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A Comparison of Interprofessional Collaboration Competencies Among Newly Licensed Registered Nurses

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This is to certify that the doctoral dissertation by

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has been found to be complete and satisfactory in all respects,
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Abstract

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MSN, Walden University, 2014

AS, Ridgewater College, 2011

Dissertation Submitted in Fulfillment

of the Requirements for the Degree of

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Abstract

Nursing students who are provided interprofessional education (IPE) with students from other professional education programs develop interprofessional collaboration competencies (IPCCs); however, not all nursing programs provide this IPE experience despite the World Health Organization and the IPE Collaborative (IPEC) promoting IPCCs for nurses upon entering practice to improve health outcomes. The purpose of this quantitative, comparative, descriptive study, guided by the IPEC framework for collaboration competencies, was to determine whether there are self-reported differences in IPCCs among nurses who graduated within the past 3 years from learning institutions that provide IPE with multiple health care professional programs and those who graduated from learning institutions that provide IPE with silo nursing programs. A sample of 101 newly graduated nurses (NGNs) responded to the IPEC competencies self-assessment survey that measured IPCCs in the two domains of interprofessional values and interprofessional interactions. A Mann–Whitney U test revealed a significant mean difference in interprofessional interactions (mean rank 65, $U = 635$, $p < 0.01$) for NGNs from schools with IPE with multiple health care professional programs compared to schools with only nursing programs (mean rank 43). No significant differences were seen among the interprofessional values domain for the two groups. Future studies may compare results of the current study with larger populations or with nurses in practice. The results of this study promote positive social change by encouraging nursing programs and health care organizations to create partnerships to increase IPE interactions and thereby improve health care outcomes.

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Dedication

I would like to dedicate my dissertation to God, my mother, Irma Sletten, and people with disabilities and chronic illnesses who have made it possible for me to complete this dissertation. God is my source of strength which has made this possible. The words of encouragement and prayers from loved ones and friends have helped me complete this dissertation.

My mother has instilled a love for education. There is always something new to learn and someone to share your knowledge with. Although my mom passed away many years ago, her passion for education and encouragement for lifelong learning continues to inspire me.

Many years ago, before I was a nurse, Irma Sletten told a coworker who was bullying me that one day she would need to address me as a doctor in nursing. On days when I am discouraged or wondering if this is the path for me, I am reminded of this patient. Former coworkers remind me of that day when I need encouragement.

People with disabilities and chronic illnesses are a reminder of the need for interprofessional collaboration that they may have increased quality care across the health care continuum through improved interprofessional collaboration.

Acknowledgments

I would like to thank Dr. Long for the countless hours of mentoring and encouraging me through my dissertation.

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Chapter 1: Introduction to the Study

As health care changes and patients have increasingly complex needs, nurses need to be competent in interprofessional collaboration (IPC) to provide safe and effective quality care (Moss et al., 2016). IPC provides high levels of quality care as nurses work together with multiple professionals in various disciplines in the healthcare setting (World Health Organization [WHO], 2010). The Interprofessional Education Collaborative (IPEC; 2016) developed four interprofessional competency domains to help with IPC: values for interprofessional practice, understanding the roles and responsibilities of various health care professionals, having effective communication, and effective teamwork. The Institute of Medicine (2010) and IPEC (2016) recommended IPC competencies (IPCCs) for entry level nurses to improve patient outcomes including interprofessional interactions and interprofessional values.

Interprofessional education (IPE) is a collaborative education method incorporating students from multiple health care professional programs, allowing for an exchange in interprofessional communication and teamwork interactions learning to value interprofessional practice and understand health care professional roles and responsibilities which can improve health outcomes (WHO, 2010). The American Association of Colleges of Nursing (AACN; 2016) advocated for nursing programs to find ways to provide IPE. However, little research has been conducted in the past to identify strategies needed to improve IPE in learning institutions, especially programs where only one health care professional program is present. Research is needed on entry level IPCCs in health systems and higher education settings to gain insights on how to

improve IPE in academic institutions as well as continued IPE in health care practice settings (IPEC, 2016; Ketcherside et al, 2017). Academic nursing programs and clinical practice settings can improve their IPE through first knowing the IPCCs of their newly graduated nurses (NGNs). Improved IPE may promote positive social change within the health system by helping NGNs learn to collaborate with other health care professionals during the provision of patient care. In this study I examined the IPCCs of NGNs who graduated within the past 3 years from associate degree nursing (ADN) and Bachelor of Science Nursing (BSN) programs where nursing was the only health care professional program who participated in IPE and compared the IPCCs of the NGNs who graduated from ADN and BSN programs that participated in IPE with students from multiple health care professional programs. The information from this study may help fill the IPE gap in the literature by showing the difference in IPCCs between graduates of nursing programs where IPE was taught with multiple health care professional programs and where IPE was taught with only nursing. The study results may also improve nursing practice as nurses become more educated on the need for IPE in academic settings and improving IPE in clinical practice settings.

This chapter will introduce the need to study IPE among NGNs within the past 3 years and summarize the background of related research literature. The problem will be stated prior to discussing the purpose of the study and research question and hypothesis. This chapter will also state the framework of the study including the nature of the study, definitions of terms, assumptions of the study, scope and delimitations, limitations, and significance of this study.

Background

The WHO (2010) challenged healthcare organizations and learning institutions to collaborate on interprofessional education to ensure healthcare professional students are ready to effectively participate in interprofessional collaboration when they enter practice. The IPCCs were therefore developed to improve IPC and in so doing to improve population health across all healthcare disciplines and settings (IPEC, 2016). IPE and IPCCs have been a focus in educational settings and have been greatly researched among learning institutions; however, research is lacking in the practice setting. Continued research is needed to improve quality care and practice by comparing IPE effectiveness and determining if NGNs who were educated in programs where IPE was practiced with multiple health care professional students have higher levels of IPCCs than nurses who participated in IPE with only nursing. There is also a lack of research on IPCCs among NGNs. Understanding the IPCCs of NGNs can help learning institutions understand how to improve IPE, and practice settings can understand how to provide further IPE to improve patient outcomes (Cox et al., 2016; Peterson & Morris, 2019). Further, there is a gap in knowledge of IPCCs differences between those who graduate from institutions with IPE with other health care professional students compared to IPE with only nursing. Research is needed on strategies to improve IPE in learning institutions as well as evaluations of IPCCs in health care organizations (Ketcherside et al., 2017).

This study will help fill the IPE gap in the literature by examining IPCCs between nursing programs and nursing practice. I examined the effectiveness IPCCs of NGNs who graduated within the past 3 years from ADN and BSN programs. Possible strategies

for improving IPE in learning institutions with only nursing (silo nursing IPE programs) would be to create partnerships with local health care organizations to do simulations with other health care professional programs (Hepp et al., 2015). The results of my research may help provide learning institutions evidence to support IPE, whether the IPE occurred with interprofessional students from other health care professional programs or with interprofessionals currently in practice. Practice settings can improve IPC by incorporating IPCCs into simulation objectives.

Problem Statement

IPC greatly improves health outcomes (Institute of Medicine, 2010; WHO, 2010). IPCCs among NGNs are needed to increase positive health outcomes in the increasing complexity of patient needs. However, many learning institutions and practice areas lack programs that include collaborative IPE, which leads to the lack of knowledge of IPCCs among NGNs in practice settings (Cox et al., 2016). Further, little is known about the IPCCs of NGNs within three years past their graduation, and less is known about whether graduates of silo nursing programs lack IPCCs. IPCCs are frequently studied in education; however, there is a lack of research on IPCCs related to NGNs. Filling this gap can help learning institutions make necessary adjustments to improve IPE in learning institutions. Practice settings would also gain from knowing the IPCCs of NGNs to provide further education on interprofessional collaboration to improve patient outcomes (Cox et al., 2016). There is a further gap knowing IPCCs differences between those who graduate from learning institutions that provide IPE with other health care professional students compared to IPE with silo nursing programs (Ketcherside et al., 2017). The

results of this study are needed to continue to improve IPE in learning institutions and to increase IPCCs in practice settings.

Purpose of the Study

The purpose of this quantitative study is to compare the self-reported differences in IPCCs for both interprofessional interactions (communication and teamwork) and interprofessional values (roles and responsibilities of health care professionals) among NGNs who graduated within the past 3 years from learning institutions that provide IPE with multiple health care professional programs and those who graduated from learning institutions with that provide IPE with silo nursing programs. I specifically compared interprofessional values and interprofessional interactions competencies against the type of IPE among NGNs who entered practice within the past 3 years. Therefore, the independent variables are the types of IPE programs. The dependent variables in this study are the IPCC scores which are obtained from an instrument designed to measure IPCCs for interprofessional interactions and interprofessional values.

