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Admissions Criteria and First-Year Completion Rates in an Associate Degree Nursing Program

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This is to certify that the doctoral study by

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

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Abstract

Students in associate degree nursing (ADN) programs in the United States experience high attrition rates in the first year. The purpose of this quantitative correlational study was to examine the relationship between preadmission factors and first-year ADN program completion rates at one college in the south central United States. Constructivist theory provided the framework for the study. Archival data for 228 students from one ADN program were analyzed using binary logistic regression. Results indicated a statistically significant association between prerequisite grade point average (GPA) and first-year program completion. An increase in the number of incoming students ages 25 years and younger was also noted. The professional development project focused on educating nursing faculty to assist students with lower GPAs to be successful. A second component of the project addressed teaching modalities targeted to millennial and Generation Z learners. Findings may be used to increase the number of nurse graduates at the study site, which may improve health care and economic development in the local community.

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Dedication

I would like to dedicate this doctoral study to my husband and children who have been steadfast in their support during this journey.

Acknowledgments

I would like to thank Dr. Stacy Wahl, my committee chair for her guidance and support. You encouraged me to keep on keeping on even when I was discouraged and ready to throw in the towel. I would also like to thank Dr. Earl Thomas for serving on my committee. Your input and feedback throughout the project study process was invaluable.

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Finally, I especially want to thank my husband, Kevin, and my children, Maddie, Amos, and Lolo for the love and support you have given me every step of the way. I wouldn't have made it through the last three years without your cheerleading and understanding. You have made as many sacrifices as I have over the last three years and I want you to know how much I love and appreciate each one of you.

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Section 1: The Problem

The Local Problem

Associate degree nursing (ADN) programs across the United States struggle with high attrition rates, primarily during the first year of nursing course work (Griswold, 2014; Rodgers, Stenhouse, McCreaddie, & Small, 2013). Nursing is one of the fastest growing professions in the United States, and between 2014 and 2024 nursing jobs are estimated to grow by 16% (Bureau of Labor Statistics, 2015). Contributing factors to the nursing shortage (American Nurses Association, 2014) include an aging nursing workforce, an aging population needing health care, and a shortage of academically prepared nursing faculty (Budden, Zhong, Moulton, & Cimiotti, 2013). The lack of faculty limits the total available seats in nursing education programs (Nardi & Gyurko, 2013), and every year academically prepared applicants fail to gain admission to nursing programs (Feldman, Greenberg, Jaffe-Ruiz, Kaufman, & Cignarale, 2015).

In 2015, the American Association of Colleges of Nursing stated close to 70,000 academically prepared applicants were denied admission into nursing programs. It is important that nursing students who enter ADN programs successfully complete them because of the limited number of ADN program seats. Most programs use selective criteria to ensure the most qualified applicants enter the program, which include grade point average (GPA), entrance exam scores, health care experience, and interviews (Trofino, 2013). The problem at the local level, and across the United States, is the selective admission criteria used in ADN programs do not predict successful completion

of the first year of the program as evidenced by first-year attrition rates as high as 50% (Griswold, 2014; Rodgers et al., 2013).

At the local level, over the last 4 years, the first-year attrition rates for one ADN program in the southern United States were 26%, 38%, 38%, and 22%, respectively (dean of nursing, personal communication, January 7, 2017). This program admits between 55 and 65 students each fall (dean of nursing, personal communication, August 3, 2017) and is the primary source of registered nurses (RNs) for the two major local health care facilities. Currently, both facilities have multiple openings for RNs, which has led one of the facilities to use more costly agency nurses from outside the area (chief nursing officers, personal communication, November 14, 2017). The high attrition rates the program experienced led to fewer graduates, which negatively impacted the program's ability to meet local workforce demands. The program's graduate employment rate averages higher than 95% (dean of nursing, personal communication, November 15, 2017). Because each nursing program seat is a valuable resource for those who use the health care system, the criteria associated with successful program completion need to be identified to ensure the students who gain admission to the nursing program are those with the highest likelihood of success.

Rationale

In this quantitative study, I investigated which selective admission criteria are associated with students' successful completion of the first year at one ADN program in the United States (see Griswold, 2014; Rodgers et al., 2013). Discussion with local health care facility representatives and interviews with nursing program administrators

confirmed that attrition is a significant local problem that negatively impacts the nursing workforce (chief nursing officers, personal communication, November 14, 2017; dean of nursing, personal communication, November 15, 2017). The literature indicated the problem is not isolated to the local setting (Griswold, 2014; Rodgers et al., 2013). Many variables impact nursing program attrition, including the selective admissions process in ADN education. These criteria include students' GPA in general education course work, comprehensive and sub-scores on a nursing school entrance exam, and interviews. By identifying which objective preadmission criteria are associated with students' successful completion of the first year of the ADN program, overall program completion rates will be improved (Mooring, 2016; Wambaugh, Eckfield, & Van Hofwegen, 2016).

In this study, the dependent variable was successful first-year program completion, and the independent variables were prerequisite GPA, Test of Essential Academic Skills (TEAS) comprehensive score, TEAS science score, TEAS reading comprehension score, and TEAS math score. The findings from the study inform social change by identifying which admission criteria are associated with students' successful completion of an ADN program at one school. Increasing the number of nurse graduates positively impacts communities from a health care standpoint, an economic standpoint, and a nursing shortage standpoint through the use of admission criteria associated with student success in the nursing program to enroll students. By increasing the number of registered nurses available to the community, patient needs can be met, and health care outcomes can be realized.

Definition of Terms

The following terms informed this study:

Associate degree in nursing (ADN): A degree traditionally awarded by a community college or hospital-based nursing program, which prepares graduates to sit for the RN licensure exam (Mahaffey, 2002).

Attrition: The departure from all forms of higher education prior to completion of a degree or other credential (American Institutes for Research, 2012). For this study, attrition was defined as a student leaving the program without successfully completing the first two semesters of the program.

Grade point average: The average obtained by dividing the total number of grade points earned by the total number of credits attempted (Hidden curriculum, 2014).

Grade point average (in prerequisite general education courses): The program's admission GPA selection criteria is not based on the student's cumulative GPA; rather it is calculated using only the courses within the Associate of Science Nursing Degree Plan. There are 28 hours of general education courses within the degree plan (National Park College, 2016).

Test of Essential Academic Skills (TEAS): A multiple-choice assessment with sections addressing reading, math, science, and English/language usage that measures learners' basic academic preparedness (Assessment Technologies Institute, 2016). A comprehensive score is provided as well as sub-scores within each section of the exam. Currently, only the TEAS comprehensive score is used in the admissions process.

Significance of the Study

High first-year attrition rates in ADN programs are a major concern in the nursing education discipline (Griswold, 2014; Rodgers et al., 2013). This study contributed to the field of nursing education by addressing a gap in practice as to whether attrition correlates to the selective admission process. Multiple local stakeholders may benefit from this research including current and future ADN students, ADN education programs, ADN administrators and faculty members, and health care consumers.

Nursing is a profession in which nurses have the potential to create a positive impact not only on the patients they care for, but also on the communities they practice in. Walden University (2014) described social change as behaviors or actions that can lead to positive effects for others. The more nursing students who complete ADN programs, the greater the potential for impacting positive social change by ensuring an adequate number of nurses to care for consumers' health care needs.

Research Questions and Hypotheses

The purpose of this quantitative study was to determine whether selective admission criteria were associated with successful student completion of the first year of an ADN program. Because the highest rate of student attrition occurs in the first year of study (dean of nursing, personal communication, January 7, 2017; Griswold, 2014; Rodgers et al., 2013), successful completion of the first year of the program indicates those students have a higher likelihood of graduating from the program. The following research questions (RQs) informed this study:

RQ1: Does a student's prerequisite GPA correlate to successful completion of the first year of an ADN program?

$H_0$1: The prerequisite GPA correlates to successful completion of the first year of an ADN program.

H_a1: The prerequisite GPA does not correlate to successful completion of the first year of an ADN program.

RQ2: Do a student's TEAS scores correlate to successful completion of the first year of an ADN program?

$H_0$2: The TEAS comprehensive score correlates to successful completion of the first year of an ADN program.

H_a2: The TEAS comprehensive score does not correlate to successful completion of the first year of an ADN program.

$H_0$3: The TEAS science score correlates to successful completion of the first year of an ADN program.

H_a3: The TEAS science score does not correlate to successful completion of the first year of an ADN program.

$H_0$4: The TEAS reading comprehension score correlates to successful completion of the first year of an ADN program.

H_a4: The TEAS reading comprehension score does not correlate to successful completion of the first year of an ADN program.

$H_0$5: The TEAS math comprehension score correlates to successful completion of the first year of an ADN program.

H_a5: The TEAS math comprehension score does not correlate to successful completion of the first year of an ADN program.

RQ3: Does a student's gender correlate to successful completion of the first year of an ADN program?

$H_0 6$: A student's gender correlates to successful completion of the first year of an ADN program.

H_a6: A student's gender does not correlate to successful completion of the first year of an ADN program.

RQ4: Does a student's age correlate to successful completion of the first year of an ADN program?

$H_0 7$: A student's age correlates to successful completion of the first year of an ADN program.

H_a7: A student's age does not correlate to successful completion of the first year of an ADN program.

RQ5: Does a student's race correlate to successful completion of the first year of an ADN program?

$H_0 8$: A student's race correlates to successful completion of the first year of an ADN program.

H_a8: A student's race does not correlate to successful completion of the first year of an ADN program.

Review of the Literature

Review of the Broader Problem

A review of the literature was conducted using the ProQuest, ScienceDirect, Cumulative Index to Nursing and Allied Health (CINAHL), and EBSCOhost databases from Walden University's library. Search terms and phrases included *nursing student retention*, *admission criteria*, *attrition rates*, *nursing education*, *program challenges*, *applicant selection*, *first year nursing attrition*, *nursing faculty shortage*, *admission criteria pre-licensure nursing*, *causes attrition nursing programs*, *nursing program preadmission criteria*, and *admission criteria pre-licensure nursing*. The database searches were limited to articles published from 2013 to the present.

Theoretical Framework

Constructivism is a learning theory that addresses the way individuals obtain knowledge (Piaget, 1999). The core premise of constructivism is that learning is an active process through which learners use problem-solving and reflection to develop or construct their understanding of ideas and concepts (Piaget, 1999). Piaget (1999) used the terms *assimilation* and *accommodation* to describe the way knowledge is constructed. Assimilation is the process through which new information is integrated into the learner's preexisting framework of knowledge (Piaget, 1999).

Accommodation, the process of creating new understanding, occurs in instances when a new experience cannot be integrated into the learner's preexisting framework (Piaget, 1999). The learner then needs to reframe that knowledge in a way that makes sense of the new experience in the context in which the learning has occurred (Piaget,

1999). For instance, when a child experiences a squirrel for the first time but cannot put it in an existing dog folder, he or she must make a new mental folder for squirrel. Accommodation may also happen when the learner experiences a failure. The learner then uses reflection and problem-solving skills to accommodate the new experience and to develop strategies or techniques to adapt, which results in learning (Piaget, 1999).

