A Quantitative Analysis of Newly Practicing Nurses' Perceived Self-Efficacy, Assertiveness, and Interprofessional Collaboration

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A QUANTITATIVE ANALYSIS OF NEWLY PRACTICING NURSES’

PERCEIVED SELF-EFFICACY, ASSERTIVENESS,

AND INTERPROFESSIONAL COLLABORATION

A Dissertation

by

Janice Baglietto

Submitted in partial fulfillment of the requirements

For the degree of

Doctor of Philosophy

April 21, 2021
The Dissertation of Janice Baglietto entitled: A QUANTITATIVE ANALYSIS OF NEWLY PRACTICING NURSES’ PERCEIVED SELF-EFFICACY, ASSERTIVENESS, AND INTERPROFESSIONAL COLLABORATION

In partial fulfillment of the requirement for the degree of

Doctor of Philosophy

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Abstract

**Background:** According to the Institute of Medicine, interprofessional teams offer the most effective way to assure the safe delivery of patient-centered care. Nurses need to possess the ability to speak up as members of interprofessional teams. Nurses who believe in their abilities to perform and who possess assertive communication skills are more successful, resulting in better patient outcomes.

**Purpose:** The purpose of this quantitative study was to examine newly practicing registered nurses’ perceived level of self-efficacy, perceived level of assertiveness, and perceived interprofessional collaboration.

**Participants:** Former members of the National Student Nurses Association who graduated in 2017 and 2018 and are now working as registered professional nurses.

**Methods:** The quantitative survey was comprised of three tools, demographic questions, and one additional qualitative open-ended question. The three tools used were: General Self-Efficacy Scale, Simplified Rathus Assertiveness Scale - Short Form, and Interprofessional Collaboration Scale. An electronic survey was sent to 3,793 graduates with a follow-up reminder two weeks later. Of the responses, 410 met inclusion criteria for analysis. Statistical methods employed for analysis with the use of SPSS included descriptive analysis, point-biserial and Pearson’s product-moment correlations, ANOVA, and t-tests. An additional open-ended qualitative question was included to inquire about perceived current interprofessional collaborative practice during the COVID-19 pandemic.

**Results:** Key findings demonstrated statistically significant correlations between the variables of perceived self-efficacy, perceived assertiveness, and interprofessional collaboration. Additional findings related to demographic characteristics showed that there were positive significant
correlations between both age and assertiveness as well as age and self-efficacy. In addition, the sample was then divided into two groups: RNs with less than two years of working experience and RNs with more than two years of working experience. The years of RN working experience did yield significant differences. No differences between groups were noted for nursing degree type or prior healthcare employment. Responses to an open-ended question inquiring about the RNs’ current practice, in light of the COVID-19 pandemic, were reviewed for common themes and showed that almost 43% of the participants expressed that the pandemic had a negative impact on interprofessional collaborative practice.

**Conclusion and Implications:** The information obtained from this study will add to the body of knowledge about newly practicing nurses’ perceived self-efficacy, perceived assertiveness, and perceived interprofessional collaborative practice. The results obtained may guide future curriculum development; healthcare systems policies, workplace education, and training programs for all professional staff; and research in interprofessional education.
Dedication

I dedicate this dissertation with love and affection to my daughters,

Kristen Ann and Karen Elizabeth.
Acknowledgments

I would like to thank my dissertation chair and advisor, Dr. Lois Moylan, for her invaluable dedication, knowledge, support, and guidance during the course of my Ph.D. degree and the writing of this dissertation. I would also like to thank Dr. Patricia Eckardt, mentor, professor, committee member, and friend, who inspired and encouraged me, in addition sharing her amazing knowledge. I also would like to thank Dr. Robert Kerner, committee member and colleague, for sharing his knowledge and expertise of interprofessional education.

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CHAPTER 1: INTRODUCTION

Background

Nurses, as the largest group of healthcare providers, need to possess effective communication to ensure competent and safe practices. Communication is essential to successful professional working relationships and teamwork. The ability of newly practicing nurses to engage in interprofessional communication is of great concern. Nurses, at an estimated 4 million strong, in a variety of multidisciplinary settings, are a significant presence in healthcare delivery. With such a significant presence, it is essential that nurses are effective interprofessional communicators. “Speaking up,” according to Numminen, Repo, and Leino-Kilpi (2017), is a necessary prerequisite for effective communication.

Assertiveness is considered an important behavior to ensure a successful relationship with colleagues, patients, and families (Riley, 2000). Assertive communication allows for the expression of feelings, opinions, and beliefs, directly and honestly, without violating the rights of others (Ellis & Hartley, 2005; Hopkins, 2005). An assertive communication style assists nurses in practice, as advocate for their patients, families, communities, and their profession. Studies have demonstrated that individuals who possess assertive behaviors are more successful and have increased self-worth (Ayaz, 2002; Bal, 2003; Yilmaz, 2000), yet little is known about assertive behaviors and newly practicing nurses.

Perceived self-efficacy (Bandura, 1977, 1995) refers to the belief in one’s capabilities to perform and manage situations. Perceived strength of one’s self-efficacy is an important determinate in a person’s likeliness to engage and cope with a given situation. A person’s confidence in one’s own ability to cope with a given situation will affect whether he or she will engage in what may be perceive as stressful or threatening. Persons with a perceived strong sense
of self-efficacy approach difficult tasks with the necessary effort to meet the challenge, whereas persons with low self-efficacy avoid the challenges altogether, due to their feelings of inadequacy.

The expectations of personal efficacy, according to Bandura (1997), can be obtained through four major sources: performance accomplishments, vicarious experiences, verbal persuasion, and emotional arousal. The attainment of self-efficacy through performance accomplishment is based on the personal mastery of an experience. Successes in performance raise the person’s self-expectations whereas repeated failure lowers them. Once strong efficacy expectation is developed through repeated successes, the negative impact of a subsequent failure is reduced. This enhancement of functional behavior can then be transferred to similar situations. The second source can be derived through vicarious experiences. Seeing others deal with threatening activities without negative outcomes can motivate others to be persistent in their efforts. This mode of attainment is not as strong as that which was obtained through personal mastery. The next source is the use of verbal persuasion, which is the suggestion that a person has the capability to cope with the given situation. Verbal persuasion alone is limited in its effect, but when used in conjunction with corrective activities, it may have greater success. The final source that influences efficacy is emotional arousal. Situations that are stressful and taxing generate high states of anxiety that may be debilitating and adversely affect efficacy by arousing thoughts of incompetence and promote avoidance behaviors. Persons who believe that they are less vulnerable and have established strong self-efficacy are less susceptible to the effects of their emotional responses.

The purpose of this proposed study was to explore the relationship between nurses’ perceived self-efficacy, perceived level of assertiveness, perceived interprofessional
collaborative practice, along with the participants’ demographic characteristics. It is hoped that the measurement and analysis of these variables may provide information vital to both academic and health industry leaders to assist nurses as they transition into interprofessional practice.

**Problem**

According to the Institute of Medicine, now known as the National Academy of Medicine, interprofessional teams are the most effective way to assure the safe delivery of effective patient-centered care (Committee on Quality of Health Care in America, & Institute of Medicine, 2001; Institute of Medicine, 2011). However, according to Thibault (2013), today's health professionals are unprepared to work in teams. The predominant current educational model of health professionals continues to segregate learning until students complete their formal academic preparation. This delay in exposure to multi-professional team practice impedes the acquisition of the necessary competencies to function as effective team members in today's complex health systems.

Awareness of this lack of interprofessional clinical experience gives rise to the question of proper preparation for practice. In present-day baccalaureate nursing education, there is limited exposure to other healthcare professions, regardless of the fact that quality patient care involves efficient teamwork. Newly practicing nurses face many challenges as they leave academia to enter the workforce. They must assimilate to their new practice environment and build professional relationships as they learn their roles and responsibilities. As members of interprofessional healthcare teams, the newly practicing nurse must be able to communicate efficiently in reporting their objective findings, concerns, and questions. The ability of the nurse to “speak up” is paramount to success within an interprofessional collaborative practice model.
In today's acute care hospital environment, the importance of effective teamwork in healthcare has been recognized as a means to improved patient safety and outcomes (Brock et al., 2013).

**Barriers to Communication**

The key to effective teamwork is communication; however, barriers to communication exist. Common barriers to effective interprofessional communication and collaboration, as identified by O'Daniel and Rosenstein (2008, pp. 2-274), include several domains: individual, social, technological, and process components (Table 1). Perceptions of each healthcare provider's role and responsibilities, gender, and generational differences all play a part in the interactions between healthcare team members. Ethnic and cultural diversity amongst team members can also exacerbate communication problems as a result of misunderstood mores. In the review of organizational communication literature, it was concluded that communication failures in medical settings arose from the very nature of its hierarchical culture. Concerns related to upward influences, role conflict and uncertainty, struggles with interpersonal power and conflict, concerns about appearing incompetent, and fears of addressing persons in power can hinder interprofessional communication (Joint Commission on Accrediation of Healthcare Organization, 2005; O’Daniel & Rosenstein, 2008; Sutcliffe, Lewton, & Rosenthal, 2004; Weick, 2002). Nurses’ confidence in the new role is challenging and may impair their sense of self-efficacy in functioning within the system.

The relationship between interprofessional communication and patient safety has been established, but few studies to date have been done to demonstrate if pre-clinical interprofessional team training affects later practice (Brock et al., 2013). The ability to effectively express one’s self and speak up is paramount to maintain the necessary lines of communication for successful interprofessional collaborative practice. The questions one must
ask is: Do nurses entering into practice possess the necessary tools to be effective communicators? Are assertiveness and self-efficacy antecedents to successful communication and interprofessional collaborative practice?

**Table 1**

*Common Barriers to Interprofessional Communication and Collaboration*

- Personal values and expectations
- Personality differences
- Hierarchy
- Disruptive behavior
- Culture and ethnicity
- Generational differences
- Gender
- Historical interprofessional and intraprofessional rivalries
- Differences in language and jargon
- Differences in schedules and professional routines
- Varying levels of preparation, qualifications, and status
- Differences in requirements, regulations, and norms of professional education
- Fears of diluted professional identity
- Differences in accountability, payment, and rewards
- Concerns regarding clinical responsibility
- Complexity of care
- Emphasis on rapid decision making


**Purpose of Research**

The purpose of this quantitative study was to examine the newly practicing registered nurses’ perceived level of assertiveness, self-efficacy, and interprofessional collaboration.

1. Determine newly practicing registered nurses’ self-perceived level of assertiveness.
2. Determine newly practicing registered nurses’ self-perceived self-efficacy.

3. Determine newly practicing registered nurses’ perceived perception of effective interprofessional collaborative practice.

4. Determine if there is a significant correlation or difference between/among newly practicing registered nurses’ perceived self-efficacy, perceived level of assertiveness and perceived interprofessional collaboration.

5. Determine if there is a significant correlation or difference between/among newly practicing registered nurses’ perceived self-efficacy; perceived level of assertiveness; perceived interprofessional collaboration; and their demographic characteristics of age, gender, degree type, and past healthcare experiences.

**Significance**

According to the Health and Medicine Division of the National Academies of Sciences, Engineering, and Medicine, there is a great chasm in the delivery of health care in the United States. In the 1999 Institute of Medicine report, *To Err Is Human: Building a Safer Health System*, preventable medical errors had been found to be the eighth leading cause of death in the United States. As many as 98,000 people will die each year as a result of preventable medical errors in hospitals. Medical errors are defined by the Health and Medicine Division "as the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim" (Kohn, Corrigan, & Donaldson, 2000). It is estimated that preventable medical errors cost hospitals an estimated $17 billion to $29 billion per year. In addition to the loss of human lives, other consequences of preventable medical errors include loss of finances, loss of public trust, decreased patient satisfaction, and decreased healthcare professionals’ morale (Institute of Medicine, 2000).
Theoretical Framework

Interprofessional Education Collaborative

In an effort to improve population health outcomes, six national associations of schools formed together to promote interprofessional learning experiences. Schools of dentistry, nursing, allopathic medicine, osteopathic medicine, pharmacy, and public health joined together in 2009 to form the Interprofessional Education Collaborative, with the goal to assist in the preparation of future health professionals and ensure superior team-based care of patients. Representatives from each of the professions joined together to guide curriculum development for all schools and create core competencies for interprofessional collaborative practice. The principles of the four core competencies are the foundations of interprofessional education and collaboration (Interprofessional Education Collaborative Expert Panel, 2011). In 2016, the Interprofessional Education Collaborative Board reconvened to restructure and update their core competencies and add a three-fold purpose statement. The four core competencies address the domains of values and ethics, roles and responsibilities, interprofessional communication, and team development and teamwork. These four domains are addressed in the arenas of patient- and family-centered care as well as community and population-oriented care. The use of these competencies begins pre-licensure and continues through professional practice (Figure 1; Interprofessional Education Collaborative, 2016).
Four Core Competencies

The first Interprofessional Education Collaborative competency states that one will work with individuals of other professions to maintain a climate of mutual respect and shared values. The second competency addresses the need to use knowledge of one’s own role and the role of other professionals to appropriately assess and address the health care needs of patients and to promote and advance population health. The third competency addresses the need to communicate with patients, families, communities, and professionals in health and other fields in a manner that supports a team approach for the promotion and maintenance of health and the
prevention and treatment of disease. The final competency addresses teams and teamwork, stating that the application of relationship-building values and principles of team dynamics are necessary to perform effectively as team members to plan, deliver, and evaluate patient/population-centered care and population health program and policies (Interprofessional Education Collaborative, 2016).

These four core competencies for Interprofessional Collaborative practice and their sub-competencies embrace the diversity and cooperative workings of an interprofessional team. Effective and efficient communication with team members is paramount to forge the necessary interdependent relationships that will provide quality patient/population-centered care. The ability to listen actively and express one’s knowledge and opinions to the team with confidence, clarity, and respect is a necessary skill required by all healthcare providers. The ability of the newly practicing registered nurse to perform as a member of an interprofessional collaborative team is essential for the delivery of safe, efficient, and effective patient/population care. The question arises: do newly practicing registered nurses possess the self-efficacy and assertiveness necessary for effective interprofessional collaboration?

**Research Questions**

The following research questions guided this quantitative descriptive study.

1. Is there a significant relationship between a nurse’s perceived level of assertiveness and perceived level of self-efficacy?

2. Is there a significant relationship between a nurse’s perceived level of assertiveness and perceived level of interprofessional collaboration?

3. Is there a significant relationship between a nurse’s perceived level of self-efficacy and perceived level of interprofessional collaboration?
Supplemental analysis was done to identify any relationships or differences related to age, gender, geographic area, degree obtained, and past employment experience in the field of healthcare.

**Conceptual Definitions**

**Assertiveness**

The concept of *assertiveness* refers to the ability to express one's own feelings, opinions, beliefs, and needs openly and clearly, directly, and honestly, without adopting an aggressive tone and with feelings that do not reflect anxiety or violate another's rights (Ibrahim, 2011; Kutlu, 2009).

**Assertiveness in Patient Care**

Assertiveness in patient care refers to the ability to respectfully express concerns about issues that have the potential to impact patient safety and share opinions with other staff, including those in authority (Omura et al., 2016).

**Aggressive Communication**

Aggressive communication is the expression of one’s views without the consideration of others (Sims, 2017).

**Collaborative Practice**

Collaborative practice in healthcare occurs when multiple health workers from different professional backgrounds provide comprehensive services by working with patients, their families, careers, and communities to deliver the highest quality of care across settings (World Health Organization [WHO], 2010).
Effective Teams, “Teamness”

Effective teams, “teamness,” is defined as teams possessing the interrelated core qualities of shared goals, clear roles, mutual trust, effective communication, measurable processes and outcomes, and organizational support (Tilden, Eckstrom, & Dieckmann, 2016).

Self-Efficacy

Self-efficacy refers to an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments (Bandura, 1977, 1986, 1995, 1997).

Interprofessional Collaborative Practice

Interprofessional collaborative practice is defined as the ability of the healthcare provider to work with others. “When multiple health workers from different professional backgrounds work together with patients, families, careers [sic], and communities to deliver the highest quality of care” (WHO, 2010).

Interprofessional Education

“When students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes” (WHO, 2010).

Interprofessional Teamwork

The levels of cooperation, coordination, and collaboration characterizing the relationships between professions in delivering patient-centered care (Interprofessional Education Collaborative Expert Panel, 2011).

Newly Practicing Registered Nurse

For the purpose of this study, a newly practicing registered nurse was defined as a graduate of a nursing program who has passed the required licensing examination and has two years or less of experience working as a registered nurse.
Physician–Nurse Collaboration

Physician–nurse collaboration is described as “nurses and physicians cooperatively working together, sharing responsibilities for solving problems and making decisions to formulate and carry out plans for patient care” (Baggs & Schmitt, 1988, p. 145).

“Speaking Up”

“Speaking up” is defined as “standing up for yourself, in such a way as not to disrespect the other person’s opinion” (Flin, O’Connor, & Crichton, 2008, p. 81). It was also defined as an individual using his or her voice to convey to someone in a higher hierarchy level specific information that may lead to a difference in patient safe (Sayre, McNesse-Smith, Leach, & Phillips, 2012; Yee-Shui Law & Chan, 2015).

Operational Definitions

Assertiveness

For the purpose of this study, assertiveness was defined as the score achieved on the Rathus assertiveness schedule.

Self-Efficacy

For the purpose of this study, self-efficacy was defined by the score achieved on the Generalized Self-Efficacy Scale (GSE).

Interprofessional Collaboration

For the purpose of this study, perceived interprofessional collaboration was defined as the score achieved on the Interprofessional Collaboration Scale (ICS).

Summary

This chapter has presented an overview of the necessity of effective communication to ensure competent and safe delivery of patient care; its significance to healthcare; barriers to
interprofessional communication; the Interprofessional Education Collaborative mission and its four competency domains; the research questions of interest for this proposed quantitative research study; and conceptual definitions. Nurses, as predominant members of many healthcare teams, will need the necessary competencies relating to communication to function as effective team members. Current professional healthcare educational models delay interprofessional training until after licensure. This educational gap is a cause for concern for the development of effective and efficient interprofessional collaborative teams. Barriers to communication have been identified and need to be addressed. In the next chapter, a review of literature relating to self-efficacy, assertiveness, and interprofessional collaboration explores related studies and establishes a foundation for the focus of this research.
CHAPTER 2: REVIEW OF LITERATURE

Introduction

This chapter provides a review of the literature that begins with assertiveness, empowerment, and the ability to speak up. It continues with a review of literature discussing barriers to communication, assertiveness training, self-efficacy, interprofessional collaboration, and the roles and responsibilities of education. It concludes with a review of social theories that have been identified to aid in the understanding of the interconnection between interprofessional collaboration and medical errors.

Assertiveness, Empowerment, and the Ability to Speak Up

In an effort to understand nurses’ ability to communicate related to their level of assertiveness and sense of empowerment, a descriptive analytical study of nursing students in a four-year baccalaureate program at a university in Egypt was done to determine the levels of assertiveness and empowerment of students in each year of their program (Ibrahim, 2011). Demographic data were collected related to the personal characteristics of the nursing students in addition to data gathered by the Rathus Assertiveness Schedule, a 30-item Likert scale used to measure each participant’s level of assertiveness, and the Spreitzer’s empowerment scale, which is a 4-dimension, 12-item Likert scale used to measure empowerment. First, a pilot study was done of 20 student nurses to assess for clarity and applicability of the survey tools. A translation/back-translation of the questions was done to assure the validity of the questions that needed to be translated from English to Arabic. A total of 207 nursing students participated in the study with an age range of 17 to 22. Forty percent of the students were first born and 80% of the students were classified as being from families with financial statuses that did not match economic needs. It was noted that the overall assertiveness score of these students was 60.4%
with first-year and fourth-year students demonstrating scores of 62.5% and 67.2% as opposed to second-year and third-year students with scores of 50% and 54.8%, respectively. In the area of psychological empowerment, a score of 52% was noted, with the greater sense of empowerment noted by second-year students at 70%. First, third, and fourth-year students scored 50%, 52%, and 48% for empowerment. Correlation analysis was then done of assertiveness, empowerment, and the demographic characteristics of the participants. It was noted that there was a positive correlation between income and a student’s assertiveness and psychological empowerment, and a negative relationship between village of residence and assertiveness and empowerment. Ibrahim (2011) recommends that specific courses need to be included in nursing programs, which will enhance assertiveness. It was also suggested that educators need to motivate students to express themselves and assist in their development of autonomy.