Research Question and Hypotheses

Research question: What is the self-reported difference in IPCCs among NGNs who graduated within the past 3 years from learning institutions that provide IPE with multiple health care professional programs compared to those who graduated from learning institutions with silo nursing programs?

H_o: There will be no difference in self-reported IPCCs among NGNs who graduated within the past 3 years from learning institutions that provide IPE with

multiple health care professional programs compared to those who graduated from learning institutions with silo nursing programs.

H_a: There will be a difference in self-reported IPCCs among NGNs who graduated within the past 3 years from learning institutions that provide IPE with multiple health care professional programs compared to those who graduated from learning institutions with silo nursing programs.

A comparative analysis was used to determine if there was a difference in IPCCs based on IPE with silo nursing programs and multiple health care professional programs. The IPEC Competency Self-Assessment Survey was used to measure participants' IPCCs using a 5-point Likert scale (Lockeman et al., 2021). I chose to use this survey as it is a self-assessment designed to provide institutions with information about IPCCs to determine the gaps in IPE.

Theoretical Framework

Collaboration competencies and IPE are two main concepts that grounded this study. The conceptual frameworks from WHO (2010) and IPEC (2016) were used to inform this research by providing the framework for IPE and collaborative practice that guides practice. WHO and IPEC created the framework that the AACN and American Organization of Nurse Executives use as an IPE guideline. I used the IPCCs values and respect of health care professional roles, understanding the roles and responsibilities of health care professionals, effective communication, and teamwork to determine the results of IPE during undergraduate nursing programs among NGNs (IPEC, 2016; WHO, 2010). The IPEC Competency Self-Assessment Survey divides the IPEC competencies

into two groups interprofessional interactions (communication and teamwork domains) and interprofessional interactions (understanding and valuing the roles and responsibilities of health care professionals) (Lockeman et al., 2021). A more thorough explanation of key elements is provided in Chapter 2.

Nature of the Study

For this study, I examined the self-reported difference in IPCCs scores between NGNs who graduated within the past 3 years prior to the beginning of this study. Participants who graduated from learning institutions that provide IPE with multiple health care professional programs were included in the study and compared to participants those who graduate from learning institutions that provide IPE with silo nursing programs. The study used a convenience sampling strategy with a causal comparative design to examine the difference in IPCCs between graduates of IPE in learning institutions with multiple health care professional programs and learning institutions with silo nursing programs. The independent variables are the types of IPE programs. The dependent variables in this study are the IPCC scores which are obtained from an instrument designed to measure IPCCs for interprofessional interactions and interprofessional values. Interprofessional values include valuing other health care professionals and understanding the roles and responsibilities of health care professionals (IPEC, 2016). Interprofessional interactions include effective communication and teamwork with patients, families, and health care professionals (IPEC, 2016).

According to the preliminary G power analysis, 128 participants were needed for the study (Faul et al., 2009). The participants were newly graduated (within the last 3

years) nurses. A state board of nursing provided the e-mail addresses for the nurses who graduated within the past 3 years and to reach the desired sample size, I also used the public website domain of other State Boards of Nursing for contact information of NGNs. The IPEC Competency Self-Assessment Survey was provided through a link to each potential participant via email for online completion. The results were then downloaded and analyzed using SPSS version 27 for independent *t* test results and because not all of assumptions of the independent *t* test were not met, a Mann–Whitney U test was used to compare the scores on the IPEC Competency Self-Assessment Survey between the participants from each of the two groups (Knapp, 2018).

Definitions

Interprofessional collaboration competencies (IPCCs): Having the knowledge, skills, and attitudes of working together with other health care professionals, patients, and families to improve health care (IPEC, 2016). The IPEC (2016) further defined the competencies as having mutual respect for other professions, understanding the roles and responsibilities of your own and other professions, effective communication, and teamwork.

Interprofessional education (IPE): Students from two or more disciplines participating in education together (WHO, 2010).

Interprofessional interactions: Engaging in effective communication and teamwork (Lockeman et al., 2021). The IPEC (2016) more specifically defines effective communication as being able to communicate with patients, family members, and other health care professionals in a manner that promotes and maintains health. Teamwork is

defined as applying relationship values and principles to effectively work together with different professions roles and responsibilities to provide safe and effective care (IPEC, 2016).

Interprofessional values: An understanding and valuing the roles and responsibilities of other professionals (Lockeman et al., 2021). The IPEC (2016) defined values as having respect and sharing values with other professionals. The IPEC defined the roles and responsibility competency as having knowledge of your profession and other professions and their responsibilities to promote health.

Learning institutions with multiple health care professional programs: Includes programs such as respiratory therapy, pharmacology, and medical students to participate in IPE.

Newly graduated nurses (NGNs): ADN and BSN entry level nurses who have entered practice within the past 3 years (Benner et al., 2009).

Silo nursing programs: IPE with only nursing students and professional nurses (AACN, 2016).

Assumptions

A research assumption is something that is out of the control of the researcher, yet it is needed for the research (Simon, 2011). An assumption with this study was that participants would answer the survey honestly. An anonymous link was provided to access the survey if potential participants chose to participate. The survey results were anonymous and no identifications were available to me, which provided participants privacy and anonymity. A second assumption in this study was that NGNs desire to have

IPCCs. A final assumption of this study was that the nurses participating in this study are representative of NGNs who have been licensed within the past 3 years though they may have graduated more than 3 years ago.

Scope and Delimitations

For this study I examined the difference in IPCCs between NGNs from learning institutions that provided IPE with multiple health care professional programs compared to nurses who graduated from learning institutions that provided IPE with silo nursing programs using a non-experimental quantitative method. The participants of this study were NGNs who have graduated within the past 3 years so that their recollection of their programs of study may be stronger. Nurses within the first 3 years of licensing are novice to their profession as both nurses from ADN and BSN programs take the same board exam (Kaplan, n.d.). The focus of the study on NGNs within the past 3 years allowed for more participants rather than limiting the study to NGNs who have graduated in the past year.

The IPEC and WHO frameworks were used to determine the IPCCs (IPEC, 2016; WHO, 2010). The IPCCs were determined by using the IPEC Competency Self-Assessment Survey for this study (Lockeman et al., 2021). The frameworks from the WHO and the IPEC have the advantage of focus on education as well as IPCCs.

Delimitations in research are research characteristics that limit the research (Simon, 2011). A major delimitation is in this study was that it is a quantitative study looking only at quantitative data. I chose a non-experimental quantitative study to align with the research questions and hypothesis (Creswell, 2014). According to research,

questions in quantitative studies are developed to provide a focus for the research. Quantitative research questions are used in social science research to investigate the difference among variables (Creswell, 2014). Another delimitation for this study was the use of the WHO and IPEC frameworks to guide the study. No theories other than the WHO Framework for Action on Interprofessional Health and Education and IPEC were considered appropriate to inform and guide this study.

Limitations

This study was limited by this sample that may not be representative of all regions of the United States. The study focused on recruiting participants from the local board of nursing expanding into Florida and Ohio. The study may also not represent past or future IPCCs due to the variables in IPE. Rossler and Hardin (2020) noticed an increase in some IPCCs among NGN during nursing graduate internship varied among age, gender, degree level, and unit of practice. The more experience among NGNs, the higher the self-reported IPCCs (Pfaff et al., 2014; Rossler & Hardin, 2020). Participants may have offered different responses if the NGN had been more recently graduated or had a longer period since graduation. NGNs from BSN programs also tend to have higher competency ratings compared to ADN programs (Matziou. et al., 2014). The age, gender, degree level, and unit of practice was not asked in this study. Therefore, the entry level may have included entering practice at the master's level as well. The participants who were recruited were at least a professional nurse registered to practice within the past 3 years of this study.

Another limitation was that for this study was the choice to use a causal comparative design with purposive sampling of NGN within 3 years of the study. The causal comparative design was chosen rather than observation to avoid potential ethical issues and restraints of permissions from various health care organizations. A major limitation to the causal comparative design was the IPE has already occurred (Mertler, 2016). The inclusion criteria could additionally have included the IPCCs of other disciplines who graduated within 3 years prior to this study. This study focused on NGN therefore the IPCCs of other health care disciplines (social workers, health care providers, pharmacists, etc.) who were newly graduated were not included in this study. Although, the use of purposive sampling has its purpose to focus on participants that meet specific criteria this study was focused on specially looking at the IPCCs of NGN licensed within 3 years prior to this study (Campbell et al., 2020). The quality of the research depends on reliable and validated tools. The IPEC Competency Self-Assessment Survey reliability and validity was determined using a Cronbach's alpha prior to using the survey (Lockeman et al., 2017). A Cronbach alpha was used to determine the reliability and validity of the participants response to this survey as well.