The theory of constructivism applies to nursing selective admission criteria because nurses, and therefore nursing students, should not simply memorize facts. Rather, they must be able to apply their acquired knowledge in real-world patient situations. The way in which constructivism was used in this study relates to the learner's ability to use both problem-solving and reflection in the process of knowledge construction. Learners' previous academic success or failure, and their ability to change or maintain their behavior based on these experiences, is at the core of determining student success in the nursing education program. Learners who have successfully progressed through their prerequisite course work have likely developed an effective method of constructing knowledge using assimilation and accommodation, thereby providing them with a sound framework upon which to build as they enter and progress through the rigorous nursing school curriculum. Learners who have not successfully moved through their prerequisite course work, as evidenced by a lower GPA, by retaking prerequisite courses to increase their GPA, or by lower TEAS test scores, have not likely been able to develop a sound framework to build on. They may not have developed coping strategies, study habits, or other behaviors that would lead to success in an ADN program.

Selection of Nursing Student Applicants

A synthesis of the literature indicated significant numbers of academically prepared applicants failed to gain admission to nursing programs because of a lack of faculty, facilities, and clinical sites (American Association of Colleges of Nursing, 2015; Feldman et al., 2015; Hayden, Smiley, Alexander, Kardong-Edgren, & Jeffries, 2014; Kinney, Montegut, Charlton, & McManus, 2017). According to the National League for Nurses (2015), ADN programs reported that 37% of qualified applications were rejected because of the factors listed above.

The impact of attrition. Attrition is a problem encountered by both domestic and foreign nursing programs (Harris, Rosenberg, & Grace O'Rourke, 2014; Kinney et al., 2017; Mooring, 2016). Several researchers have found attrition occurs primarily during the first year of enrollment and some ADN programs, both in the United States and abroad, experience attrition rates higher than 50% (Griswold, 2014; Harris et al., 2014; Kinney et al., 2017; Mooring, 2016; Rodgers et al., 2013; Roos, Fichardt, MacKenzie, & Raubenheimer, 2016). The attrition problem in nursing education has a direct impact on the health care workforce (Harris et al., 2014; McKendry, Wright, & Stevenson, 2014) because it reduces the number of potential nurses needed by health care consumers.

A variety of factors will impact the increased demand for nurses over the next decade, including an aging nursing workforce approaching retirement; a large, aging baby boomer population who will make greater demands on the health care industry; and managed health care (Bureau of Labor Statistics, 2015; Harris et al., 2014). According to the National Council of State Boards of Nursing (2015), approximately 50% of the

nursing workforce is over 50 years of age. Without an academically qualified and readily available workforce to fill current and future job openings, the quality of and accessibility to health care could be compromised. Because of pressing demands to meet workforce needs, nursing programs must admit applicants with a high likelihood of successful program completion (Wambaugh et al., 2016).

Associate degree nursing programs turn away qualified applicants each year in the United States (American Association of Colleges of Nursing, 2015; Cunningham, Manier, Anderson, & Sarnosky, 2014; Kinney et al., 2017). Limitations such as lack of qualified faculty, limited classroom and laboratory space, and declining clinical sites result in increased pressure to ensure all available program seats are filled by applicants with the best chances of success (Harris et al., 2014; Olsen, 2017; Wambaugh et al., 2016). Identifying which students will successfully complete a nursing program is complex and requires careful examination and consideration of several factors, including student demographics, attrition rates, psychosocial factors, and methods used to evaluate the collected data (Harris et al., 2014; Wambaugh et al., 2016).

When a student fails to complete a nursing program, the impact is felt by a variety of stakeholders including the student and his or her family, the program's faculty members, the educational institution, the local health care establishment, and the community (Olsen, 2017; Salamonson et al., 2014; Wambaugh et al., 2016). Olsen (2017) discussed the high cost of nursing education attrition including the loss of tuition revenue to the educational institution, the impact attrition has on the nursing shortage, the waste of student financial resources, and the emotional and psychological impact on the student

and family members. Crouch (2015) examined the societal impact of nursing program attrition, which includes the negative impact of reduced human resources available in communities as well as the negative emotional and financial impact on students and their families.

Wambaugh et al. (2016) discussed confusing and sometimes contradictory findings, such as the impact student age has on attrition rates, and pointed to the need for further research on the subject. McKendry et al. (2014) agreed there was a need for further research regarding why some students are successful in nursing education programs while other equally qualified candidates are not. Kinney et al. (2017) focused on the premise that ADN programs can meet workforce needs more quickly than longer baccalaureate programs, and therefore more research focusing on ADN program admission criteria is needed. According to Crouch (2015), "students who are entering the nursing program deserve a reasonable estimate of the likelihood for successful program completion" (p. 47). Crouch discussed the benefits that a reliable system to admit students with a high likelihood of program completion would have on stakeholders, including populating the available workforce for local health care facilities. Salamonson et al. (2014) called for reliable ways to identify students at risk of attrition. However, Olsen (2017) reported that most research on nursing program attrition focused on baccalaureate programs, leaving a paucity of research on associate degree programs.

Causes of attrition. A variety of factors can lead students to leave a nursing education program either voluntarily or involuntarily (Wray, Aspland, Barrett, & Gardiner, 2017). Tinto (1993), one of the leading theorists in the field of student

retention, described two main types of integration and the role they play in student attrition. The first was social integration, which includes factors like personal interaction with faculty and peers (Tinto, 1993). The second was academic integration, which focuses on factors like GPA and students' perceptions regarding the role of student (Tinto, 1993). According to Tinto (1993), students with high levels of social and academic integration are less likely to experience attrition.

Regarding attrition in nursing education, many researchers have divided causes of attrition into personal and academic categories (Kinney et al., 2017; Kukkonen, Suhonen, & Salminen, 2016; Rodgers et al., 2013; Roos et al., 2016). Academic factors include lack of preparedness for the rigor of nursing school, student learning style, inability to meet academic requirements, and clinical issues such as poor interpersonal communication skills and clinical placement problems (Kinney et al., 2017; Roos et al., 2016). Nonacademic factors include financial concerns, personal problems, work commitment, family commitments, wrong career choice, and health concerns (Kinney et al., 2017; Mooring, 2016; Roos et al., 2016).

To decrease the potential impact of academic factors on attrition, researchers examined a variety of preadmission academic indicators related to nursing student success. These variables include high school GPA, standardized preadmission test scores, general education GPA, science course GPA, and the number of prerequisite courses completed (Chen & Voyles, 2013; Crouch, 2015; Cunningham et al., 2014; Harris et al., 2014; Manieri, De Lima, & Ghosal, 2015; Mooring, 2016; Trofino, 2013). Harris et al. (2014) identified ethnically diverse students, poor reading skills, and low GPAs as causes

of attrition. Harris et al. found that science courses, specifically anatomy and physiology (A&P) grades, to be predictive of success, and noted that students who earned a C or D grade in the A&P course were more likely to withdraw or repeat nursing courses than their counterparts who earned an A or B grade in the A&P course. The goal of examining preadmission indicators is to determine how they impact attrition and to identify applicants with a high likelihood of successful program completion (Mooring, 2016).

Personal factors have been identified as a cause of nursing program attrition (Kinney et al., 2017; Kukkonen et al., 2016; Rodgers et al., 2013) and include family demands, work demands, and financial stressors (Kinney et al., 2017). McKendry et al. (2014) found that attempting to balance multiple demands such as work, family issues, and the program's academic rigor negatively impacted attrition rates.

Stuart, Rios-Aguilar, and Deil-Amen (2014) used an adapted version of existing retention theories to explore how the potential financial impact of an earned credential could affect students' decisions to complete programs of study. Findings indicated that students consider the cost/benefit analysis when making decisions related to degree selection (Stuart et al., 2014). Salamonson et al. (2014) found that students for whom nursing was not their first career choice had higher levels of attrition than their counterparts for whom nursing was their first choice. Salamonson et al. found that first-semester attrition rates in a nursing program were almost twice as high for students who had not selected nursing as their first option. This finding may be supported by Mooring's (2016) finding that lack of passion related to nursing as a career choice negatively impacted attrition rates.

Roos et al. (2016) examined the main reasons students left South African nursing education programs. Their findings indicated academic failure and financial and health-related concerns were the three leading causes of attrition, respectively (Roos et al., 2016). Schrum (2015) identified poor academic performance as the primary reason for students' leaving a program, but also found that student relocation and personal reasons were contributing factors. Olsen (2017) identified financial concerns as a major contributing factor affecting attrition; students who were supporting other family members had higher levels of attrition than students without that financial burden. Salamonson et al. (2014) and Harris et al. (2014) supported this finding, noting that students who worked more than 16 hours per week had higher attrition levels than those who worked fewer hours or not at all. Salamonson et al. found higher attrition in male students, and this finding was supported by Roos et al. (2016).

Kinney et al. (2017) discussed students' lack of interpersonal skills as a nonacademic reason contributing to attrition and focused on soft skills, such as poor peer communication. Several researchers discussed the importance of having a full understanding of both the role of a nurse and the rigor and expectations of nursing school (Dante et al., 2015; Mooring, 2016; Wray et al., 2017). McKendry et al. (2014) found that prior to entering a nursing program, students experience high levels of anxiety related to not understanding the expectations and demands of the program. This finding was supported by Dante et al. (2015).

Students who reported feeling unprepared for the demands of the profession or that they were not receiving adequate support from the nursing faculty, were more likely

to exit the program (ten Hoeve, Castelein, Jansen, & Roodbol, 2017). Studies conducted by Dante et al. (2015) and Roos, et al. (2016) found the public needed to be educated regarding the demands of not only nursing, but also nursing education programs to better understand the depth and breadth of the educational experience they would be undertaking. McKendry et al. (2014) discussed the need to identify students at risk for failure and ensure their access to on-campus support services. However, they found there seemed to be a stigma associated with using support services, even when readily available. Students stated they would advise their peers to use the available services but would be hesitant to utilize them themselves. McKendry et al. (2014) also identified certain logistical factors, such as scheduling changes and learning management system (LMS) concerns, which increased student anxiety levels and impacted on program attrition rates.

Another non-academic factor found in the literature related to program attrition is student age. Older students tend to persist in nursing education, which is the opposite of higher education statistics in general (Wray et al., 2017). Older students may be more effective than younger students at self-regulation, which includes strategies, thoughts, and feelings that aid in decision-making (Wambaugh et al., 2016). This relates to the theoretical framework of constructivism. Students with the ability to set goals and modify behaviors to reach those goals have a higher likelihood of success in nursing education programs (Wambaugh et al., 2016). A lack of these essential skills increases the likelihood of attrition. Another came to the conclusion that students over age 45 did have

a higher attrition rate than their younger counterparts and found age was a statistically significant predictor of student attrition (Donnell, 2015).