In a cross-sectional quantitative study of newly graduated British nurses’ empowerment to challenge unsafe practices, the nurses’ perceived levels of organizational empowerment and assertive communication skills were studied using hypothetical scenarios (Mansour & Mattukoyya, 2018). Using the Conditions of Work Effectiveness Questionnaire and four hypothetical scenarios on attitudes toward speaking up, 110 newly graduated nurses at four British hospitals were surveyed to determine if there was a correlation between the participants’ empowerment average scores and their hypothetical scenarios of speaking up. Of that group, a total of 51 questionnaires were completed and returned for analysis. A correlation analysis was done on the demographic data to determine the similarities and differences among the participants. The majority of the nurses reported working in either medical or surgical areas (31.4% and 35%). The newly graduated nurses reported an overall average workplace empowerment score of 13.8 (SD = 0.52, Cronbach’s α = .86) which is a moderate level of
perceived empowerment. An average score of 4.47 was noted on the speaking-up scale ($SD = .69$, Cronbach’s $\alpha = .76$), which is indicative of a high degree of willingness to intervene and challenge perceived unsafe clinical practices in given hypothetical scenarios. The study revealed a statistically significant correlation between participants’ overall perceived work empowerment and their reported ability in speaking up to challenge unsafe practice ($r = .472, p < .01$). This study demonstrated a link between newly graduated nurses’ perceived empowerment in their work setting and their ability to speak up. It was suggested by Mansour and Mattukoyya (2018) that newly graduated nurses need guidance, support, and acknowledgment. Managers and staff development educators will need to foster a supportive work culture to assist the newly graduated nurse build self-confidence, an attribute to speaking-up behaviors necessary for safe patient practice.

In a narrative inquiry of new graduated registered nurses in Hong Kong (Law & Chan, 2015), the process of learning to speak up in practice was explored. Eighteen new graduates were recruited for repeated unstructured interviews and additional email conversation. The results of the study illustrated the following: learning to speak up requires more than one training session; mentoring is an important part of the education process and is not confined to a single person, and can take place prior to, during or after an experience; the establishment of a safe environment ensures that voices can be heard. It was concluded that mentoring by others, self-mentoring, and a safe environment are necessary to promote speaking-up behaviors in new graduate nurses.

**Assertiveness Training**

In an attempt to reduce interpersonal stress in the workplace environment, assertiveness training for nurses has been suggested. It is believed that poor assertiveness skills put patients at
risk (Manning, 2006; Yoshinaga et al., 2018). In a single group, a pre/post interventional study of nurses’ assertiveness without a control group was conducted at three hospitals in Japan (Yoshinaga et al., 2018). All participants received two 90-minute assertiveness training sessions one month apart and were assessed pre-intervention, post-intervention, and at a 3-month and 6-month follow-up. Participants were licensed assistant nurses and registered nurses. The Rathus Assertiveness Schedule is a 30-point Likert scale used to determine degrees of assertiveness with ranges from -90 to +90 points, with a higher number indicating higher assertiveness; the Brief Version of the Fear of Negative Evaluation Scale, which is a 12-item Likert scale ranging from 12 to 60, with a higher number reflecting greater concern about a negative evaluation; and the Brief Job Stress Questionnaire, which is a 57-item Likert scale to measure job-related stress, with higher scores demonstrating increased distress. These three surveys were used to evaluate the outcome of assertiveness training on nursing staff at three hospitals in Japan. Analysis of the data included an ANOVA using Greenhouse-Geisser correction. Bonferroni-corrected t tests were used for post-hoc tests. In addition to null-hypothesis testing, within-group effect was determined as the effect of size. A total of 33 participants had completed the training, with two dropping out at the 3-month follow-up point. The participants were mostly female (n = 24, 72.7%), with a mean age of 38.3 years (SD = 12.1). Their average work experience for the participants were 3.8 years (SD = 4.0).

In a pairwise comparison of the outcome measurements, it was demonstrated that the modified brief assertiveness training did demonstrate an improvement in assertiveness after the completion of the training. This was demonstrated by an improved RAS score from -14.2 to -8.9. However, no statistically significant effects were seen on the Brief Version of the Fear of Negative Evaluation or the Brief Job Stress Questionnaire subscales.
Barriers to Communication

In an effort to understand the complex phenomenon of failures in healthcare communication, Guttman et al. (2018) discussed the need for precision when describing communications. Communication as defined by Salas et al. (2014) and amended by Guttmann et al. (2018, p. 1) is the “reciprocal process of sending and receiving precise and accurate information that forms and reforms one’s attitudes, behaviors, and cognitions influenced by internal and external factors.” Barriers to effective communication, according to Guttman et al. (2018), are classified as behavioral, cognitive, linguistic, environmental, and technological. Behavioral barriers to communication include the fear of potential consequences that may include dismissal, anger, intimidation, and/or retribution. The self-preservation of the individual in this case is the motivational factor. Speaking up can be viewed, in an unsafe environment, as a socially and politically risky behavior resulting in an aversion to do so. Cognitive barriers to communication can occur when communication is disruptive, lacks context, is limited, or susceptible to interruptions or distractions. The processing and perception of the communication is then at risk. These breaks in the communication process interfere with concentration and tax both the sender and the receiver and put the message at risk.

The enforcement of an environment free of unnecessary communication and the use of communication tools to aid in maintaining the focus of the sender may prove to be helpful. Linguistic barriers to communication can be in the form of speech style, speed, tone, syntax, semantics, pragmatics, colloquialism, and terminology. The use of closed-loop communication may assist by providing an opportunity for clarification in real time, thus preempting a misunderstanding between the sender and the receiver. Environmental noise, which is defined as both human and equipment, are peripheral sounds present in the environment. In addition,
physical barriers in the work environment such as masks, surgical drapes, and equipment can affect the sender and receiver by the obstruction of a line of vision or muffle verbal communication. Simple changes such as surgical drapes with clear windows and clear face shield can allow for better visualization, which can directly affect transmission of the message. The last of the barrier categories are the technological barriers. The electronic medical record has allowed for quick and easy access to information, but still, there is segregation of disciplines. Information is often separated between physician, nurses, and other members of the interprofessional team, with each discipline documenting in their own electronic silo. If the information contained in each of these silos is not appreciated by other members of the interdisciplinary team, failures in communication can occur, which could result in a delay of appropriate care, injury, or death. This presentation of potential/actual barriers to communication allows us to understand the gaps that are present, and which must be addressed to ensure a safer patient healthcare environment.

**Self-Efficacy and Interprofessional Collaboration**

A cross-sectional study of 264 Iranian nurses from five hospitals was done to determine their perceived level of self-efficacy (Soudagar, Rambod, & Beheshtipour, 2015). The General Self-Efficacy (GSE) Scale was used to evaluate a targeted population of nurses with diploma, bachelor’s and master’s degrees. The subjects in this study were mostly female (79%), with an age range from 20 to 52 years and the mean age of 31.72. The working experience range was from less than 1 year to 34 years, with a mean of 8.33 years. The majority of the nurses had baccalaureate degrees (84.4%). The mean self-efficacy in all nurses was 29.7 ($SD = 5.28$). A significant difference was found among the degree types: diploma ($M = 32.22$, $SD = 6.21$), baccalaureate ($M = 29.33$, $SD = 5.68$), and master’s degrees ($M = 32.00$, $SD = 6.00$).
significant difference of the GSE was found between diploma and bachelor nurses \((p = 0.01)\). The study showed that diploma degree nurses had higher self-efficacy scores compared to the baccalaureate counterparts. Nurses with more working experience scored significantly higher and self-efficacy was predicted by years of experience in nursing \((\beta = 0.25, p = 0.009)\) and overall interest in the nursing field \((\beta = -0.15, p = 0.02)\). Suggestions were made for a repeated study; an investigation of the university program curriculum to identify a possible cause for lower self-efficacy score than those nurses from diploma programs; increase in experiences demonstrated higher self-efficacy scores; and lastly, for experienced nurses to share their experiences and interest in the nursing field.

A quasi-experimental, non-randomized study of 115 nurses and midwives and 156 physicians currently in a postgraduate education program was done in London to study the effect of interprofessional simulation on self-efficacy (Watters et al., 2015). Participants took part in a hi-fidelity clinical simulation located on the campus of a large hospital in central London. Participation in the study was part of mandatory postgraduate professional development. The intervention consisted of 21 interprofessional courses and 53 uniprofessional courses. Each course contained six scenarios, five clinical and one communication, for the one-day simulation learning experience. There were 12 participants in each course: for uniprofessional courses, the sessions had either 12 physicians or 12 nurses/midwives; the interprofessional courses, comprised of nurses/midwives and physician in a one-to-one ratio. Each participant was paired off for at least one 15-minute scenario while others in the group observed. Each scenario was then followed by a facilitated debrief. Pre-course and post-course questionnaires were administered for the measurement of self-efficacy in emergency situation, communication, teamwork, and leadership. Quantitative and qualitative data were also collected. These consisted
of both fixed response questions and open-ended questions used to explore themes pertaining to communication and leadership. The investigator hypothesized that self-efficacy would increase as a result of overall training in both the uniprofessional and interprofessional courses and that the participants would feel more trust in their abilities. The interprofessional training showed an improved post scores in self-efficacy, with significantly better improvement for nurses and midwives ($p < 0.001$); improved communication/teamwork ($p < 0.05$); and improved leadership and management ($p < 0.001$). The physician did show a significantly higher scores post course on communication/teamwork ($p < 0.05$). However, scores for leadership/management were not significant. The qualitative responses identified the triangularization of three themes: communication, leadership, and teamwork, which the investigator stated closely mirrored the literature.

**Education, Roles, and Responsibilities**

In the area of education, attention has been paid to the timing of interprofessional education in the curriculum and the pedagogical approach needed for this undertaking. It was determined that an understanding of one's professional role identity and responsibility was needed prior to introduction into team collaboration. Exposure of students to interprofessional team learning prior to the attainment of the necessary educational topics and the understanding of their role responsibilities may cause the student undue stress and inhibit effective learning (Hudson, Lethbridge, Vekka, & Caputi, 2016). Teaching approaches such as team simulation and simulated mock case studies were examined to determine if deliberate practice improved an individual's team performance; these were a valid construct to assess communication and clinical decision-making skills. Studies have shown that a simulation-enhanced Interprofessional
Education curriculum has been successful in improving communication and teamwork (Boehler, Schwind, Markwell, & Minter, 2017; Wong, Gang, Szyld, & Mahoney, 2016).

In the nonexperimental survey-based quantitative study, *Making an Attitude Adjustment Using a Simulation-Enhanced Interprofessional Education Strategy to Improve Attitudes Toward Teamwork and Communication* (Wong, Gang, Szyld, & Mahoney, 2016), attitudes and perception about teamwork, communication, and interprofessional collaboration were examined. A convenience sample of 50 staff nurses and 59 emergency medical residents at a 1200-bed academic affiliated U.S. urban adult tertiary care public hospital were required to attend a mandatory training course that included simulation-based didactic sessions. Participation in the survey-based study was voluntary. Participants were given pre-session handouts outlining team roles and responsibilities and then grouped into six member teams (three nurses, three residents). The intervention consisted of a 30-minute introductory lecture, stating the goals and objectives of the course, roles for the resuscitation room, and a discussion of tools and strategies for effective communication. Each group then participated in 12 three-hour simulation sessions over a three-month period. Simulation scenarios ran for 15 minutes regardless of the clinical outcome. Instructor-guided structured debriefing was done at the conclusion of each case. Clinical aspects of the simulation cases were discussed; however, the major focus of the debriefing was on teamwork and communication. After each session, participants were given a handout highlighting teamwork and interprofessional communication strategies. To assess the participants' attitudes on teamwork, the TeamSTEPPS Team-work Attitudes Questionnaire (TTAQ) was given both pre-session and post-session each day. In addition, participants' demographic data were collected from the Hospital Survey on Patient Safety Culture. Statistical analysis of the baseline demographic data was analyzed via the $X^2$ test. An independent 2-tailed
student $t$ test was used to analyze the pre-session and post-session survey responses. To ensure a normal distribution, the Wilcoxon test was performed. At the conclusion of the study, the analysis showed a significant improvement in staff attitudes toward: team structure ($6.4\%, p < 0.0001$), leadership ($2.8\%, p = 0.029$), situation monitoring ($4\%, p = 0.014$), and mutual support ($4\%, p = 0.003$). Conversely, communication construct with only a $2.6\%$ improvement score did not show a significant improvement as reflected by $p = 0.107$. Limitations to the study were unique. Due to the aftermath of Hurricane Sandy that caused serious damage throughout the Northeastern US, in the Fall of 2012, there was a 2-month gap resulting in the temporary displacement of nurses and resident physicians. Another gap identified was the exclusion of attending physicians as learners in the team-training program. Attending physicians play an intricate role in the education and socialization of the resident physicians, therefore it is important that they too can communicate and function effectively, as part of the interdisciplinary team. The investigators concluded that simulation-enhanced Interprofessional Education curriculum was successful in improving teamwork and communication behaviors and suggested future work across other disciplines and at other institutions for comparison.

Common themes that have emerged from this review include the relationship between assertiveness, empowerment, and the ability to speak up; the need for changes in current nursing education curriculums to include communication and assertiveness training for nurses’ pre-practice; the need to address barriers to interprofessional communication in all health professions; and the need for interventions to alleviate barriers to communication.

Efficient and effective interprofessional communication is necessary for the delivery of safe patient practice. It is essential that educators and administrator do all that they can to empower nurses to speak up. Barriers that hinder a nurse’s ability to communicate need to be
addressed. The work environment needs to be safe and supportive of its staff to ensure that effective communication can take place. This is not only a patient safely issue but also a staff morale issue.

**American Association of Colleges of Nursing**

American Association of Colleges of Nursing (2020), in their position statement on Interdisciplinary Education and Practice, acknowledges the need for interdisciplinary education to foster interprofessional interactions that will enhance future collaborative practice. The American Association of Colleges of Nursing is aware that each discipline has its own perspective and scope of practice and wants nurse educators to expose nursing students to experiences that will allow for exposure to a holistic, interprofessional approach to patient and population care. Interdisciplinary educational approaches allow students from varied healthcare disciplines to learn about and from each other. Interdisciplinary education enables professional socialization to occur along with the development of essential team skills, such as collaborative decision making and problem solving.

The American Association of Colleges of Nursing (2020) recommends that schools of nursing develop programs and curricula that provide both undergraduate and graduate nursing students opportunities to collaborate with other healthcare disciplines; establish processes for joint educational planning in both classroom and clinical experiences; collaborate with other disciplines to develop, implement, and evaluate models of interdisciplinary education; and seek out clinical experiences that foster interdisciplinary models. The organization recommends that schools of nursing conduct research to evaluate interdisciplinary education, develop a database of interdisciplinary education, conduct workshops for interdisciplinary educators, and establish alliances with other professional organization to design and foster interdisciplinary education.
Summary

In this chapter, the importance of an assertive communication style was discussed and studies from various cultures were reviewed. Nurses and other healthcare professionals, working in a safe and supportive environment can feel empowered to speak up, despite the identified barriers to communication. Both perceived self-efficacy and perceived assertiveness have shown to have a relationship with interprofessional collaboration practice. Studies have shown that timely intervention such as assertiveness education, communication education, mentoring, and interprofessional simulation educational experiences all play a role to increase perceived self-efficacy and perceived interprofessional collaborative practice. Several studies showed that interprofessional courses did have a significant positive effect on the nurses: communication and teamwork; leadership and management; and self-efficacy. However, no studies were identified to show a relationship among newly practicing nurses’ perceived self-efficacy, perceived assertiveness, and perceived interprofessional collaboration. Recommendations for the development and inclusion of interprofessional education has been made by the American Association of Colleges of Nursing. This addition to nursing and other health education programs will better prepare future healthcare professional for their entry into interprofessional practice model. The next chapter will explain the research design method, the instrumentation used, the research procedure, ethical considerations, and the analytical approach used.
CHAPTER 3: METHODS

Chapter three summarizes and explains the research design, the population studied, the sampling procedure, the sample, and the ethical considerations that need to be considered. This chapter describes the instrumentation and the operational definitions of the research variables, the research procedure, and the proposed analytical approach.

Research Design

A quantitative correlational design was utilized to establish the strength and direction of the relationship between newly practicing registered nurses’ self-perceived self-efficacy, assertiveness, and interprofessional collaboration. According to Wood and Ross-Kerr (2011), correlational design studies are used when the researcher is unsure if the variables in question are related to each other or when the variables are thought to be related, but the strength and direction of the relationship is unknown. Both reasons are applicable in this study.

A web-based survey was constructed using SurveyMonkey® and distributed electronically to a national sample of newly practicing registered nurses. Respondents were able to access the website via a hyperlink utilizing the electronic device of their choice. The specific recruitment sample of newly practicing registered nurse participants was obtained from the National Student Nurses Association (NSNA) database with permission of the organization. Consent from each participant was voluntary, obtained electronically, and the information provided included the purpose of the study, the protection of anonymity of the participants, the known risks associated with the study, and the participant’s right to withdraw from the study at any time. Consent was implied by submission of the survey rather than signatures or identifiable data to protect their anonymity (Creswell, 2013, p. 153). All data were password protected, stored and will be safely secured for 5 years. In an attempt to improve the rate of response,
follow-up emails were sent two weeks after the initial invitation email to encourage responses, as recommended by Dillman, Smyth, and Christian (2009).

Demographic data were collected to describe the characteristic of the sample, as related to identified gender, age, marital status, identified ethnicity/culture, educational degree, type of institution currently employed at (community, tertiary), and prior health care experience. The following tools were incorporated in the survey: The Generalized Self-Efficacy Scale (GSE), the Simple Rathus Assertiveness Schedule-Short form (SRAS-SF), and the Interprofessional Collaboration Scale (ICS). The data were reviewed and cleaned and descriptive statistical analysis was performed to define the characteristics of the sample. The descriptive statistic included the mean, medium, mode, and percentages. Correlation analysis was then performed to describe the strength and direction of the variables in question. The purpose of this analysis was to explore the interrelationships among self-perceived self-efficacy, assertiveness, and interprofessional collaboration. Data were checked for outliers, distribution of data points, and the direction and strength of any relationship between variables. Inferential statistical testing, t-tests, ANOVA, Pearson’s product-moment correlation, and point-biserial correlation analyses were done in comparing some of the demographics.

**Research Questions**

1. Is there a significant relationship between a nurse’s perceived level of assertiveness and perceived level of self-efficacy?

2. Is there a significant relationship between a nurse’s perceived level of assertiveness and perceived level of interprofessional collaboration?

3. Is there a significant relationship between a nurse’s perceived level of self-efficacy and perceived level of interprofessional collaboration?
Study Sample

A national sample of newly practicing registered nurses was obtained from the NSNA. Established in 1952, the NSNA represents nursing students from all 50 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands. NSNA is a nonprofit organization for students enrolled in diploma, associate, and baccalaureate nursing programs. Current membership in this organization is comprised of approximately 60,000 students enrolled in diploma, associate, and baccalaureate entry-level nursing programs. Permission to use an established email list of 3,793 former NSNA members from the spring/summer 2017, winter 2017, spring 2018, and summer 2018 graduate classes was obtained in order to provide some control over the wide range of potential nursing experience by limiting the sample to nurses with comparable employment since graduation as their entry into practice. These respondents from the 2018 New Graduate Survey gave their emails and permission to be contacted in the future. The respondents of the survey, who have met inclusion criteria, consist of a total of 3,793 nurses (72%). The educational preparation breakdown of these participants was as follows: 1,179 (31.1%) of the respondents had obtained an associate’s degree as their entry into practice and a total of 2,614 (68.9%) from a baccalaureate degree program. Of the 2,614-baccalaureate prepared nurses, 2,050 (54%) indicated that they had attained a traditional baccalaureate degree as their initial degree from generic nursing programs and 564 (14.9%) from second-degree programs.
Table 2.

NSNA Presently Licensed, Newly Practicing Registered Nurses by Degrees

<table>
<thead>
<tr>
<th>Degree type</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associate’s Degree</td>
<td>1179</td>
<td>31.1%</td>
</tr>
<tr>
<td>Baccalaureate Degree (Traditional Program)</td>
<td>2050</td>
<td>54%</td>
</tr>
<tr>
<td>Baccalaureate Degree (Accelerated Program)</td>
<td>564</td>
<td>14.9%</td>
</tr>
<tr>
<td>Total</td>
<td>3793</td>
<td>100%</td>
</tr>
</tbody>
</table>

Sampling and Consent

An electronic web-based invitation and survey was sent to those in the target population (Figure 2). This approach allowed for the potential recruitment of participants who have been employed for more than two years and those employed less than two years. The invitation to participate described the purpose of the study and gave a web-based link to connect to the study. The consent to participate was built into SurveyMonkey®, after the title, and introduced the study and the researcher. A statement affirming the level of risks to the participant was included along with notification of IRB-exempt acknowledgment from the sponsoring college and the NSNA. The consent included a statement of the proposed benefits to the participants, the right to withdraw from the study at any time, and the researcher’s contact information for questions. The consent was followed by a statement of thanks for participation in the survey. Respondents had the opportunity to enroll in a raffle for a 250 dollar Amazon® e-gift card by providing their email address to the researcher via a separate link (not linked to the survey response data) upon closing out the study.
Figure 2

Sampling Procedure

NSNA 2017 & 2018 GRADUATES N = 3,793

TOTAL RN ELECTRONIC SURVEY RESPONSES N = 490

RN SURVEY RESPONSES EXCLUDED N = 90

RN SURVEY RESPONSES ACCEPTED FOR INCLUSION N = 410

RNsWith more than 2 years practice experience N = 203

RNs 2 years or less of practice experience N = 207

ANALYSIS
The Sample

The group from which the convenience sample was obtained consists of 3,793 former NSNA members who are graduates from Associate and Baccalaureate pre-licensure degree programs and are now currently licensed and working as registered nurses. This sample included graduates from both the calendar year 2017 and 2018.