Significance

This study will provide learning institutions with current research on the knowledge, skills, and attitude regarding IPCCs, which can improve IPE. Health care organizations will also have current research on self-reported IPCCs among NGNs. Additionally, learning institutions with silo nursing programs will be able to know how their IPCCs compared with learning institutions that provide IPE with multiple health

care professional programs. The results of future studies would provide learning institutions with IPC knowledge, attitudes and skills that need improvement.

The results of the study may have positive social change for hospitals and health systems incorporating IPCCs as part of routine competency testing. This study may also help provide IPE strategies for learning institutions with silo nursing programs. Incorporating IPE throughout nursing programs will improve competencies in IPC to prepare nurses for an increased quality care (Ketcherside et al., 2017). Studies have shown improvement of IPE competencies during undergraduate nursing programs; however, no studies have examined the effectiveness of IPE once nurses enter practice (IPEC, 2016). Further research is needed on difference of IPCCs among professionals currently in practice to determine if there is a difference among those who participated in IPE during their undergraduate education (Ketcherside et al., 2017). The IPE gap was addressed using a quantitative comparative descriptive study using a self-assessment of IPEC competencies among NGNs who entered practice within the past 3 years from learning institutions that provide IPE with multiple health care professional programs compared to those graduated from IPE with silo nursing programs.

Summary

As health care is changing, so is the complexity of patient needs. Nurses need to be competent in IPC to provide safe and effective quality care. NGN that participated in IPE with silo nursing programs may enter practice with different competency levels than those who participate in IPE with multiple health care professional programs. This study focused on learning the IPCC interactions and values of NGNs who graduated within the

past 3 years prior to entering practice. The results of this study may help learning institutions and health care organizations recognize areas where improvements in IPE and continued education could focus to improve the IPC competencies of nurses and to improve quality care.

The literature review for this study will be discussed in Chapter 2. The literature review will describe a more detailed analysis of the framework that were used to study the IPCCs among NGNs. A more thorough explanation of the key variables will also be provided to learn how IPE and other variables that may impact IPCCs.

Chapter 2: Literature Review

The increased complexity of health care requires NGNs to have IPCCs. IPCCs is studied within learning institutions but not upon entering the practice setting. Understanding the gap between NGNs and undergraduate will guide academia to know IPCCs that need to be strengthened during IPE. This chapter will list the literature search strategy for this study, discuss the framework used for this study, and provide the literature review of key variables and concepts.

Literature Search Strategy

The literature search for studies within the last 5 years to support the use of IPE included electronic databases from EBSCO Host and Thoreau including CINAHL, Medline, PubMed from 2015–2020. Search terms included *interprofessional collaboration and newly licensed nurse, interprofessional education, interprofessional collaboration and new graduate nurses, interprofessional education and new graduate nurses, interprofessional collaboration testing, interprofessional practice and new nurses,* and *interprofessional competencies*. Search results were limited to English and peer-reviewed articles.

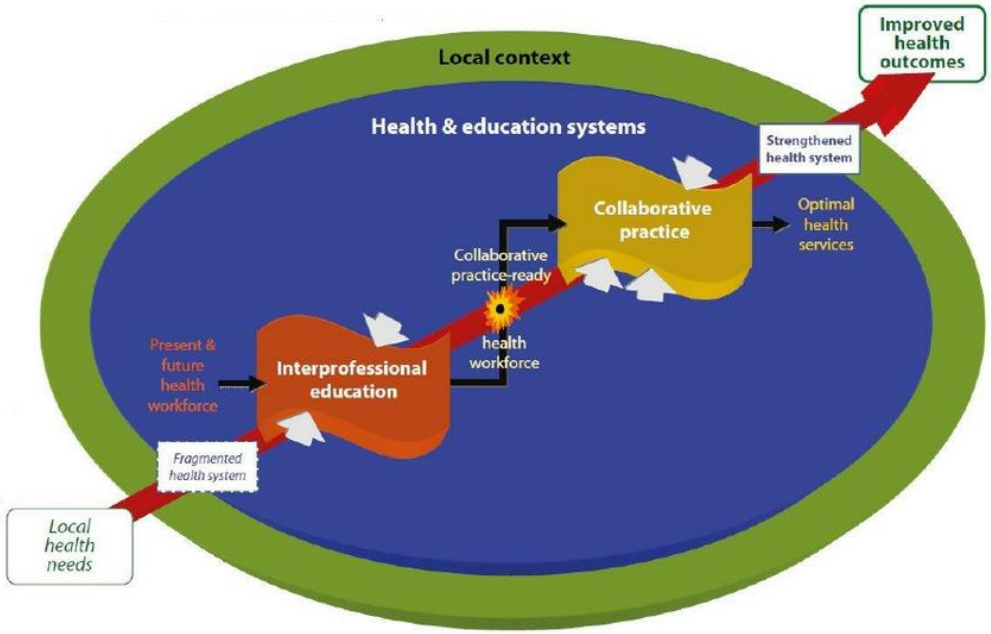
Theoretical Foundation

The framework from WHO and IPEC guided the research for this study. WHO (2010) was the original creator of the framework for IPE. IPEC is made up of several organizations including AACN and American Organization of Nurse Executives that use the WHO framework as a guideline for IPCCs in the United States (see Figure 1). WHO's framework for action on IPE and Collaborative practice with other allied health

professionals improves health outcomes by providing strategies for learning institutions to prepare health care professionals to engage in IPC upon entering practice. This framework can strengthen IPE for undergraduates, graduates, and staff development of IPCCs. Health care organizations collaborating with learning institutions can help close the gap between health care professional programs and practice (WHO, 2010).

Figure 1

WHO Framework for Action on Interprofessional Education Health and Education Systems

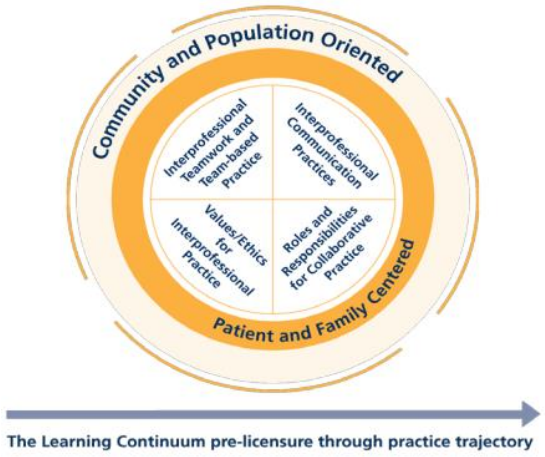


Note: From "Framework for Action on Interprofessional Education and Collaborative Practice," by WHO, 2010 (https://www.who.int/publications/i/item/framework-for-action-on-interprofessional-education-collaborative-practice). Copyright 2010 by WHO. Reprinted with permission.

The IPEC (2016) developed core competencies for IPC in 2011 in response to the WHO framework for action on IPE and IPC (see Figure 2). The IPEC core competencies include four domains: values of other professions, understanding roles and responsibilities, interprofessional communication, and teamwork. The shared values and respect domain is focused on health care professions, patients, and patient families. This competency, when implemented, is demonstrated through patient-centered care, respecting patient privacy, and developing a trusting relationship with patients, families, and other health care professional team members. Valuing IPC requires maintaining competence of their own profession while valuing the other health care team members to provide quality care. It is important to understand the knowledge, skills, and attitudes of health care professionals and know personal limitations to be able to collaborate with health care professionals and provide patient-centered care.

Figure 2

IPECC Domain



Note: From “Core Competencies for Interprofessional Collaborative Practice: 2016 Update,” by IPEC, 2016 (https://ipec.memberclicks.net/assets/2016-Update.pdf).

Effective communication with patients, family members, and health care professionals is another IPCCs of IPEC (2016). Health care professionals need to provide clear, concise, and accurate information in a timely and effective manner with patients, families, and other health care team members. Effective communication requires active listening, encouraging others to express their ideas, and using respectful language (IPEC, 2016). Communication is key to effective teamwork to provide quality care.

Teamwork IPCCs require engaging with other health care professionals, the patient, and family to provide quality patient centered care. Through taking accountability for one's performance and performance as a health care team, patient outcomes can improve (IPEC, 2016). All health care professionals working together increase effectiveness of patient centered care and patient outcomes.