Certain student demographic populations have been identified as having higher attrition rates than their Caucasian and female counterparts. Minority and male students typically have higher attrition rates (Donnell, 2015; Mooring, 2016; Scott & Zerwic, 2015). This is an important finding due to the disparity between the nursing workforce and the population served (Scott & Zerwic, 2015). For example, the National Council of State Boards of Nursing (2015) reported only 19.5% of RN respondents to the National Nursing Workforce Study were from racial/ethnic minorities and just 14.1% of respondents were male. African Americans represent 13.3% of the population; Latinos represent 17.8%, and Native Hawaiian/Pacific Islanders, Asian, American Indian/Alaska Natives represent 7.2%, for a total representation of 38.3% for these groups (United States Census Bureau, 2016). Males make up 49.2% of the United States population (United States Census Bureau, 2016).

Vukic, Steenbeek, and Muxlow (2016) noted workforce diversity in health professions enhanced cultural safety, responsiveness of the health care system, and quality care while reducing negative outcomes for diverse populations of patients. White and Fulton (2015) also discussed the importance of increasing nursing workforce diversity related to more effectively meeting the needs of the ethnically and culturally diverse populations they serve. They identified social isolation as one factor that impacted African American nursing students' persistence. Mooring (20016) found minority students in nursing programs had higher attrition related to factors including less

rigorous academic preparation for higher education and various personal reasons. Donnell (2015) found Black students left the nursing program or were off-track more often than their non-Black counterparts and found a similar result when gender and English Speakers of Other Languages [ESOL] status were examined. Male students and ESOL students left the program or fell off-track more than their female, non-ESOL counterparts.

Moore and Clark (2016) reported ESOL nursing students struggled with multiple choice nursing exam questions, which they had difficulty answering correctly when the questions contained grammatical or structural errors or were difficult to read. While they found native speakers may also struggle with error-filled multiple-choice questions, for the same reasons, ESOL students were more negatively impacted. In contrast, another study did not find ethnicity alone could predict attrition from the nursing program but did recommend uniformity when programs gather race and ethnicity related data to ensure accuracy and comparability (Donnell, 2015). It suggested programs use the Census Bureau's race and ethnicity definitions to eliminate ambiguity. Hodges et al. (2017) discussed barriers encountered by male nursing students, including a significant lack of historical male nursing figures and male nursing role models. Carrigan and Brooks (2016) found the stereotype of nursing as a female profession negatively impacted recruitment and retention of male nursing students and recommended ensuring gender neutrality in recruitment literature.

Ferrell, Decrane, Edwards, Foli, and Tennant (2016) examined minority students' perception related to student success in nursing education programs. They found

students' length of time in the program was most impacted by personal reasons followed closely by financial situations. They stated academic factors such as the organization of the program itself played a role in attrition and found that although the institution provided mentoring and tutoring services, most student participants in the study did not utilize them.

Applicant selection. Due to the high number of qualified applicants and the limited number of available seats in nursing programs, it is essential that a method of identifying and selecting applicants with the highest likelihood of success be determined (Bremner, Blake, Long, & Yanosky, 2014). Taylor, Macduff, and Stephen (2014) stated "Amongst all approaches to selection, entry qualifications emerge as the most effective, reliable, and valid predictors of success (albeit with limitations)" (p. 1156). To that end, identifying a logical, reliable, and statistically driven method to select and admit applicants with the best chance of successful completion is beneficial to many stakeholders (Cunningham et al., 2014). A uniform and effective selection process decreases the amount of financial, logistical, and human resources that occur when high attrition results (Cunningham et al., 2014). Mooring (2016) posited this could lead to more effective recruitment strategies.

Nursing programs employ a variety of admission criteria from which to select students, including overall GPA, scores from preadmission entrance exams like the TEAS, science GPA, and ACT and SAT scores (Bremner et al., 2014; Crouch, 2015; Cunningham et al., 2014). However, standardized testing can become a barrier for some

underrepresented student groups (Scott & Zerwic, 2015). Bremner et al. (2014) warned against admission selection procedures that rely solely on standardized testing.

Glazer et al. (2016) and Wambaugh et al. (2016) discussed increasing the use of "holistic assessment" in the admission process. These assessments include interviews that consider previous experiences and attributes in addition to academic achievements (Scott & Zerwic, 2015). Scott and Zerwic (2015) stated that while GPA and standardized test scores are objective and measurable, they only provide information about a single aspect of an applicant's qualifications. They describe an admission process where the focus is not on the likelihood of successful completion, but rather on the attributes brought to the nursing profession. While the students were required to meet minimum academic admission requirements, they were not selected based on academic factors only.

Selective admission criteria. Many nursing programs employ selective admission criteria to help ensure the most qualified candidates are accepted (Harris et al., 2014). Selective admission criteria are program determined, vary from institution to institution, and can include academic and non-academic components (Wambaugh et al., 2016). Many institutions of learning focus on academics in the belief that previous success, as evidenced by a high pre-entry GPA, indicates the applicant is very likely to successfully complete the rigorous nursing curriculum (Cunningham et al., 2014). Some programs apply point systems to rank applicants based on various academic components such as general education GPA, science course GPA, and scores from standardized tests such as the TEAS (Crouch, 2015; Kinney et al., 2017).

Significant numbers of institutions use academic indicators because they objectively measure the applicants' previous academic achievement (Wambaugh et al., 2016). Olsen (2017) found evidence to support using academic aptitude measurements to predict an applicant's likelihood of success in a nursing education program. Indicators such as admission GPA, entrance exam scores, science course GPA, and educational history (prior degrees) were predictive of success. However, other research seems to contradict some of those findings. Wambaugh et al. (2016) found students who held previous baccalaureate degrees were not more likely to be successful in nursing programs than other students and found previous health care experience was not predictive of success. Tower, Cooke, Watson, Buys, and Wilson (2015) reported applicants with previous experience in health care settings did have an increased probability of program completion.

Abele, Penprase, and Ternes (2013) determined that two factors, the number of courses a student failed and the lifespan psychology course grade, were statistically significant predictors of program success. For each additional course a student was unsuccessful in, the student's chances of program completion were half those of students who had failed one course less. Additionally, they found lifespan psychology grades predicted student success, with a higher grade indicating higher likelihood of completion. This finding was significant since most available data related to specific course grades being predictive of success focus on hard sciences like Anatomy and Physiology (Cunningham et al., 2014; Harris et al., 2014; Wambaugh et al., 2016).

A variety of researchers have examined preadmission exams like the TEAS or HESI related to student success with varied findings (Bremner et al., 2014; Cunningham et al., 2014; Wambaugh et al., 2016). While Cunningham et al. (2014) found entry GPA was related to a student's overall nursing program GPA, they also found the TEAS had a significant relationship with most of the program's outcome variables. Their findings indicated the most significant predictor of success was the combination of science course GPA and the TEAS composite score. Wambaugh et al. (2016) examined both objective academic and non-objective factors such as learning style and applicants' psychosocial environments. They found that science GPA and TEAS scores could be used to predict program outcomes, but the predictive weight was dependent upon which program outcome was being examined. For example, the TEAS composite score was predictive of graduation, but the TEAS and the science course GPA was predictive of NCLEX success and overall nursing program GPA.

Bremner et al. (2014) focused on identifying an ATI TEAS benchmark for their program that would predict students' proficiency in the program's first semester. They found students with higher TEAS composite scores had less first-year attrition. Based on their results, the program changed its cut score (minimum qualification score) to 78% but allowed applicants 2 attempts to meet it. They also warned that program cut scores should be set based on the student population served. So, if a program serves a population where lack of academic preparedness is a problem and development coursework is frequently used by students, then the institution should set a lower cut score versus an institution where program applicants are well prepared for college-level work.

When evaluating applicants' prior academic achievement or aptitude, the level of achievement measured by objective factors like GPA or entrance exam scores aligns to certain aspects of the constructivist theoretical framework. For example, students who have been successful in prior college-level coursework and have built a knowledge base demonstrate use of effective time management skills, study techniques, and behavior modification that result in academic success (Olsen, 2017; Wambaugh et al., 2016). These same skills are utilized throughout a nursing education program and improve students' chances of successful program completion.

To identify personal factors that may enhance or inhibit successful program completion, subjective selection methods, such as applicant interviews, have been studied (Cunningham et al., 2014; Taylor et al., 2014; Trofino, 2013; Wambaugh et al., 2016). Proponents of a more holistic assessment admission approach believe attributes other than prior academic achievement are important indicators of probability for success. Taylor et al. (2014) used application interviews to evaluate communication skills, values, and personality traits. Gale, Ooms, Grant, Paget, and Marks-Maran (2016) believed it was important that nursing program admission candidates possess certain values like honesty, integrity, and empathy. They used the Multi Mini Interview (MMI) process to evaluate candidates according to those traits in conjunction with literacy and numeracy testing for their study. The results indicated the MMI, along with numeracy test scores, were statistically significant predictors of success.

While many programs are beginning to incorporate holistic selection processes, there are some concerns related to interviewing applicants and basing admission on

subjective criteria (Cunningham et al., 2014). For instance, interviewing applicants consumes a great deal of faculty and staff time and since interviews are subjective, bias is a concern (Cunningham et al., 2014; Glazer et al., 2016; Miller, 2015; Taylor et al., 2014) and may not be considered fair by applicants (Scott & Zerwic, 2015; Taylor et al., 2014). Gale et al. (2016) were concerned about the "halo effect" in which the interviewers were not focused on the answers given but rather, whether they liked the applicants. Another concern related to holistic admission processes is the difficulty that shy or introverted students have when engaging in the process, thereby putting them at a disadvantage (Taylor et al., 2014).

Nursing student retention. One way of addressing retention is to identify admission criteria that most effectively predict student success in ADN programs. Olsen (2017) discussed multiple factors in addition to academic aptitude that impacted student retention in nursing programs, including psychological hardiness and family support. Wray et al. (2017) identified two variables, domicile and age, as retention related factors. Their study found older students had a higher likelihood of success in nursing education programs as compared to their younger counterparts and posited older students have more motivating factors and may have more sources of support in place. However, Donnell (2015) noted higher attrition rates in students over 45 years old.

Wray et al. (2017) reported local students were more likely to remain in the program. They linked this finding to sources of support available to those students who lived in the community long-term. McKendry et al. (2014) found students who are passionate about nursing were more likely to be successful. This finding is supported by

Salamonson et al. (2014), who noted students for whom nursing was their first career choice were more likely to persist and those students who tended to be older than students for whom nursing was not a first choice. Intrinsic motivating factors were identified as positively impacting retention rates by ten Hoeve et al. (2017). In addition, they found that job security and satisfaction with the nursing program and clinical placements positively impacted student retention.

