understanding on how the role of the nurse on the interprofessional team is perceived and reflects on team dynamics and functioning.

Recommendations for Future Nursing Practice and Education

These findings may be foundational to future research on this topic. Since participants needed to know their own roles prior to engaging with others, it is recommended there be a course on professional roles and interprofessional dynamics prior to undergraduate healthcare students engaging with each other. This may alleviate some stress that undergraduate students have on not understanding or knowing what their peers do. As per WHO (2010), it is beneficial to implement IPE programs earlier in post-secondary educational programs but there does have

to be a shared knowledge and a foundational understanding of each other's roles. This recommendation aligns well with the CIHC's 2010 framework for effective collaborative practice. This is further evident by a scoping review by Nagel et al. (2024), in which interprofessional practice may be amplified through experiential learning once students grasp the theoretical foundations of interprofessional education.

Limitations of the Study

There are two limitations to consider. The first limitation is the small sample size. A smaller sample size may not yield a wide variety of experiences. This would then not catch the essence of the research question. Although the sample was adequate, within multiple interpretive description designs using similar sizes, a larger sample size may have elicited more perspectives.

The second limitation is participants may have had additional healthcare educational experiences prior to the undergraduate nursing program at the University of Manitoba. Although the demographic questionnaire did ask about previous career experiences within healthcare, some students may have taken additional post-secondary coursework prior to entering the nursing program. Prior to entering the University of Manitoba's Bachelor of Nursing program, students may have taken multiple years of pre-requisite coursework, that may have impacted their perspectives on interprofessional teamwork within the healthcare system. This may influence the overall team functioning or dynamics during interactions and engagement with other healthcare professionals.

Conclusion

Throughout these five chapters, the study at hand was completed, analyzed, and examined. The purpose of the study was to understand how IPE influenced undergraduate nursing students' perceptions on the role of a nurse within an interprofessional collaborative

team, as they transition from a student to a registered nurse. The research question was, “How do undergraduate students at the end of their nursing program perceive the influence of interprofessional education experiences on their understanding of the role of the nurse in the interprofessional team?”. This question yielded results which included a broad theme of the evolution of the role of the nurse within the interprofessional team. As seen through the interview findings, IPE does influence how undergraduate students perceive the role of the nurse on the interprofessional team. There was no answer regarding what the role was, or which IPE activity changed or influenced undergraduate nursing students’ perspectives on the role of the nurse within the interprofessional team. Participants’ perspectives grew and developed as they acquired more interprofessional educational experiences.

Through the combination of classroom, simulation, and clinical experiences, nursing participants described an evolution of their role as a nurse within the interprofessional team. Through the subthemes of *knowledge of roles, confidence in practice,* and *finding one’s voice,* these participants achieved the transition from receiving interprofessional education to becoming active members of collaborative practice. From these findings, these study results can be used within future research and development of IPE programs and activities, especially for undergraduate nursing students.

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Appendix A

Interview Guide

Thank you for agreeing to participate in this research study. As a reminder, the purpose of this study is to explore nursing students' perspectives of their interprofessional education experiences and the influence these experiences have had on your understanding of the role of the nurse in the interprofessional team. Throughout your nursing education at the University of Manitoba, you've received interprofessional education from the time spent in clinicals, simulations, Professional Foundations 5: Interprofessional and Collaborative Practice, and through activities with the Office of Interprofessional Collaboration's Program. With the following questions, I'll ask you to reflect on these experiences.

1. In terms of your learning about interprofessional collaboration, what key things stood out the most for you and why?
    a. Tell me more about which interprofessional education activities that you felt contributed the most to your learning?
    b. What specific skills do you think you have you achieved as a result of these learning activities?
    c. How have these activities impacted how you see interprofessional teamwork within healthcare? If they have not, why not?
    d. How have these activities changed how you view the role of the nurse on the interprofessional team? If they have not, why not?
2. With regards to the skills that you mentioned you learned in the interprofessional activities, how were you able to apply these in the clinical practice setting?
    a. Please provide me with some examples.

i. If you could not, why do you think this was?

3. What do you believe is the most important competency or competencies that promotes the role of the nurse in the interprofessional team?

   a. Please explain your answer.

   b. (If they do not recall, you can list them) – interprofessional communication, patient centred-care, role clarification, team functioning, collaborative leadership and interprofessional conflict resolution.

4. Other than focusing on the role of the nurse, what are any other major learning experiences from your interprofessional education that has impacted the way you practice?