The IPCCs were designed to improve population health across all health care disciplines and settings (IPEC, 2016). Therefore, IPEC (2016) developed the IPCCs to guide IPE in academia and health care organizations in efforts to prepare health care professional students and continue as a guide for competencies and education once in practice. The IPCCs are designed to inform professional licensing and credentialing bodies for testing (IPEC, 2016). IPC will help health care professions move beyond a discipline specific approach to patient centered care which will better meet the increasing complexity of health care across populations throughout the lifespan (IPEC, 2016; Green & Johnson, 2015). The learning continuum should begin in undergraduate programs and continue into professional practice. Although multiple research studies have examined IPC in education such as those by Brandt (2018), Green & Johnson (2015), Lockeman et

al. (2016), Pfaff et al. (2014) and Roberts et al. (2019) research is lacking on IPCCs in practice especially among NGNs which will be expanded on later in this chapter.

Literature Review Related to Key Variables

This section will be used to review the key variables of this study. The WHO Framework for IPE whether in silo nursing programs or with multiple health care professional programs will be included as a key variable. The IPCCs were incorporated into the search terms to develop the literature review and are used as key variables for this study. This review of the literature will cover the collaboration competencies for nurses, interprofessional values, interprofessional interactions, interprofessional education, learning institutions with multiple health care professional programs, factors that impact IPCCs, and learning institutions with silo nursing IPE programs.

Collaboration Competencies

The IPEC core competencies include four domains: values of other professions, understanding roles and responsibilities, interprofessional communication, and teamwork (IPEC, 2016). Lockeman et al. (2021) combined the IPEC domains into two categories; interprofessional values and interprofessional interaction in the IPEC Competency Self-Assessment Survey, which were used in this study (see Figure 2). The interprofessional values category on the survey combined the IPEC interprofessional values and roles and responsibilities domains (Lockeman et al., 2021). The interprofessional interaction category on the survey combined the IPEC effective communication and teamwork domains (Lockeman, et al. 2021). Later in this section interprofessional values and interprofessional interactions will be reviewed further.

Interprofessional Values

IPC involves collaborating with other health care professionals such as pharmacists, specialists, physical therapists, dietitians, paramedics, and more (WHO, 2010; IPEC, 2016). Effective collaboration includes IPEC IPCCs of understanding and valuing the roles of interprofessional team members with other interprofessional team members (Matziou et al., 2014; IPEC, 2016). Lack of understanding roles or responsibilities can hinder timely patient care. NGNs in Australia self-reported struggling with communication with interprofessional team members (Thompson et al., 2015). NGNs gain confidence in collaboration with an understanding of their role and valuing the roles of other health professionals through IPE and experience (Monagle et al., 2018; Pfaff et al., 2014).

Interprofessional Interactions

Effective communication with interprofessional members, patients and family are important in teamwork for positive quality patient outcomes (Hopkins & Bromley, 2015; IPEC, 2016; Matiziou et al., 2014). Communication skills affect the teamwork as well as patient care (Thompson et al., 2015). NGNs may lack effective communication skills with interprofessional team members including patients and family members (Hopkins & Bromley, 2015; Monagle et al., 2018; Thompson et al., 2015). This research studied current communication competency levels of NGNs.

IPE

IPE focuses on how to work as a team with other health care professionals through use of IPCCs. The IPEC (2016) competencies promote effective communication

through the understanding that respecting various professional roles is necessary for teamwork and collaboration. A common area of collaboration NGNs struggle with is delegating to licensed nurses and assistants and feeling confident in offering suggestion to health care members for effective patient care (Charette et al., 2019). Further knowledge is needed on the impact of IPE impact on NGNs in a variety of settings and programs to understand the gap upon entering practice (Charette et al., 2019; Pfaff et al., 2014).

Learning Institutions with Multiple Health Care Professional Programs

Banks et al. (2018) provided IPE with nursing students in their final term of their baccalaureate program and first year master level social work students. Although IPCCs improved, communication was a challenge for the social work students to understand medical terminology and for nursing students to provide the right amount of relevant patient information. Further understanding of interprofessional roles would also improve the teamwork and communication among the participants. Wong et al. (2017) evaluated BSN nursing students and medical students in the last year of an undergraduate program in Hong Kong after IPE. Significant improvement was seen in all four IPCCs after the IPE. Further studies are needed to know IPCCs once in practice.

Learning Institutions with Silo Nursing

The research is limited on silo nursing programs IPE evaluation of IPCCs when nursing students act in the roles of other health care professionals. Further studies should be done on IPC once in practice to see the impact of IPE among graduates from

institutions with nursing programs as the only health science program (Monagle et al., 2018; Reeves et al., 2013; Wong et al., 2017).

Ketcherside et al. (2017) found that incorporating IPE with practicing health care professionals and BSN student nurses showed statistical significance in the ability to collaborate once entering public health education. The IPCCs of health care professionals outside of nursing were not included in the study. Ketcherside et al., (2017) recommended that further research is needed on difference of IPCCs among health care professionals, including nursing, currently in practice to determine if the difference in types of IPE during their undergraduate education.

Monagle et al., (2018) found that although self-reported IPCCs among NGNs showed improvement with IPE, however NGNs reported they continue to struggle with interprofessional communication. IPE in learning institutions and practice continue to work on communication competencies. IPCCs evaluation once NGNs enter practice will help learning institutions know competencies requiring additional IPE.

Factors that Impact IPCCs

In addition to the type of IPE, other factors may impact IPCCs. The more experience among NGNs, the higher the self- reported IPCCs (Pfaff et al., 2014). Among NGNs, age and gender has not shown to impact IPCCs (Matziou et al., 2014; Pfaff et al., 2014). NGNs from BSN programs tend to have higher competency ratings compared to ADN programs (Matziou et al., 2014).

Improving learners' knowledge, skills and attitudes across the learning continuum is a complex goal making it important to learn of IPCCs upon entering practice (Cox et

al., 2016). The results of future studies would provide learning institutions with which IPC knowledge, attitudes, and skills need improvement. Currently, learning institutions tend to seek feedback on IPE areas of improvement by meeting with clinical partners to learn areas of needed improvement based on opinion versus concrete data (Moss et al., 2016). IPCCs did show higher levels of IPCCs among NGNs based on type of degree (ADN/BSN), and unit of practice (Rossler & Hardin, 2020). Unfortunately, to date there is limited research data on IPCCs among NGNs in the United States (Daley et al., 2018; IPEC, 2016; Moss et al., 2016).

Summary and Conclusions

The increase of complexity of health care requires NGNs to have IPCCs. WHO and IPEC have created the framework for IPE and IPCCs. IPCCs consist of two overall categories of interprofessional interactions and interprofessional values. IPE is provided in learning institutions. IPCCs is studied within learning institutions however not upon entering into the practice setting. Understanding the gap between NGNs and undergraduate will guide academia to know IPCCs that need to be strengthened during IPE. Chapter three will explain the research design and rationale to determine the IPCCs gap upon entering practice as a registered nurse (RN), describe the methodology for this research, describe threats to validity and ethical procedures.

Chapter 3: Research Method

The purpose of this quantitative study was to determine whether there are self-reported differences in IPCCs among NGNs who graduated within the past 3 years from learning institutions that provide IPE with multiple health care professional programs compared to those who graduated from learning institutions with silo nursing programs. In this chapter I will explain the research design and rationale, describe the methodology for this research, and describe threats to validity and ethical procedures.

Research Design and Rationale

I chose a non-experimental, quantitative, causal comparative research design with a purposive sampling strategy for this study. The independent variables are the types of IPE programs. The dependent variable in this study was the IPCCs of NGNs within the past 3 years after they graduated, which included interprofessional values and interprofessional interactions. Interprofessional values referred to valuing other health care professionals and understanding their roles and responsibilities (IPEC, 2016). Interprofessional interactions include effective communication and teamwork with patients, families, and health care professionals.

The research was constrained by limited time and use of self-assessment instead of observation of IPCCs. Time was limited to complete my dissertation in a timely manner, and self-assessment was used rather than current observation of IPCCs in health care organizations. I looked at the difference in IPCCs between recently graduated nurses from learning institutions with multiple health care professional programs compared to learning institutions with nursing as the only health science program. The study focused

on ADN and BSN nurses who have recently graduated with the past 3 years who are novice to their profession. Both ADN and BSN take the same board exam (Kaplan, n.d.). The IPCCs were determined using the IPEC Competency Self-Assessment Survey for this study (Lockeman et al., 2021).