McKendry et al. (2014) found that students who understood the expectations of nursing school, and felt their program met those expectations, were more likely to describe their experiences in the program as positive. They recommended providing applicants and incoming nursing students with information on program expectations and ensuring support is available to students during the pre-entry phase. This finding was similar to Crouch (2015) and Harris et al. (2014), who noted providing early intervention for students at risk of attrition increases the chance of success.

Reyes, Andrusyszyn, Iwasiw, Forchuk, and Babenko-Mould (2015) found that nursing students who display resilience when dealing with the stresses that accompany nursing education programs tend to persist in programs. They posited programs should focus on ways to develop and strengthen resiliency in both nursing faculty and nursing students to improve program outcomes related to persistence. Resilience also becomes an important factor regarding nursing program attrition due to the high number of stressors nursing students' experience. According to Yesil, Öztunç, and Eskimez (2015), nursing students face more stressors than traditional college students, including the rigors of clinical experiences and demanding scheduling.

Schrum (2015) found that the use of a retention specialist had a positive impact on student performance. The study examined a program that used a retention specialist to provide tutoring and weekly one (1) hour application sessions for the nursing students. Their findings showed that employment of the retention specialist did have a statistically significant positive impact on course grades, retention, and graduation rates. Murray, Pole, Ciarlo, and Holmes (2016) also examined the use of a retention specialist, though the focus of their study was the impact a retention specialist had on minority student retention. In this study, the retention specialist provided various services including referring students to campus support services, hosting monthly meetings to promote student socialization, and developing individualized retention plans for each participant. Their findings revealed higher retention rates following the addition of the retention specialist.

Identifying strategies to address high minority and male attrition rates in nursing education programs has been the focus of numerous studies. White and Fulton (2015) found that it was important to provide African American students academic support as well as opportunities to establish and maintain social relationships. Payton, Howe, Timmons, & Richardson (2013) found the relationship between faculty and minority nursing students was an important factor in retention and suggested faculty members clearly communicate expectations and be aware of methods used to provide feedback to minority students to ensure they are not exhibiting racial bias.

Mooring (2016) recommended using recruitment strategies early in minority students' academic careers. Scott and Zerwic (2015) warned against programs placing

great weight on standardized preadmission exams since they may be biased against students from underrepresented populations. They expressed their support for making admission decisions based on academic metrics in conjunction with past experiences and personal attributes. Dapremont (2014) found Black nursing students identified several strategies associated with successful completion of nursing programs such as a daily study routine and participation in peer study groups. However, according to Dapremont (2014), some students complained of difficulties when participating in primarily White study groups such as being exposed to racially insensitive statements. Even in those circumstances, however, Black students found participating in peer study groups to be valuable (Dapremont, 2014).

Donnell (2015) recommended addressing ESOL students' poor reading comprehension to improve retention within that student population. She warned that addressing reading comprehension alone may not be sufficient and other factors related to student attrition including age, gender, and ESOL status may also need to be considered. Moore and Clark (2016) suggested faculty have a moral imperative to ensure exam questions are written using linguistic modification strategies that can improve test item readability to prevent any bias against ESOL students.

Donnell (2015) urged early identification and intervention of at-risk students when attempting to address nursing program attrition rates. This sentiment was echoed by McKendry et al. (2014) who found students may perform better if support is started during the pre-entry phase of program admission. Harris et al. (2014) and Crouch (2015)

also discussed the need for early at-risk student identification and implementation of early intervention strategies to promote success.

Hodges et al. (2017) examined one institution's Careers Beyond the Bedside (CaBB) Program and how it attempted to address the lack of gender diversity in nursing education programs. One approach was the use of workshops for male nursing students to interact with males currently working in the field of nursing. Carrigan and Brooks (2016) found that a variety of strategies can assist men to successfully complete nursing education programs. They found it is essential for nursing faculty members to eliminate any bias towards male nursing students and when possible, to provide male nursing faculty or male nursing role models. In addition, they found highlighting the history of males in the nursing profession and ensuring more than one male is in a clinical group, when possible, to be valuable strategies to facilitate development of peer relationships.

Summary. A multitude of factors are integral to nursing program attrition. The problem of attrition affects not only individuals, but families and communities as well. Making changes to nursing program admission and retention methodology that increase student success creates positive change for all involved stakeholders. Many variables are identified in relation to nursing program attrition including academic and personal issues. Programs have attempted to address the problem of attrition by implementing holistic admission assessments, reviewing and ranking applicants based upon various academic markers, and using a combination of selective admission criteria. The goal of retention is to ensure those students who are accepted to nursing education programs successfully complete them, which will positively impact the nursing workforce.

Implications

Numerous types of selective admission criteria are utilized by ADN programs throughout the nation. There is little consensus regarding which selective admission criterion predict the likelihood of successful completion of the first year of ADN programs (dean of nursing, personal communication, January 7, 2017; Griswold, 2014; Rodgers et al., 2013). The findings from this research study informed positive interventions focused on decreasing attrition during the first year of an ADN program in Central Arkansas. The study itself focused on identifying indicators of student success and, in turn, students lacking some or all those factors that would be identified as an at-risk population and targeted for early intervention. These interventions will be directed towards increasing this population's chance of successfully completing the first year of the nursing program. A positive outcome of the early intervention program will positively impact a variety of stakeholders including ADN applicants, ADN students, ADN administrators, the educational institution, and the community.

Due to the community's need for nurses, as evidenced by numerous unfilled positions at both local hospitals, the college's administration sought to increase enrollment in the ADN program by at least thirty students per admission cohort (dean of nursing, personal communication, August 3, 2017). By identifying if a correlation exists between admission criteria and first-year completion, students who are identified as being high risk for attrition are identified upon admission and may be placed into a retention program designed to assist them to be successful in the nursing program.

Summary

This section focused on the problem of first-year attrition in ADN programs. The review of the literature on the topic provided evidence that attrition is problematic throughout ADN education and that there is no consensus regarding the most effective selective student admission criteria to pre-licensure ADN programs. The review explored causes and impact of attrition, the numerous stakeholders involved, the use of selective criteria in nursing admissions, the selection of applicants, and factors in nursing student retention. Section 2 describes the research design and data collection methods for the study.

Section 2: The Methodology

Research Design and Approach

I used a retrospective quantitative correlational study approach to examine the problem of first-year nursing program student attrition. The research goal was to determine whether a correlation existed between program admission criteria and successful first-year completion of an ADN program. Correlation refers to the relationship between variables whereby changes in one of the variables impact another variable (Babbie, 2017). If a statistically significant correlation is found between one of the admission (independent) variables and successful first-year program completion (dependent variable), then students who did not achieve or possess that criterion may be identified upon admission as at risk of attrition. Once at-risk students are identified, interventions can be designed and implemented to help students complete their first year in the program.

Setting and Sample

Archival ADN student data from one medium-size community college in the southern United States were used as an information source for this project. The records of nursing students who entered or departed the ADN program between 2013 and 2017 were reviewed. Selected preadmission data and nursing course GPA information were examined to determine whether a statistically significant correlation existed between the dependent and independent variables.

The convenience sample provided data for 230 students. According to the central limit theorem, “if our sample size is larger than 50, the sampling distribution of the mean

is approximately normal" (Frankfort-Nachimas & Leon-Guerrero, 2015, p. 271). The sample in the current study included traditional and nontraditional college students, with most (approximately 80%) being female. The sample also included a high percentage of first-generation college students, or approximately 40-45% of each student cohort (dean of nursing, personal communication, November 2, 2017).

The nursing program offers three tracks. These include a traditional track in which students may enter the program upon successful completion of Anatomy and Physiology I and Chemistry for Non-Majors, two high school track options for which only high school seniors qualify, and two licensed practical nurse (LPN) to RN completion track options. Students in the two LPN options receive advanced standing and enter the program in either the second or third semester. The program only allows students two admissions. After the second admission, if the student remains unsuccessful, he or she must submit an appeal to the nursing admissions committee requesting a third admission; if he or she was a traditional or high school track student, the requirement is to earn the LPN license and apply to reenter the program track as an LPN to RN student.

Only first-time high school and traditional track students were included in this study. Readmitted students and RN completion students were excluded from the study because their admission process differs from high school and traditional students and they make up a small percentage of students in the ADN program. Over the 4-year period from 2013 to 2017, an average of 4% of students entering the first nursing course were readmissions, 11% entering the second nursing course were readmissions, and 7% of students entering the second nursing course were LPN to RN completion students.

Traditional track students apply to the program in the spring. Admissions criteria include achieving the TEAS cut score of 59.3% and successful completion of Chemistry for Non-Majors and Anatomy and Physiology I with a grade of C or better. Applicant GPA is calculated using only the ADN general education requirements, which include Chemistry for Non-Majors, Anatomy and Physiology I, Anatomy and Physiology II, Microbiology, English Composition I, English Composition II, College Algebra, and General Psychology. Preference is given to applicants who have completed at least 20 general education curriculum hours.

Applicants are ranked based on their GPA. If an applicant has retaken a course to increase his or her GPA, the retake grade replaces the original even if it is lower. That grade is used in the GPA calculation. Applicants may take the TEAS admission exam twice each admission cycle to achieve the cut score. Students who do not successfully meet the cut score on the first attempt are counseled by the dean of nursing or the ADN program director prior to retaking the exam. The institution provides free online and hardcopy TEAS preparation resources for applicants through the college library.

The two available high school tracks include a 2-year track and a 3-year track. Applicants for both tracks must be in their senior year of high school and have a high school graduation GPA of 3.0 or higher and a TEAS score of at least 59.3%. Applicants for the 2-year track without college course work must have an ACT composite score of 25 and a score of at least a 21 in reading. Applicants with college course work through dual or concurrent enrollment must have successfully completed at least 9 hours of nursing general education courses and have an ACT composite score of 22 with a reading

score of at least 21. All 2-year high school applicants must submit a written letter of recommendation from a science or medical professions faculty member.

Three-year track students must have an ACT composite of 20 and test into English Composition I and College Algebra. They must also have a high school graduation GPA of 3.0 or higher and a TEAS score of at least 59.3%. In addition, they must successfully complete all nursing general education requirements with a 2.75 or higher GPA prior to beginning the nursing program.

Instrumentation and Materials

Archival data on 230 students provided by the institution was entered in an Excel spreadsheet created for this project. The data provided by the institution included students' demographic information including race, gender, and age. Students' GPA in completed prerequisite courses, TEAS composite scores, and TEAS sub-scores for reading, math, and science were entered in the spreadsheet. The data also included whether the student successfully completed the first year of the ADN program.

The track option (high school or traditional) and gender (male or female) were coded using a binomial system (0, 1) and were entered in the spreadsheet. Other demographic data including race and age were coded using the nominal scale, entered in the spreadsheet, and examined for correlation. The students' GPAs and TEAS scores were entered in the spreadsheet as interval data. There were two students who did not have TEAS sub-scores available, and they were excluded from the study making the N value 228.