The estimated sample size needed for the correlation analysis was 379 valid respondents (10%) to achieve a power of .80. This was the minimum required responses needed to ascertain the strength and direction of linear relationships between the variables: perceived self-efficacy, perceived assertiveness, and interprofessional collaboration, without incurring a type 2 error. A Pearson’s $r$ correlation was used to assess the direction and strength of correlation between variables. A total of 490 responses were obtained with 410 (84%) suitable for analysis. This accounted for an 11% response rate.

Instrumentation

The survey was constructed to measure the variables of interest: self-perceived self-efficacy, self-perceived assertiveness, and self-perceived interprofessional collaboration. The items from each of the three instruments were incorporated into the electronic survey without descriptive labels, as to not disclose the intent of the inquiry. Demographic questions were located at the end of the survey to decrease the chance of implied bias by the respondent.
Variables of Interest

The variables under study included self-efficacy, assertiveness, interprofessional collaboration, and each of these variables was measured with specific instruments (Figure 3). Self-efficacy was measured by the GSE (Schwarzer & Jerusalem, 1995), assertiveness was measured by the Simple Rathus Assertiveness Schedule-Short Form (Jenerette & Dixon, 2010), and interprofessional collaboration was measured with the Interprofessional Collaboration Scale (Kenaszchuk, Reeves, Nicholas, & Zwarenstein, 2010).

Figure 3

Variables of Interest
### Table 3

**Instrumentation**

<table>
<thead>
<tr>
<th>Name</th>
<th>Year/Author(s)</th>
<th>Measures</th>
<th>Population</th>
<th>Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Self-Efficacy Scale</td>
<td>1979 Schwarzer &amp; Jerusalem</td>
<td>Perceived Self-Efficacy</td>
<td>General Adult Population</td>
<td>10-items, 4-point Likert Scale</td>
</tr>
<tr>
<td>(GSE)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simple Rathus assertiveness</td>
<td>2010 Jenerette &amp; Dixon</td>
<td>Individual’s Perceived Level of Assertiveness</td>
<td>Adult Version</td>
<td>19-item, 6-point Likert Scale</td>
</tr>
<tr>
<td>Schedule-Short Form (SRAS-SF)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interprofessional Collaboration</td>
<td>2010 Kenaszchuk, Reeves, Nicholas &amp; Zwarenstein</td>
<td>Participants’ Perceptions of Interprofessional Collaboration</td>
<td>Adult Healthcare providers: Nurses, Physicians, Allied Healthcare</td>
<td>26-item, 4 point Likert scale</td>
</tr>
</tbody>
</table>
ranged from .76 to .90, with the majority in the high .80s. Criteria-related validity has been documented in numerous correlation studies demonstrating positive coefficients with favorable emotions, dispositional optimism, and work satisfaction. Negative coefficients were found with depression, anxiety, stress, burnout, and health complaints. The scale has been used internationally with success since 1992 to predict adaptation after life changes and to indicate quality of life at any point in time. However, the general measure does not specifically address behavior change.

**Simple Rathus Assertiveness Schedule - Short Form**

The SRAS-SF (Jenerette & Dixon, 2010) is a 19-item schedule using a six-point Likert scale for measuring an individual’s level of assertiveness. The SRAS-SF is a shorten version of the Simple Rathus Assertiveness Schedule (McCormick, 1984), which is easier to read and comprehend than the original Rathus Assertiveness Schedule (RAS). Given that three scales of measurement were used, in addition to demographic questions, the decision was made to use the shorter version of the assertiveness scale. The SRAS-SF uses the same 19 items and 6 responses as the SRAS, with higher scores representing higher levels of assertiveness. The SRAS-SF S was chosen as an alternative to the original RAS or the SRAS to decrease the response burden of the participants. When compared, the SRAS and SRAS-SF were noted to be highly correlated with a Pearson’s correlation of .98 ($p < .01$) and Cronbach’s alphas of .85 and .80, respectively. The mean item-total correlation for the SRAS-SF was .37 with item means ranging from .21 to .53 (Jenerette & Dixon, 2010).

The original Rathus Assertiveness Schedule (Rathus, 1973) is a 30-item schedule for measuring an individual’s level of assertiveness, but the instrument can also be used to measure changes in assertive behaviors after assertiveness training. The RAS scale contains 30 items and
uses a six-point Likert scale to inquire if the item in question is: very characteristic of me, extremely descriptive (3); rather characteristic of me, quite descriptive (2); somewhat characteristic of me, slightly descriptive (1); uncharacteristic of me, slightly non-descriptive (-1); rather uncharacteristic of me, quite non-descriptive (-2); to very uncharacteristic of me, extremely non-descriptive (-3).

As published by the creator of the scale, Spencer A. Rathus (1973), a description of the reliability and validity are as follows. RAS score reliability was established after a test-retest administration of the instrument to 68 undergraduate college men and women, ranging in age from 17 to 27, with retesting after the lapse of 8 weeks. The mean pretest score was .2941, with a standard deviation of 29.121. The mean post test score was 1.6176 with a standard deviation of 27.6319. A Pearson’s correlation coefficient was run between initial and 8-week post score, yielding an $r$ of .778 ($p < .01$), demonstrating moderate to high stability of test scores over the 8-week lapse. RAS validity was established by comparing self-reported RAS scores to two external measures of assertiveness. In the first of the two studies, 18 college students administered the RAS to 67 known participants. The participants were then rated on a 17-item schedule constructed according to semantic differential techniques. The modifiers of rather, quite, somewhat, slightly, very, and extremely, were utilized to moderate the interval measurements, in addition to their corresponding numerical assignment. The factor structure of the 17-item rating schedule was determined by factor analysis of the responses and then followed by a varimax rotation of the raw data. Four factors accounting for 71.2% of the total variance were obtained: assertiveness, contentment, intelligence and prosperity, and health. Pearson’s correlation coefficients were run between the 67 raw RAS scores and the student raters’ impressions of their personality traits on each of the 17 scales. RAS scores demonstrated a
significant correlation \((p < .01)\) with each of the five scales comprising the assertiveness factor of the rating schedule: boldness \((r = .6124)\), outspokenness \((r = .6163)\), assertiveness \((r = .3424)\), aggressiveness \((r = .5374)\), and confidence \((r = .3294)\). RAS scores also negatively covaried with niceness \((r = -.3593; p < .01)\). However, the RAS scores did not covary with any of the remaining 11 items. RAS scores served as a valid indicator of respondents’ assertiveness in terms of the impressions they make on others. The RAS scores did fail to covary with intelligence, happiness, fairness and the remainder of the items, suggesting that RAS scores are not confused by the desire of the participant to respond in a manner that is deemed socially acceptable.

To determine each item’s contribution to the RAS and its validity, Pearson’s correlation coefficients were run between item scores, total RAS scores, and semantic differential rating of the six personality traits for the 67 subjects. Of the 30 items, 27 showed significant correlation with the total RAS score. Of the three remaining items, all were determined to be maintained in the schedule. Item number 1 and 21 indicated that their respondents considered themselves to be as aggressive and assertive as their peers and as frank and open about their emotions. Item 18 was to be maintained since it showed the relationship of confidence in a person’s ability to contradict a person in a public situation. The data demonstrated that the RAS is a reliable and valid assessment of assertiveness and that such an instrument can be used in obtaining pre- and post-measures of assertiveness in clinical practice.

The Simple Rathus Assertiveness Scheduled, which the SRAS-SF is derived from, is a 30-item six-point Likert-type scale, like the original RAS. However, the SRAS was modified for readability in 1984 by Iain A. McCormick. According to McCormick (1984), the original RAS schedule has a reading grade level of 10-12, as measured by the Flesch Reading Ease score.
McCormick (1984), using the Noun Frequency Method (Elley, 1969), was able to lower the Flesch Reading Ease score to a sixth-grade level. The Cronbach’s correlation between the total scores of these two versions was .94, which is evident of a high satisfactory degree of equivalence. The mean inter-item correlation between the RAS and SRAS was reported to be .79 ($p = .001; df = 114$). It was McCormick’s beliefs that this simplified version would be a more efficient and less taxing measure for study participants of average reading ability.

**Interprofessional Collaboration Scale**

The ICS (Kenaschuk, Reeves, Nicholas, & Zwarenstein, 2010) was used to assess the participants’ perceptions of interprofessional collaboration with physicians and allied health professionals. The original tool consists of three parallel versions to address the perceptions of collaborations by physicians, nurses, and allied health professionals. Each section of the original survey utilizes 13 questions to inquire about the reported perception of interprofessional collaborative relationship between the respondent and the other professional dyads, for a total of 26 questions. Based on a validity study with 479 nursing respondents working in inpatient units of 15 community and academic hospitals in Canada, three factors’ measures were identified: communication, accommodation, and isolation. The exploratory factor analysis supported the three-factor structure with a Raykov’s composite reliability statistic above 0.7 for all groups.

For the purpose of this study, only the section addressing the nurses’ perceived working relationships with doctors and allied health professionals was explored. The respondents were asked to evaluate their work relationships, based on their current place of employment, between themselves, physicians, and allied health professionals. The electronic survey consisted of a total of 26 items, in which 13 items inquired about the working relationship between nurses and physicians and subsequent 13 items inquired about the working relationship between nurses and
allied health professionals. Utilizing a four-point Likert scale, responses ranged from strongly disagree (1), disagree (2), agree (3), to strongly agree (4). Five of the 13 items in the survey required reverse-scoring.

**Ethical Considerations**

**Category of Review**

A research proposal was submitted to the Molloy Institutional Review Board (Appendix A). Since data collection via survey methodology is anonymous and of no apparent risk to the participants, a request for exempt status was requested. Approval was obtained from the Molloy IRB, as an exemption category two.

**Data Preparation**

Data were collected via SurveyMonkey® and exported electronically with labels and coding into SPSS for analysis. The Likert scales were coded with accommodation made for reversed-coded items. The GSE used to evaluate the respondents’ self-perceived self-efficacy, is a 10-item Likert scale response coded +1 to +4. The SRAS-SF, used to evaluate the respondents’ self-perceived level of assertiveness, had its Likert scale responses code from -3 to +3. Adjustments were made for the 11 reverse-coded items in this 19-item survey. The ICS, used to evaluate the nurses’ self-perceived interprofessional collaboration relationships, had its 26-item Likert-type scale responses coded +1 to +4, with adjustment made for the five reverse-coded items. Demographic categorical data were assigned numerical codes and exported along with the three surveys data for analysis. In addition, responses to the one qualitative open-ended question were read and divided into one of four categories: positive effect on interprofessional collaboration, negative effect on interprofessional collaboration, both positive and negative effect.
on interprofessional collaboration, or no change in interprofessional collaboration. Percentages for each category were calculated.

**Planned Analysis**

The SPSS data were coded and cleaned. Descriptive and correlation analysis was performed using SPSS 23. The descriptive analysis was used to describe the characteristics of the sample. Frequencies of the descriptive categorical variables were obtained for analysis, showing the numerical value and percentage. Continuous variables were analyzed for mean, standard deviation, minimum, maximum, skewness, and kurtosis.

Statistical techniques to explore relationship among variables were then performed. Correlation and t test analysis was then done to describe the strength and direction of the relationships between the variables of perceived self-efficacy, assertiveness, and interprofessional collaboration. In addition, group comparison was done between/among groups demographic characteristics and self-perceived self-efficacy, assertiveness, and interprofessional collaboration, using analysis of variance (ANOVA) and Point-Biserial correlation.

**Limitations**

The limitation of this study included:

- Bias related to recruitment strategy
- Bias related to recruitment characteristics (only former NSNA members)
- Convenience sample from a single organization
- Fatigue due to length of study
- History

39
Summary

This chapter discussed the use of a quantitative correlational design to establish the strength and direction of the relationships between newly practicing nurses’ perceived self-efficacy, perceived assertiveness, and perceived interprofessional collaboration. This design utilized a sample of newly practicing nurses, obtained electronically from the NSNA. An electronic survey utilizing questions from the GSE, the SRAS-SF, and the ICS were used to examine the variables in question. The objective was to determine if there was a significant correlation between newly practicing nurses’ perceived self-efficacy, perceived level of assertiveness, and perceived interprofessional collaboration.
CHAPTER 4: FINDINGS

This chapter presents the results of the data analysis, including the quantitative survey results and the one open-ended qualitative question. Descriptive statistics were computed for demographics, self-efficacy scores, assertiveness scores, and interprofessional collaboration scores for the sample population \((n = 410)\) and then for two subgroups of RNs: those RNs with two years or less of working experience \((n = 207)\) and RNs with more than two years of experience \((n = 203)\). Surveys missing any values were not included in the data analysis. The responses to the one qualitative question were examined for common themes.

Demographic results are described and key findings highlighted. The response rate was calculated for the percentage of completed survey \((10.8\%, n = 410)\) over the total number of the recruitment population \((n = 3,793)\). The mean, minimum, maximum, and standard deviation was computed for perceived general self-efficacy, assertiveness, and interprofessional collaboration for the total sample. The exploration of relationships between/among variables were then computed. To determine relationships between continuous variables such as GSE scores and dichotomous variables such as gender, point-biserial correlation was used to determine the strength and direction of the relationship, if any. The exploration of relationships between a dependent continuous variable, such as the SRAS-SF score for assertiveness, and multiple groups, such as degree type or race, one-way ANOVA was performed.

Subgroup analysis for the means, minimum, maximum, and standard deviation, and one-way sample \(t\) test for self-efficacy, assertiveness, and interprofessional collaboration scores was completed for RN respondents with two years or less of practice experience and RN respondents with more than two years of practice experience. Correlation between/among GSE, SRAS-SF, and ICS scores and sociodemographic characteristics of gender, age, region, highest level of
nursing education, and prior employment in another area of healthcare was completed using the \( t \) test, point-biserial correlation and ANOVA testing.

**Population for Sample Recruitment**

An electronic list of 3,793 U.S. nursing program graduates from the spring/summer 2017, winter 2017, spring 2018, and summer 2018, was obtained with permission from the NSNA. This population of graduates consisted of 3,459 female (91.5%) and 323 males (8.5%). The age groupings of this population consisted of 710 (18.5%) graduates under 22 years, 1,734 (45.7%) 23 to 28 years, 476 (12.5%) 29 to 32 years, 432 (11.4%) 33 to 38 years, 179 (4.7%) 39 to 42 years, 175 (4.6%) 43 to 48 years, and 93 (2.5%) graduates over 49 years of age. Of the 3,793 nursing graduates, 1,179 (31.1%) had completed an Associate Degree program, 2,050 (54%) a traditional Baccalaureate Degree program, and 564 (14.9%) an Accelerated Baccalaureate Degree program.

**Description of Sample**

The data obtained from the survey consisted of 490 total responses, but 80 of the respondents were eliminated due to incompletion of large sections of the survey. A total of 410 respondents had completed the majority of the survey, which was used for analysis. Variation in \( n \) value in subsequent analysis is contributed to occasional missing item(s). The SPSS option to exclude cases pairwise was used to address this randomly occurring issue.

The gender of the sample \((n = 407)\) had a valid percentage of 88% female \((n = 358)\) and 12% male \((n = 49)\) graduate nurses now currently in practice. The percentage of males is slightly higher than that of the 9.1% reported in the 2017 National Nursing Workforce Study (National Council of State Boards of Nursing, 2018). Age ranges of this sample \((n = 409)\) was as follows: 0.2% \((n = 1)\) age 22 and under, 44% \((n = 180)\) age 23 to 28, 15.2% \((n = 62)\) age 29 to 32, 18.1%
(n = 74) age 33 to 38, 7.8% (n = 32) age 39 to 42, 8.6% (n = 35) age 43 to 48, and 6.1% (n = 25) age 49 and over (see Table 4).

The racial/ethnicity of the sample closely resembled that of the 2017 National Nursing Workforce Survey whose breakdown is as follows: 80.8% majority of White/Caucasian, 6.2% Black or African American, 5.3% Hispanic or Latino, 0.4% American Indian or Alaska Native, 7.5% Asian, 0.5% Native Hawaiian or Pacific Islander, 1.7% two or more races, and 2.9% other. The identified racial/ethnicity of the RN sample (n = 408) computed the following valid percentages: 78.7% (n = 321) White non-Hispanic, 5.4% (n = 22) Black or African American non-Hispanic, 6.9% (n = 28) Hispanic or Latino, 0.5% (n = 2) American Indian or Alaska Native, 5.6% (n = 23) Asian, 0.2% (n = 1) Native Hawaiian or another Pacific Islander, and other 2.7% (n = 11). The marital status of the sample (n = 407) consisted of a valid percentage of 49.9% (n = 203) single, 43.5% (n = 177) married, 6.4% (n = 26) divorced/separated, and 0.2% (n = 1) widowed. The identified home region of the respondent from the sample (n = 409) was as follows: 15.2% (n = 62) northeast region, 33.3% (n = 136) southern region, 20.5% (n = 84) central region, and 31.1% (n = 127) western region (see Table 5).

The highest level of nursing education (n = 410) at the time of the survey, which was two to three years post-graduation from the per-licensure RN program, was as follows: associate’s degree 16.8% (n = 69), bachelor’s degree 79.1% (n = 324), master’s degree 3.9% (n = 16), and doctor of nursing practice 0.2% (n = 1) (see Table 2). In comparison to the 2017 National Nursing Workforce Survey, the percentage of RNs with bachelor’s degrees is noticeably inflated (79%) compared to the 2017 national percentage (45.2%) (National Council of State Boards of Nursing, 2018). This value can be contributed to the convenience sample recruitment from the NSNA. More than half, 58.4% (n = 219), of the respondents reported having degrees other than
nursing with 41.6% (n = 156) reporting no other degree. The breakdown of having other degrees (n = 375) are as follows: associate’s degree 23.4% (n = 96), pre-licensure baccalaureate 25.4% (n = 104), and master’s degree 4.6% (n = 19).

In response to questions about current place and clinical area of employment (n = 402, n = 409), 84.1% (n = 338) indicated that they worked in an inpatient setting as opposed to 15.6% (n = 64) who work in out-patient areas. Of those reporting employment in an in-patient setting, 52% (n = 209) indicated that they currently work at a community hospital, 9.5% (n = 38) indicated that they were currently working at a tertiary care hospital, 22.6% (n = 91) indicated that they were currently working at a university medical center, and 15.9% (n = 64) were employed in an out-patient setting. In comparison, the 2017 National Workforce survey reported that 55.7% of RNs work in hospital settings (National Council of State Boards of Nursing, 2018). The clinical areas of practice for the sample (n = 409) included medical/surgical/telemetry (29.8%, n = 122), critical care (16.8%, n = 69), emergency care (7.6%, n = 31), perioperative (4.2%, n = 17), maternal/obstetrics (7.3%, n = 30), pediatrics (5.6%, n = 23), pediatric critical care (1.7%, n = 7), behavioral health (2.4%, n = 10), community (2.9%, n = 12), school nursing (0.5%, n = 2), occupational (0.2%, n = 1), and other area of nursing (9%, n = 37). In addition, 48 of the respondents (11.7%) indicated working in multiple clinical areas (see Table 6).

An inquiry was made into prior healthcare employment history. Of the sample (n = 409), 70.4% (n = 288) indicated that they had had prior employment in healthcare, while 29.6% (n = 121) had no prior healthcare employment history. The areas of prior healthcare experience (n = 381) included nursing assistant (38.3%, n = 146), unit clerk (1.6%, n = 6), EMT/Paramedic (3.1%, n = 12), Mental Health Counselor/Social Worker (0.5%, n = 2), and other healthcare jobs
In addition, 59 of the respondents indicated prior healthcare experience in multiple positions (15.7%) (see Table 8).

Subsequently, since respondents to this survey were graduates of nursing programs from the spring of 2017 to the summer of 2018, an inquiry about their length of employment was made. Of this sample \((n = 410)\), 50.5\% \((n = 207)\) had indicated that they have been employed two years or less and 49.5\% \((n = 203)\) had indicated that they have been employed greater than two years. Sociodemographic statistics were then completed on the two subgroups for comparison: RNs working less than or equal to two years and RNs working more than two years (see Tables 4-11).