Methodology

Population

The population of this study was a purposive sample of newly licensed ADN or BSN nurses licensed within the past 3 years prior to responding to the link in my survey which was sent via email. The NGNs were invited to participate in an online survey containing the IPEC Competency Self-Assessment Survey version 3 and were asked to provide their demographic information. The estimated current target population size was 800 newly graduated ADN and BSN nurses within the past 3 years in the state where this study originated (Minnesota Board of Nursing, 2020). The response rate was initially low and necessitated reaching out beyond the state nursing programs, therefore I will describe that change in chapter 4.

Sampling and Sampling Procedures

Participants were NGNs who received an undergraduate nursing degree (ADN, BSN) within the past 3 years. The local state board of nursing provided e-mail addresses for participants who had become licensed as RNs within the past 3 years at the time of this study. Participants were excluded if they had graduated as a RN more than 3 years prior to being licensed. The exclusion criteria were presented early in the survey process so that when the response indicated the potential candidate did not meet the criteria, the

next step was to end the survey and thank the potential participant for their time prior to answering the survey questions.

I used G* power to conduct a power analysis for this study (Faul et al., 2009). Using a two-tail independent *t* test, an alpha level of 0.05, a power level of 0.8, and a 0.5 effect size, I determined that a sample size of 128 would be sufficient (64 participants of IPE with multiple health care professional students and 64 participants of IPE with nursing students in silo nursing programs). I planned to use a Mann-Whitney U test if assumptions were not met (Knapp, 2018).

Procedures for Recruitment, Participation, and Data Collection

An invitation to participate in this study was e-mailed to NGNs who met the selection criteria. The following demographic information was collected:

- length of time practicing as a RN (6 months or less, 7–12 months, 1–3 years)
- length of time since graduation from entry level RN position
- type of IPE their undergraduate nursing program provided (with multiple health care students, only nursing students)

Participants were informed that consent to participate was agreed upon when clicking to proceed with the online survey. I used a feature in Survey Monkey to deidentify the data. Data were collected from Survey Monkey after the survey had been closed. When participants completed the survey, they were be thanked for their time. There was no follow up needed for this study.

Instrumentation and Operationalization of Constructs

Dow et al. (2014) developed the IPEC Competency Self-Assessment Survey based on the IPEC. The survey has forty-two questions to measure the IPEC domains using a 5-point Likert scale with responses ranging from strongly agree to strongly disagree. The tool was developed for undergraduate health care professional students as well as current practicing professionals to determine the attitudes and skills of IPC. Understanding the IPEC scores is important because it will help nursing education programs know areas, they need to address to increase their IPE to prepare nursing undergraduate nurses for practice.

Lockeman et al. (2021) refined their original IPEC Competency Self-Assessment Survey to combine the IPEC domains into two categories: interprofessional interactions (IPEC interprofessional communication and teamwork domains) and interprofessional values (IPEC values for interprofessional practice and roles and responsibilities domains). Lockeman et al. (2021) further shortened the survey version 3 to sixteen questions finding it valid and reliable with two cross sectional studies across multiple institutions (first study n=608 and second study n=676). Reliability for each subscale using Cronbach's alpha was 0.92 for the interprofessional interaction scale and 0.93 for the interprofessional value scale (Lockeman et al., 2017). Roberts et al. (2019) found the use of IPEC Competency Self-Assessment Survey version 3 effective in identifying education gaps of IPE among 37 nursing students and 30 practicing health care interprofessionals. Further research using the IPEC Competency Self-Assessment Survey will help identify knowledge gaps among NGNs. Lockeman and Dow granted permission

for the use of the IPEC Competency Self-Assessment Survey version 3 and scoring key (see Appendix C).

Data Analysis Plan

The participant responses from the online survey were downloaded into Statistical Product and Service Solutions (SPSS) version 27 for analysis. Data cleaning and screening were used to identify and resolve inconsistencies in the data as well as describe the data properties (Huebner et al., 2016). The online survey did not allow for duplicate surveys or incomplete surveys so the responses within the dataset were complete. Before analysis could begin, I created a transformation of the data to create two new variables. The scoring instructions provided the guidance for me to separate out the questions that focused on interprofessional interactions and interprofessional values and create the two new numerical, scale variables for interprofessional interactions and interprofessional values (see Appendix B).

RQ: What is the self-reported difference in IPCCs among NGNs who graduated within the past 3 years from learning institutions that provide IPE with multiple health care professional programs compared to those who graduated from learning institutions with silo nursing programs?

H_o: There will be no difference in self-reported IPCCs among NGNs who graduated within the past 3 years from learning institutions that provide IPE with multiple health care professional programs compared to those who graduated from learning institutions with silo nursing programs.

H_a: There will be a difference in self-reported IPCCs among NGNs who graduated within the past 3 years from learning institutions that provide IPE with multiple health care professional programs compared to those who graduated from learning institutions with silo nursing programs.

For this research, I planned to conduct an independent *t*-test to determine whether the IPCCs scores are significantly different between the two types of IPE. An independent *t* test has four major assumptions: there is independence of observations (each subject belongs only to one group), there are no significant outliers in the groups, the data is approximately normally distributed, and there was homogeneity of variance in each group (Knapp, 2018). I also calculated a Cronbach's alpha on the IPEC Competency Self-Assessment Survey.

Threats to Validity

The NGNs may have had limited to no opportunity to participate in collaboration with other health care professionals during practice. Undergraduate nursing programs provide clinical and simulation experiences throughout their programs however interactions with other health care professionals may be limited (WHO, 2010).

External Validity

Threats to external validity are recognized as limitations on generalization of study results to other RNs in different settings and regions of the US. For my study, I used convenience sampling which may limit generalizability (Creswell, 2014). Another possible external threat for this study may have occurred if the NGNs felt threatened to self-report a higher IPCCs level to not reflect poorly on themselves, the organization they

are employed with, or their learning institution. This study did not collect names of organization the participants work for nor the names of their learning institutions. I removed all self-identifiers, so the responses are not linked to the individuals.

Internal Threats to Validity

Internal validity may be threatened by the survey instrument that I used for my study. The instrument I selected for this study was the IPEC Competency Self-Assessment Survey that has been used in previous studies with nurses and shown to be valid and reliable for measuring IPE (Dow, et al., 2014; Lockeman et al., 2021; Roberts et al. 2019). A possible internal threat to validity may be participants having prior health care experience. Participants may have been a licensed practical nurse prior to becoming a RN therefore would have experienced IPC. Other health care professionals may have also changed careers to become a RN. Participants with prior health care experience were included however recognized as possible higher IPCCs.

Ethical Procedures

All participants were within the United States. The local state board of nursing provided e-mail address of NGNs licensed within the last 3 years. The invitation to participate in the study was sent to those e-mail address. No access to internal documents, records, or other data were collected from other organizations. Survey Monkey was used for the survey distribution and for anonymous data collection. The survey used had previously been piloted and validated. The study participants were NGNs who were in practice at the time of the survey. I had no knowledge of who responded. The participant

recruitment procedures followed the approaches outlined and approved through the Walden IRB # 09-30-20-0322415.

NGNs who chose to participate entered their own information on the electronic survey accessed online. The participants accessed the survey online which deidentified the participants. There was not any direct contact with the participants. I was not notified of which e-mail addresses responded and who did not. After the survey was sent out the e-mail addresses were destroyed. Survey data will be stored for five years on a private computer with password protection. Following the five years the research data will be destroyed.

Summary

This quantitative study is needed to determine if there are differences in the type of IPE with multiple health care professional programs and silo nursing programs based on the IPCCs of NGNs who graduated within the past 3 years. Participants were excluded who had graduated over 3 years ago even if they had practiced less than 3 years. The independent variables in this study were the types of IPE programs, the dependent variables were the IPCCs (IPEC, 2016). The IPEC Competency Self-Assessment Survey questions were used for NGNs to self-report their IPCCs and procedures to assure ethical principles of research were reviewed and approved by the institutional review board. Chapter four will provide the results of the survey and demographic questions.

Chapter 4: Results

The purpose of this quantitative study was to determine whether there are self-reported differences in IPCCs (interprofessional interactions and interprofessional values) among NGNs who graduated within the past 3 years from learning institutions that provide IPE with multiple health care professional programs compared to those who graduated from learning institutions with silo nursing programs. Therefore, the independent variables were the types of IPE programs, and the dependent variables in this study are the domains of the IPCCs interprofessional interactions and interprofessional values scores.