Validity refers to whether a tool measures what it is intended to measure, and reliability refers to whether that measurement is accurate and consistent (Frankfort-Nachimas & Leon-Guerrero, 2015). In the current study, validity and reliability were evaluated through identification of the descriptive statistics and binary logistic regression using the Statistical Package for the Social Sciences (SPSS) Version 24.

Data Collection and Analysis

Archival data were collected from the ADN program student files. The nominal scale independent variables of race and gender were coded and entered in the Excel spreadsheet. The nominal scale independent variable of age was also coded and entered in the spreadsheet. The interval scale independent variables of prerequisite GPA, TEAS composite score, and subcategory scores were added to the spreadsheet. The dichotomous dependent nominal scale variable of first-year nursing completion status was entered in the spreadsheet. The coding information for the categorical scale independent variables is presented in Table 1.

Table 1

Coding of Variables

Variable	0	1	2	3	4	5	6
First-year program completion	Did not Complete	Completed					
Gender	Female	Male					
Track Option	Traditional	High School					
Race	White	African American/ Black	Hispanic/Latino	Asian/ Pacific Islander	Native American	Mixed	Other
Age	17-20	21-25	26-30	31-40	41-50	51-60	≥60

Permission to access archival student data was requested and received from the dean of nursing of the institution. Walden institutional review board approval was granted (IRB approval number 02-20-18-0066838). Following data collection, descriptive statistics and binary logistic regression were performed using SPSS. Binary logistic regression can be used to examine the relationship between a dichotomous dependent variable and continuous scale independent variables (Gravetter & Wallnau, 2008). The results of these tests were then analyzed to determine whether statistically significant relationship existed between any of the independent variables and the dependent variable of first-year nursing completion. The statistical analysis used to examine each research question is presented in Table 2.

Table 2

Statistical Analysis

Research questions	Variables	Statistical analysis
RQ1: Does a student's prerequisite GPA correlate to successful completion of the first year of an ADN program?	Independent Variable: Prerequisite GPA Dependent Variable: Student first-year completion	Binary logistic regression
RQ2: Do a student's TEAS scores correlate to successful completion of the first year of an ADN program?	Independent Variables: TEAS scores: Composite, Reading, Math, Science Dependent Variable: Student first-year completion	Binary logistic regression
RQ3: Does a student's gender correlate to successful completion of the first year of an ADN program?	Independent Variable: Gender Dependent Variable: Student first-year completion	Binary logistic regression
RQ4: Does a student's age correlate to successful completion of the first year of an ADN program?	Independent Variable: Age Dependent Variable: Student first-year completion	Binary logistic regression
RQ5: Does a student's race correlate to successful completion of the first year of an ADN program?	Independent Variable: Race Dependent Variable: Student first-year completion	Binary logistic regression

Assumptions, Limitations, Scope, and Delimitations

I assumed that students entering the program with higher GPAs and TEAS scores would have a higher likelihood of successful completion of the first year of the ADN program, and students with lower GPAs and scores would have a lower likelihood of successful completion of the first year of the program. Another assumption was the age of the student may negatively impact his or her successful completion of the first year of the ADN program.

A major limitation was the limited sample and the fact that study participants came from one institution's AD nursing program. The lack of sample diversity may have been a limiting factor. This study focused on 10 independent variables, but additional variables may have impacted program attrition rates. Another limitation was the nominal scale dependent variable and the mixed scales of the independent variables. This limited the approach that could be used for statistical analyses and made it necessary to use binary logistic regression.

Protection of Participants' Rights

The data source for this study was archival student records. Students currently enrolled in the AD program were excluded from the study. The student data were coded to ensure confidentiality and to protect participants' identities. Any data with identifying information were stored on a password-protected flash drive, and hard copy documents were stored in a locked filing cabinet. I am the only one with access to the computer and the filing cabinet. Safeguarding of all study records will be maintained according to Walden University requirements.

Data Analysis Results

The study sample consisted of 228 students admitted to an ADN program between 2013 and 2017. The program has multiple track options; however, only students entering the program through the traditional and high school track options were included in the study. First-year completion was accomplished by 64.9% (n = 148) of the students in the sample. The descriptive analysis of the sample is presented in Table 3.

Table 3

*Demographics and Race of the Sample (*N=*228)*

	n	%
Gender		
Female	182	79.8%
Male	46	20.2%
Ethnicity		
White	195	85.5%
African American/Black	7	3.1%
Hispanic/Latino	12	5.3%
Asian/Pacific Islander	2	0.9%
Native American	2	0.9%
Mixed	8	3.5%
Other	2	0.9%
Age		
17-20	51	22.4%
21-25	75	32.9%
26-30	45	19.7%
31-40	36	15.8%
41-50	19	8.3%
51-60	1	0.4%
≥61	1	0.4%
Track		
Traditional	210	92.1%
High School	18	7.9%

Study Findings Related to Research Questions/Hypotheses

This retrospective quantitative correlational study answered 5 research questions by examining the associations between 10 independent variables related to successful first-year program completion in an AD nursing program.

Research Question 1

RQ1: Does a student's prerequisite GPA correlate to successful completion of the first year of an ADN program?

$H_0$1: The prerequisite GPA correlates to successful completion of the first year of an ADN program.

H_a1: The prerequisite GPA does not correlate to successful completion of the first year of an ADN program.

Binary logistic regression was utilized to analyze the data. Descriptive statistics were run for the independent variables. The descriptive statistics for the continuous independent variables are presented in Table 4.

Table 4

Descriptive Statistics of the Continuous Independent Variables

Variable	Min	Max	M	SD
Prerequisite GPA	2.920	4.000	3.579	.260100
TEAS Composite Score	55.3%	90.70%	69.0706%	7.00711%
TEAS Reading Score	57.10%	97.60%	77.4140%	8.54457%
TEAS Science Score	35.40%	87.50%	58.8895%	10.6125%
TEAS Math Score	43.30%	100.00%	72.1952%	12.8806%

Note. N = 228. Odds ratios were calculated using a 95% confidence interval.

The model correctly classified approximately 64.9% of the cases. The odds ratio for the relationship between first-year completion and prerequisite GPA was calculated to be 11.796 with a p-value of .006. Because the p-value is less than the selected alpha level of 0.05, the null hypothesis was rejected. Therefore, there is a statistically significant association between first-year completion and prerequisite GPA. The results of the binary logistic regression are presented in Table 5.

Table 5

Binary Logistic Regression Omnibus Test Results- Relationship Between Prerequisite GPA and Dependent Variable (SPSS)

Variable	B	OR	CI Lower, Upper	Wald	p-value
Prerequisite GPA	2.468	11.798	2.024, 68.773	7.528	.006

Note. N = 228. Odds ratios were calculated using a 95% confidence interval.

Research Question 2

RQ2: Do a student's TEAS scores correlate to successful completion of the first year of an ADN program?

$H_0$2: The TEAS composite correlates to successful completion of the first year of an ADN program.

H_a2: The TEAS composite score does not correlate to successful completion of the first year of an ADN program.

$H_0$3: The TEAS science score correlates to successful completion of the first year of an ADN program.

H_a3: The TEAS science score does not correlate to successful completion of the first year of an ADN program.

$H_0$4: The TEAS reading comprehension score correlates to successful completion of the first year of an ADN program.

H_a4: The TEAS reading comprehension score does not correlate to successful completion of the first year of an ADN program.

$H_0$5: The TEAS math score correlates to successful completion of the first year of an ADN program.

H_a5: The TEAS math score does not correlate to successful completion of the first year of an ADN program.

Binary logistic regression was utilized to analyze the data. Descriptive statistics were run for the independent variables. The descriptive statistics for the continuous independent variables are presented in Table 4. The model correctly classified approximately 64.9% of the cases. Results indicated that TEAS scores were not a statistically significant predictor of successful first-year completion as evidenced by p-values ranging from .236 to .935. Therefore, the null hypotheses could not be rejected. The results of the binary logistic regression are presented in Table 6.

Table 6

Binary Logistic Regression Omnibus Test Results: Relationship Between TEAS Scores and Dependent Variable (SPSS)

			CI		
Variable	B	OR	Lower, Upper	Wald	p-value
TEAS Composite	.190	1.209	.833, 1.656	1.403	.236
TEAS Reading	-.012	.988	.892, 1.090	.060	.807
TEAS Math	-.003	.997	.931, 1.069	.007	.935
TEAS Science	-.033	.968	.874, 1.071	.404	.525
TEAS English	-.034	.966	.903, 1.034	.998	.318

Note. N = 228. Odds ratios were calculated using a 95% confidence interval.

Research Question 3

RQ3: Does a student's gender correlate to successful completion of the first year of an ADN program?

$H_0$6: A student's gender correlates to successful completion of the first year of an ADN program.

H_a6: A student's gender does not correlate to successful completion of the first year of an ADN program.

Binary logistic regression was utilized to analyze the data. The model correctly classified approximately 64.9% of the cases. Results indicated that gender was not a statistically significant predictor of successful first-year completion as evidenced by a p-value of .070. Therefore, the null hypotheses could not be rejected. The results of the binary logistic regression are presented in Table 8.

Table 7

Descriptive Statistics of the Categorical Independent Variables

Variable	Min	Max	M	SD
Age	0	6	1.58	1.286
Race	0	6	.43	1.216
Gender	0	1	.20	.027

Table 8

Binary Logistic Regression Omnibus Test Results: Relationship Between Gender and Dependent Variable (SPSS)

			CI		
Variable	B	OR	Lower, Upper	Wald	p-value
Gender	.771	2.161	.939, 4.972	3.285	.070

Note. N = 228. Odds ratios were calculated using a 95% confidence interval.

Research Question 4

RQ4: Does a student's age correlate to successful completion of the first year of an ADN program?

$H_0$7: A student's age correlates to successful completion of the first year of an ADN program.

H_a7: A student's age does not correlate to successful completion of the first year of an ADN program.

Binary logistic regression was utilized to analyze the data. Descriptive statistics were run for the independent variables. The model correctly classified approximately 64.9% of the cases. Results indicated that age was not a statistically significant predictor of successful first-year completion as evidenced by p-values ranging from .999 to 1.000. Therefore, the null hypotheses could not be rejected. The results of the binary logistic regression are presented in Table 9.

Table 9

Binary Logistic Regression Omnibus Test Results: Relationship Between Age and Dependent Variable (SPSS)

Variable	B	OR	CI Lower, Upper	Wald	p-value
Age					
17-20	-20.484	.000	.000	.000	1.000
21-25	-19.854	.000	.000	.000	1.000
26-30	-19.929	.000	.000	.000	1.000
31-40	-20.125	.000	.000	.000	1.000
41-50	-20.648	.000	.000	.000	1.000
51-60	-41.160	.000	.000	.000	1.000

Note. N = 228. Odds ratios were calculated using a 95% confidence interval.