**Table 4**

*Sociodemographic Characteristics of Total RN Sample: Gender, Age & Highest Nursing Degree*

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategory</th>
<th>(n)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>49</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>358</td>
<td>88%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>407</td>
<td>100%</td>
</tr>
<tr>
<td>Age</td>
<td>22 &amp; under</td>
<td>1</td>
<td>0.2%</td>
</tr>
<tr>
<td></td>
<td>23 – 28</td>
<td>180</td>
<td>44%</td>
</tr>
<tr>
<td></td>
<td>29 – 32</td>
<td>62</td>
<td>15.2%</td>
</tr>
<tr>
<td></td>
<td>33 – 38</td>
<td>74</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>39 – 42</td>
<td>32</td>
<td>7.8%</td>
</tr>
<tr>
<td></td>
<td>43 – 49</td>
<td>35</td>
<td>8.5%</td>
</tr>
<tr>
<td></td>
<td>49+</td>
<td>25</td>
<td>6.1%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>409</td>
<td>100%</td>
</tr>
<tr>
<td>Degree</td>
<td>Associate’s</td>
<td>69</td>
<td>16.8%</td>
</tr>
<tr>
<td></td>
<td>Bachelor’s</td>
<td>324</td>
<td>79.1%</td>
</tr>
<tr>
<td></td>
<td>Master’s</td>
<td>16</td>
<td>3.9%</td>
</tr>
<tr>
<td></td>
<td>DNP</td>
<td>1</td>
<td>0.2%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>409</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 5

*Sociodemographic Characteristics Comparison of RN Subgroups: Gender, Age & Highest Nursing Degree*

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategory</th>
<th>RNs &lt; 2 years</th>
<th>RNs &gt; 2 years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>26</td>
<td>12.7%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>179</td>
<td>87.3%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>207</td>
<td>100%</td>
</tr>
<tr>
<td>Age</td>
<td>22 &amp; under</td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td></td>
<td>23 – 28</td>
<td>87</td>
<td>42%</td>
</tr>
<tr>
<td></td>
<td>29 – 32</td>
<td>28</td>
<td>13.5%</td>
</tr>
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<td></td>
<td>33 – 38</td>
<td>40</td>
<td>19.3%</td>
</tr>
<tr>
<td></td>
<td>39 – 42</td>
<td>20</td>
<td>9.7%</td>
</tr>
<tr>
<td></td>
<td>43 – 49</td>
<td>15</td>
<td>7.2%</td>
</tr>
<tr>
<td></td>
<td>49+</td>
<td>16</td>
<td>7.7%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>207</td>
<td>100%</td>
</tr>
<tr>
<td>Degree</td>
<td>Associate’s</td>
<td>40</td>
<td>19.3%</td>
</tr>
<tr>
<td></td>
<td>Bachelor’s</td>
<td>158</td>
<td>76.3%</td>
</tr>
<tr>
<td></td>
<td>Master’s</td>
<td>9</td>
<td>4.3%</td>
</tr>
<tr>
<td></td>
<td>DNP</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>207</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 6

Sociodemographic Characteristics of Total Sample: Marital Status, Race & Region

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategory</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marital Status</td>
<td>Single</td>
<td>203</td>
<td>49.9%</td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td>177</td>
<td>43.5%</td>
</tr>
<tr>
<td></td>
<td>Divorced/Separated</td>
<td>26</td>
<td>6.4%</td>
</tr>
<tr>
<td></td>
<td>Widow</td>
<td>1</td>
<td>0.2%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>407</td>
<td>100%</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>White, Non-Hispanic</td>
<td>321</td>
<td>78.7%</td>
</tr>
<tr>
<td></td>
<td>Black or African American</td>
<td>22</td>
<td>5.4%</td>
</tr>
<tr>
<td></td>
<td>Hispanic or Latino</td>
<td>28</td>
<td>6.9%</td>
</tr>
<tr>
<td></td>
<td>American Indian or Alaska Native</td>
<td>2</td>
<td>0.5%</td>
</tr>
<tr>
<td></td>
<td>Asian</td>
<td>23</td>
<td>5.6%</td>
</tr>
<tr>
<td></td>
<td>Native Hawaiian or</td>
<td>1</td>
<td>0.2%</td>
</tr>
<tr>
<td></td>
<td>Pacific Islander</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>11</td>
<td>2.7%</td>
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<tr>
<td></td>
<td>Total</td>
<td>408</td>
<td>100%</td>
</tr>
<tr>
<td>Region</td>
<td>Northeast</td>
<td>62</td>
<td>15.2%</td>
</tr>
<tr>
<td></td>
<td>South</td>
<td>136</td>
<td>33.3%</td>
</tr>
<tr>
<td></td>
<td>Central</td>
<td>84</td>
<td>20.5%</td>
</tr>
<tr>
<td></td>
<td>West</td>
<td>127</td>
<td>31.1%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>409</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 7

**Sociodemographic Characteristics of RN Subgroups: Marital Status, Race & Region**

<table>
<thead>
<tr>
<th>Category</th>
<th>Subgroup</th>
<th>RN ≤ 2 years</th>
<th></th>
<th>RN &gt; 2 years</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Marital Status</td>
<td>Single</td>
<td>105</td>
<td>51%</td>
<td>98</td>
<td>48.8%</td>
</tr>
<tr>
<td></td>
<td>Married</td>
<td>86</td>
<td>41.7%</td>
<td>91</td>
<td>45.3%</td>
</tr>
<tr>
<td></td>
<td>Divorced/Separated</td>
<td>15</td>
<td>7.3%</td>
<td>11</td>
<td>5.5%</td>
</tr>
<tr>
<td></td>
<td>Widow</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>206</td>
<td>100%</td>
<td>201</td>
<td>100%</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td>White, Non-Hispanic</td>
<td>159</td>
<td>77.2%</td>
<td>162</td>
<td>80.2%</td>
</tr>
<tr>
<td></td>
<td>Black or African American, Non-Hispanic</td>
<td>10</td>
<td>4.9%</td>
<td>12</td>
<td>5.9%</td>
</tr>
<tr>
<td></td>
<td>Hispanic or Latino</td>
<td>14</td>
<td>6.8%</td>
<td>14</td>
<td>6.9%</td>
</tr>
<tr>
<td></td>
<td>American Indian or Alaska Native</td>
<td>1</td>
<td>.5%</td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td></td>
<td>Asian</td>
<td>15</td>
<td>7.3%</td>
<td>8</td>
<td>4.0%</td>
</tr>
<tr>
<td></td>
<td>Native Hawaiian or Pacific Islander</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>7</td>
<td>3.4%</td>
<td>4</td>
<td>2%</td>
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<tr>
<td></td>
<td>Total</td>
<td>206</td>
<td>100%</td>
<td>202</td>
<td>100%</td>
</tr>
<tr>
<td>Region</td>
<td>Northeast</td>
<td>33</td>
<td>15.9%</td>
<td>29</td>
<td>14.4%</td>
</tr>
<tr>
<td></td>
<td>South</td>
<td>71</td>
<td>34.3%</td>
<td>65</td>
<td>32.2%</td>
</tr>
<tr>
<td></td>
<td>Central</td>
<td>33</td>
<td>15.9%</td>
<td>51</td>
<td>25.2%</td>
</tr>
<tr>
<td></td>
<td>West</td>
<td>70</td>
<td>33.8%</td>
<td>57</td>
<td>28.2%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>207</td>
<td>100%</td>
<td>202</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 8

Sociodemographic Characteristics of Total Sample: Place Employed & Clinical Area

<table>
<thead>
<tr>
<th>Category</th>
<th>Subgroup</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Place Employed</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Community Hospital</td>
<td>209</td>
<td>52%</td>
</tr>
<tr>
<td></td>
<td>Tertiary Hospital</td>
<td>38</td>
<td>9.5%</td>
</tr>
<tr>
<td></td>
<td>University Center</td>
<td>91</td>
<td>22.6%</td>
</tr>
<tr>
<td></td>
<td>Out-patient</td>
<td>64</td>
<td>15.9%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>402</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Clinical Area</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Med/Surg/Tele</td>
<td>122</td>
<td>29.8%</td>
</tr>
<tr>
<td></td>
<td>Critical Care</td>
<td>69</td>
<td>16.9%</td>
</tr>
<tr>
<td></td>
<td>Emergency Care</td>
<td>31</td>
<td>7.6%</td>
</tr>
<tr>
<td></td>
<td>Perioperative</td>
<td>17</td>
<td>4.2%</td>
</tr>
<tr>
<td></td>
<td>Maternal/Obstetrics</td>
<td>30</td>
<td>7.3%</td>
</tr>
<tr>
<td></td>
<td>Pediatric</td>
<td>23</td>
<td>5.6%</td>
</tr>
<tr>
<td></td>
<td>Pediatric Critical</td>
<td>7</td>
<td>1.7%</td>
</tr>
<tr>
<td></td>
<td>Behavioral Health</td>
<td>10</td>
<td>2.4%</td>
</tr>
<tr>
<td></td>
<td>Community/VNS</td>
<td>12</td>
<td>2.9%</td>
</tr>
<tr>
<td></td>
<td>School Nursing</td>
<td>2</td>
<td>0.5%</td>
</tr>
<tr>
<td></td>
<td>Occupational</td>
<td>1</td>
<td>0.2%</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>37</td>
<td>9.0%</td>
</tr>
<tr>
<td></td>
<td>Multiple Areas</td>
<td>48</td>
<td>11.7%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>409</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 9

**Sociodemographic Characteristics of RN Subgroups: Place Employed & Clinical Area**

<table>
<thead>
<tr>
<th>Category</th>
<th>Subgroup</th>
<th>RN ≤ 2 years</th>
<th>RN &gt; 2 years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Place Employed</td>
<td>Community Hospital</td>
<td>98</td>
<td>48.3%</td>
</tr>
<tr>
<td></td>
<td>Tertiary Hospital</td>
<td>16</td>
<td>7.9%</td>
</tr>
<tr>
<td></td>
<td>University Center</td>
<td>40</td>
<td>19.7%</td>
</tr>
<tr>
<td></td>
<td>Out-patient</td>
<td>49</td>
<td>24.1%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>203</td>
<td>100%</td>
</tr>
<tr>
<td>Clinical Area</td>
<td>Med/Surg/Tele</td>
<td>58</td>
<td>28.2%</td>
</tr>
<tr>
<td></td>
<td>Critical Care</td>
<td>25</td>
<td>12.1%</td>
</tr>
<tr>
<td></td>
<td>Emergency</td>
<td>15</td>
<td>7.3%</td>
</tr>
<tr>
<td></td>
<td>Perioperative</td>
<td>10</td>
<td>4.9%</td>
</tr>
<tr>
<td></td>
<td>Maternity</td>
<td>16</td>
<td>7.8%</td>
</tr>
<tr>
<td></td>
<td>Pediatric</td>
<td>12</td>
<td>5.8%</td>
</tr>
<tr>
<td></td>
<td>Pediatric Critical</td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td></td>
<td>Behavioral</td>
<td>6</td>
<td>2.9%</td>
</tr>
<tr>
<td></td>
<td>Community</td>
<td>10</td>
<td>4.9%</td>
</tr>
<tr>
<td></td>
<td>School Nursing</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td>Occupational</td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td></td>
<td>Other Areas</td>
<td>27</td>
<td>13.1%</td>
</tr>
<tr>
<td></td>
<td>Multiple Areas</td>
<td>25</td>
<td>12.1%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>206</td>
<td>100%</td>
</tr>
</tbody>
</table>
Table 10

**Sociodemographic Characteristics: Prior Healthcare Experience & Type of Experience**

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategory</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior Healthcare Experience</td>
<td>No</td>
<td>121</td>
<td>29.6%</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>288</td>
<td>70.4%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>409</td>
<td>100%</td>
</tr>
<tr>
<td>Type</td>
<td>Nursing Assistant</td>
<td>146</td>
<td>38.3%</td>
</tr>
<tr>
<td></td>
<td>Unit Clerk</td>
<td>6</td>
<td>1.6%</td>
</tr>
<tr>
<td></td>
<td>EMT/Paramedic</td>
<td>12</td>
<td>3.1%</td>
</tr>
<tr>
<td></td>
<td>Mental Health</td>
<td>2</td>
<td>0.5%</td>
</tr>
<tr>
<td></td>
<td>Counselor</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Areas</td>
<td>52</td>
<td>13.6%</td>
</tr>
<tr>
<td></td>
<td>Multiple Areas</td>
<td>59</td>
<td>15.5%</td>
</tr>
<tr>
<td></td>
<td>Not Applicable</td>
<td>104</td>
<td>27.3%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>381</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 11

**Sociodemographic Characteristics of RN Subgroups: Prior & Type of Healthcare Experience**

<table>
<thead>
<tr>
<th>Category</th>
<th>Subcategory</th>
<th>≤ 2 years</th>
<th>&gt; 2 years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Prior Experience</td>
<td>No</td>
<td>56</td>
<td>27.1%</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>151</td>
<td>72.9%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>207</td>
<td>100%</td>
</tr>
<tr>
<td>Type</td>
<td>Nursing Assistant</td>
<td>68</td>
<td>36.2%</td>
</tr>
<tr>
<td></td>
<td>Unit Clerk</td>
<td>3</td>
<td>1.6%</td>
</tr>
<tr>
<td></td>
<td>EMT/Paramedic</td>
<td>5</td>
<td>2.7%</td>
</tr>
<tr>
<td></td>
<td>Mental Health</td>
<td>2</td>
<td>1.1%</td>
</tr>
<tr>
<td></td>
<td>Counselor</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other Areas</td>
<td>33</td>
<td>17.6%</td>
</tr>
<tr>
<td></td>
<td>Multiple Areas</td>
<td>29</td>
<td>15.4%</td>
</tr>
<tr>
<td></td>
<td>Not Applicable</td>
<td>48</td>
<td>25.5%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>188</td>
<td>100%</td>
</tr>
</tbody>
</table>
Reliability of the Measurement Instruments

Cronbach’s alpha, also referred to as coefficient alpha, is a widely used computation that estimates the internal consistency of a measurement tool to determine the degree that items on a multi-items scale are assessing the same underlying construct. Normal ranges are between .00 and 1.00, with the higher value reflective of better internal consistency. Coefficients of .80 and higher are desired in a measurement tool (Polit & Beck, 2017). Cronbach’s alphas were computed for each tool used in this study (GSE, SRAS-SF, and ICS). The results are as follows: GSE $\alpha = .836$, SRAS-SF $\alpha = .829$, and ICS $\alpha = .919$, respectively.

Perceived Self-Efficacy, Assertiveness, and Interprofessional Collaboration

This section describes the descriptive results of the variables of self-efficacy, assertiveness, and interprofessional collaboration for the sample, NSNA 2017 and 2018 RN graduates, and two subsamples, RNs with two years or less of practice experience and RNs with more than two years of practice experience. In addition, $t$ tests analysis was done to determine if there was a statistically significant difference between the mean scores of two RN subgroups - RNs with two years or less of practice experience and RNs with more than two years of practice experiences - in perceived self-efficacy, assertiveness, and interprofessional collaboration.

Perceived Self-Efficacy

The GSE score range for the 10-item scale is 10 to 40. A score of ten indicated a low perceived self-efficacy and a score of 40 indicated a high perceived self-efficacy. For the total sample ($n = 406$), the perceived self-efficacy score was $M = 32.64$, with a reported minimum of 23 and maximum 40. The GSE score, for the RNs with less than or equal to two years’ experience ($n = 206$) $M = 32.22$, with a reported minimum of 24 and maximum of 39. The GSE
score for the sample of RNs with more than two years of practice experience \((n = 200)\) was a \(M = 33.07\), with minimum of 23 and maximum of 40 (see Table 12).

**Table 12**

*General Self-Efficacy Descriptive Statistics for Sample and Subgroups*

<table>
<thead>
<tr>
<th>Sample</th>
<th>(n)</th>
<th>Minimum</th>
<th>Maximum</th>
<th>(M)</th>
<th>(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total RNs</td>
<td>406</td>
<td>23</td>
<td>40</td>
<td>32.64</td>
<td>3.429</td>
</tr>
<tr>
<td>RNs ≤ 2 yrs.</td>
<td>206</td>
<td>24</td>
<td>39</td>
<td>32.22</td>
<td>3.265</td>
</tr>
<tr>
<td>RNs &gt; 2 yrs.</td>
<td>200</td>
<td>23</td>
<td>40</td>
<td>33.07</td>
<td>3.546</td>
</tr>
</tbody>
</table>

An independent-samples \(t\) test was conducted to compare the perceived self-efficacy scores for RNs with two years or less of practice experience and RNs with two years or more of practice experience. The results showed a significant difference in scores between the RNs with two years or less practice experience \((M = 32.22, SD = 3.265)\) and RNs with more than two years of practice experience \((M = 33.07, SD = 3.546; t = (404) = -2.53, p = .01, \text{two-tailed})\). The magnitude of the differences in the means (mean difference = -0.857, 95% CI: -1.522 to -0.191) was very small (eta squared = 0.016) 1.6% (see Table 13).

**Table 13**

*T Test: GSE and RN subgroups*

<table>
<thead>
<tr>
<th>Levene’s Test</th>
<th>(t)-test for the Equality of Means</th>
<th>95% CI of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(F) (\text{Sig}) (t) (df)</td>
<td>(\text{Mean Difference}) (\text{Std. Error Difference}) (\text{Lower}) (\text{Upper})</td>
</tr>
<tr>
<td>Equal Variances assumed</td>
<td>4.406 (.036) (-2.53) (404)</td>
<td>(.012) (-857) (.338)</td>
</tr>
<tr>
<td>Equal Variance not assumed</td>
<td>(-2.53) (399.007) (.012) (-.857) (.339)</td>
<td>(-1.522) (-.191)</td>
</tr>
</tbody>
</table>
Perceived Assertiveness

The SRAS-SF score range for this 19-item scale was -57 to +57. A score of -57 indicates a low level of self-perceived assertiveness and a score of +57 indicates a high level of self-perceived assertiveness. For the total sample (n = 404), the perceived assertiveness score was $M = 4.62$ with a reported minimum of -42 and maximum 48. The SRAS-SF score for the RNs with two years or less of practice experience was (n = 204) $M = 2.76$ with a reported minimum of -37 and maximum of 47. The SRAS-SF score for RNs with more than two years of practice experience was (n = 200) $M = 6.51$, with a reported minimum of -42 and maximum of 48 (see Table 14).

Table 14

<table>
<thead>
<tr>
<th>Sample</th>
<th>n</th>
<th>Minimum</th>
<th>Maximum</th>
<th>$M$</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total RNs</td>
<td>404</td>
<td>-42</td>
<td>48</td>
<td>4.62</td>
<td>17.738</td>
</tr>
<tr>
<td>RNs ≤ 2 yrs.</td>
<td>204</td>
<td>-37</td>
<td>47</td>
<td>2.76</td>
<td>16.892</td>
</tr>
<tr>
<td>RNs &gt; 2 yrs.</td>
<td>200</td>
<td>-42</td>
<td>48</td>
<td>6.51</td>
<td>18.412</td>
</tr>
</tbody>
</table>

An independent-samples $t$ test was conducted to compare the perceived assertiveness scores for RNs with two years or less of practice experience and RNs with two years or more of practice experience. There was a significant difference in scores between the two groups; for RNs with two years or less practice experience ($M = 2.76, SD = 16.892$) and RNs with more than two years of practice experience ($M = 6.51, SD = 18.412; t = (402) = - 2.128, p = .01, two-tailed). The magnitude of the differences in the means (mean difference = - 3.740, 95% CI: - 7.195 to -.285) was very small (eta squared = .011) 1.1% (see Table 15).
Table 15

*T-Test: SRAS-SF and RN Subgroups*

<table>
<thead>
<tr>
<th>Levene’s Test</th>
<th>$F$</th>
<th>Sig</th>
<th>$t$</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Diff</th>
<th>Std. Error Diff</th>
<th>95% CI of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal Variances assumed</td>
<td>2.653</td>
<td>.104</td>
<td>-2.128</td>
<td>402</td>
<td>.034</td>
<td>-3.74</td>
<td>1.757</td>
<td>-7.195</td>
</tr>
<tr>
<td>Equal Variance not assumed</td>
<td>-2.126</td>
<td>397.559</td>
<td>.034</td>
<td>-3.74</td>
<td>1.759</td>
<td>-7.198</td>
<td>-.282</td>
<td></td>
</tr>
</tbody>
</table>

**Perceived Interprofessional Collaboration**

The ICS score range for this 26-item scale used in this study ranged from 26 to 104. This scale comprises two 13-items subscales: the first 13 items address the nurse’s perception of interprofessional collaboration with physicians (ICS-D) and the second 13-items address the nurse’s perception of interprofessional collaboration with allied healthcare team members (ICS-A). In the 26-item ICS, a score of 26 indicates a low level of self-perceived interprofessional collaboration whereas a score of 104 indicates a high level of self-perceived interprofessional collaboration. In the two 13-item subscales, a score of 13 would indicate a low level of self-perceived interprofessional collaboration and a score of 52 would indicate a high level of perceived interprofessional collaboration. Descriptive analysis for the mean, minimum, maximum was computed for the total RN sample ($n = 410$) and then again for both subgroups: RNs with less than two years’ practice experience ($n = 207$) and RNs with more than two years’ practice experience ($n = 203$). The ICS score for the total RN sample ($n = 402$) was $M = 69.49$
with a reported minimum of 28 and maximum of 104; ICS-D score \((n = 407)\) was \(M = 33.19\) with a reported minimum of 13 and maximum of 52; and ICS-A score \((n = 405)\) was \(M = 36.36\) with a reported minimum of 13 and maximum of 52.