The results of the IPCCs were measured on the IPEC Competency Self-Assessment Survey 5-point Likert scale (Lockeman et al., 2021). I chose to use this survey as it is a self-assessment designed to provide institutions with information about IPCCs to determine the gaps in IPE. The survey scoring of the total IPEC could not be supported in the literature; therefore, the survey was only scored by its two domains—the interprofessional interactions domain and interprofessional values domain. The IPEC Competency Self-Assessment Survey is a validated instrument and has been tested for reliability using the combined subdomains of IPEC into two subdomains, interprofessional interactions and interprofessional values (Lockeman et al., 2021). An independent *t* test was planned for analysis for comparing the mean scores for each of the two variables by the type of IPE program nurses participated in during their undergraduate nursing program. SPSS version 27 was used to analyze the data. In this chapter I will discuss the data collection and results of the responses.

Data Collection

Data collection occurred from Oct. 1, 2020-March 29, 2021. Participants were initially recruited through e-mail addresses provided by the local board of nursing, according to the recruitment plan in Chapter 3. However, the participant response was lower than desired (n = 70) by the power analysis that indicated 128 responses were needed with 64 from each of the two groups. Since the initial e-mail distributions from the local board of nursing did not produce an adequate response, NGNs from other states were recruited. E-mail addresses of NGNs from the Florida and Ohio Board of Nursing were obtained from publicly available access and used to recruit NGNs from the two states. Additionally, the Walden University Research participant site and Facebook were used to recruit participants. Despite the multiple attempts and approaches, over 9,000 e-mails sent to potential NGNs participants and the length of time for recruitment, the desired sample sized was unable to be obtained; therefore, the analysis began with 103 participants who completed the survey. Once the participants submitted their responses

Baseline Descriptive and Demographic Characteristics of the Sample

There were 103 participants who completed the survey; however, two participants, one from each group, were removed from the study since their survey answers were all strongly disagree though they had over a year experience. Therefore, there were 101 participants. Ninety participants indicated they had graduated within the past 3 years. Though 13 responded that it had been over 3 years since they graduated, they also responded that they had entered practice within the past 3 years, so their survey responses were retained. Thirty-five of the participants had practiced as a RN for less

than 6 months, thirteen of the participants had practiced for 7 months to 1 year, but most (n = 53) had practiced for 1 to 3 years. There were 33 participants from IPE programs with multiple health care professionals and 68 participants from the silo nursing group. The achieved G power using *t* test means: Mann–Whitney settings for two tailed with IPCCs group statistics for individual group means (Table 1) with post hoc analysis showed the interprofessional interactions domain achieved an effect size of 0.8 with a power of 0.9 whereas the interprofessional values domain achieved an effect size of 0.307 with a power of 0.28 (Faul et al., 2009).

Results

Between October 2020 and March 2021, 101 IPEC Competency Self-Assessment Surveys were analyzed to determine IPCCs for the interprofessional interactions and interprofessional values domains. Thirty-three participants were from learning institutions that provide IPE with multiple health care professional programs, and 68 participants were from learning institutions with silo nursing programs.

SPSS 27 was used to compare the IPCCs interprofessional interactions and interprofessional values among NGNs within the past 3 years. The interprofessional interactions domain scores were identified by calculating the mean score for the odd numbered questions, and the interprofessional values domain scores were identified by calculation the mean score for the even numbered questions on a Likert scale from 1-5 (*strongly disagree* to *strongly agree*). The interprofessional interactions domain scores of NGNs showed a higher average from learning institutions that provide IPE with multiple health care professional programs (M = 4.3, SD = 0.3) compared to NGNs from learning

institutions with silo nursing programs (*M* = 3.9, *SD* = 0.5). The interprofessional values domain of NGNs had similar results from learning institutions with silo nursing programs (*M* = 4.4, *SD* = 0.5) and from NGNs from learning institution that provide IPE with multiple health care programs (*M* = 4.5, *SD* = 0.3; Table 1).

Table 1

IPCCs Group Statistics

	Type of IPE	*n*	Mean	Std. Deviation	Std. Error Mean
Interprofessional Interactions Domain	Silo Nursing Programs	68	3.9632	0.56154	0.06810
	Multiple Health care Professionals	33	4.3182	0.39540	0.06883
Interprofessional Values Domain	Silo Nursing Programs	68	4.4118	0.50003	0.06064
	Multiple Health care Professionals	33	4.5492	0.38646	0.06727

An independent *t* test was planned using SPSS 27 to test if there was a difference in IPCCs interactions and values between NGNs who graduated within the past 3 years from learning institutions that provide IPE with multiple health care professional programs and those who graduated from learning institutions with that provide IPE with silo nursing programs. The assumptions of independent *t* tests are independence of observations, there are no significant outliers in the groups, normal distribution, and homogeneity of variance (Knapp, 2018). The participants identified as having participated in learning institutions with silo nursing programs or IPE with multiple health care professional programs therefore the participant was only able to be included in one group meeting the assumption of independent observations. There were two

significant outliers identified, one who had participated in silo nursing programs the other from IPE with multiple health care professional programs, who were eliminated to meet the second assumption. The Shapiro-Wilks tests the assumption of normal distribution showing the interprofessional interactions domain and interprofessional values domain are moderately skewed (0.09; -1.00). The Shapiro-Wilk test also tests kurtosis to determine if there was normal distribution. The interprofessional interactions domain kurtosis showed negative excess (-5) while the interprofessional values showed excess kurtosis (2.4). Therefore, since the interprofessional interactions and interprofessional values domains were skewed and kurtosis showed abnormal distributions, the assumptions of a *t* test were not met. Therefore, a Mann–Whitney U test was used to analyze the data using SPSS (Knapp, 2018).

The assumptions of a Mann–Whitney U test are: (a) the dependent variable is ordinal, (b) the independent variable has two categorical independent groups, (c) there is independence of observations, and (d) the two variables are not normally distributed (Knapp, 2018). The dependent variable of IPCCs scores on the IPEC Competency Self-Assessment Survey with a Likert scale is ordinal. The independent variable of IPE types (silo nursing programs or multiple health care professional programs) consists of two independent groups with independent observations; the two distributions were not normally distributed however were the same shape.

The results of the Mann–Whitney U test using SPSS 27 showed that the interprofessional interactions domain of NGNs from learning institutions with multiple health care professional programs were significantly different (mean rank 65, $U = 635$, p

= 0.0001) than those from silo nursing programs (mean rank 43; Table 2). Therefore, the null hypothesis was rejected.

The interprofessional values domain among the NGNs from the silo nursing programs had a mean rank of 48 whereas the multiple health care professional programs had a mean rank of 56 (Table 2). The NGNs from both groups showed no statistically significant difference ($U = 938.50$, $p = 0.17$; see Table 3). Therefore, the null hypothesis was retained.

Table 2

Rank of Means

	Type of IPE	*N*	Mean Rank	Sum of Ranks
Interprofessional Interactions	Silo Nursing Programs	68	43.84	2981.00
	Multiple Health care Professionals	33	65.76	2170.00
Interprofessional Values	Silo Nursing Programs	68	48.30	3284.50
	Multiple Health care Professionals	33	56.56	1866.50

Table 3

Mann–Whitney U Test

	Interprofessional Interactions	Interprofessional Values
Mann-Whitney U	635.000	938.500
Wilcoxon W	2981.000	3284.500
Z	-3.548	-1.342
Asymp. Sig. (2-tailed)	0.000	0.179

Note. Grouping Variable: Type of interprofessional collaboration education

Internal consistency reliability on the IPEC Competency Self-Assessment Survey for the 16 questions was also tested. The results of the Cronbach's alpha using SPSS version 27 for interprofessional interactions (0.854) and interprofessional values (0.865)

indicated a high internal consistency reliability. The results are consistent with Lockeman et al. (2021) internal consistency reliability testing using the Cronbach's alpha which indicated 0.93 for the interprofessional interactions and 0.93 for the interprofessional values.

Summary

The self-reported IPCCs interprofessional interactions and interprofessional values results from 101 participants; thirty-three participants from learning institutions that provide IPE with multiple health care professional programs and sixty-eight participants from learning institutions with silo nursing programs, were analyzed with SPSS version 27 based on the results from the IPEC Competency Self-Assessment Survey. The IPCCs interprofessional interactions results were higher among the NGNs from multiple health care professional programs than from silo nursing programs although the interprofessional values among both groups were statistically similar.