Research Question 5

RQ5: Does a student's race correlate to successful completion of the first year of an ADN program?

$H_0$8: A student's race correlates to successful completion of the first year of an ADN program.

H_a8: A student's race does not correlate to successful completion of the first year of an ADN program.

Binary logistic regression was utilized to analyze the data. Descriptive statistics were run for the independent variables. The model correctly classified approximately 64.9% of the cases. Results indicated that race was not a statistically significant predictor of successful first-year completion as evidence by p-values ranging from .101 to .823. Therefore, the null hypotheses could not be rejected. The results of the binary logistic regression are presented in Table 10.

Table 10

Binary Logistic Regression Omnibus Test Results: Relationship Between Race and Dependent Variable (SPSS)

Variable	B	OR	CI Lower, Upper	Wald	p-value
Race					
Caucasian/White	2.271	9.689	.483, 194.558	2.202	.138
African Am./Black	-.2.796	16.386	.500, 536.834	2.467	.116
Hispanic/Latino	2.753	15.686	.587, 419.429	2.696	.101
Asian/Pacific Islander	.464	1.590	.027, 92.325	.050	.823
Native American	2.473	11.862	.181, 778.191	1.343	.247
Mixed	1.401	4.058	.141, 116.683	.668	.414

Note. N = 228. Odds ratios were calculated using a 95% confidence interval.

Conclusion

The purpose of this study was to determine if an association existed between successful completion of the first year of an AD nursing program and 10 specific

independent variables. Section 2 of this project described the selection of the sample, data collection, and analysis. The approach for this research project was a retrospective quantitative correlational study to answer the proposed research questions. Analysis of the data revealed a statistically significant association between the prerequisite GPA and successful first-year completion. A statistically significant relationship between successful first-year completion and the other 9 independent variables was not identified. The data analyses also showed that the program experienced a major shift in the age demographic. The data indicated that 75% of the students that entered the program between 2013 and 2017 were 30 years old or younger, with most of those students being under 25. This represents a major demographic shift that may be impacting program attrition rates.

Section 3: The Project

The goal of this study was to determine whether a statistically significant relationship existed between student characteristics and successful completion of the first year of an ADN program. The study results were presented in Section 2. In this section, I describe the project (see Appendix) developed to effect positive change based on the study findings. This project, a professional development initiative intended for nursing faculty at the study site, has been designed to address findings concerning generational changes among students and a need for interventions regarding prerequisite GPA as an indicator of first-year student attrition.

Rationale

Based on the data analysis results, a professional development initiative was created to positively address the problem. The professional development goal was aligned to the statistically significant association between the prerequisite GPA and successful first-year completion and the shift in age demographic the program experienced. The program's curriculum delivery method is based on Knowles's adult learning theory (nursing curriculum committee chairperson, personal communication, May 28, 2018). This theory assumes that adult learners enter the educational setting being self-directed, self-motivated, and goal-oriented learners who bring previous life experiences to build upon (Knowles, Holton, & Swanson, 2015). Because the student demographics have shifted, Knowles's theory may not apply to younger students entering the program. Students who have recently graduated from high school typically do not bring the depth and breadth of life experience to the academic setting as older, more mature students do.

It is important for nursing faculty to understand the current student population they are teaching and the differences between the younger student population and the nontraditional, older learners faculty are accustomed to teaching. The professional development initiative addressed this concern as well as the statistically significant finding regarding prerequisite GPA and successful first-year completion of the ADN program.

Review of the Literature

I conducted a review of the literature using the ProQuest, Academic Search Complete, Cumulative Index to Nursing and Allied Health (CINAHL), and EBSCOhost databases from Walden University's library. Search terms and phrases included *multigenerational learning*, *millennials, Generation Z*, *teaching strategies AND young adults*, *teacher professional development*, *attrition*, *early identification*, *nursing student success,* and *educator continuing education*. The database searches were limited to articles published from 2013 to the present.

Characteristics of Millennial and Generation Z Learners

According to the United States Council of Economic Advisors (2014), *millennial* refers to individuals born between 1984 and 2005. Generation Z is the population immediately following the millennial generation (Shatto & Erwin, 2016), who will enter postsecondary education in the next 4 to 5 years. A large volume of research has addressed millennial learners, most of which describes the characteristics that the members of this group share. There is less research on Generation Z, though there seem

to be commonalities between the two generations as both have spent most, or all, of their lives in a technologically advanced, interconnected society (Shatto & Erwin, 2016).

One shared characteristic is the ability to multitask, and these learners typically feel unproductive if they are focused on a solitary task (Shatto & Erwin, 2017). Generations who grew up with technology dislike textbooks and prefer to go directly to the source of information via the Internet (Shatto & Erwin, 2017). Educators need to be aware of the characteristics members of these two generations exhibit in order to design and implement effective teaching strategies (Shatto & Erwin, 2016; Villena-Alvarez, 2016).

Members of these generations have grown up in a technology-rich environment and value the use of that technology (Fjortoft, 2017; Hosek & Titsworth, 2016; Villena-Alvarez, 2016). Rideout (2016) found that college students may spend up to 9 hours a day engaged with multimedia formats. An interconnectedness fostered by social media use has created a population of social learners who enjoy collaboration (Cheong, Shuter, & Suwinyattichaiporn, 2016). The Pew Research Internet Project (2018) found that 88% of 18- to 29-year-olds use at least one social media site. When faced with situations in which technology access is inhibited, such as a loss of Wi-Fi availability, these individuals may become anxious and possibly exhibit signs of anger (Villena-Alvarez, 2016).

Discussion regarding members of these generations should take into consideration that many millennials and Generation Zs have been raised in an environment with extremely high parental involvement (Blue & Henson, 2015; Schiffrin & Liss, 2017). The

term *helicopter parenting* describes parents who seem to be overinvolved in their children's lives (Schiffrin & Liss, 2017; Shatto & Erwin, 2016). Research has indicated this type of overparenting can have an impact on academic performance and can lead to a sense of entitlement in children (Goldman & Martin, 2016; Schiffrin & Liss, 2017). The interactions faculty will have with members of these generations will be affected by the parent-child relationships the students experienced throughout their lives (Frey & Tatum, 2016). Many members of these generations received praise or positive feedback throughout their lives and value frequent feedback (Blue & Henson, 2015).

Young adults who experienced overparenting or helicopter parenting may not have developed effective coping mechanisms, which may impede their ability to manage adversity (Schiffrin & Liss, 2017; Stephens & Gunther, 2016) and may elicit characteristics of dependency (Odenweller, Booth-Butterfield, & Weber, 2014). Students who did not experience overparenting may nevertheless have experienced strong parental relationships and may expect extensive engagement with authority figures like faculty members (Blue & Henson, 2015; Hosek & Titsworth, 2016). Student may feel it is important for faculty members to know them as individuals (Price, 2014). Many members of these generations are high achievers who expect academic success (Price, 2014). These factors can lead to a sense of academic entitlement in which students equate paying tuition with getting a degree rather than working to earn it (Blue & Henson, 2015).

Teaching Millennial and Generation Z Learners

The previous section illustrates some of the challenges associated with teaching millennial and Generation Z learners. Hosek and Titsworth (2016) discussed how

millennial learners' lifelong immersion in the information-rich environment has created a demand for new instructional methodologies. Technology-immersed students expect faculty to incorporate technology into their teaching methods (Blue & Henson, 2015; Shatto & Erwin, 2017), and students desire to be engaged in the learning process with collaborative opportunities (Blue & Henson, 2015; Cheong et al., 2016). Faculty who entered higher education as content experts must view their students as consumers of their product (Hosek & Titsworth, 2016). This may lead to faculty-student conflict related to generational differences, and faculty must recognize and address their innate biases related to this student population and their learning preferences (Shatto & Erwin, 2017).

The pervasive access to, and use of, technology and digital devices can be an educational strength providing rapid access to large amounts of information (Shatto & Erwin, 2017). However, that same technology can also be disruptive in a classroom setting (Cheong et al., 2016). Faculty are faced with large percentages of students deeply attached to digital devices, which can make learner engagement and keeping student attention on class content very difficult (Cheong et al., 2016). This can cause tension in the faculty-student relationship because the faculty member may feel students are distracted by their digital devices and disengaged from the classroom content (Cheong et al., 2016; Shatto & Erwin, 2017). These learners are used to having information at their fingertips in real time (Shatto & Erwin, 2017). It is important for faculty members to encourage responsible use of technology by incorporating appropriate use of digital devices into the classroom and using mixed teaching methods while ensuring activities

provide educational value (Cheong et al., 2016; Shatto & Erwin, 2017; Villena-Alvarez, 2016).

Millennial and Generation Z students view the faculty role differently from previous generations. Traditional lecture-style teaching may not be effective for this learner population, and faculty must function as content experts as well as facilitators by developing and implementing opportunities for engagement and collaboration (Blue & Henson, 2015; Critz & Knight, 2013; Hegeman, 2015; Shatto & Erwin, 2017). This has created a challenge for educators because many classrooms are now multigenerational and the needs of all learners must be met (Hosek & Titsworth, 2016; Sánchez & Kaplan, 2014). This also provides opportunities for faculty to utilize the varied life and educational experiences provided by students in a multigenerational educational setting (Sánchez & Kaplan, 2014).

Younger learners prefer a structured format, having been highly scheduled from early childhood (Blue & Henson, 2015; Shatto & Erwin, 2017) with less free time than any prior generation (Blue & Henson, 2015). This may impact their attitudes toward homework, as they feel outside assignments are busy work if faculty are unable to explain how the assignments have a direct impact on them (Blue & Henson, 2015; Goldman & Martin, 2016). Young adults want to know what benefits they will receive from doing the assignment and how it is relevant. Because these students enter the educational setting with less life experience, faculty must assist them in developing independent thinking and problem-solving techniques (Blue & Henson, 2015). Some factors related to engaging this population of learners include class size, classroom

setting (lecture hall format), and student diversity (James, 2016) that creative faculty can address. Many faculty members, especially in community college settings, are content experts without an extensive background in educational theory and may have difficulty providing the in-depth, constructive feedback the young adult population expects (Duffy, 2013). It is important to support faculty members by providing the necessary professional development opportunities required to assist them in the development of this skill set (Duffy, 2013).

There are many teaching strategies and techniques that can be used to foster engagement and learning with generations who prefer to learn through observation and may favor videos more than written information (Fjortoft, 2017; Shatto & Erwin, 2017). Learners may also respond well to narrative or story-based teaching, which engages them on an affective level (Shatto & Erwin, 2016). Students from this population also seem to be hyperaware of self and like to communicate via pictures, hence their attachment to smartphones and social media apps (Fjortoft, 2017). Their dependence on social media can be used as a teaching strategy by incorporating apps into the curriculum via structured collaborative learning activities (Shatto & Erwin, 2017). Social media also presents a teaching opportunity related to confidentiality and appropriate use of technology, especially in health science fields in which students have access to private health care data (Shatto & Erwin, 2017).