The ICS score for the RN sample with two years or less of practice experience \((n = 202)\) was \(M = 69.08\) with a reported minimum of 28 and maximum of 96; ICS-D score \((n = 206)\) was \(M = 32.83\) with a reported minimum of 13 and maximum of 28; and ICS-A score \((n = 203)\) was \(M = 36.33\) with a reported minimum of 15 and maximum of 52.

The ICS score for the sample of RNs with more than two years’ experience \((n = 200)\) was \(M = 69.90\) with a reported minimum of 28 and maximum of 104; ICS-D score \((n = 201)\) was \(M = 33.56\) with a reported minimum of 15 and maximum of 52; and ICS-A score \((n = 202)\) was \(M = 36.40\) with a reported minimum of 13 and maximum of 52 (see Table 16).

**Table 16**

*Interprofessional Collaboration Scale Descriptive Statistics for RN Sample and Subgroups*

<table>
<thead>
<tr>
<th>Sample</th>
<th>(N)</th>
<th>Minimum</th>
<th>Maximum</th>
<th>(M)</th>
<th>(SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total RNs</td>
<td>402</td>
<td>28</td>
<td>104</td>
<td>69.49</td>
<td>10.349</td>
</tr>
<tr>
<td>RNs ≤ 2 yrs.</td>
<td>202</td>
<td>28</td>
<td>96</td>
<td>69.08</td>
<td>10.582</td>
</tr>
<tr>
<td>RNs &gt; 2 yrs.</td>
<td>200</td>
<td>28</td>
<td>104</td>
<td>69.90</td>
<td>10.119</td>
</tr>
<tr>
<td>ICS-D</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total RNs</td>
<td>407</td>
<td>13</td>
<td>52</td>
<td>33.19</td>
<td>6.329</td>
</tr>
<tr>
<td>RNs ≤ 2 yrs.</td>
<td>206</td>
<td>13</td>
<td>48</td>
<td>32.83</td>
<td>6.235</td>
</tr>
<tr>
<td>RNs &gt; 2 yrs.</td>
<td>201</td>
<td>15</td>
<td>52</td>
<td>33.56</td>
<td>6.417</td>
</tr>
<tr>
<td>ICS-A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total RNs</td>
<td>405</td>
<td>13</td>
<td>52</td>
<td>36.36</td>
<td>5.567</td>
</tr>
<tr>
<td>RNs ≤ 2 yrs.</td>
<td>203</td>
<td>15</td>
<td>52</td>
<td>36.33</td>
<td>5.648</td>
</tr>
<tr>
<td>RNs &gt; 2 yrs.</td>
<td>202</td>
<td>13</td>
<td>52</td>
<td>36.40</td>
<td>5.498</td>
</tr>
</tbody>
</table>
An independent-samples t test was conducted to compare the perceived interprofessional collaboration scores for RNs with two years or less of practice experience and RNs with two years or more of practice experience. There was no significant difference in scores between the two groups ($p = .433$). The ICS score for the sample of RNs with two years or less of practice experience ($n = 202$) was $M = 69.08$ with a reported minimum of $-2.841$ and maximum of $1.22$; comparatively, the ICS score for the sample of RNs with more than two years of practice experience ($n = 200$) was $M = 69.90$ with a reported minimum of $-2.841$ and maximum of $1.22$ (see Table 17).

**Table 17**

*T-Test: Interprofessional collaboration and RN Subgroups*

<table>
<thead>
<tr>
<th>Levene’s Test</th>
<th>$t$-test for the Equality of Means</th>
<th>95% CI of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equal Variances assumed</td>
<td>$F$ .171, $Sig$ .679, $t$ -.785, $df$ 400</td>
<td>$Mean$ Difference -.811, $Std. Error$ Difference 1.033, Lower -2.841, Upper 1.22</td>
</tr>
<tr>
<td>Equal Variance not assumed</td>
<td>$F$ -.785, $df$ 399.518</td>
<td>$Mean$ Difference -.811, $Std. Error$ Difference 1.033, Lower -2.841, Upper 1.219</td>
</tr>
</tbody>
</table>

**Answering the Research Questions**

The purpose of this study was to determine if there is or is not a correlation among the variables of interest (self-efficacy, assertiveness, and interprofessional collaboration) and/or the sociodemographic characteristics of the sample. This section presents each of the research questions and the supporting analysis to determine if there is or is not a correlation among the
variables of interest and which sociodemographic characteristics, if any, may figure in the relationships/correlations.

The relationship between two variables in a correlation analysis is represented by the letter $r$. A perfect positive correlation would be expressed by a positive one (+1), whereas zero (0) would denote that no correlation exists, and negative one (-1) would denote a perfect negative correlation. For the purpose of this study, the strength of the relationship between variables, as represented by $r$ or $r_{pb}$ will be quantified numerically as follows: weak (.1 to .29), moderate (.30 to .49), and large (.50 to .99) (Cohen, 1988).

**Research Question 1**

Is there a significant relationship between a nurse’s perceived level of assertiveness and perceived level of self-efficacy?

To determine if there is a relationship between perceived self-efficacy, as measured by the GSE, and perceived assertiveness, as measured by the SRAS-SF, analysis using Pearson product-moment correlation coefficient was done. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. Analysis of the sample demonstrated a positive correlation between the two variables, $r = .408$, $n = 400$, $p = .000$. Overall, there was a moderate correlation that is statistically significant, at the .01 level (2-tailed) between self-efficacy and assertiveness (see Table 18).

A Pearson product-moment correlation coefficient was then repeated on the split sample of RNs with two years or less of working experience and RNs with more than two years of working experience. In the subgroup of RNs with two years or less of practice experience, the Person product-moment correlation coefficient showed a positive correlation between the two variables, $r = .394$, $n = 203$, $p = .000$. Overall, there was a moderate correlation that is
statistically significant at the .01 level (2-tailed) between self-efficacy and assertiveness in RNs with two years or less of practice experience (see Table 18).

In the subgroup of RNs with more than of two years’ practice experience, the Pearson product-moment correlation coefficient also showed a positive correlation between the two variables, \( r = .407, n = 197, p = .000 \). Overall, there was a moderate correlation that is statistically significant at the .01 level (2-tailed) between self-efficacy and assertiveness (see Table 18).

**Table 18**

*Correlation Analysis: Self-efficacy and Assertiveness*

<table>
<thead>
<tr>
<th></th>
<th>Total RN Sample</th>
<th>RNs ≤ 2 yrs. Subgroup</th>
<th>RNs &gt; 2 yrs. Subgroup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson ( r )</td>
<td>.408**</td>
<td>.394**</td>
<td>.407**</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>( N )</td>
<td>400</td>
<td>203</td>
<td>197</td>
</tr>
</tbody>
</table>

** Correlation is significant at the .01 level (2-tailed).

**Research Question 2**

Is there a significant relationship between a nurse’s perceived level of assertiveness and perceived level of interprofessional collaboration?

The relationship between RNs’ perceived assertiveness, as measured by the SRAS-SF, and overall perceived Interprofessional Collaboration, as measured by the ICS was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. There was a positive correlation between the two variables, \( r = .111, n = 397, p = .027 \). Overall, there was a weak correlation that is statistically significant, at the .05 level (2-tailed) between assertiveness and interprofessional collaboration (see Table 19).
A Pearson product-moment correlation coefficient was then duplicated on the sample of RNs with two years or less of practice experience and RNs with more than two years of practice experience. In the sample of RNs with two years or less of practice experience, the Person product-moment correlation coefficient was computed and showed no correlation between the two variables, $r = .070, n = 199, p = .324$ (see Table 18). To the contrary, the subgroup sample of RNs with more than two years of practice experience, a positive correlation between the two variables, $r = .143, n = 198, p = .044$. Overall, there was a weak correlation that is statistically significant at the .05 level (2-tailed) between assertiveness and interprofessional collaboration (see Table 19).

**Table 19**

*Correlation Analysis: Assertiveness and Interprofessional Collaboration*

<table>
<thead>
<tr>
<th></th>
<th>Total RN Sample</th>
<th>RNs ≤ 2 yrs. Subgroup</th>
<th>RNs &gt; 2 yrs. Subgroup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson $r$</td>
<td>.111*</td>
<td>.070</td>
<td>.143*</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td>.027</td>
<td>.324</td>
<td>.044</td>
</tr>
<tr>
<td>$N$</td>
<td>397</td>
<td>199</td>
<td>198</td>
</tr>
</tbody>
</table>

*Correlation is significant at the .05 level (2-tailed).

**Assertiveness and Interprofessional Collaboration with Physicians.** In an attempt to ascertain if the relationship between assertiveness and interprofessional collaboration was dependent on members’ role, additional Pearson product-moment correlation coefficient was computed for the relationship of RNs and physicians and then again for RNs and allied healthcare providers. RNs’ perceived assertiveness and perceived interprofessional collaboration with physicians, as measured by the ICS-D, was investigated. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. There was a positive correlation between the two variables, $r = .131, n = 402,$
$p = .009$. Overall, there was a weak correlation that is statistically significant, at the .01 level (2-tailed) between assertiveness and interprofessional collaboration (see Table 20).

A Pearson product-moment correlation coefficient was then duplicated on each of the subgroups; RNs with two years or less of practice experience and RNs with more than two years of practice experience. In the subgroup of RNs with two years or less of practice experience, the Pearson product-moment correlation coefficient was computed and showed that there was no correlation between the two variables, $r = .088, n = 203, p = .213$. Overall, there was no correlation between assertiveness and interprofessional collaboration with physicians, among RNs with two years or less of practice experience (see Table 20).

In the subgroup of RNs with more than two years of practice experience, Pearson product-moment correlation coefficient was computed to assess the relationship between assertiveness and interprofessional collaboration with physicians. There was a positive correlation between the two variables, $r = .159, n = 199, p = .025$. Overall, there was a weak correlation statistically significant at the .05 level (2-tailed) between assertiveness and interprofessional collaboration with physicians (see Table 20).

### Table 20

*Correlation Analysis: Assertiveness and Interprofessional Collaboration with Physicians*

<table>
<thead>
<tr>
<th></th>
<th>Total RNs</th>
<th>RNs ≤ 2 yrs.</th>
<th>RNs &gt; 2 yrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sample</td>
<td>Subgroup</td>
<td>Subgroup</td>
</tr>
<tr>
<td>Pearson $r$</td>
<td>.131**</td>
<td>.088</td>
<td>.159*</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td>.009</td>
<td>.213</td>
<td>.025</td>
</tr>
<tr>
<td>$N$</td>
<td>402</td>
<td>203</td>
<td>199</td>
</tr>
</tbody>
</table>

** Correlation is significant at the .01 level (2-tailed).
*Correlation is significant at the .05 level (2-tailed).
Assertiveness and Interprofessional Collaboration with Allied Healthcare Providers.

The relationship between perceived assertiveness, as measured by the SRAS-SF, and perceived interprofessional collaboration with allied healthcare professionals, as measured by the ICS-A was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. There was no correlation between the two variables, $r = .057$, $n = 399$, $p = .257$ (see Table 21).

A Pearson product-moment correlation coefficient was then duplicated on the subgroups of RNs with two years or less of practice experience and RNs with more than two years of practice experience. In the subgroup of RNs with two years or less of practice experience, the Person product-moment correlation coefficient was computed and showed that there was no correlation between assertiveness and interprofessional collaboration with allied healthcare providers, $r = .037$, $n = 200$, $p = .603$ (see Table 21).

In the RN subgroup with more than two years of practice experience, there was no correlation between assertiveness and interprofessional collaboration with allied healthcare professionals, $r = .075$, $n = 199$, $p = .294$ (see Table 21).

Table 21

<table>
<thead>
<tr>
<th></th>
<th>Total RNs</th>
<th>RNs ≤ 2 yrs.</th>
<th>RNs &gt; 2 yrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sample</td>
<td>Subgroup</td>
<td>Subgroup</td>
</tr>
<tr>
<td>Pearson $r$</td>
<td>.057</td>
<td>.037</td>
<td>.075</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td>.257</td>
<td>.603</td>
<td>.294</td>
</tr>
<tr>
<td>$N$</td>
<td>399</td>
<td>200</td>
<td>199</td>
</tr>
</tbody>
</table>
**Research Question 3**

Is there a significant relationship between a nurse’s perceived level of self-efficacy and perceived level of interprofessional collaboration?

The relationship of the RN sample between perceived self-efficacy, as measured by the GSE, and perceived interprofessional collaboration, as measured by the ICS, was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. There was a positive correlation between the two variables, $r = .233$, $n = 399$, $p = .000$. Overall, there was a weak correlation that is statistically significant at the .01 level (2-tailed) between self-efficacy and interprofessional collaboration.

The analysis was then repeated for each of the RN subgroups. In the RNs with two years or less of practice experience, there was a positive correlation between the two variables, $r = .245$, $n = 201$, $p = .000$. Overall, there was a weak correlation that was statistically significant at the .01 level (2-tailed) between self-efficacy and interprofessional collaboration.

In RNs with more than two years of practice experience, there was a positive correlation between self-efficacy and interprofessional collaboration, $r = .217$, $n = 198$, $p = .002$. Overall, there was a weak correlation that is statistically significant at the .01 level (2-tailed) between self-efficacy and interprofessional collaboration (see Table 22).

**Table 22**

*Correlation Analysis: Self-efficacy and Interprofessional Collaboration*

<table>
<thead>
<tr>
<th></th>
<th>Total RN</th>
<th>RNs ≤ 2 yr.</th>
<th>RNs &gt; 2 yr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson $r$</td>
<td>.233**</td>
<td>.245**</td>
<td>.217**</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>$N$</td>
<td>399</td>
<td>201</td>
<td>198</td>
</tr>
</tbody>
</table>

**Correlation is significant at the .01 level (2-tailed).
Supplemental Questions

Is there a significant correlation between the practicing nurses’ sociodemographic characteristics such as gender, age, geographical region, related healthcare experience, and degree type, and their perceived self-efficacy?

The relationship between perceived self-efficacy and a variety of sociodemographic characteristics were examined to determine if these characteristics affected an RN’s self-efficacy. The total sample of RNs and then the two subgroups— the first being that of RNs with two years or less of practice experience and the second being those RNs with more than two years of practice experience, were measured, computed, and analyzed. Using Point-Biserial Correlation and Pearson product-moment correlation coefficient, the strength and direction of linear relationships, if any, between two variables are described. For comparison of mean scores of more than two groups, ANOVA was used.

Self-efficacy and Gender

To determine if there was a relationship between perceived self-efficacy, as measured by the GSE, and gender (males = 0 and females = 1) of the total sample of RNs, a Point-Biserial correlation analysis was computed. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. There was no correlation between the two variables, $r_{pb} = -.019$, $n = 403$, $p = .710$. The Point-Biserial correlation was then computed to assess the relationship between self-efficacy and gender in the subgroup of RNs with two years or less of practice experience and then again for the RNs with more than two years of practice experience. Both subgroup analysis showed that there was no significant correlation between the two variables in the two years or less of practice experience RN group,
\[ r_{pb} = .015, n = 204, p = .829, \] and the RN group with more than two years of practice experience, \[ r_{pb} = -.057, n = 199, p = .424 \] (see Table 23).

**Table 23**

**Point-Biserial Correlation Analysis: General Self-Efficacy and Gender**

<table>
<thead>
<tr>
<th></th>
<th>Total RN Sample</th>
<th>RNs ≤ 2 yrs. Subgroup</th>
<th>RNs &gt; 2 yrs. Subgroup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point-Biserial ( r_{pb} )</td>
<td>-.019</td>
<td>.015</td>
<td>-.057</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td>.710</td>
<td>.829</td>
<td>.424</td>
</tr>
<tr>
<td>( N )</td>
<td>403</td>
<td>204</td>
<td>199</td>
</tr>
</tbody>
</table>

**Self-Efficacy and Age**

The relationship between perceived self-efficacy, as measured by the GSE, and age groupings (Under 22 years = 1 to 49 years and over is = 7), were investigated using Pearson product-moment correlation coefficient to determine if there was a relationship between the sample of RNs’ self-efficacy score and age. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a positive correlation between the two variables, \( r = .121, n = 405, p = .014 \). Overall, there was a weak correlation that is statistically significant at the .05 level (2-tailed) between and RNs’ perceived self-efficacy and age groupings.

The relationship between self-efficacy and age groupings for the subgroup of RNs with two years or less of practice experience and then again for the subgroup of RNs with more than two years of practice experience were then computed for comparison. There was no significant correlation between the two variables, \( r = .093, n = 206, p = .184 \) for the subgroup of RNs with two years or less of practice experience. In comparison, the analysis of the subgroup of RNs with more than two years of practice experience showed a positive correlation between the two
variables, $r = .169$, $n = 199$, $p = .017$. Overall, there was a weak correlation that is statistically significant at the .05 level (2-tailed) between self-efficacy and age groupings (see Table 24).

Table 24

*Correlation Analysis: Self-Efficacy and Age Groupings*

<table>
<thead>
<tr>
<th></th>
<th>Total RN Sample</th>
<th>RNs ≤ 2 yrs. Sample</th>
<th>RNs &gt; 2 yrs. Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson $r$</td>
<td>.121*</td>
<td>.093</td>
<td>.169*</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td>.014</td>
<td>.184</td>
<td>.017</td>
</tr>
<tr>
<td>$N$</td>
<td>405</td>
<td>206</td>
<td>199</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).

**Self-Efficacy and Region**

Is there a difference in mean self-efficacy score based on an RN’s home region? Is there a difference in mean self-efficacy score between the regions of the United States? A one-way between-groups analysis of the variance was conducted to explore the impact of identified home region of the country on level of perceived level of general self-efficacy, as measured by the GSE (see Table 25). Participants were divided into four groups according to their identified home region (Group one: Northeast region; group two: South region; group three: Central region; group four: West region). There was a statistically significant difference at the $p < .05$ of the GSE scores for the four groups $F = 2.77$, $p = .041$. The actual difference in mean scores between the groups was small. The GSE mean 32.62 ($n = 405$) for the groups ranged from 31.75 to 33.07 and were reported as follows: Northeast region mean 31.75 ($n = 61$); South region mean 33.07 ($n = 134$); Central region 33.00 ($n = 83$); and West region 32.32 ($n = 127$). The post hoc comparison using the Tukey HSD test indicated that the mean score for the Northeast region ($M = 31.75$, $SD = 3.113$) was significantly different from the Southern region ($M = 33.07$, $SD = 3.44$). Analysis was also then completed on the two subgroups of RNs with two years or less of
practice experience \((n = 206)\) and RNs with more than two years of practice experience \((n = 199)\). No statistically significant difference was noted between the variables of self-efficacy and region with this sample (see Table 25).

Table 25

**ANOVA: Self-Efficacy and Region**

<table>
<thead>
<tr>
<th>Sample</th>
<th>(F)</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total RNs</td>
<td>2.77</td>
<td>.041</td>
</tr>
<tr>
<td>RNs ≤ 2 yrs.</td>
<td>1.32</td>
<td>.267</td>
</tr>
<tr>
<td>RNs &gt; 2 yrs.</td>
<td>2.215</td>
<td>.088</td>
</tr>
</tbody>
</table>

**Self-Efficacy and Nursing Degree**

In an effort to explore the effects of nursing education on self-efficacy, a one-way between-groups analysis of the variance was conducted. Participants were divided into five groups according to their highest level of nursing degree reported at the time of the survey (Group one: Associate degree; Group two: Baccalaureate degree; Group three: Master’s degree; Group four: DNP; Group five: PhD). Since no participants indicated having completed a PhD, this level of education was not included in the statistical calculations. There was no statistically significant difference at the \(p < .05\) of the GSE scores for the four remaining groups: \(F = 1.706, p = .165\). Since statistical significance was not achieved, the actual difference in mean scores between the groups was not calculated in a post hoc test. The GSE mean 32.64 \((n = 406)\) was noted. The group means were reported as follows: Associate’s degree mean 32.97 \((n = 68)\); Bachelor’s degree mean 32.50 \((n = 321)\); Master’s degree mean 33.69 \((n = 16)\); and DNP mean 38.00 \((n = 1)\). Additionally, both RN subgroups showed no statistical significance between self-efficacy and highest level of nursing degree: RNs with two years or less of practice experience,
$F = 1.227, p = .295$, and RNs with more than two years of practice experience $F = 1.97, p = .312$ (see Table 2).