The next chapter will discuss the findings of this study compared to what has been found in the peer reviewed literature described in Chapter 2. The focus will be on improving IPE in learning institutions to increase IPCCs in practice settings. Furthermore, the findings will be analyzed and interpreted in the context of IPEC Domains and WHO Framework for Action on IPE Health and Education Systems as those were the theoretical frameworks for this study.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this quantitative study was to determine whether there are self-reported differences in IPCCs interprofessional interactions and interprofessional values among NGNs who graduated within the past 3 years from learning institutions that provide IPE with multiple health care professional programs compared to those who graduated from learning institutions with silo nursing programs. A Mann–Whitney U test was used to analyze the survey results using SPSS version 27 because the assumptions for an independent *t* test were not met. The results showed that the interprofessional interactions domain of NGNs from learning institutions that provide IPE with multiple health care professional programs were statistically significantly higher (mean rank 65, $U = 635$, $p = 0.0001$) than those from silo nursing programs (mean rank 43; see Table 2). However, the interprofessional values domain among the NGNs from the silo nursing programs and the IPE with multiple health care professional programs showed no significant difference ($U = 938.50$, $p = 0.17$).

Interpretation of the Findings

This study showed that NGNs with silo nursing programs self-reported a lower level of IPCCs in the interprofessional interactions domain than students who participated in IPE programs with multiple health care professionals. This finding confirms WHO's Framework for Action on IPE and Collaborative Practice, which was designed to help prepare health care professionals to enter practice with IPCCs. However, the self-reported IPCCs in the interprofessional values domain showed no difference among NGNs from either IPE type of program. This is inconsistency with WHO's framework is further

discussed in the Recommendations section. Regardless of this finding, IPCCs research is lacking among NGNs (Brandt, 2018; Green & Johnson, 2015; Lockeman et al., 2021; Pfaff et al., 2014; Roberts et al., 2019), and this study extends knowledge on self-reported IPCCs of NGNs.

Interprofessional Interactions

Effective communication with interprofessional members, patients, and family is important in teamwork for positive quality patient outcomes (Hopkins & Bromley, 2015; IPEC, 2016; Matiziou et al., 2014). Communication skills affect the team as well as patient care (Thompson et al., 2015). However, NGNs tend to lack effective communication skills with interprofessional team members including patients and family members (Hopkins & Bromley, 2015; Monagle et al., 2018; Thompson et al., 2015). The results of this study confirm prior research that NGNs lack communication skills (Hopkins & Bromley, 2015; Monagle et al., 2018; Thompson et al., 2015).

Interprofessional Values

Effective collaboration includes the IPEC's IPCCs of understanding and valuing the roles of interprofessional team members with interprofessional team members (IPEC, 2016; Matziou et al., 2014). Lack of understanding roles or responsibilities can hinder timely patient care. For example, NGNs in Australia self-reported struggling with communication with interprofessional team members (Thompson et al., 2015). NGNs gain confidence in collaboration with an understanding of their role and valuing the roles of other health professionals through IPE and experience (Monagle et al., 2018; Pfaff et al., 2014). Research has indicated that NGNs competencies increase after 6 months of

practice (Benner et al., 2009). However, the results of this study disconfirm that NGNs interprofessional values increased with practice over the first 3 years. The findings from my study did not reveal a difference in interprofessional values in NGNs over length of practice.

IPE

IPE focuses on collaboration with other health care professionals through IPCCs. The IPEC (2016) competencies promote effective communication through the understanding that respecting various professional roles is necessary for teamwork and collaboration. A common area of collaboration that NGNs struggle with is delegating to licensed nurses and assistants and feeling confident in offering suggestion to health care members for effective patient care (Charette et al., 2019). The results of my study confirm that IPCCs interprofessional interactions, which includes delegation, were lacking among NGNs from silo nursing programs with IPE.

Factors that Impact IPCCs

Improving learners' knowledge, skills and attitudes across the learning continuum is a complex goal, making it important to learn of IPCCs upon entering practice (Cox et al., 2016). Currently, learning institutions tend to seek feedback on IPE areas of improvement by meeting with clinical partners to learn areas of needed improvement based on opinion versus concrete data (Moss et al., 2016). Prior to my study there was limited research data on IPCCs among NGNs in the United States (Daley et al., 2018; IPEC, 2016; Moss et al., 2016) therefore my results extend knowledge for learning institutions on IPCCs among NGNs who graduated within the past 3 years from learning

institutions that provide IPE with multiple health care professional programs and those who graduated from learning institutions with that provide IPE with silo nursing programs.

Learning Institutions with Multiple Health Care Professional Programs

Banks et al. (2018) and Wong et al. (2017) studied the impact of IPE with nursing students and multiple professional programs during their undergraduate programs finding significant improvement in IPCCs. Further studies are needed to know IPCCs once in practice. This study provides knowledge of IPCCs among NGNs. The results provide learning institutions that provide IPE with multiple health care professional programs that IPCCs are higher than with silo nursing.

Learning Institutions with Silo Nursing Programs

Monagle et al. (2018), Reeves et al. (2013), Wong et al. (2017) recommended further studies on IPCCs once in practice to see the impact of IPE among graduates from institutions with nursing programs as the only health science program. My study extends knowledge of IPCCs of NGNs for learning institutions which showed the self-reported IPCCs of NGNs within the last 3 years showing the impact of IPE with multiple health care professionals results in stronger IPCCs than IPE with silo nursing.

Ketcherside et al. (2017) found that incorporating IPE with practicing health care professionals and BSN student nurses show statistical significance in the ability to collaborate once entering public health education. Ketcherside et al., (2017) recommended that further research is needed on difference of IPCCs among health care professionals, including nursing, currently in practice to determine if there are differences

in types of IPE during their undergraduate education. The definition for IPE with multiple health care professionals included multiple health care professional students as well as multiple health care professionals currently in practice. This study further confirms interprofessional interactions domain of IPCCs were statistically higher among NGNs who participated in IPE with multiple health care professionals than those who participated in IPE with silo nursing. However, this study did not include the IPCCs of other disciplines.

Monagle et al., (2018) found that although self-reported IPCCs among NGNs showed improvement with IPE, NGNs reported they continue to struggle with interprofessional communication. Evaluation of IPCCs once NGNs enter practice will help learning institutions know competencies requiring additional IPE as well as health care organizations to know what IPCCs to include in continued education. This study helps to fill the gap in knowledge of NGN IPCCs that may promote social change for learning institutions and health care organizations who seek to improve healthcare and healthcare outcomes.

Limitations of the Study

A major limitation in this study was the low number of participants, particularly among the NGN who participated in IPE from learning institutions with multiple health care professional programs. There were only 33 of the needed 64 participants. There was a 16% G power less than needed to analyze the inferences of this study. The participants may have misunderstood the definitions of silo nursing and multiple health care professionals though the definitions were provided on the survey.

This study is limited by this sample which may not be representative of all regions of the United States. According to the National Council of State Board of Nursing (2021), there have been 740,936 RNs licensed in the past 3 years in the US. The local board of nursing has had 16,980 new RNs licensed during the last 3 years (Minnesota Board of Nursing, 2021). The participants in this study were recruited from the local board of nursing, FL board of nursing, Ohio board of nursing, and Walden University participants and therefore results may not be generalizable to NGNs in other geographic regions. Additionally, while Walden University students may work in other countries outside of the US, participants were not asked where they practice and therefore generalizations to nurses or healthcare settings outside of the US cannot be made.

This study may not represent past or future IPCCs due to the variables in IPE. The IPCCs of other health care disciplines, prior health care experience in another role, and other time frames were not included in this study. Additionally, the IPCCs were self-reported rather than observed. Participants self-reported IPCCs may not represent their competencies as viewed by the health care team.

Recommendations

Learning institutions and health care organizations working together to provide IPE is recommended by the AACN (2016). Silo nursing programs can benefit from the recommendations of AACN and American Organization of Nurse Executives in developing partnerships and providing IPE (Peterson, 2019). Further quantitative research is needed to examine IPCCs on NGNs to recognize the gap between undergraduate IPE and IPCCs (Cox, et al., 2016; Ketcherside et al., 2017). Future studies

should observe IPCCs instead of evaluating self-reported IPCC. Additionally, more demographics should be included to see if there is a variance in IPCCs among age, gender, prior health care experience, degree of education (such as ADN, BSN, etc.), and participation in nursing internships (Rossler & Hardin, 2020). Future studies will help learning institutions and health care organizations improve IPCC.

Implications

As health care changes and patients have increasingly complex needs, nurses need to be competent in IPC to provide safe and effective quality care (Moss et al., 2016). The Institute of Medicine (2010) and IPEC (2016) recommended IPCCs for entry level nurses to improve patient outcomes. IPCCs include interprofessional interactions and interprofessional values. The findings of this study showed NGNs value IPC (mean 4.46) however NGNs struggle with interprofessional interactions, especially those from silo nursing programs.