Appendix B

Demographic Questionnaire

Demographic Questionnaire

1. **What is your age?**
   a) 18- 24
   b) 25-29
   c) 30-34
   d) 35- 39
   e) 40-44
   f) >45

2. **To what gender to you choose to identify as?**
a) Woman
b) Man
c) Transgender
d) Other
e) Prefer not to say

3. **Thinking about your background, do you consider yourself:**
   a) Asian
   b) Black
   c) Indigenous (Inuit, Métis, First Nations)
   d) Middle Eastern
   e) Latin American
   f) White
   g) Other: please specify _____

4. **Please select from the list below any previous employment you might have worked in where you worked with other health professions (select all that apply):**
   a) Health care (e.g., LPN, international nurse, health care aid, counsellor): please specify _____
   b) Undergraduate Nurse Employee (UNE)
   c) Other: please specify _____
   d) None

1) **In your clinical rotations as a nursing student, have you interacted with other health professions?**
   a) Yes

      If yes, which disciplines did you interact with (check all that apply)
      ☐Dentistry/dental hygiene
      ☐Medicine
      ☐ Pharmacy
      ☐ Rehabilitation Sciences (Physiotherapy/Occupational Therapy)
      ☐ Other (please specify): _____

      If yes, which clinical area did you interact with other health professionals? (Check all that apply):
      ☐Long term care
      ☐Sub-acute medicine
      ☐Medicine
      ☐Surgery
      ☐Labour & Delivery
      ☐Pediatrics
      ☐Palliative Care
      ☐Mental Health
      ☐Community
      ☐Rural placement

   b) No

2) If you checked YES to number 4, please answer the following. In your employment outside of being a nursing student, have you interacted with other health profession?
   a) Yes

      If yes, which disciplines did you interact with (check all that apply)
      ☐Dentistry/dental hygiene
      ☐Medicine
      ☐Pharmacy
      ☐Rehabilitation Sciences (Physiotherapy/Occupational Therapy)
      ☐Other (please specify): _____

      If yes, which clinical area did you interact with other health professionals? (Check all that apply):
      ☐Long term care
      ☐Sub-acute medicine
      ☐Medicine
      ☐Surgery
      ☐Labour & Delivery
      ☐Pediatrics
      ☐Palliative Care
      ☐Mental Health

☐Community
☐Rural placement

b) No

Appendix C

Consent Form

Title of Study: Perspectives on the Role of the Nurse within the Interprofessional Team from Senior Practicum Nursing Students Who Received Interprofessional Education

Principle Investigator: Hannah Mohammed, RNBN, BA (Hons)

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This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something

mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Purpose of this study

The goal of this research study is to explore senior practicum nursing students' understanding of the nursing role within the interprofessional team and their experiences of the interprofessional education they received in the undergraduate nursing curriculum.

Study procedures

Interviews will be conducted on UM licensed Zoom. Interviews will only take an hour of your time. The interviews will be audio recorded using the UM licensed Zoom platform and then transcribed. Transcription will be conducted by the researcher and Transcription Heroes, a company that will transcribe the interviews files. Once transcriptions are complete, member checking may be done. Member checking will be conducted by the PI, Hannah Mohammed, reaching out to participants who may want to review the transcript to review the interview transcription. This will take place during a second interview if they would like to. The second interview will only take a few minutes, at most half an hour. This will take place a month after the initial interviews if it is needed. The audio files will be deleted once the transcripts are verified by the PI and advisor. Participation within this study is voluntary.

Risks and Discomforts

There are no risks associated with participating in this project. During the interviews, you can choose not to answer any questions that may make you feel distressed.

Benefits

The benefit of this study is to help understand the perspectives of nursing students on the undergraduate interprofessional education they received. The results may be used by educators to

provide a focused review into the IPE perspectives of undergraduate nursing students, allowing them to use results as evidence to make possible changes to the IPE curriculum based on the evidence provided.

Compensation

Participants will be given a $50 gift card to Amazon. Participants will still receive and keep the gift card if they decide to withdraw.

Costs

There is no cost to you to participate in the interview.

How will the information that you provide us be used?

Confidentiality

Demographic questions will be asked, but your name will not be used. Direct quotes will be used within the final project, but a pseudonym will be used, for example “student 1” or “student 2”. You can choose not to answer the demographic questions. Audio files will be sent to Transcription Heroes, a transcription company that will sign a confidential agreement. Once the transcripts are verified, the audio files will be deleted.

Your name and contact information will be kept on MS Teams, in which the researcher and the primary advisor would have access. All transcripts, recordings, and consent forms will be kept until after the researcher’s thesis defense and destroyed in June 2024.

Voluntary Participation/Withdrawal from the Study

Participation is voluntary. You can withdraw at any time, whether it be my email or during the interview process. This includes before or after the interview process. To withdraw, please contact Hannah Mohammed at Hannah.mohammed@umanitoba.ca. Withdrawal can take place

up until the data will be analyzed and the project will be written, by October 2023. You can decide to not answer questions during the interview process.

Dissemination and Results

Since the results are part of a thesis project, results will be written and presented to the advisor and committee members, then disseminated at any nursing research symposiums or nursing education conferences in 2024. Results will be available by January 2024 and can be emailed to you if you choose to receive it.

Questions

If any questions come up during or after the study, contact Hannah Mohammed, email: Hannah.mohammed@umanitoba.ca

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Research Ethics Board at the University of Manitoba, Fort Garry campus. If you have any concerns or complaints about this project, you may contact any of the above-named persons or the Human Ethics Officer at 204-474-

7122 or HumanEthics@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

I would like to receive a copy of the results: ☐ Yes ☐ No

Participant printed name: _____ Date _____

(day/month/year)

Participant signature: _____

Researcher and/or Delegate's Signature: _____ Date: _____

Appendix D

Recruitment Poster