Some factors inhibit engagement and participation for these learners, such as ambiguity related to faculty expectations of student performance (Duffy, 2013) and strict syllabus policies related to digital device use in the classroom (Frey & Tatum, 2016).

Young adult students have been raised with information at their fingertips via web-based devices; when these students have a question, their first instinct may not be to consult faculty but rather to access information via search engines (Cheong et al., 2016; Shatto & Erwin, 2017). Faculty need to find creative and effective ways to manage the use of digital devices and resources in the course and classroom (Cheong et al., 2016).

Early Identification and Intervention

Early identification of academically at-risk students can be useful when trying to increase student success, retention, and completion (McCluckie, 2014; Tampke, 2013; Zhang, Fei, Quddus, & Davis, 2014; Yin, 2016) because early identification allows for development and utilization of targeted intervention strategies (Baars & Arnold, 2014). Baars and Arnold (2014) argued that institutions have an ethical responsibility to identify and assist students who are at risk of early attrition, thereby preventing the loss of valuable resources including tuition and time. Early identification and notification also allow learners the opportunity to correct or improve behaviors and performance (Duffy, 2013). Yin (2016) suggested targeted academic counseling as one strategy to assist at-risk students. Zhang et al. (2014) examined the impact of early intervention on public university students and found those who received face-to-face counseling and advising were more likely to complete the courses they were enrolled in.

Numerous studies have addressed prior academic performance in relation to attrition (Anderson, Cunningham, Manier, & Sarnosky, 2014; Baars & Arnold, 2014; Yin, 2016; Zhang et al., 2014). Baars and Arnold (2014) explored how student performance on the first two exams of a course related to successful completion. Baars

and Arnold found that students who did not pass either of the first two exams were far more likely to exit the course than those who passed at least one of them. Yin (2016) examined the relationship between students' prior academic performance, as evidenced by their GPA, and success in higher education settings and found previous achievement can be used as a predictor of academic success. This finding was supported by Zhang et al.'s (2014) research on early intervention programs, which indicated students who experience early success, or come to a course with previous academic successes, are more likely to persist than students who have not experienced early success. These studies support the implementation of early interventions with students entering the ADN program who have lower GPAs as well as those who are unsuccessful on exams early in each course.

Another approach for early identification of at-risk students is Multiple Mini Interviews (MMI) (oude Egbrink & Schuwirth, 2016). Student interviews were examined for statements related to non-cognitive risk factors including self-reflection and planning. Those whose comments revealed time management difficulties, inaccurate self-reflection, or poor organizational skills were found to present these behaviors during the program of study, indicating these factors could be effective in the early identification of at-risk students. Targeted interventions could be developed to address the specific concern(s) the students' voiced.

Face-to-face counseling and advising allow faculty members to develop a relationship with students (Zhang et al., 2014). These sessions provide an opportunity for faculty members to help students identify problems they are experiencing and develop a

plan to address those barriers (Ali, Rose, & Ahmed, 2015; Zhang et al., 2014). In addition, these interactions provide an avenue for faculty members to connect students to available support services (Yin, 2016). Counseling and advising sessions provide an opportunity for students' coping and stress management strategies to be assessed and, if found ineffective or insufficient to meet the demands of the nursing program, offer students the support needed to be successful (Yehia, Jacoub, & Eser, 2016). Tutoring is an effective early intervention strategy to combat attrition in higher education courses (Cassells, 2018). Baars and Arnold (2014) posited targeted interventions should be tailored to the individual student as opposed to the one-size-fits-all method since student populations face diverse barriers. However, in contrast to the findings of these studies, Tampke (2013) did not find a statistically significant relationship between the use of targeted student interventions within an early identification system and student persistence.

Student attendance is an additional factor discussed in the literature related to early identification of at-risk students. McCluckie (2014) found attendance to be an indicator related to course completion. The study examined students' overall attendance in all enrolled courses at the six-week mark of the semester. Those with attendance issues, defined as total attendance of less than 75%, were identified as at-risk for withdrawal. Faculty advisors of these at-risk students were notified to direct students to appropriate resources for early intervention or assist them to withdraw if appropriate to the situation. McCluckie's (2014) finding of attendance as an effective course attrition predictor was supported by O'Neill, Morcke, and Eika (2016) related to their work

regarding behavioral predictors of attrition in which they used tutor observations in an anatomy course. Lack of class and tutoring session attendance was identified as a risk-factor for withdrawal or course failure.

Summary

A multitude of factors are integral to meeting the learning needs of the millennial and Generation Z populations. This student population continues to grow and presents unique challenges along with unique opportunities for faculty. Understanding these learners' needs and preferences is an important first step. Faculty must then embrace the challenge by developing and utilizing creative and engaging learning activities that allow these students to use their preferred learning styles in a dynamic educational setting. The goal is to engage and retain these learners and use of early identification and intervention strategies may be useful in reaching that outcome.

Project Description

The professional development project, informed by the study findings, will be a three (3) day workshop. The overall goal of the workshop is to decrease student attrition in the first year of the ADN program by assisting faculty to design and implement strategies that address the changes experienced by the population they serve. The workshop will be held on-site and will ideally take place the week prior to classes beginning since faculty are already scheduled to be on-campus for professional development and preparation time. Multiple topics will be covered during the workshop with each day having two main themes. Interactive teaching strategies will be incorporated into each day's content to foster engagement.

Day one's teaching methods include a Power Point presentation, small group discussions, large group discussions, and a small group learning activity. The morning session's emphasis is identifying and discussing problems the program has experienced related to demographics and outcomes. A small group activity related to the perceptions and stereotypes of various student populations (millennial, etc.) will occur during this session. The focus of the afternoon session is characteristics of millennial and Generation Z learners. A detailed workshop agenda can be found in Appendix A.

Day two's teaching methods include a Power Point presentation, small group discussions, large group discussions, and a small group learning activity. Identifying and implementing effective teaching strategies for millennial and Generation Z learners will be the focus of the morning session. It will include a small group activity in which the participants will design both a classroom and a clinical learning activity. Classroom management techniques will be the concentration of the afternoon session.

The final morning of the workshop will cover early identification and intervention information. Teaching methods include a Power Point presentation, small group discussions, large group discussions, and a small group learning activity. The morning session group activity will be a pair and share regarding identification of student behaviors that will trigger an early identification. The afternoon session emphasis is providing constructive feedback. The workshop's final group activity will provide an opportunity for participants to practice developing and delivering constructive feedback through role playing.

The resources necessary to implement the workshop include a classroom with audio-visual capability and tables that can be utilized for small group activities. These resources are readily available in all classrooms in the nursing building and are available for scheduling. I do not foresee any significant barriers to presenting the workshop since faculty are already on-campus for professional development activities, the resources needed are readily available, and strong administrative support exists for the project.

The roles and responsibilities are divided into two (2) categories, the presenter's and the participants'. The presenter's role is to present the content and facilitate discussion, activities, and participant collaboration. The presenter's responsibilities include ensuring the information is current, relevant, and includes evidence-based practice. The participants' responsibilities are to attend each session in its entirety, actively participate in all group activities and discussions, and to honestly evaluate the program at the conclusion of each day's session.

Project Evaluation Plan

Evaluation is an important part of project development and should be addressed from the inception of the project to the conclusion (Caffarella & Daffron, 2013). This professional development workshop will employ an outcomes-based evaluation to assess if its goals have been met. The outcomes being assessed are the daily session objectives and in addition, the surveys would also address the accommodations, resources, and presenter. To ensure participants evaluate each session, a hard-copy formal Likert Scale survey addressing each session objective will be administered to conclude each day of the workshop. The survey will provide quantitative evaluation data regarding outcome

achievement (see Appendix A). Key stakeholders involved in this project are Nursing Division faculty members and the student population they serve. In addition, the institution itself is also a stakeholder since high attrition rates negatively impact it as well. To ensure participants can provide thorough qualitative evaluation data, a free text section will be included on the paper evaluation tool, so program participants may comment on topics not captured by the Likert Scale questions.

Project Implications

The project's social change implications will affect several key stakeholders including nursing students and their families, the local health care system, and community members who will receive the care graduates provide. Positive social change for the community in terms of health care will occur by increasing the number of students who successfully complete the nursing program, which in turn positively impacts the community economically. Students entering the program will be directly affected by having increased chances of program completion, thereby improving their economic status. This also impacts their families and communities by increasing the amount of capital available to spend. In addition, it will also ensure the time, effort, and money invested completing the numerous general education requirements were not wasted.

Section 4: Reflections and Conclusions

Project Strengths and Limitations

The professional development initiative was developed based on analysis of data regarding first year nursing program attrition in a community college in the southern United States. The goal of the professional development initiative was to address two primary findings that emerged from the data analysis. The first finding was the association between prerequisite GPA and successful first-year completion. The second finding was the shift in age demographic the program has experienced. Both findings were addressed through the design of a 3-day professional development workshop that provided content regarding identification of at-risk students and effective teaching strategies for millennial and Generation Z student populations.

Project strengths include length and administrative support. Three full days provides enough time to cover the topics and to incorporate learning activities that maximize participant engagement in the workshop. Administrative support exists in the nursing division and in the institution at large to foster an environment that allows for a 3-day professional development workshop to be undertaken.

Although the length of the professional development workshop is a strength, it is also a major limitation of the project. Finding adequate time at the beginning of a semester to dedicate 3 consecutive days to a professional development activity is challenging. Nursing faculty are already overscheduled the week prior to class starts because of committee and instructional team meetings and class preparation and planning. Although the program could be implemented during the summer break,

participants would have to be compensated for coming in on noncontract time. This would be cost prohibitive considering the size of the faculty. Inclusion of adjunct faculty would be ideal but would also increase the cost of the workshop because they are hourly employees.

Another limitation is that the study included data from only one medium-size community college. The findings of the study may not be replicable at other institutions serving a different student population. This limitation could be mediated by expanding the study's scope to include students from multiple nursing programs.

Recommendations for Alternative Approaches

The problem addressed by the project was first-year nursing student attrition and strategies to address the factors contributing to the problem. An alternative approach to the traditional workshop format of the project could be development of online self-paced learning modules. This approach to professional development would address the major limitation of the project, which was the difficulty of scheduling a 3-day workshop. Online modules could also be housed on the institution's learning management system where full-time and adjunct faculty could access it at their convenience and return to the modules for further review.

Another alternative approach to the problem of first-year attrition is making a change to the program admission policy. Because the strongest statistically significant association for first-year attrition was prerequisite GPA, a policy change could address that factor. The current minimum admission GPA is 2.75, though the program typically does not dip below 3.0 because of the quality of the applicant pool (dean of nursing,

personal communication, May 4, 2018). It is possible that increasing the minimum qualifying GPA could have a positive impact on the first-year attrition rate.