Since the NGNs from silo nursing programs had lower IPCCs interprofessional interactions than those from IPE with multiple health care professional programs, the silo nursing programs should continue to find ways to incorporate multiple health care professionals in attempt to increase IPCCs. WHO (2010) defined IPE as occurring when students from multiple health science programs are educated together to learn with one another and from one another and reported that IPE could improve health outcomes. The AACN (2016) advocated for nursing programs to find ways to provide IPE.

Incorporating IPCCs as part of routine competency testing in hospitals and health care systems may effect positive social change for hospitals and health system as IPCCs

increases patient outcomes (Charette et al., 2019; Ketcherside et al., 2017). The results of this study showed IPCCs, especially interprofessional interactions, may be lacking even though NGNs value IPC. Further quantitative research on the IPCCs among health care members can improve health care outcomes through knowledge of the gap in IPCCs among their health care members and IPCCs to provide IPE.

Furthermore, this study helps effect positive social change though improved IPE strategies for learning institutions with silo nursing programs. Incorporating IPE throughout nursing programs will improve competencies in IPC to prepare nurses for an increased quality care (IPEC, 2016; Ketcherside et al., 2017; WHO, 2010). Studies have shown improvement of IPCCs during IPE in undergraduate nursing programs; however, no previous studies have examined the effectiveness of IPE once nurses enter practice (Cox et al., 2016; IPEC, 2016). Learning institutions with silo nursing programs should continue to look for ways to incorporate multiple health care professionals in their IPE and track IPCCs once NGNs enter practice using quantitative research to identify possible gaps in their IPE.

Conclusion

The purpose of this quantitative study was to determine whether there are self-reported differences in IPCCs among NGNs who graduated within the past 3 years from learning institutions that provide IPE with multiple health care professional programs compared to those who graduated from learning institutions with silo nursing programs. This study compared the IPCCs against the type of IPE among NGNs who entered practice within the past 3 years. IPCCs were divided into two domains: interprofessional

interactions included effective communications and teamwork and interprofessional values included understanding of interprofessional roles and responsibilities and valuing interprofessional team members. In this study, interprofessional interactions were significant. The NGNs from learning institutions with multiple health care professional IPE programs compared to those who graduated from learning institutions with silo nursing programs. Although, interprofessional values were significantly similar among NGNs within the past 3 years regardless of the type of IPE.

Further research should be conducted with a larger participant size and observations of IPCCs. Learning institutions can use the results of this study to continue to improve IPE especially interprofessional interactions. Learning institutions with silo nursing programs should continue to seek out ways to incorporate health care professional students or those in health care practice into their IPE to improve health care outcomes and create positive social change. Health care facilities can create a positive social change through implementing IPCCs in their routine competency testing and provide further IPE.

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Appendix A: IPEC Competency Self-Assessment Tool Version 3

INSTRUCTIONS: Based on your education or experience in the health care environment, select/circle the number that corresponds with your level of agreement or disagreement on each item.

	Strongly Disagree	**Disagree**	**Neither Agree nor Disagree**	**Agree**	**Strongly Agree**
1. I am able to choose communication tools and techniques that facilitate effective team interactions.	1	2	3	4	5
2. I am able to place the interests of patients at the center of interprofessional health care delivery.	1	2	3	4	5
3. I am able to engage other health professionals in shared problem-solving appropriate to the specific care situation.	1	2	3	4	5
4. I am able to respect the privacy of patients while maintaining confidentiality in the delivery of team-based care.	1	2	3	4	5
5. I am able to inform care decisions by integrating the knowledge and experience of other professions appropriate to the clinical situation.	1	2	3	4	5
6. I am able to embrace the diversity that characterizes the health care team.	1	2	3	4	5
7. I am able to apply leadership practices that support effective collaborative practice.	1	2	3	4	5
8. I am able to respect the cultures and values of other health professions.	1	2	3	4	5
9. I am able to engage other health professionals to constructively manage disagreements about patient care.	1	2	3	4	5
10. I am able to develop a trusting relationship with other team members.	1	2	3	4	5
11. I am able to use strategies that improve the effectiveness of interprofessional teamwork and team-based care.	1	2	3	4	5

12. I am able to demonstrate high standards of ethical conduct in my contributions to team-based care.	1	2	3	4	5
13. I am able to use available evidence to inform effective teamwork and team-based practices.	1	2	3	4	5
14. I am able to act with honesty and integrity in relationships with other team members.	1	2	3	4	5
15. I am able to understand the responsibilities and expertise of other health professions.	1	2	3	4	5
16. I am able to maintain competence in my own profession appropriate to my level of training.	1	2	3	4	5

Appendix B: IPEC Competency Self-Assessment Tool Version 3 Data Key

Questionnaire Instructions: Based on your education or experience in the health care environment, select/circle the number that corresponds with your level of agreement or disagreement on each item.

Scale: 1 = Strongly Disagree 2 = Disagree 3 = Neither Agree nor Disagree 4 = Agree 5 = Strongly Agree	
Interaction	1. I am able to choose communication tools and techniques that facilitate effective team interactions.
Values	2. I am able to place the interests of patients at the center of interprofessional health care delivery.
Interaction	3. I am able to engage other health professionals in shared problem-solving appropriate to the specific care situation.
Values	4. I am able to respect the privacy of patients while maintaining confidentiality in the delivery of team-based care.
Interaction	5. I am able to inform care decisions by integrating the knowledge and experience of other professions appropriate to the clinical situation.
Values	6. I am able to embrace the diversity that characterizes the health care team.
Interaction	7. I am able to apply leadership practices that support effective collaborative practice.
Values	8. I am able to respect the cultures and values of other health professions.
Interaction	9. I am able to engage other health professionals to constructively manage disagreements about patient care.
Values	10. I am able to develop a trusting relationship with other team members.
Interaction	11. I am able to use strategies that improve the effectiveness of interprofessional teamwork and team-based care.
Values	12. I am able to demonstrate high standards of ethical conduct in my contributions to team-based care.
Interaction	13. I am able to use available evidence to inform effective teamwork and team-based practices.
Values	14. I am able to act with honesty and integrity in relationships with other team members.
Interaction	15. I am able to understand the responsibilities and expertise of other health professions.
Values	16. I am able to maintain competence in my own profession appropriate to my level of training.

Scoring:

- Odd-numbered items comprise the Interprofessional Interaction Domain
- Even-numbered items comprise the Interprofessional Values Domain
- Responses for items in each domain should be averaged to arrive at a domain score.

Appendix C: Permission to use IPEC Competency Self-Assessment Tool Version 3

Alan Dow [redacted]
Mon 4/29/2019 9:11 AM
To: Denise Pederson;
Cc: Kelly Lockeman [redacted]

Denise,

Feel free to use the instrument. We also have a newer, shorter version that Kelly Lockeman (cc'd) can you send you information about. Best of luck in your studies!

Alan

Alan Dow, MD, MSHA
Asst Vice President of Health Sciences for
Interprofessional Education & Collaborative Care
President and CEO, UHS-PEP, Professional Continuing Education for VCU
Seymour and Ruth Perlin Professor of Medicine and Health Administration
Virginia Commonwealth University

Kelly Lockeman [redacted]
Mon 4/29/2019 8:01 AM
To: Denise Pederson

Hi Denise,

Attached is the most recent version of the survey and a key for scoring. You are welcome to use it if it meets your needs. We have a paper under review that focuses on this revision, its performance with new samples, and some additional validity evidence. I presented an abbreviated version (attached) at the AERA meeting in April 2018 before expanding and submitting to a journal for review. If you have questions or need additional information, let me know. Good luck with your dissertation.

Kelly

Kelly Lockeman, PhD
Assistant Professor, School of Medicine
Director of Evaluation and Assessment
Center for Interprofessional Education & Collaborative Care
Virginia Commonwealth University

From: Kelly Lockeman [redacted]

Sent: Friday, July 3, 2020 5:05 PM
To: Denise Pederson
Subject: RE: [EXTERNAL] IPEC competency survey version 3

Hi Denise,

Thanks for the update. Yes, absolutely, you still have permission. Good luck with your study!

Kelly

Kelly Lockeman, PhD
Associate Professor, School of Medicine
Office of Assessment, Evaluation, and Scholarship
Director of Evaluation and Assessment,
Center for Interprofessional Education & Collaborative Care
Virginia Commonwealth University