**Table 26**

ANOVA: Self-Efficacy and Nursing Degree

<table>
<thead>
<tr>
<th>Sample</th>
<th>$F$</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total RNs</td>
<td>1.706</td>
<td>.165</td>
</tr>
<tr>
<td>RNs $\leq 2$ yrs.</td>
<td>1.227</td>
<td>.295</td>
</tr>
<tr>
<td>RNs $&gt; 2$ yrs.</td>
<td>1.197</td>
<td>.312</td>
</tr>
</tbody>
</table>

**Self-Efficacy and Prior Healthcare Experience**

The last characteristic investigated for the sample was prior healthcare experience. Is there a relationship between prior employment in healthcare and self-efficacy? Does employment as a nursing assistant, EMT, or other allied healthcare field job influence the self-efficacy of RNs? A Point-Biserial correlation was done of the RN sample to describe the relationship, if any. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. There was no correlation between the two variables, $r_{pb} = -.005, n = 405, p = .915$. Likewise, both RN subgroups showed no significant correlation between the two variables, self-efficacy and prior healthcare experience in RNs with two years or less of practice experience, $r_{pb} = -.003, n = 206, p = .971$, or with RNs with more than two years of practice experience, $r_{pb} = -.005, n = 199, p = .939$ (see Table 27).

**Table 27**

Point-Biserial Correlation Analysis: Self-Efficacy and Prior Healthcare Experience

<table>
<thead>
<tr>
<th></th>
<th>Total RN Sample</th>
<th>RNs $\leq 2$ yrs. Subgroup</th>
<th>RNs $&gt; 2$ yrs. Subgroup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point-Biserial $r_{pb}$</td>
<td>-.005</td>
<td>-.003</td>
<td>.005</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td>.915</td>
<td>.971</td>
<td>.939</td>
</tr>
<tr>
<td>$N$</td>
<td>405</td>
<td>206</td>
<td>199</td>
</tr>
</tbody>
</table>
Supplemental Research Findings

Is there a significant correlation between/among the practicing nurses’ demographic characteristics such as gender, age, geographical region, related healthcare experience, degree type, and their perceived level of assertiveness?

The relationship between perceived assertiveness and multiple sociodemographic characteristics were examined to determine if there is or is not a relationship between perceived levels of assertiveness, as measured by the SRAR-SF and self-reported demographics of the sample. The total sample of RNs and then the two subgroups— the first being that of RNs with two years or less of practice experience and the second being those RNs with more than two years of practice experience— were measured, computed, and analyzed. Using Point-Biserial and Pearson product-moment correlation coefficient, the strength and direction of a linear relationship, if any, between two variables are described. Analysis to compare the mean scores of more than two groups is done using ANOVA.

Assertiveness and Gender

Is there a difference in assertiveness scores between male and female RNs in this sample? The relationship between perceived assertiveness, as measured by the SRAS-SF, and gender (males = 0 and females = 1) was explored using Point-Biserial correlation analysis. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. The results of the Point-Biserial correlation showed that there was no correlation between the two variables in this sample of RNs, \( r_{pb} = -.090, n = 402, p = .070 \).

The above analysis was then repeated on the two subgroups of RNs: those who have two years or less of practice experience and those RNs with more than two years of practice experience. There was no significant correlation between the between assertiveness and gender.
in RNs with two years or less of practice experience, \( r_{pb} = .082, n = 202, p = .248 \), or with RNs with more than two years of practice experience, \( r_{pb} = -.103, n = 199, p = .149 \) (see Table 28).

**Table 28**

*Point Biserial Correlation Analysis: Assertiveness and Gender*

<table>
<thead>
<tr>
<th></th>
<th>Total RN Sample</th>
<th>RNs ≤ 2 yrs. Subgroup</th>
<th>RNs &gt; 2 yrs. Subgroup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point-Biserial ( r_{pb} )</td>
<td>-.090</td>
<td>-.082</td>
<td>-.103</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td>.710</td>
<td>.248</td>
<td>.149</td>
</tr>
<tr>
<td>( N )</td>
<td>401</td>
<td>202</td>
<td>199</td>
</tr>
</tbody>
</table>

**Assertiveness and Age**

Is there a relationship between an RN’s age and assertiveness scores, as measured by the SRAS-SF? The relationship between perceived assertiveness, as measured by the SRAS-SF, and age (Under 22 years = 1 and over 49 is = 7), was computed using a Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. Analysis recognized that there was a positive correlation between the two variables for the total sample of RNs, \( r = .176, n = 404, p = .000 \). Overall, there was a weak correlation that is statistically significant, at the .01 level (2-tailed) between assertiveness and age groupings.

Analysis was then performed on the two subgroups of RNs: those with two years or less of practice experience and those with more than two years of practice experience. In the subgroup of RNs with less experience, there was no significant correlation between assertiveness and the age groupings, \( r = .063, n = 204, p = .373 \). Conversely, the RN subgroup with more than two years of practice experience showed a positive correlation between the two variables, \( r = .306, n = 199, p = .000 \). Overall, there was a moderate correlation statistically significant at the .01 level (2-tailed) between assertiveness and age groupings (see Table 29).
Table 29

**Correlation analysis: Assertiveness and Age**

<table>
<thead>
<tr>
<th></th>
<th>Total RN Sample</th>
<th>RNs ≤ 2 yrs. Subgroup</th>
<th>RNs &gt; 2 yrs. Subgroup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson $r$</td>
<td>.179**</td>
<td>.063</td>
<td>.306**</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td>.000</td>
<td>.373</td>
<td>.000</td>
</tr>
<tr>
<td>$N$</td>
<td>403</td>
<td>204</td>
<td>199</td>
</tr>
</tbody>
</table>

** Correlation is significant at .01.

**Assertiveness and Region**

A one-way between-groups analysis of the variance was conducted to explore the impact of identified home region of the country on the level of perceived level of assertiveness, as measured by the SRAS-SF on the RN samples (Table 31). Participants were divided into four groups according to their identified home region (group one: Northeast; group two: South; group three: Central; group four: West). Statistically, there was no significant difference at the $p < .05$ level in SRAS-SF scores for the four groups: $F = 1.68$, $p = .172$. Despite not reaching statistical significance, the actual difference in mean scores between the groups was calculated in a post hoc test. The SRAS-SF mean 4.54 ($n = 404$) for the four groups ranged from .67 to 7.14 and were reported as follows: group one: Northeast, $M = .67$ ($n = 61$); group two: South, $M = 4.04$ ($n = 134$); group three: Central, $M = 7.13$ ($n = 83$); group four: West, $M = 5.25$ ($n = 126$). The post hoc comparison using the Tukey HSD test indicated that the mean score for group one Northeast ($M = .67$, $SD = 16.45$), was significantly different from group three, Central ($M = 7.13$, $SD = 19.29$). The investigation of the two RN subgroups showed no significant difference at the $p = .05$ level; RNs with two years or less of practice experience ($n = 203$): $F = 2.388$, $p = .07$ or RNs with more than two years of practice experience ($n = 198$) $F = 1.52$, $p = .211$ (see Table 30).
Table 30

ANOVA: Assertiveness and Region

<table>
<thead>
<tr>
<th>Sample</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total RNs</td>
<td>1.667</td>
<td>.174</td>
</tr>
<tr>
<td>RNs ≤ 2 yrs.</td>
<td>2.388</td>
<td>.07</td>
</tr>
<tr>
<td>RNs &gt; 2 yrs.</td>
<td>1.520</td>
<td>.211</td>
</tr>
</tbody>
</table>

Assertiveness and Nursing Degree

Is there a relationship between assertiveness and the highest level of obtained nursing degree? A one-way between-groups ANOVA was conducted to explore the impact of nursing degree on the perceived level of assertiveness, as measured by the SRAS-SF; (Table 31). Participants were divided into five groups according to their highest level of nursing degree (group one: Associate’s degree; group two: Bachelor’s degree; group three: Master’s degree; group four: DNP; group five: PhD). Since no participants indicated having completed a PhD, this level of education was not included in the statistical analysis. For the total sample of RNs, there was no statistically significant difference at $p < .05$ for the four groups: $F = .815$, $p = .468$. The actual difference in mean scores between the groups was not calculated in a post hoc test. The SRAS-SF mean 4.6 ($n = 405$) was noted with the groups mean as follows: group one: Associate’s degree mean, 5.6 ($n = 69$); group two: Bachelor’s degree mean, 4.18 ($n = 318$); group three: Master’s degree mean, 6.88 ($n = 17$); and group four: DNP 28.00 ($n = 1$). Likewise, there was no statistically significant difference at $p < .05$ for the three groups, $F = .461$ $p = .632$, for the subgroup of RNs with two years or less of practice experience ($n = 203$). The group means were reported as follows: group one: Associate’s degree mean, 2.88 ($n = 40$); group two: Bachelor’s degree mean, 2.43 ($n = 155$); or group three: Master’s degree mean, 8.00 ($n = 9$). In the subgroup of RNs with more than two years of practice experience ($n = 200$), there
was no statistically significant difference at $p < .05$ for the four groups, $F = .775$ $p = .509$, for the subgroup of RNs with two years or less of practice experience ($n = 203$). The group means were reported as follows: group one: Associate’s degree mean, $9.48$ ($n = 29$); group two: Bachelor’s degree mean, $5.84$ ($n = 163$); group three: Master’s degree mean, $6.57$ ($n = 7$); group four: DNP mean, $28$ ($n = 1$) (see Table 31).

Table 31

<table>
<thead>
<tr>
<th>Sample</th>
<th>$F$</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total RNs</td>
<td>.850</td>
<td>.467</td>
</tr>
<tr>
<td>RNs ≤ 2 yrs.</td>
<td>.461</td>
<td>.632</td>
</tr>
<tr>
<td>RNs &gt; 2 yrs.</td>
<td>.775</td>
<td>.509</td>
</tr>
</tbody>
</table>

**Assertiveness and Prior Healthcare Experience**

Is there a relationship between perceived assertiveness, as measured by the SRAS-SF, and prior healthcare experience (No = 0 and Yes = 1)? This question was investigated using Point-Biserial correlation for the total sample of RNs and the two subgroups (see Table 32). Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. There was no correlation between the two variables, $r_{pb} = -.010$, $n = 404$, $p = .846$, for the total RN sample. Similarly, there was no significant correlation between the prior healthcare work experience and assertiveness scores, $r_{pb} = .009$, $n = 204$, $p = .898$, for the subgroup of RNs with two years or less of practice experience; or for the subgroup of RNs with more than two years of practice experience, $r_{pb} = -.015$, $n = 199$, $p = .834$ (see Table 32).
Table 32

Correlation Analysis: Assertiveness and Prior Healthcare Employment

<table>
<thead>
<tr>
<th></th>
<th>Total RN Sample</th>
<th>RNs ≤ 2 yrs. Subgroup</th>
<th>RNs &gt; 2 yrs. Subgroup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point-Biserial $r_{pb}$</td>
<td>-.009</td>
<td>.009</td>
<td>-.015</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td>.855</td>
<td>.898</td>
<td>.834</td>
</tr>
<tr>
<td>$N$</td>
<td>403</td>
<td>204</td>
<td>199</td>
</tr>
</tbody>
</table>

**Supplemental Research Findings.** Is there a significant correlation between/among the practicing nurses’ demographic characteristics such as gender, age, geographical region, related healthcare experience, degree type, and their perceived interprofessional collaboration?

The relationship between perceived interprofessional collaboration and several sociodemographic characteristics were examined to determine if there was a correlation between specific characteristics and interprofessional collaboration scores of the RN sample. The total sample of RNs and then the two subgroups– the first being that of RNs with two years or less of practice experience and the second being those RNs with more than two years of practice experience– were measured, computed, and analyzed. Using Point-Biserial correlation and Pearson product-moment correlation coefficient, the strength and direction of a linear relationship, if any, between two variables are described. For the comparison of mean scores of more than two groups, ANOVA is used.

**Interprofessional Collaboration and Gender**

Is there a difference in interprofessional collaboration scores of male and female RNs? The relationship between perceived interprofessional collaboration, as measured by the ICS and gender (males=0 and females=1) was investigated using Point-Biserial correlation (see Table 34). Preliminary analyses were performed to ensure no violation of the assumptions of normality,
linearity, and homoscedasticity. There was no significant correlation between the two variables, $r_{pb} = .074$, $n = 400$, $p = .138$, for the total RN sample. The Point-Biserial correlation was then computed for RNs with two years or less of practice experience, $r_{pb} = .107$, $n = 201$, $p = .132$, and RNs with more than two years of practice experience, $r_{pb} = .037$, $n = 199$, $p = .608$. There was no significant correlation between the interprofessional collaboration scores and gender in either groups (see Table 35).

**Interprofessional Collaboration with Physicians and Gender**

Is there a difference in Interprofessional Collaboration Scores with physicians, based on gender? The relationship between perceived interprofessional collaboration with physician, as measured by the ICS-D, and gender (males = 0 and females = 1) was investigated using Point-Biserial correlation. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. There was no statistically significant correlation between the two variables, $r_{pb} = .068$, $n = 405$, $p = .170$, for the total sample of RNs. The Point-Biserial correlation was then repeated for both subgroups, RNs with two years or less of practice experience, $r_{pb} = .094$, $n = 204$, $p = .182$, and RNs with more than two years of practice experience, $r_{pb} = .041$, $n = 200$, $p = .569$. There was no statistically significant correlation between the variables in either of the RN subgroups (see Table 33).

**Interprofessional Collaboration with Allied Healthcare and Gender**

Is there a difference in Interprofessional Collaboration Scores with allied healthcare providers based on gender? The relationship between perceived interprofessional collaboration with allied healthcare providers, as measured by the ICS-A, and gender (males = 0 and females = 1) was investigated using Point-Biserial correlation. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. There was
no statistically significant correlation between the two variables, \( r_{pb} = .074, n = 400, p = .138 \), for the total sample of RNs. The Point-Biserial correlation was then repeated for both subgroups; RNs with two years or less of practice experience, \( r_{pb} = .107, n = 201, p = .132 \), and RNs with more than two years of practice experience, \( r_{pb} = .037, n = 199, p = .608 \). There was no statistically significant correlation between the variable in either of the RN subgroups (see Table 33).

**Table 33**

**Point-Biserial Correlation Analysis: Interprofessional Collaboration and Gender; Overall ICS, with Physicians, and with Allied Healthcare.**

<table>
<thead>
<tr>
<th>Sample</th>
<th>ICS</th>
<th>ICS-D</th>
<th>ICS-A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total RN</td>
<td>Point-Biserial</td>
<td>.074</td>
<td>.069</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.138</td>
<td>.168</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>400</td>
<td>404</td>
</tr>
<tr>
<td>RNs ≤ 2 yrs.</td>
<td>Point-Biserial</td>
<td>.107</td>
<td>.094</td>
</tr>
<tr>
<td>Subgroup</td>
<td>Sig. (2-tailed)</td>
<td>.132</td>
<td>.182</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>201</td>
<td>204</td>
</tr>
<tr>
<td>RNs &gt; 2 yrs.</td>
<td>Point-Biserial</td>
<td>.037</td>
<td>.041</td>
</tr>
<tr>
<td>Subgroup</td>
<td>Sig. (2-tailed)</td>
<td>.608</td>
<td>.569</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>199</td>
<td>200</td>
</tr>
</tbody>
</table>

**Interprofessional Collaboration and Age**

Is there a relationship between interprofessional collaboration and age of the RN sample?

The relationship between perceived interprofessional collaboration, as measured by the ICS, and age groupings (Under 22 years = 1 and over 49 = 7) investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. There was no significant correlation between the two variables, \( r = -.079, n = 401, p = .113 \), for the total sample of RNs. The
Pearson’s $r$ was then repeated for both subgroups: RNs with two years or less of practice experience, $r = -0.131, n = 202, p = 0.063$, and RNs with more than two years of practice experience, $r = -0.017, n = 199, p = 0.814$. No significant correlation was seen in either of these samples (see Table 34).

**Interprofessional Collaboration with Physicians and Age**

Correlation analysis was then done to see if there was a correlation between RNs’ perceived interprofessional collaborative relationships with physicians factoring for age grouping of the RN samples. The relationship between perceived Interprofessional collaboration with physicians, as measured by the ICS-D-13, and age groupings (Under 22 years = 1 and over 49 = 7) were investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. There was no statistically significant correlation between the two variables, $r = -0.005, n = 406, p = 0.913$, was identified for the total RN sample. The Pearson’s $r$ was then repeated for both subgroups, RNs with two years or less of practice experience, $r = -0.55, n = 206, p = 0.432$, and RNs with more than two years of practice experience, $r = 0.054, n = 200, p = 0.447$. There was no significant correlation seen between the variables of these two RN samples (see Table 34).

**Interprofessional Collaboration with Allied Healthcare and Age**

The relationship between perceived Interprofessional collaboration with allied healthcare providers, as measured by the ICS-A-13, and age (Under 22 years = 1 and over 49 = 7) was investigated using Pearson product-moment correlation coefficient. This correlation analysis was done to determine if there is a difference in interprofessional collaboration between RNs and physician as opposed to RNs and allied healthcare providers. Preliminary analyses were
performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. There was a weak, negative correlation between the ICS-A scores and age, $r = -0.138$, $n = 404$, $p = .005$ at the $p = .01$ level. This analysis was then duplicated for the sample of RNs with two years or less of practice experience, $r = -0.175$, $n = 203$, $p = .012$, where there was a statistically significant weak negative correlation between the two variables, at a $p = .05$.

Contrarily, in the sample of RNs with more than two years of practice experience, there was no correlation between the variables, $r = -0.095$, $n = 201$, $p = .178$ (see Table 34).

**Table 34**

*Correlation Analysis: Interprofessional Collaboration and age; Overall ICS, with Physician, and with Allied Healthcare.*

<table>
<thead>
<tr>
<th>Sample</th>
<th>ICS</th>
<th>ICS-D</th>
<th>ICS-A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total RN Sample</td>
<td>Pearson Correlation</td>
<td>-.079</td>
<td>-.005</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.113</td>
<td>.913</td>
</tr>
<tr>
<td></td>
<td>$N$</td>
<td>401</td>
<td>406</td>
</tr>
<tr>
<td>RNs ≤ 2 yrs. Subgroup</td>
<td>Pearson Correlation</td>
<td>-.131</td>
<td>-.055</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.063</td>
<td>.432</td>
</tr>
<tr>
<td></td>
<td>$N$</td>
<td>202</td>
<td>206</td>
</tr>
<tr>
<td>RNs &gt; 2 yrs. Subgroup</td>
<td>Pearson Correlation</td>
<td>-.017</td>
<td>.054</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.814</td>
<td>.447</td>
</tr>
<tr>
<td></td>
<td>$N$</td>
<td>199</td>
<td>200</td>
</tr>
</tbody>
</table>

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

**Interprofessional Collaboration and Region**

A one-way between-groups ANOVA was conducted to explore the impact of identified home region of the country on the level of perceived level of interprofessional collaboration, as measured by the ICS. Participants were divided into four groups according to their identified home region (group one: Northeast; group two: South; group three: Central; group four: West).

Statistically, there was no significant difference at the $p < .05$ level in ICS scores for the four
groups: \( F = 1.55, p = .201 \). Despite not reaching statistical significance, the actual difference in mean scores between the groups was calculated in a post hoc test. The ICS mean 69.50 \((n = 401)\) for the four groups that ranged from 68.17 to 70.62 were reported as follows: group one: Northeast, \( M = 68.17 (n = 59) \); group two: South, \( M = 68.42 (n = 133) \); group three: Central, \( M = 70.49 (n = 84) \); group four: West, \( M = 70.62 (n = 125) \). The post hoc comparison using the Tukey HSD test indicated that the mean score for group one: Northeast \((M = 68.17, SD = 10.25)\) was significantly different from group four: West \((M = 70.62, SD = 9.911)\). This analysis was repeated for the two RN subgroups: those with two years or less of practice experience and those with more than two years of practice experience. No significant difference in means was noted in each of the samples (see Table 35).

### Table 35

**ANOVA: Interprofessional Collaboration and Region**

<table>
<thead>
<tr>
<th>Sample</th>
<th>( F )</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total RNs</td>
<td>1.55</td>
<td>.201</td>
</tr>
<tr>
<td>RNs ≤ 2 yrs.</td>
<td>2.408</td>
<td>.068</td>
</tr>
<tr>
<td>RNs &gt; 2 yrs.</td>
<td>.492</td>
<td>.688</td>
</tr>
</tbody>
</table>

**Interprofessional Collaboration and Nursing Degree**

To determine if there was a difference in mean scores related to achieved level of nursing education, a one-way between-groups ANOVA was conducted. The purpose of this analysis is to explore the effect, if any, of nursing education on an RN’s perceived interprofessional collaboration, as measured by the ICS. Participants were divided into five groups according to their highest level of nursing degree (group one: Associate’s degree; group two: Bachelor’s degree; group three: Master’s degree; group four: DNP; group five: PhD). Since no participants indicated having completed a PhD, this level of education was not included in the statistical
calculations. Analysis of the total RN sample showed that there was no statistically significant difference at the $p < .05$ of the ICS scores for the four groups: $F = .420, p = .739$. The differences in mean scores between the groups was not calculated in a post hoc test. The ICS mean, 69.49 ($n = 402$) was noted. The group means were reported as follows: group one: Associate degree mean, 70.45 ($n = 69$); group two: Bachelor’s degree mean, 69.31 ($n = 316$); group three: Master’s degree mean, 68.38 ($n = 16$); group four: DNP ($n = 1$) ICS single score 76.00. This analysis was repeated for the two RN subgroups, those with two years or less of practice experience and those with more than two years of practice experience. No significant difference in means was noted in each of the samples (see Table 36).

Table 36

<table>
<thead>
<tr>
<th>Sample</th>
<th>$F$</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total RNs</td>
<td>.420</td>
<td>.739</td>
</tr>
<tr>
<td>RNs ≤ 2 yrs.</td>
<td>.384</td>
<td>.681</td>
</tr>
<tr>
<td>RNs &gt; 2 yrs.</td>
<td>1.141</td>
<td>.334</td>
</tr>
</tbody>
</table>

Interprofessional Collaboration and Prior Healthcare Employment

Does working in a related healthcare field, prior to employment as a licensed professional, influence an RN’s interprofessional collaborative relationships? To answer this question, a correlation analysis of RN sampled was done. The relationship between an RN’s perceived interprofessional collaboration, as measured by the ICS, and prior healthcare experience (No = 0 and Yes = 1) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. There was no correlation between the two variables, $r = .086, n = 401, p = .086$ in the RN sample. However, in the subgroup of RNs with two years
or less of practice experience or less, there was a correlation between the variables \( r = .162^*, n = 202, p = .021 \). The correlation was weak but significant at the level of .05. In the subgroup of RNs with more than two years of practice experience there was no correlation between the two variables, \( r = .013, n = 199, p = .852 \) (see Table 37).

**Interprofessional Collaboration with Physicians and Prior Healthcare Employment**

Analysis was then performed to determine if there was a correlation in interprofessional collaboration scores of RNs who have had prior healthcare employment, in another healthcare position, such as a nursing assistant. The relationship between perceived interprofessional collaboration with physicians, as measured by the ICS, and prior healthcare experience (No = 0 and Yes = 1) was investigated using Point-Biserial correlation. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. There was no statically significant correlation between the two variables, \( r_{pb} = .036, n = 406, p = .471 \). The analysis was then duplicated for the two subgroups of RNs: those with two years or less of practice experience and those RNs with more than two years of practice experience. In the RN sample group with less experience, no correlation was noted between the variables, interprofessional collaboration with physician and prior healthcare experience, \( r_{pb} = .099, n = 206, p = .159 \). Likewise, analysis of the RN subgroup with more experience also showed that there was no correlation between the two variables, \( r_{pb} = -.017, n = 200, p = .811 \) (see Table 37).

**Interprofessional Collaboration with Allied Healthcare and Prior Healthcare Experience**

Does working in a related healthcare field prior to employment as a licensed professional influence an RN’s interprofessional collaborative relationships with allied members of the healthcare team? To answer this question, a correlation analysis of RNs sampled was done. The
relationship between perceived interprofessional collaboration with allied healthcare providers, as measured by the ICS-A, and healthcare experience (No = 0 and Yes = 1) investigated using Point-Biserial correlation. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a weak, positive correlation between the two variables, \( r_{pb} = .125, n = 404, p = .013 \) at a \( p = .05 \) level. Duplicate analysis was then performed to see if there was a correlation between the variable in either or both of the RN subgroups. In the sample group of RNs with less years of practice experience, a correlation was noted between the variables \( r_{pb} = .200, n = 203, p = .004 \). This correlation was statistically significant at the .01 level. In the RN subgroup with more practice experience, there was no correlation between the two variables, \( r_{pb} = .053, n = 201, p = .458 \) (see Table 37).

**Table 37**

**Point-Biserial Correlation Analysis: Interprofessional Collaboration with Allied Healthcare and Prior Healthcare Experience; Overall, with Physicians, with Allied Healthcare**

<table>
<thead>
<tr>
<th>Sample</th>
<th>ICS</th>
<th>ICS-D</th>
<th>ICS-A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total RN Sample</td>
<td>Sig. (2-tailed)</td>
<td>.086</td>
<td>.036</td>
</tr>
<tr>
<td></td>
<td>( r_{pb} )</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( N )</td>
<td>401</td>
<td>406</td>
</tr>
<tr>
<td>RNs ≤ 2 yrs. Subgroup</td>
<td>Sig. (2-tailed)</td>
<td>.162*</td>
<td>.099</td>
</tr>
<tr>
<td></td>
<td>( r_{pb} )</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( N )</td>
<td>202</td>
<td>206</td>
</tr>
<tr>
<td>RNs &gt; 2 yrs. Subgroup</td>
<td>Sig. (2-tailed)</td>
<td>.013</td>
<td>-.017</td>
</tr>
<tr>
<td></td>
<td>( r_{pb} )</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>( N )</td>
<td>199</td>
<td>200</td>
</tr>
</tbody>
</table>

* Correlation is significant at the .05 level (2-tailed).
** Correlation is significant at the .01 level (2-tailed).

**Qualitative Inquiry of the Sample RNs**

At the time of this study, RNs across the United States were in the throes of a COVID-19 pandemic. This international health crisis challenged interprofessional healthcare teams across
the globe. Here in the United States, healthcare professionals, allied healthcare providers, and support personnel worked together to care for millions of sick and dying patients.

Since all members of a healthcare team need to be able to communicate efficiently, the ability of all team members to “speak up” is paramount for the success of interprofessional collaborative healthcare teams. However, in this present-day pandemic environment, all healthcare providers are being put to the test. An inquiry was made of this convenience sample of RNs. “What effect, if any, did the COVID-19 pandemic have on your interprofessional collaborative practice?” Of the 490 original surveys returned from the emailing of 3,793 potential respondents, 242 chose to answer this question. These free-texted, typed survey responses were exported to an Excel document for ease of reading. The responses were read and sorted into four categories and percentages were computed: positive effect on interprofessional collaborative practice (20%, n = 48), negative effect on interprofessional collaborative practice (43%, n = 105), both positive and negative effect on interprofessional collaborative practice (3%, n = 7), and unchanged interprofessional collaborative practice (34%, n = 82). Common themes included: avoidance of physician and allied health care providers to physically participate in direct hands-on patient care; decrease in in-person communication; increased use of alternative methods of communication such as telecommunication, texting and phone, increased stress, mental exhaustion; decreased trust in leadership/management; nurses assuming additional roles/responsibilities; increased camaraderie between doctors and nurses; and increased collaboration with respiratory therapy.

From the response received, it is apparent that the COVID-19 pandemic has challenged interprofessional teams across the United States. Many of the nurses expressed their frustrations and spoke of being left with the majority of patient responsibility. One respondent said (R1)
“Physicians and techs want to avoid being at the bedside of positive COVID patients…which causes nurses to be at bedside for more tasks.” Another respondent (42) “…the interprofessional collaborative practice was negatively affected due to nurses becoming the primary, if not sole, provider to interact with COVID positive patients…” A respondent who identified herself as a travel RN stated, “Worse communication than it was before definitely both with the medical and allied health staff. Multiple disputes unresolved…been to three different hospitals. Same thing.”

Of the positive responses, one nurse stated (R 88), “I think in some ways we had to be more collaborative. Doctors, residents, fellows, and attendings, would come in to the room to help turn patients; we collaborated more on the timing of all patient care…” Others spoke of how they cared for each other (R105): “COVID-19 made everyone in the hospital have to communicate and work together more than ever due to the craziness of the work environment…” Another respondent stated (R143), “…I feel like it has actually improved relations between the different allied health disciplines. More communication and collaboration seem to be happening on behalf of the patients.”

These responses give us only a glimpse into the effect of the pandemic on interprofessional collaborative practice. Future interprofessional research is needed to ascertain the needs of our interprofessional healthcare teams so that we can provide them with the education and resource that they will need to provide safe and effective patient care.

Summary

This chapter presented the results from a quantitative study of nurses’ perceived self-efficacy, assertiveness, and interprofessional collaboration. A sample of practicing RNs, former members of the NSNA, and graduates from 2017 and 2018 college nursing programs were recruited via email. Their responses, which included response from three reliable and valid
assessment tools, GSE, SRAS-SF and ICS, were analyzed along with sociodemographic data to determine if there is a relationship between/among the variables.

Descriptive demographic analysis was done to describe the sample. Correlation analysis was completed to determine relationships using Pearson’s correlation coefficient. Subgroup analysis for the means, standard deviation, and one-way sample t-test for self-efficacy, assertiveness, and interprofessional collaboration scores was completed for RN respondents with two years or less of practice experience and RN respondents with more than two years of practice experience. Correlation between/among GSE, SRAS-SF, and ICS scores and sociodemographic characteristics of gender, age, region, highest level of nursing education, and prior employment in another area of healthcare was completed using the ANOVA test. In addition, responses to one open-ended qualitative question were examined to see how the current COVID-19 pandemic has impacted RNs’ interprofessional collaborative practice.

In the next chapter, these findings are discussed as related to the research questions. Recommendations will be made based on the finding for additional research and education initiatives to support current and future interprofessional collaborative practice.
CHAPTER 5: DISCUSSION AND RECOMMENDATIONS

New nurses, upon entering their interprofessional practice environment, need to possess strong and efficient communication styles so that they will be able to build the necessary professional relationships with all members of the healthcare team. In order to perform in an interprofessional team environment, nurses will need to have an understanding of their roles and responsibilities; self-efficacy, a belief in their own ability to perform; and the ability to speak up. Nurses, as essential members of interprofessional healthcare teams, need to have effective communication skills, which are paramount to the delivery of safe, quality healthcare (Law & Chan, 2015). Studies have shown that individuals who possess assertive characteristics have an increased sense of self-worth and are more successful (Ayaz, 2002; Bal, 2003; Yilmaz, 2000).

This chapter presents the findings, implications, recommendations, and limitations of this quantitative study. The purpose of this quantitative study was to explore the relationship between nurses’ perceived level of assertiveness and perceived level of self-efficacy; perceived level of assertiveness and perceived interprofessional collaboration; and perceived level of self-efficacy and perceived interprofessional collaboration.

Findings from this study showed a significant correlation between nurses’ perceived self-efficacy and perceived assertiveness. There also was a significant correlation shown between a nurses’ perceived assertiveness and perceived interprofessional collaboration. However, the result of the nurses’ perception of interprofessional collaborative scores did vary, based on several factors such as which healthcare team member, physician, or allied healthcare provider. Only a few of the sociodemographic characteristics demonstrated a significant correlational relationship with the variables and will be discussed further in this chapter. The data obtained from this sample provides an opportunity to plan and execute educational intervention in academia and
healthcare practice settings to assist RNs assimilate into professional practice. Educators, healthcare delivery systems, and researchers will need to further study and implement initiatives, processes, and procedures to aid in the successful assimilation of newly practicing nurses and all healthcare providers to an interprofessional healthcare environment.

**The Sample**

The final sample of RNs for this survey was obtained from an email list of former members of the NSNA. All of the participants were 2017 and 2018 graduates from associate and baccalaureate pre-licensure degree programs. This sample, mostly female, did have a slightly higher percentage of males than that which is currently reported in the 2017 National Nursing Workforce Study. The age range of the participants was from 22 years to over 49 years, with the largest percentage of nurses falling in the 23 to 28 age range. The racial/ethnicity of the sample closely did mimic that of the 2017 National Nursing Workforce Survey. The sample consisted of mostly white, non-Hispanic RNs. Half of the respondents were single. Each region of the United States was represented, with a slightly higher response from the West and the South. The majority of the respondents, almost 80%, were from baccalaureate nursing programs; this value was noted to be well above the national average of just under half coming from baccalaureate programs. The majority of the respondents reported working in inpatient hospital settings, in medical/surgical/telemetry units and critical/emergency care units. This percentage was much higher than reported by the 2017 National Workforce survey, which reported that slightly more than half of all RNs work in hospital settings. Of these working RNs, half reported working two years or less and half reported working over two years. When questioned about prior healthcare working experience, 70% reported having worked in some capacity in a health-related job. These jobs included allied healthcare and support roles.
Research Questions

Research Question 1

Is there a significant relationship between nurses’ perceived level of assertiveness and perceived level of self-efficacy?

In the total sample of RNs, a statistically significant, moderate, positive correlation was found between perceived self-efficacy and perceived assertiveness. When looking at the RN subgroups, RNs with two years or less of work experience and RNs with more than two years of work experience, both subgroups showed a statistically significant, positive, moderate correlation between perceived self-efficacy and assertiveness. The current study is unique in that these two variables have never been analyzed together. Therefore, this finding adds to the body of knowledge.

Research Question 2

Is there a significant relationship between a nurse’s perceived level of assertiveness and perceived level of interprofessional collaboration?

In the total sample of RNs, it was noted that there was a statistically significant, weak, positive correlation between perceived assertiveness and perceived interprofessional collaboration of the total scale. There was also a statistically significant correlation between perceived assertiveness of the total sample and the physician scale. However, there was no statistically significant correlation found between the total RN sample and allied healthcare providers.

When looking at the RN subgroups, RNs with two years or less of work experience and RNs with more than two years of work experience, the first group showed no statistically significant correlation between perceived assertiveness and perceived interprofessional
collaboration in the total ICS, or in the two subscales for physician or allied healthcare providers. The RNs with more than two years of experience showed a statistically significant, weak, positive correlation in the total ICS and the physician subscales. No statistically significant correlation was found between perceived assertiveness and perceived interprofessional collaboration with allied healthcare providers. This finding indicates that as length of work experience increases, so does assimilation into the work culture, resulting in an increased perception of interprofessional collaborative practice. The current study is unique in that these two variables have never been analyzed together. Therefore, this finding adds to the body of knowledge.

**Research Question 3**

Is there a significant relationship between a nurse’s perceived level of self-efficacy and perceived level of interprofessional collaboration?

In this sample of RNs, a statistically significant, weak, positive correlation was found between perceived self-efficacy and perceived interprofessional collaboration of the total ICS and both subscales. When looking at the sample based on length of work experience, both RN subgroups showed statistically significant weak positive correlations on the total ICS and both subscales. The current study shows that RNs’ perceived self-efficacy correlated with their perception of successful interprofessional collaboration. Bandura (1977, 1995) tells us that persons with a strong sense of self-efficacy are more likely to engage with other team members. A cross-sectional study of Iranian nurses by Soudagar et al. (2015) showed that nurses with more work experience scored significantly higher in self-efficacy. The current study had similar finding, which showed that nurses with more than two years of work experience had statistically significant higher scores in self-efficacy than RNs with two years or less work experience.
**Supplemental Findings**

Is there a significant correlation/difference between newly practicing nurses’ sociodemographic characteristics such as gender, age, geographical region, prior healthcare experience, degree type, years of experience as a practicing RN, and perceived self-efficacy?

In a review of the analysis of perceived self-efficacy, as it relates to this sample of RNs’ socio-demographic characteristics, some interesting findings were noted. In this group, there was no significant correlation between self-efficacy and gender. There was a significant correlation between age and perceived self-efficacy; as age increased, scores in self-efficacy were higher. With regards to region of the country, there was also a significant difference between the regions, with the Northeastern region scoring lower. There was no significant correlation between self-efficacy and prior healthcare work experience. The level of nursing degree did not play a factor in self-efficacy since there was no significant difference noted between the groups. Lastly, the sample was divided into two subgroups; those with two years or less of practice as RN and those with more than two years of practice as an RN. There was a significant difference noted between the groups, with those having more experience having higher scores. This is a positive finding that with length of practice, there is an increase in confidence in their ability.

Is there a significant correlation/difference between newly practicing nurses’ sociodemographic characteristics such as gender, age, geographical region, prior healthcare experience, degree type, years of experience as a practicing RN, and perceived assertiveness?

In a review of the analysis of perceived assertiveness, as it relates to this sample of RNs’ socio-demographic characteristics, some interesting findings were noted. There was no significant correlation between gender and assertiveness, but there was a significant correlation
between age and assertiveness in the overall sample of RNs. As age increased, scores for
assertiveness were higher. There was no significant difference in the overall sample of RNs
among geographic regions in assertiveness scores. There was no significant correlation between
perceived assertiveness and prior healthcare work experience. No significant difference was seen
among level nursing degrees and assertiveness. Lastly, the sample was divided into two
subgroups: those with two years or less of practice as RN and those with more than two years of
practice as an RN. There was a significant difference between the two groups demonstrating that
those with more years of experience as an RN had significantly higher mean scores.

Assertiveness is a necessary characteristic in acting as a patient advocate, so it is a positive
finding that as nurses gain work experience, their assertiveness level increases.

Is there a significant correlation/difference between newly practicing nurses’ socio-
demographic characteristics such as gender, age, geographical region, prior healthcare
experience, degree type, years of experience as a practicing RN, and perceived interprofessional
collaboration?

In reviewing the analysis of perceived interprofessional collaboration, as it relates to this
sample of RNs socio-demographic characteristics, some interesting findings were noted. There
was no significant correlation identified between gender and perceived interprofessional
collaboration on the total score of the instrument and also no significant difference found on the
two subscales of physician or of allied healthcare providers. There was no significant correlation
seen between perceived interprofessional collaboration and age on the total scale. No significant
correlation on the subscale of physician. There was a significant negative correlation with scores
of the subscales of allied health. As age increased, the less perceived collaboration was reported.
There was no significant difference among regions. There was no significant correlation
identified between prior healthcare work experience and scores of the total instrument. On the subscale of physicians, no significant correlation was found. A significant correlation was identified on the subscale of allied healthcare provider and prior healthcare work experience. There were no significant differences noted among different nursing degree type on the score of the total instrument. Subscales were not calculated for levels of degree.

The group was then separated into those RNs with two years or less of experience and those with more than two years of experience. On the total score for the ICS, there was no significant difference found. Neither of the subscales for physician or allied healthcare providers also showed significant difference in the scores of either subscale. It can be inferred that prior work experience with allied healthcare providers may have enhanced a nurse’s ability to establish interprofessional collaborative relationships.

**Qualitative Question**

What effect, if any, did the COVID-19 pandemic have on your interprofessional collaborative practice?

Since this survey was released in the midst of the Covid-19 pandemic, an open-ended question was added to the survey to inquire if the Covid-19 pandemic had an effect on their interprofessional collaborative practice. Of the total sample of RNs included in the final survey analysis, more than half chose to respond to this question. Of the responses, 43% of the RNs stated that the pandemic had negatively affected interprofessional collaboration. Most of the RNs reported bearing most, if not all, of the physical burden of patient care. The RNs reported that both physicians and allied healthcare provider either did not enter the rooms of the patients or worked remotely. It was also reported by the RNs that there was a deterioration in communication and teamwork. Twenty percent of the respondents reported an increase in
interprofessional collaboration, stating how all members of the interprofessional team pulled together during this stressful time. Three percent of the respondents said that they saw both positive and negative effects on interprofessional collaborative practice. The final 34% of the respondents said that there was no change in their interprofessional collaborative practice.

Since the early spring of 2020, interprofessional healthcare teams have been dealing with the challenges of this health crisis. Nurses have been working under stressful conditions, fearful not only for their patients’ health and safety but also for their own. During this time, nurses’ self-efficacy is put to the test, as they encounter unimaginable medical situation. Under these conditions, the RNs’ belief in their abilities paired with their assertiveness may be what makes the difference in patient care and outcomes.

**Implications and Recommendations for Nursing Education**

Educators, in order to better prepare future nurses for entry into an interprofessional practice environment, need to provide a curriculum that fosters the development of not only foundational arts and sciences but also self-efficacy, assertiveness, and interprofessional collaboration. Nurses who have a strong sense of nursing self-efficacy will readily engage and take on challenging tasks with confidence (Bandura, 1977, 1995; Zimmerman, 2000). Nurses who possess assertive communication skills can better communicate with interprofessional teams and advocate for their patients, resulting in better and more efficient patient centered care (Riley, 2000).

Curricula should offer courses and programs to aid in the development of a strong sense of nursing self-efficacy and assertive behaviors for a successful transition into practice. Positive feedback and mentoring from both mentors and peers will also aid in the fostering of self-efficacy. Interprofessional experiences will allow the student to practice assertive
communication so that they may feel more confident to “speak up” in an interprofessional environment.

Assessment of a student’s perceived general self-efficacy and perceived assertiveness pre and post specific program(s) may assist educators in choosing exercises that could strengthen these attributes.

Exposure to other health disciplines during foundational educational experiences is also very important. Traditional segregated by profession learning does not afford students the opportunity to learn about interprofessional team practice (Thibault, 2013). Healthcare educators need to desegregate learning. This could be done through the use of joint educational courses and simulation experiences. The knowledge attained through joint learning will give the student the opportunity to learn about the roles and responsibilities of other professionals, as recommended in the second Interprofessional Education Collaborative (2016) competency.

**Implications and Recommendations for Nursing Practice**

Administrators and managers in healthcare need to maintain a collegial work environment as stated in the first of the Interprofessional Education Collaborative’s (2016) core competencies. A safe workplace free of barriers to communication will help maintain nurses’ self-efficacy and assist with their successful transition into interprofessional collaborative practice.

Healthcare organization need to provide the necessary training to all staff to ensure competency. This may include programs such as nurse residency programs, nurse fellowships programs, adequate orientation time with preceptors, staff development educators, interprofessional rounding, management training, and opportunities for additional education. For example, the utilization of a structured communication process like TeamSTEPPS will provide
the novice practitioner with a script to facilitate the sharing of information, voicing concerns, and addressing conflicts. In addition, policies and processes for reporting when there are failures in communication resulting in bad outcomes or when there are unprofessional behaviors need to be hardwired into the culture.

Employers expect nurses to be competent and ready to work safely and independently (Woods et al., 2015). However, many new nurses have not achieved this level in all areas and may need additional orientation hours and support to successfully transition into interprofessional collaborative practice. If adequate support is not given, the new onboarding staff may feel overwhelmed and leave, resulting in inadequate staffing, decreased patient safety, and increased orientation cost. Finally, administrators and managers need to recognize and thank staff for a job well done.

**Implication and Recommendations for Research**

Good communication is essential to successful professional relationships and teamwork (Numminen et al., 2017), and good interprofessional teamwork improves patient safety and outcomes (Institute of Medicine, 2011). A suggestion for future research is to determine if there is a relationship between pre-practice assertiveness training and interprofessional collaborative practice. Although this study did show a relationship between self-efficacy and assertiveness, it was not known if the RN participants had any special training prior to their entry into professional practice or what their perceived levels of self-efficacy and assertiveness were upon entry.

Future research might include the assessment of levels of perceived self-efficacy, perceived assertiveness, and perceived interprofessional collaboration, not only during the course of foundational education programs but also upon entry into practice and at various time
intervals afterwards. This research should also be repeated using a more diverse population to see if there is a difference between this sample population from the NSNA as opposed to a more diverse national sample.

Limitations

With regards to sample selection there was a risk of response bias since this study was recruited from a single organizational email database. All of the RN participants who responded to the survey were former members of the NSNA. This sample excluded RNs from diploma program and other non-collegial nursing program. This RN sample, for the most part, reflected the socio-demographic characteristic as reported in the 2017 National Nursing Workforce survey, with the exception of degree. The sample obtained had almost twice the percentage of baccalaureate prepared nurses than that which was seen nationally at that time.

Another possible limitation to this survey is the attrition of respondents due to response burden. It was noted that 80 respondents got tired or lost interest, leaving incomplete data that resulted in their exclusion from the sample.

Another limitation that is unique to this study is the current global COVID-19 pandemic. At the time of the release of the survey, the nation was dealing with a national health crisis that stressed health systems, healthcare providers, and support staff. As a result, the familiar norms and demands of healthcare environment had to undergo rapid changes. Many nurses were required to work excess hours in situations that put them at high risk. There was no longer the “normal” work environment and there was no way of knowing how this might have impacted interprofessional collaboration.
Conclusion

Based on the evidence generated by this study, significant relationships among perceived self-efficacy, perceived assertiveness, and perceived interprofessional collaboration have been shown to exist in this select sample. These three variables are known to be necessary for the delivery of safe and efficient healthcare. Educators, healthcare employers, and researchers need to support the development and the nurturing of these characteristics. Future research in the area of effective interdisciplinary teamwork is indicated. It is the nurses’ belief in their competencies and their ability to speak up that fosters effective engagement in interprofessional collaborative practice. The assessment of nurses’ level of perceived self-efficacy, assertiveness, and interprofessional collaboration should be done to ensure that newly practicing nurses have the necessary tools for success.

To keep in alignment with the Interprofessional Education Collaborative’s core principles, educators need to ensure that curriculums not only supply future nurses with foundational knowledge, skill development, and clinical experiences to aid in the development of clinical competencies but also interprofessional collaborative educational experiences so that they can be prepared for practice outside of the academic setting. Healthcare employers need to recognize their responsibility to provide adequate orientation programs and safe collegial work environments that will foster self-efficacy, encourage assertive and respectful communication, and promote interprofessional collaborative practice. Findings from this study may assist in aiding educators, healthcare administrators, and researchers, as stewards of the profession, to assist nurses’ transition safely into effective interprofessional practice.
References


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doi:10.1080/10904018.2016.1202770


doi:10.3109/13561820.2015.1137891


doi:http://dx.doi.org/10.10016/j.colegn.2014.05.003


doi:10.1111/jonm.12521

Appendix A

Letter of Approval: Molloy College IRB

Molloy College IRB
Approval Date: August 21, 2020
Expiration Date: August 21, 2023

Kathleen Maurer Smith, Ph.D.
Dean, Graduate Academic Affairs
1000 Hempstead Ave., PO Box 5002, Rockville Centre, NY 11571-5002
Tel: 516.323.3601
Fax: 516.323.3398
E: ksmith@molloy.edu

DATE: August 21, 2020
TO: Janice Baglietto, MS, RN
FROM: Molloy College IRB
PROJECT TITLE: [1646086-1] A QUANTITATIVE ANALYSIS OF NEWLY PRACTICING NURSES’ PERCEIVED SELF-EFFICACY, ASSERTIVENESS, AND INTERPROFESSIONAL COLLABORATION.
REFERENCE #: New Project
SUBMISSION TYPE: New Project
ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE: August 21, 2020

Thank you for your submission of New Project materials for this project. The Molloy College IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations. However, exempt research activities are subject to the same human subject protections and ethical standards as outlined in the Belmont Report.

This acknowledgement expires within three years—unless there is a change to the protocol.

Though this protocol does not require annual IRB review, the IRB requires an annual report of your exempt protocol (Expedited and Exempt Research Protocol Annual Report Form) which is available on the IRB webpage.

If there is a proposed change to the protocol, it is the responsibility of the Principal Investigator to inform the Molloy College IRB of any requested changes before implementation. A change in the research may change the project from EXEMPT status and requires prior communication with the IRB.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact Patricia Eckardt at 516-323-3711 or peckardt@molloy.edu. Please include your project title and reference number in all correspondence with this committee.

Sincerely,

Patricia Eckardt, Ph.D., RN, FAAN
Chair, Molloy College Institutional Review Board
Appendix B

Letter of Permission: NSNA

Veronica D. Feeg, PhD, RN, FAAN
Co-Principle Investigator, National Student Nurses Association – Annual New Graduate Survey

Dear Ms. Baglietto:

As you may know, I have served as the co-principle investigator over the past years with Dr. Diane Mancino for the Annual New Graduate Survey for the National Student Nurses’ Association (NSNA). Each year, we ask the respondents to provide their permanent email addresses for us to use in follow-up surveys, indicating that they would be willing to receive new surveys. We believe that it is important for us to follow our past members with periodic, relevant and screened surveys to understand how their careers have unfolded in nursing. We review all requests and only allow those with important implications for the organization.

Your request for studying “interprofessional collaboration” in a sample of new graduates from the specific years that you have requested is important to NSNA. Since they are no longer members of NSNA, they will still be given the opportunity to participate as volunteers in your cover letter and stop at any time if they choose.

We ask that you are willing to share your findings with us and that we would be able to use any aggregate or de-identified data from their responses for reports that would be relevant to our current members. Your topic on “interprofessional collaboration” is an area that we hope to know more about in order to serve our organization’s members as nursing roles expand in healthcare delivery today.

Please be sure to include the following points in your invitation letter, that survey respondents:

(1) are participating “voluntarily”
(2) are able to “stop out” at any point in the survey, and
(3) are willing to provide their “email address” separately from their responses when they submit the completed survey in order to be eligible for any incentives that you are offering.

Please use this statement in the invitation:
“You are receiving this invitation as a past member of the National Student Nurses Association (NSNA) who gave your email willingly on the Annual NSNA New Graduate Survey to be surveyed in the future on important issues in nursing relevant to the NSNA. As a past member, your results will be voluntary, anonymous, and de-identified. You will be providing information that will be made available to the organization upon request as they continuously work to improve services that are relevant to their student members.”

If you comply with the statements above, you have permission to use the email addresses under my SurveyMonkey® account and monitored by me throughout the process. You have permission to identify the NSNA in your invitation, but not to use the logo in your survey, as these participants are not current members.

Thank you for your good work and I look forward to receiving important data from your study.

Sincerely,

Veronica D. Feeg, PhD, RN, FAAN
Co-Principal Investigator and Research Associate
National Student Nurses Association
Appendix C

Letter of Permission: General Self-Efficacy Scale

Permission granted

to use the General Self-Efficacy Scale for non-commercial research and development purposes. The scale may be shortened and/or modified to meet the particular requirements of the research context.

http://userpage.fu-berlin.de/~health/selfacs.htm

You may print an unlimited number of copies on paper for distribution to research participants. Or the scale may be used in online survey research if the user group is limited to certified users who enter the website with a password.

There is no permission to publish the scale in the Internet, or to print it in publications (except 1 sample item).

The source needs to be cited, the URL mentioned above as well as the book publication:


Professor Dr. Ralf Schwarzer

www.rafschwarzer.de
Appendix D

Permission Request: Simple Rathus Assertiveness Scale-Short Form

Dear Dr. Jenerette,

I am a doctoral student at the Barbara H. Hagan School of Nursing and Health Sciences, Molloy College, Rockville Centre, NY. I am writing my dissertation titled A Quantitative Analysis of Newly Practicing Registered Nurses’ Perceived Self-Efficacy, Assertiveness, and Interprofessional Collaboration, under the direction of my dissertation committee chaired by Dr. Lois Moylan, who can be reached at lmoylan@molloy.edu.

I am writing to ask for written permission to use the Simple Rathus Assertiveness Scale–Short Form (SRAS-SF) in my research study. I would also appreciate receiving a copy of the SRAS-SF, instructions for administering and scoring the scale, and the proper citation.

I would like to use and print your survey under the following conditions:

- I will use the SRAS-SF only for my research study and will not sell or use it for any other purposes.
- I will include a statement of attribution. If you have a specific statement that you would like for me to use, please provide it in your response.
- At your request, I will share aggregate data as well as reliability estimates of the tool in my population.

If these are acceptable terms and conditions, please indicate so by replying to me through email: jbaglietto@lions.molloy.edu.

Sincerely,

Janice Baglietto, MS RN CCRN-K
Doctoral Candidate
Molloy College
Appendix E

Letter of Permission: SRAS-SF.

JENERETTE, CORETTA

Tue, Sep 29, 12:01 AM (5 days ago)

to me

Janice,

My apologies for the delayed response. You have my permission to use the scale. Please let me know the results of your study. Best of luck with your dissertation.

Best,

Coretta

Coretta Jenerette, Ph.D., RN, AOCN, CNE, ANEF, FAAN
Professor and Associate Dean for Diversity, Equity, and Inclusivity
pronouns: she, her, hers

803-576-8332
cjeneret@mailbox.sc.edu

College of Nursing
University of South Carolina
1601 Greene Street
Columbia, SC 29208
Appendix F

Permission: Interprofessional Collaboration Scale

**Permission/Access:** Open access (available on website)


**Notes on Access:** It is not necessary to contact the author to confirm permission to use.

The scale may be used freely except that no commercial or for-profit use is permitted

**Contact author:**

Chris Kenaszchuk, M.Sc.
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Institute for Mental Health Policy Research
33 Russel Street
Toronto, Ontario, Canada M5S 2S1
Email: chris.kenaszchuk@cam.ca
Tel: (416) 5535-8501 Ext. 36081
Appendix G

Survey Questions

General Self-Efficacy Scale (GSE)

1. I can always manage to solve difficult problems if I try hard enough
   1. Not at all true
   2. Hardly true
   3. Moderately true
   4. Exactly true
2. If someone opposes me, I can find the means and ways to get what I want.
   1. Not at all true
   2. Hardly true
   3. Moderately true
   4. Exactly true
3. It is easy for me to stick to my aims and accomplish my goals.
   1. Not at all true
   2. Hardly true
   3. Moderately true
   4. Exactly true
4. I am confident that I could deal efficiently with unexpected events.
   1. Not at all true
   2. Hardly true
   3. Moderately true
   4. Exactly true
5. Thanks to my resourcefulness, I know how to handle unforeseen situations.
   1. Not at all true
   2. Hardly true
   3. Moderately true
   4. Exactly true
6. I can solve most problems if I invest the necessary effort.
   1. Not at all true
   2. Hardly true
   3. Moderately true
   4. Exactly true
7. I can remain calm when facing difficulties because I can rely on my coping abilities.
   1. Not at all true
   2. Hardly true
   3. Moderately true
4. Exactly true
8. When I am confronted with a problem, I can usually find several solutions.
   1. Not at all true
   2. Hardly true
   3. Moderately true
   4. Exactly true
9. If I am in trouble, I can usually think of a solution
   1. Not at all true
   2. Hardly true
   3. Moderately true
   4. Exactly true
10. I can usually handle whatever comes my way.
    1. Not at all true
    2. Hardly true
    3. Moderately true
    4. Exactly true

References:

Contact:
Prof. Dr. Ralf Schwarzer,
Freie Universität Berlin, Psychologie,
Habelschwerdter Allee 45,
14195 Berlin, Germany,
FAX +49 (30)838-55634
Email: health@zedat.fu-berlin.de
Email: http://www.Ralschwarzer
http://userpage.fu-berlin.de/~health/selfscal.htm
Simple Rathus Assertiveness Schedule-Short Form

19-Item Schedule for Assessing Assertive Behavior

Directions: Indicate how well each item describes you by using this code:

3 very much like me, 2 rather like me, 1 slightly like me, -1 slightly unlike me, -2 rather unlike me, -3 very much unlike me

1. Most people stand up for themselves more than I do. *

2. At times I have not made or gone on dates because of my shyness. *

3. When I am eating out and the food, I am served is not cooked the way I like it, I complain to the person serving it.

4. If a person serving in a store has gone to a lot of trouble to show me something which I do not really like, I have a hard time saying “No.” *

5. There are times when I look for a good strong argument.

6. I try as hard in life to get ahead as most people like me do.

7. To be honest, people often get the better of me. *

8. I do not like making phone calls to businesses or companies. *

9. I feel silly if I return things, I don’t like to the store that I bought them from. *

10. If a close relative that I like was upsetting me, I would hide my feelings rather than say that I was upset. *

11. I have sometimes not asked questions for the fear of sounding stupid. *

12. During an argument, I am sometimes afraid that I will get so upset that I will shake all over. *

13. If a famous person were talking in a crowd and I thought he/she was wrong, I would get up and say what I thought.
14. If someone has been telling false and bad stories about me, I see him or her as soon as possible to “have a talk” about it.

15. I often have a hard time saying “No.” *

16. I complain about poor service when I am eating out or in other places.

17. When someone says I have done very well, I sometimes just don’t know what to say*.

18. If a couple near me in the theater were talking rather loudly, I would ask them to be quiet or to go somewhere else and talk.

19. I am quick to say what I think.

Reference

Interprofessional Collaboration Scale, Section B.

As a nurse you work with physicians and allied health professionals like occupational, physical and respiratory therapist, and others. Please evaluate work relationships between nurses, physicians, and allied health professionals in the clinic/department where you work now. Read the statements below. The select one response that best describes your opinion about the statement.

**Response Choices:** 1 Strongly Disagree, 2 Disagree, 3 Agree, 4 Strongly Agree

1. Nurses have a good understanding with the doctors about our respective responsibilities.
2. Doctors are usually willing to take into account the convenience of nurses when planning their work.
3. I feel that patient treatment and care are not adequately discussed between nurses and doctors. *
4. Nurses and medical staff share similar ideas about how to treat patients.
5. Medical staff are willing to discuss nursing issues.
6. Medical staff cooperate with the way we organize nursing.
7. Medical staff would be willing to cooperate with new nursing practices.
8. The medical staff do not usually ask for nurses’ opinions. *
9. Medical staff anticipate when nurses will need their help.
10. Important information is always passed on between nurses and doctors.
11. Disagreements with doctors often remain unresolved. *
12. The doctors think their work is more important than the work of nurses. *
13. Doctors would not be willing to discuss their new practices with nurses. *
14. Nurses have a good understanding with the **allied health care professionals** about our respective responsibilities.

15. Allied health staff are usually willing to take into account the convenience of the nurses when planning their work.

16. I feel that patient treatment and care are not adequately discussed between nurses and allied health care staff. *

17. Nurses and allied health staff share similar ideas about how to treat patients.

18. Allied health staff are willing to discuss nursing issues.

19. Allied health professionals cooperate with the way we organize nursing.

20. Allied health staff would be willing to cooperate with new nursing practices.

21. The allied staff do not usually ask for nurses’ opinions. *

22. Allied staff anticipate when nurses will need their help.

23. Important information is always passed on between nurses and allied health care staff.

24. Disagreements with allied health care professionals often remain unresolved. *

25. Allied health staff think their work is more important than the work of nurses. *

26. Allied health care professionals would not be willing to discuss their new practices with nurses. *

**Reference:**

Demographic Survey Questions

1. What is your identified gender?
   1) Male
   2) Female
   3) Transgender Male
   4) Transgender Female
   5) Nonbinary

2. What is your current age?
   1) 22 and under
   2) 23-28
   3) 29-32
   4) 33-38
   5) 39-42
   6) 43-48
   7) 49 and over

3. What is your race/ethnicity?
   1) White, Non-Hispanic
   2) Black or African American, Non-Hispanic
   3) Hispanic or Latino
   4) American Indian or Alaska Native
   5) Asian
   6) Native Hawaiian or Other Pacific Islander
   7) Other
4. What is your current marital status?
   1) Single
   2) Married
   3) Divorced/separated
   4) Widow

5. What area of the country do you identify with as your home region?
   1) Northeast
      (ME, NH, VT, MA, RI, CT, NY, NJ, PA)
   2) South
      (MD, DE, WV, DC, VA, TN, NC, SC, GA, AL, MS, FL, AR, LA, OK, TX)
   3) Central
      (ND, SD, NE, KS, KY, MN, IA, MO, WI, IL, IN, OH, MI)
   4) West
      (MT, WY, ID, WA, OR, CA, NV, UT, CO, AZ, NM, AK, HI)

6. What is your highest level of Nursing Education?
   1) Associate degree
   2) Bachelor’s degree
   3) Master’s degree
   4) DNP
   5) PhD

7. If you have another degree in addition to nursing, indicate below.
   1) Associate degree
   2) Bachelor’s degree
   3) Master’s degree
   4) Doctorate
   5) Not Applicable
8. What is your current place of employment?

   1) Inpatient Community Hospital
   2) Inpatient Tertiary Care Hospital
   3) Inpatient University Medical Center
   4) Out Patient

9. What is your current area of Clinical practice?

   1) Medical/Surgical/Telemetry Nursing
   2) Critical Care Nursing
   3) Emergency Care Nursing
   4) Perioperative Nursing
   5) Maternal Obstetrics Nursing
   6) Pediatric Nursing
   7) Behavioral Health Nursing
   8) Community/Visiting Health Nursing
   9) School Nursing
  10) Occupational Nursing
  11) Other

10. How long have you been employed in your current position?

   1) <6 month
   2) 6 months to 12 months
   3) >12 months to 18 months
   4) > 18 months to 24 months
   5) > 24 months

11. Do you have any prior employment experience in healthcare?

   1) Yes
   2) No
12. If you do have prior healthcare experience, in what capacity?

1) Nursing Assistance/ Patient Care Assistance
2) Unit Clerk/Secretary
3) EMT/Paramedic
4) Social Worker
5) Mental Health Counselor
6) Respiratory Therapist
7) Physical Therapist
8) Dietitian
9) Other
10) Not Applicable