Scholarship, Project Development and Evaluation, and Leadership and Change

As I began the project development component of my doctoral study, I learned a great deal about a diverse range of topics. I have always embraced the power of education, and those values have been strengthened by my time at Walden University. Along with the opportunity to learn more about educational principles, effective teaching and learning strategies, program planning and evaluation, and scholarship in general, I have also learned a great deal about perseverance.

I first studied Boyer's (2016) model of scholarship while preparing to sit for the Certified Nurse Educator exam. I appreciated the four categories of scholarship described by Boyer. However, as I moved through the higher education and leadership course work, my understanding and appreciation of each component deepened. As a scholar, I have become a more discerning consumer of research. As an education practitioner, I have modified my practice based on the evidence-based education I have received. As a project developer, I have learned how to take an idea and, through research, data analysis, and project planning, create a deliverable product to address identified needs of the program.

Reflection on Importance of the Work

There is a large volume of research regarding attrition in the first year of nursing education programs. However, much of that research has focused on baccalaureate programs rather than ADN programs. My research indicated a statistically significant

relationship between students' prerequisite GPA and successful completion of the first year of the ADN program. The professional development project I developed was designed to address the issues contributing to student attrition. I hope to share my findings and the project I developed at the local and state level to have a positive impact on nursing education.

Implications, Applications, and Directions for Future Research

High attrition rates in nursing education programs negatively impact the health care system by limiting the number of new nurses entering the profession. The social change aspects of this project impact several different levels of stakeholders. On an individual and family level, increasing nursing program completion helps ensure the time, energy, and monetary investments nursing students make to their education are fruitful. A nursing degree allows entrance into a lucrative and personally rewarding profession in which nurses can touch numerous lives during their careers. Nurses also positively impact the health care systems in their communities.

Many opportunities for future research regarding the issue of nursing student attrition exist. As more millennial and Generation Z students enter higher education, faculty will need to modify their teaching strategies to meet the learning needs of these populations. Research is also needed regarding nursing school admission policies. Although there is a great deal of research on this topic, changing student populations warrant the need for more research on admission policies.

Conclusion

High attrition rates are a problem facing many nursing education programs across the United States. Research indicated that attrition occurs mostly in the first year of ADN programs (Griswold, 2014; Rodgers et al., 2013). These rates affect not only the students but also other stakeholders. The goal of this study was to identify which, if any, admission criteria were associated with successful first-year completion in an ADN program.

The findings indicated the only admission criterion with a statistically significant relationship with first-year program attrition was prerequisite GPA. A second finding related to a shift in the age demographic of the student population. Over the past 5 years, more students entering the program have been 25 years old or younger. These two findings informed the development of a 3-day professional development workshop designed to help faculty members address the challenges posed by millennial students. Institutions of higher education, including specialized programs within those institutions, must adapt to the changing student population they serve. The overarching goal of the professional development project was to provide nursing faculty at the study site with the knowledge and tools needed to meet the learning needs of students entering the ADN program.

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Appendix: The Project

Program Overview

Program Description

The project is a 3-day professional development workshop aimed at providing the nursing faculty up-to-date information regarding the changing student population served by the program. A variety of topics are addressed during the workshop. The focus of the first day's session is identifying the problems facing the nursing program including a major shift in the age demographic and how that shift is affecting the program's outcomes. Day two focuses on evidence-based teaching modalities and strategies targeted to millennial learners and classroom management techniques. Finally, day three focuses on the development and implementation of an early identification system to identify at-risk students early in the first year of the program. Early intervention strategies and available student support services are also addressed. Active learning strategies including several group activities were developed and are used throughout the 3-day workshop to keep participants engaged in the content and provide opportunities for application of knowledge.

Program Outcomes

Effective professional development programs require planning that includes early identification of the program outcomes (Caffarella & Daffron, 2013). This project was designed with two primary outcomes in mind. The first was to provide members of the nursing faculty information about the changes in the student population they serve. The second outcome was to provide the educators tools to assist them in planning and

implementing teaching strategies to meet the learning needs of the current population they serve.

Learning Goals

The following learning goals were established for the 3-day professional development project: Upon completion of the 3-day professional development workshop the participant will be able to:

1. Describe characteristics of millennial & generation Z learners.
2. Identify barriers millennial & generation Z learners face.
3. Compare & contrast the characteristics of these learners with the traditional adult learner.
4. Discuss the educational theories currently used by program faculty.
5. Identify 2 new classroom management strategies.
6. Identify at least 2 new teaching strategies targeted at millennial learners.
7. Develop 1 new classroom or clinical learning activity that incorporates teaching strategies targeted at millennial learners.
8. Discuss student behaviors that trigger an early identification alert.
9. Explain the rationale for implementation of an early intervention program.
10. Identify the on-campus student support services.
11. Demonstrate the use of constructive feedback.

Workshop Agenda
Student Retention Bootcamp

Day 1	
8:00-8:15	Welcome and Introductions
8:15-9:30	Overview of the research that informed the workshop: • Attrition Rates • Decrease in Program Outcomes (NCLEX pass rates) • Problematic Student Behaviors (examples from classroom, laboratory, and clinical settings)
9:30-9:45	Break
9:45-11:00	Group Activity: Faculty Perceptions of Different Student Populations (18-21, 22-25, 26-30, 31-40, ≥41): • Participants will be placed in pairs and will be provided with paper generic figures of people that are labeled with different age ranges • Participants will use colored markers to write descriptive words that they associate with students from that age group around the figure • Participants will then circle the positive and negative words with different colored markers. • Each pair will then pair and share with another pair and compare & contrast their findings. • Group discussion of the activity and perceptions will follow.
11:00-12:00	Review of the data showing demographic age shift in the nursing program and how this impacts the faculty • Identification of biases, stereotypes, etc.
12:00-1:00	Lunch Break
1:00-2:00	Review of the current educational theories and their key tenets: includes large group discussion on each theory (pros and cons; how they are currently being utilized by the program, effectiveness) • Knowles • Mezirow
2:00-2:30	Presentation: Characteristics of Millennial and Generation Z Learners
2:30-2:45	Break
2:45-3:45	Presentation Continued: Characteristics of Millennial and Generation Z Learners followed by large group discussion regarding the continued use of current educational theories versus incorporation of new methodologies/theories
3:45-4:00	Evaluation of Day 1

Day 2	
8:00-8:30	Review and Reflection of Day 1 Content (Group Discussion)
8:30-10:30	Presentation: Teaching Strategies for Millennials and Generation Z Learners • Integration of Technology • Utilization of Social Media • Provision of Opportunities for Collaboration • Development of Problem-Solving & Critical Thinking Skills
10:30-10:45	Break
10:45-11:45	Group Activity: Creation of Classroom and Clinical Learning Activities • Participants will work in groups of 3 • Utilizing the strategies presented in the previous session, each group will create one classroom and one clinical learning activity • Activities will be outlined on large post-it paper which will be placed on the whiteboard during each groups presentation • Activity outlines will be moved to back wall of the classroom and left up for the duration of the workshop
11:45-12:45	Lunch Break
12:45-2:15	Groups presentations: • Each group presents their activities • Large group discussion related to the presentations
2:15-2:30	Break
2:30-3:45	Presentation: Classroom Management • Begin with identification of classroom behavioral issues • Discussion of problems faculty perceptions of classroom management problems • Present content related to management strategies/policies
3:45-4:00	Evaluation of Day 2

Day 3	
8:00-8:30	Review & Reflection of Day 2 Content (Group Discussion)
8:30-9:00	Introduction of Early Identification and Early Intervention of At Risk Students • Group Activity: Pair and Share: Faculty perceptions of problematic student behaviors • Large Group Discussion of the Pair and Share Findings
9:00-10:30	Presentation: Principles & Strategies Related to Early Identification & Early Intervention of At Risk Students with large group discussion: • What student behaviors should trigger an early identification alert? • Why? • What are some targeted interventions could be effective? • What resources would be necessary to implement the interventions? • Are those resources available?
10:30-10:45	Break
10:45-11:45	Guest Speakers from Campus and Area Resources Related to Student Success • TRIO • Academic Resource Center • Counseling • Mentoring Program
11:45-12:45	Lunch Break
12:45-2:15	Presentation: Developing & Delivering Constructive Feedback • Importance of constructive feedback • Types- verbal, non-verbal, situational • Commonly used methods- BOOST, TELL, Sandwich
2:15-2:30	Break
2:30-3:30	Group Activity: Developing & Delivering Feedback • Groups of 3 • Groups will relate student situations from class/clinical where feedback was needed • Discuss constructive & non-constructive feedback related to the situations • Groups will role play the scenarios utilizing verbal & non-verbal communication methods- 1 group member will observe & critique
3:30-3:45	Large Group discussion of the role play activity
3:45-3:55	Workshop Wrap-up:

	• Review highlights of workshop • Have participants share their take-aways (key points)
3:55-4:00	Evaluation of Day 3

Faculty Evaluation Likert Scale

Workshop Day 1 Evaluation Tool

Likert Key: 1 Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree, 5 Strongly Agree

Question	1	2	3	4	5
1. The session's learning objectives were clearly communicated.					
2. By the end of the session, the day's learning objectives were met.					
3. The presenter was prepared for the session.					
4. The presenter was knowledgeable about the material presented.					
5. The day's activities were beneficial to learning the content.					
6. The session's content was pertinent to my position.					
7. I plan to employ at least one strategy from the day's session.					

Other Comments or Suggestions:

_____

_____

_____

Workshop Day 2 Evaluation Tool

Likert Key: 1 Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree, 5 Strongly Agree

Question	1	2	3	4	5
1. The session's learning objectives were clearly communicated.					
2. By the end of the session, the day's learning objectives were met.					
3. The presenter was prepared for the session.					
4. The presenter was knowledgeable about the material presented.					
5. The day's activities were beneficial to learning the content.					
6. The session's content was pertinent to my position.					
7. I plan to employ at least one strategy from the day's session.					

Other Comments or Suggestions Related to Today's Session:

_____

_____

_____

Workshop Day 3 Evaluation Tool

Likert Key: 1 Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree, 5 Strongly Agree

Question	1	2	3	4	5
1. The session's learning objectives were clearly communicated.					
2. By the end of the session, the day's learning objectives were met.					
3. The presenter was prepared for the session.					
4. The presenter was knowledgeable about the material presented.					
5. The day's activities were beneficial to learning the content.					
6. The session's content was pertinent to my position.					
7. I plan to employ at least one strategy from the day's session.					
8. The facility was conducive to meeting the workshop's objectives.					

What were the primary strengths of the 3-day workshop?

_____

_____

What were areas for improvement for the 3-day workshop?

_____

_____

Suggestions for future professional development topics: