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OPTIMIZING STUDENT RETENTION: MEASUREMENT AND ANALYSIS OF STRATEGIES IMPLEMENTED WITHIN TRADITIONAL BACHELOR'S IN NURSING PROGRAMS

Bethanie K. Gamble Dr.
University of Texas at Tyler

OPTIMIZING STUDENT RETENTION: MEASUREMENT AND ANALYSIS OF STRATEGIES IMPLEMENTED WITHIN TRADITIONAL BACHELOR'S IN NURSING PROGRAMS

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BETHANIE K. GAMBLE

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BETHANIE K. GAMBLE

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Approvals:

Dissertation Co-Chair: Belinda Deal, Ph.D.

Dissertation Co-Chair: Danita Alfred, Ph.D.

Member: Zhaomin He, Ph.D.

Member: Marianne Jeffreys, Ed.D.

Barbara K. Haas, Ph.D.
Executive Director, School of Nursing

Yong Tai Wang, Ph.D.
Dean, College of Nursing & Health Sciences

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This dissertation is an exploration of strategies that optimize nursing student retention. While college students experience a degree of personal and social challenges toward degree completion, nursing students experience higher incidences of attrition due to the academic rigors, clinical scheduling, and high stresses of nursing programs. While few institutional contributions can address personal and social issues impacting retention, nursing programs have a unique opportunity to develop interventions to strengthen social connections to the academic institution and facilitate early connections to the profession. These professional integration factors are central domains of the Jeffreys' Nursing Universal Retention and Success (NURS) model and have been shown to improve student retention. Despite significant research addressing student success, little describes institutional strategies known to optimize student retention, and of these strategies, which are most successful. The first manuscript, *Optimizing Undergraduate Nursing Student Retention: A Concept Analysis*, provided a foundation to better understand how improvements or optimal solutions could be identified. Review of literature discovered an absence of valid instruments to measure all subscales of professional integration factors;

therefore, the second manuscript, *Development and Psychometric Evaluation of the Professional Integration Factors Retention Strategies Survey*, outlines the process utilized for scale development while the third manuscript, *Optimizing Student Retention: Measurement and Analysis of Strategies Implemented within Traditional Bachelor's in Nursing Programs*, presents the primary research study examining retention strategies implemented within traditional Bachelor's in Nursing programs. In completing this dissertation, the researcher was able to contribute to the nursing education body of research on nursing student retention.

Chapter 1

Overview of the Research Study

Context for Doctoral Research Focus

Academic retention remains a central issue among the nation's academic community with little improvement in general college retention over the past 30 years (Fisher & Engemann, 2009). As the highest risk of dropout occurs during the first academic year (Chen, 2012; Ryan, 2004) due to social and cognitive transition issues (Williams & Butler, 2010), many targeted strategies have been implemented to facilitate academic and social integration within institutions (Tinto, 1990). These are necessary to promote student enrollment, strengthen academic programming, and stabilize the financial viability of the institution due to performance metrics (National Conference of State Legislatures, 2015), credit hour production (Fisher & Engemann, 2009; Merkley, 2016), and financial aid requirements of satisfactory academic progress (U.S. Department of Education Office of Federal Student Aid, 2014).

Student retention within nursing programs is more complex as retention rates are notably lower compared to the general college population (Newton & Moore, 2009; Peter, 2005) and accurate benchmark measures are difficult to obtain due to institutional differences in retention rate calculations and delays in reporting, impeding the ability of nursing programs to address attrition issues expeditiously (Cameron, Roxburgh, Taylor, & Lauder, 2011).

Rigorous admission criteria is frequently utilized as a mechanism to competitively admit the most academically qualified nursing students, increasing the likelihood of successful program completion. Despite pre-admission academic performance, institutions have little influence on external factors that distract students from academic success following program admission, such as personal issues, financial status, employment responsibilities, and family stressors. However, institutions have an opportunity to positively influence a student's academic success through early and sustained connections to the academic institution and nursing profession through formal support of professional integration factors (PIFs), such as nursing faculty advisement and helpfulness, encouraged professional memberships and event attendance, encouragement by friends in class, peer mentoring-tutoring opportunities, and formal enrichment programs (Jeffreys, 2012).

Nursing student retention impacts many facets: the individual student, the institution, and society. Students who complete a bachelor's degree program enjoy higher median earnings than those with a high school education (National Center for Education Statistics, 2014), while those who fail to complete a degree experience lowered socioeconomic standards of living and incur educational debt without the promise of entering the nursing workforce (Gajewski & Mather, 2015; Yeom, 2013). Academic failure may permanently influence academic achievements as the individual may doubt their ability to earn a college degree in the future (Yeom, 2013). Nursing student retention is one measure of institutional performance and can significantly impact a program's state board of nursing approval and national accreditation status, reputation, and enrollment ability (Jeffreys, 1998; Trofino, 2013). Poor retention increases

educational costs due to lost tuition revenues and underutilized resources (Ascend Learning, 2012). Further, nursing student retention rates directly impact the nursing workforce in a time of unprecedented national nursing shortages (Juraschek, Zhang, Ranganathan, & Lin, 2012; Shelton, 2012), when our nation's demographics are becoming more ethnically and culturally diverse. Nurses must be available to provide patient care, but also should be representative of the geographic demographics of the population (Mulholland, Anionwu, Atkins, Tappern, & Franks, 2008). Thus, nursing programs must aggressively confront issues negatively impacting student retention and design institutional strategies to optimize program completion.

The nursing profession requires high levels of critical thinking and clinical reasoning; therefore, nursing curricula must maintain rigorous standards to ensure clinicians are prepared with the knowledge, skills, and abilities for safe and competent nursing practice (Trofino, 2013). Nursing students often struggle to manage these intense academic workloads and high professional standards and may experience increased stress and anxiety and encounter challenges in nursing course progression and degree completion (Pulido-Martos, Augusto-Landa, & Lopez-Zafra, 2012). As these barriers are well-known, nursing programs must proactively optimize student retention through institutionally-led initiatives. Professional integration factors (PIFs), such as nursing faculty advisement and helpfulness, professional events, memberships, encouragement by friends in class, peer mentoring-tutoring, and enrichment programs (Jeffreys, 2012) have been identified to improve student retention. Better understanding of PIFs being implemented within nursing programs and their degree of success to optimize student

retention is critical to nursing education and can assist educators and nursing programs to develop targeted, effective interventions.

While retention challenges faced by students and institutions of higher learning are well reported in the literature, there is limited information regarding specific PIFs being implemented to optimize retention among nursing students enrolled within traditional bachelors in nursing programs and which of these strategies are most effective to promote retention. There is noted absence in the literature regarding perspectives of program administrators concerning PIFs implemented and their effectiveness. Review of measurement instruments identified no valid and reliable tool to measure PIFs implemented within nursing programs. Therefore, the intent of this dissertation was to develop a reliable and valid measurement instrument to measure PIFs implemented within nursing programs and survey traditional Bachelor's in Nursing programs, as the most consistent in program length compared to other program types, to determine which PIFs are being implemented and their degree of effectiveness to optimize student retention.

Introduction of Manuscripts

In the beginning phases of building this program of research, the researcher sought to understand the breadth and depth of the concept, *optimize*, as it related to student success and retention. Although numerous writings described attrition risks and challenges, few articles focused on proactive retention efforts and strategies to optimize student persistence behaviors. The first manuscript located in chapter two, *Optimizing Undergraduate Nursing Student Retention: A Concept Analysis*, examined the operational definition to clarify the concept and interpret through the lens of an academic setting.

This process assisted to identify distinct characteristics of success in relation to academic models or plans enacted to optimize student performance, processes, and/or outcomes as optimal and sustainable retention solutions are desired. As the review of literature continued, no valid or reliable tool was available that measured all professional integration factor (PIF) subscales; therefore, development of a measurement tool was necessary. The second manuscript found in chapter three, *Development and Psychometric Evaluation of the Professional Integration Factors Retention Strategies Survey*, outlines the process of instrument development and psychometric testing through exploratory factor analysis to identify a clean and simple solution. The third manuscript found in chapter four, *Optimizing Student Retention: Measurement and Analysis of Strategies Implemented within Traditional Bachelor's in Nursing Programs*, is a study of professional integration factors and their relationship to nursing student retention. The study involved a national survey of deans and program directors of accredited traditional Bachelor's in Nursing programs. In completing this dissertation, the researcher filled a gap in the profession's knowledge by exploring the implementation and effectiveness of strategies geared to optimize nursing student retention.

Chapter 2

Optimizing Undergraduate Nursing Student Retention: A Concept Analysis

Abstract

During a time of national nursing shortage, student retention is a growing concern for academic institutions, nursing programs, and the nursing profession. While multidimensional factors influence undergraduate nursing student retention, many outcome benchmarks, including approval and accreditation status, heavily emphasize degree completion. Therefore, nursing program retention is a high-stakes outcome. There is limited information reported in the literature regarding specific strategies being implemented by nursing programs to promote academic persistence among undergraduate nursing students. Theoretical examination of the concept *optimize* and analysis of contributing factors and variance sought to examine the underlying process needed to identify and develop sustainable solutions to improve institutional performance. This process can be utilized by nursing programs as part of a comprehensive strategic vision to assess existing resources and student-identified needs in order to proactively identify the most effective strategies with the greatest return on investment. Future research is needed to identify the specific interventions or strategies being implemented by programs of nursing to optimize undergraduate nursing student persistence and retention and the relationship between these variables and program retention rates.

Optimizing Undergraduate Nursing Student Retention: A Concept Analysis

During a time when the future nursing workforce is uncertain, undergraduate nursing student retention and degree completion is a growing concern for programs of nursing as well as healthcare agencies seeking to employ licensed nurses. Academic institutions are challenged to achieve graduation performance metrics to receive allocated budget funding (National Conference of State Legislatures, 2015) and may experience financial losses for students who do not complete a degree program (Fisher & Engemann, 2009). State boards of nursing and national nursing accreditation agencies monitor student retention as one measure of an institution's performance. Low retention rates can greatly impact a nursing program's approval and accreditation status, enrollment ability, and reputation (Jeffreys, 1998; Trofino, 2013). Because nursing is a high-impact profession, nursing curricula must employ rigorous standards as high levels of critical thinking, reasoning, and decision-making are necessary to ensure clinicians are prepared with essential cognitive, affective, and psychomotor skills needed to provide safe and competent nursing practice in a dynamic healthcare environment (Trofino, 2013). During this academic process, nursing students are often challenged to manage intense academic workloads and may experience difficulties in completing a nursing program (Pulido-Martos, Augusto-Landa, & Lopez-Zafra, 2012). With a growing national nursing shortage projected to result in 1.05 million registered nurse job openings by the year 2022 (Bureau of Labor Statistics, 2012), an aging workforce, and fewer individuals pursuing a career in professional nursing (Buerhaus, Staigner, & Auerbach, 2000), greater attention is necessary to optimize nursing student retention and program completion to sustain and build the current workforce. While the attrition challenges faced by students and

institutions of higher learning are well reported in the literature, there is limited information regarding what specific strategies are being implemented to optimize academic persistence among undergraduate nursing students. Exploration of the concept *optimize* provides a foundation for development of proactive strategies to promote student persistence and retention within undergraduate nursing programs.

Methods

Utilizing the Walker and Avant (2011) methodology as an organizing framework, the operational definition of *optimize* was examined to clarify the concept and interpret this term through the lens of an academic setting to better identify which strategies may be most effective to optimize undergraduate nursing student persistence and retention. A literature search of the terms *optimize, academic persistence, retention, retention strategies,* and *nursing students* as controlled vocabulary and major subject headings was conducted within interdisciplinary databases including CINAHL Complete, Academic Search Complete, Business Source Complete, Medline, PsychInfo, ERIC, ScienceDirect, and Education Source for peer-reviewed articles to inform the concept topic. Applied limiters included articles published in English language within the past ten years. In total, 15 studies were retained to inform the concept.

Following concept selection and purpose of analysis, Walker and Avant (2011) encourage an interdisciplinary comprehensive literature review for complete concept identification. The purpose is to define the concept and provide a basis for a clear definition and understanding of the term.

Definition and Uses of the Concept

The word *optimize* is a common vocabulary term that describes the process of improving or maximizing efficiency, performance, usefulness, or to be optimistic ("Optimize", 2017, para 1). To *optimize* is to modify existing resources, processes, or behaviors with the intent to hone or perfect ("Optimize", n.d., para 2) often with the goal of providing a competitive advantage. Interdisciplinary studies show business and industry fields seek to optimize end-user product performance. This is often accomplished through innovative technologies, product manufacturing and designs, product formulation, and use of more functional materials during the product development process. Familiar examples of industry improvements designed to optimize product performance include aerodynamic technologies for motorsports (Masouleh & Limebeer, 2016) and innovative textile fabrics for athletic footwear and apparel (Hu & Lu, 2015). The pharmaceutical industry uses a pharmacokinetic and pharmacodynamic modeling approach to optimize dosage regimens and treatment strategies, target efficacy, and reduce toxicities and the emergence of drug resistance (Ahmad, Huang, Hao, Sanders, & Yuan, 2016).

Many interventions have been implemented to promote beneficial health behaviors such as education to optimize knowledge and use of bicycle helmets among pediatric clients to reduce traumatic injuries (Adams, Drake, Dang, & Le-Hind, 2014) and examination of jerk and torque-change models to predict the center of mass during sit-to-stand movements to optimize balance recovery during activities of daily living (Yamasaki, Kambara, & Koike, 2011). Clinical trials have been implemented to optimize prolonged breastfeeding through empowerment, education, and social support of women

during the perinatal period to reduce infant mortality, allergies, and risk factors of chronic disease (Savitri et al., 2016), while other trials have sought to enhance premature neonatal feeding outcomes and accelerate feeding milestones within a neonatal intensive care unit through process optimization feeding strategies (Jadcherla et al., 2016).

Similarly, clinical initiatives have been implemented within the healthcare industry to optimize treatment outcomes and promote client safety. Such quality enhancements include employing clinical pharmacists within emergency departments to decrease adverse events, facilitate medication distribution, and implement antimicrobial stewardship to improve treatment outcomes and reduce bug-drug mismatches (Davis, Covey, Weston, Hu, & Laine, 2016). In addition, clinical improvements have included evaluation of unnecessary medication allergy alerts within computerized provider order entry systems to reduce the rate of errors, provider overrides, and alert fatigue (Brodowy & Nguyen, 2016), as well as implementation of cost-effective performance assurance measures that verify medical device performance meets design expectations through prioritized risk classification inspection scheduling models (Gaamangwe, Babbar, Krivoy Moore, & Kresta, 2015).

Researchers within undergraduate nursing education have examined variables related to nursing retention and student success and posited solution models. One such model is the Nursing Undergraduate Retention and Success (Jeffreys, 2012), later adapted to the Nursing Universal Retention and Success (NURS) model (Jeffreys, 2015), which outlines multidimensional factors that influence undergraduate nursing student persistence and retention. These factors examine student profile characteristics, student affective factors, environmental factors, psychological outcomes, academic outcomes,

academic factors, and outside surrounding factors (Jeffreys, 2015). Central to the NURS model are professional integration factors aimed at optimizing student interaction, socialization, and persistence. Academic institutions and nursing faculty have the opportunity to optimize these factors within the context of faculty advisement and helpfulness, professional events, memberships in professional organizations, peer encouragement, peer mentoring and tutoring, and enrichment programs to promote student retention behaviors.

Defining Attributes and Antecedents

Walker and Avant (2011) suggest delineation of concept attributes is an essential component of concept analysis that allows for broad and expansive awareness of related characteristics. Likewise, identifying antecedents, which must be present prior to the concept's occurrence in order for it to be recognized, provide additional contextual structure and understanding.

Attributes

Distinctive characteristics of the concept presented show a predetermined benchmark was identified to designate "success" (Savitri et al., 2016) and a model or plan was enacted to simplify variable relationships, better understand complex connections, and optimize processes and outcomes (Adams et al., 2014; Ahmad et al., 2016; Yamasaki et al., 2011). Optimal and sustainable improvement solutions were desired. Current processes were evaluated, relationships between variables examined, measurement criteria clarified, and a specific set of priorities were assigned (Yamasaki et al., 2011). Optimization models incorporated systems data and in many instances, assigned weighting or numerical importance to risk factors (Gaamangwe et al., 2015). In utilizing

a gap analysis approach, variance between current outcomes and desired outcomes were evaluated. Industries examined existing resources and applied a strategically focused systems-approach to model operational algorithms and optimize efficiency, performance, or behaviors. Awareness of optimization modeling processes can assist nursing programs to identify and rank strategies that promote student retention within an academic setting according to the greatest effectiveness and subsequently develop interventions to enhance academic persistence behaviors for the greatest investment return.

Antecedents

Review of interdisciplinary literature identified the following characteristics as necessary to optimize performance, efficacy, or behaviors.

1. **Visionary goals and desire that the current situation can be improved.** In all presented conditions, there was recognition that the current situation could be improved. Some reported circumstances may be viewed as unsatisfactory or underperforming while other circumstances may be viewed as acceptable, but the visionary desire is present to seek maximum performance. Such goals can be used to motivate and provide a clear pathway toward optimization. Nursing programs should aim to promote optimal student achievement, not minimal grade and performance benchmarks (Jeffreys, 2014).
2. **Designated area of variance within current variables for focused improvement efforts.** Similarly, when recognizing a current situation can be improved, it is imperative to identify a specific focus for improvement efforts. Data is analyzed and trended to evaluate the relationship and effectiveness of variables for the most optimal and sustainable systems improvement. While

significant research has focused on reasons *why* students choose to leave an academic setting, few factors have been evaluated to determine reasons why students elect to *remain* enrolled (Wray, Aspland, & Barrett, 2014). Although Jeffreys's NURS model (2015) provides empirical factors to consider, estimates of undergraduate nursing students within the United States who have considered voluntary withdrawal from a nursing program and the reasons that influenced their academic persistence remain unknown.

3. **Identifying necessary assets and resources.** Maximized efficiency of resource utilization and allocation are consistent themes among literature application of the term *optimize*. The process of optimizing efficiency, behaviors, and performance requires the use of assets and resources to devise a strategic systems model that is financially feasible and readily implementable. Types of resources include financial and/or economic assets that promote production and profit, as well as tangible supplies, raw materials, supportive aid, naturally-occurring phenomena, and equipment available during times of need. Other types of resources may include use of time, energy, ingenuity, and physical and cognitive capabilities for effective situational management. Strategies for resource allocation directed toward student retention would consider the greatest expenditures in relation to the retention factors identified as most likely to improve student persistence and success. Nursing student retention is a complex phenomenon with multi-faceted contributing factors. Nursing programs and faculty may be challenged to prioritize resources and assistance in determining which retention factors

might take precedence over others as little is known about which retention strategies are most effective. Resources may include student support services as well as personnel resources. The goal of resource optimization should aim to proactively support students to prevent academic difficulty rather than provide remediation services for students who are actively struggling and in jeopardy of academic failure. Interventions are designed to support persistence and retention, rather than prevent attrition (Jeffreys, 2012; Jeffreys, 2014).

4. **Consideration of preferences, goals, and expectations of consumers and end-users.** When optimizing performance, behaviors, or efficacy, the needs and preferences of the end-user are a necessary consideration. These stakeholders are directly impacted, either positively or negatively, by any optimization efforts. Determining which factors are the greatest influence in student retention-withdrawal decisions that can be addressed by nursing programs is critical in devising effective, targeted strategies to optimize retention. Conducting a needs assessment and identifying a student priorities framework for mitigating factors that most contribute to retention and persistence may provide a clear organizational structure for addressing student decision behaviors. Identifying specific student needs and determination of student-centered retention priorities can assist nursing programs and faculty in clarifying and emphasizing proactive retention strategies necessary for student success.

Optimizing Student Retention: Conceptual Case Presentation

Walker and Avant (2011) suggest model case development utilizing defining attributes depicts a pure conceptual exemplar. Conversely, a contrary case excluding defining attributes disaffirms the concept. The following fictional cases are presented:

Model Case

Nursing program "A" reviews program outcome data at the conclusion of each academic semester. The program's most current retention rate, defined as students who complete the program without interruption, is 75%, exceeding their target benchmark of 70%. Nursing faculty discuss their desire to assist students to become more successful in completing the program and wish to be identified as a program of excellence within the community. Faculty conduct a student satisfaction and needs assessment survey to determine the effectiveness of current support resources offered by the nursing program, and also solicit recommendations for resources needed. Data are aggregated and analyzed at a planning retreat and current resources are examined to determine the degree of effectiveness in promoting student persistence and retention. Students reported high levels of satisfaction with the nursing resource center, but identified the need to increase peer tutor hours of availability.

Faculty considered other retention services and identified that fewer students were involved in the local nursing student network (NSN) organization than in past semesters. When queried, the faculty facilitator reported that the current schedule of NSN meetings directly conflict with clinical hours for sophomore and junior nursing students. Following comprehensive analysis, faculty devise the following plan of action: recommend rescheduling NSN meetings to avoid conflicts with class or clinical hours and submit a

grant proposal to employ three additional peer tutors for 15-hours per week. Additional tutors will allow for increased tutor availability during peak study hours when the majority of students are on campus. Faculty elect to increase the nursing program's retention rate benchmark to 75%, with a goal to attain retention rates above 80% within the next six semesters. The program will continue to monitor retention rates each semester with additional comparative analysis of mid-term reporting grades compared to prior semesters to determine if additional early intervention strategies are needed. Further, the student satisfaction and program resource needs survey will continue to be administered each semester to determine effectiveness of current resources, added resources, and if additional resources are needed.

Although currently meeting retention benchmark goals, the nursing program envisions higher levels of program completion, desiring to achieve a competitive edge as a program of distinction within the community. To optimize their efforts, faculty conducted a special retreat to comprehensively examine current retention efforts offered by the program and perform a gap analysis of their effectiveness. Faculty provided input and solicited the goals and preferences of enrolled students. A devised plan of action identified short- and long-term goals to improve retention rates. Faculty challenged the status quo by increasing the program's retention benchmark, factoring a reasonable timeframe for achievement.

Contrary Case

Nursing program "B" reviews program outcome data at the conclusion of each academic year. The program's most current retention rate, defined as students who complete the program without interruption, is 75%, exceeding their target benchmark of

70%. Nursing faculty are pleased the program has been able to maintain retention rates above the designated benchmark and reflect upon the changes in student study characteristics over the past few years, noting students rarely meet with faculty for assistance and do not routinely utilize the nursing resource center. Due to financial limitations, the nursing program does not offer peer tutoring services. Students either study independently or with classroom peers. Results of an annual student satisfaction survey reveal 65% of students are satisfied or extremely satisfied with available resources, consistent with prior satisfaction rates in previous years. Faculty update the program's strategic plan with recommendations to continue current resources as the retention benchmark has been met.

Similar to nursing program A, nursing program B has met retention benchmark goals. The program was content to maintain current minimum benchmarks with plans to continue annual measurement. The program did not aspire to increase student retention as required benchmarks had been attained. Likewise, the program did not compare their retention rates with other nursing programs in the region as a measure of excellence. Although faculty discussed changes in student study and help-seeking behaviors over the past few years, there was no additional examination of this factor to determine reasons for reduced use of resources. Further consideration of student satisfaction surveys demonstrated 35% of respondents were either neutral or dissatisfied with current program resources, an unexamined aspect of the survey. The annual questionnaire did not incorporate a student needs survey nor seek student suggestions for additional resources needed. Outcome variance and areas for improvement were not examined as the program's retention goals had been met. This contrary exemplar illustrates nursing

program B did not embody optimization behaviors as faculty were satisfied to maintain minimum standards of performance, measurement, and services.

Priorities: Empirical Referents

Empirical referents measure and assist the researcher in defining characteristics of the concept *optimize* (Walker & Avant, 2011). As aforementioned, defining attributes involve predetermined benchmarks designating acceptable achievement as well as a process optimization model or plan to identify and prioritize retention factor relationships for better understanding of complex interactions. Optimization planning incorporates gap analysis for examination of variance between current outcomes and desired outcomes, as well as review of existing resources.

Measurement instruments are available to examine different aspects of nursing retention, both from the perspective of the student such as the Perceived Faculty Support scale measuring the relationship of perceived faculty support and student retention (Shelton, 2012), as well as the perspective of the faculty and nursing program such as the Healthcare Professions Education Program Self-Assessment, which measures institutional barriers and helpfulness for retaining Hispanic nursing students (Bond & Cason, 2014). Nursing student retention is defined as the continuous enrollment in a nursing program through progressive and sequential academic course completion until achievement of the program's graduation requirements (Jeffreys, 2012). However, the challenge to sufficiently and comprehensively examine nursing student retention is quite difficult due to multiple inconsistencies. Currently, there is no national benchmark to measure nursing program completion rates and many programs measure retention at

differing timeframes. Currently, there are no published instruments that measure professional integration factors designed to optimize student retention.

Conclusion

While the attrition challenges faced by students and institutions of higher learning are well reported in the literature, there is limited information of what specific strategies are being implemented to promote academic persistence among undergraduate nursing students and which of these strategies are most beneficial. This concept analysis clarifies the concept of *optimize* applied within the academic context of undergraduate nursing student retention. A review of published literature suggests a plan of action for nursing programs to optimize retention outcomes should identify acceptable benchmark standards of achievement and to subsequently develop a model or algorithm plan to guide process improvement measures. Utilizing gap analysis to identify variance between current and desired outcomes, prioritizing relationships between identified retention factors, and comprehensive review of existing resources provides a foundation for developing sustainable and optimal solutions to promote student retention. Future research is needed to identify specific interventions or strategies being implemented by programs of nursing to optimize undergraduate nursing student persistence and retention and the relationship between these variables and program retention rates.

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Chapter 3

Development and Psychometric Evaluation of the Professional Integration Factors Retention Strategies Survey

Abstract

Background and Purpose: Nursing students experience higher attrition rates than average college students due to the academic rigor of nursing programs. This study examined psychometric properties of the Professional Integration Factors Retention Strategies Survey (PIF-RSS), which measured constructs of faculty advisement and helpfulness, professional events, memberships, encouragement by friends in class, peer mentoring-tutoring, and enrichment programs.

Methods: The PIF-RSS survey was distributed to deans, directors, and program coordinators of traditional Bachelor's in Nursing programs.

Results: Following exploratory factor analysis, 47 items aligned within a 5-factor solution were retained. Reliability of the total instrument was .90.

Conclusions: This study provides preliminary evidence of the psychometric properties of the PIF-RSS instrument. Additional studies are recommended to further examine instrument psychometric properties for different program types and populations.

Development and Psychometric Evaluation of the Professional Integration Factors Retention Strategies Survey

Academic program completion is a desired outcome within programs of higher education and is critical to ensure a robust future nursing workforce. As greater emphasis is placed on academic success due to national nursing shortages (Juraschek, Zhang, Ranganathan, & Lin, 2012; Shelton, 2012), performance metric funding (National Conference of State Legislatures, 2015), demands of credit hour production (Fisher & Engemann, 2009; Merkley, 2016), stipulated program completion timeframes, and grade-based standards to measure satisfactory academic progress (U.S. Department of Education Office of Federal Student Aid, 2014), student retention remains a priority academic outcome within nursing programs.

Despite competitive admission strategies designed to strengthen the likelihood of successful program completion, nursing students experience higher attrition rates than the general college population due to the rigors of nursing program curricula, academic workloads, and time demands of didactic and clinical schedules (Newton & Moore, 2009; Peter, 2005; Pulido-Martos, Augusto-Landa, & Lopez-Zafra, 2012). While student academic performance can be negatively influenced by external factors such as personal and financial issues, employment, and family responsibilities (Jeffreys, 2012), nursing programs can positively impact program completion through institutional support such as encouraging faculty and peer connections, offering peer mentoring and tutoring services, sponsoring program enhancements, and facilitating early integration within the professional nursing community. These focused professional integration factor initiatives

can provide strategic support to assist students in maintaining satisfactory academic progress (Jeffreys, 2012).

Understanding the relationship between professional integration factors (Jeffreys, 2012) and student retention is necessary for identification of the most effective institutionally-driven strategies to optimize student retention. While multi-faceted retention issues are well documented, there is limited information available highlighting the efficacy of retention strategies being implemented by nursing programs. Specifically, there is no psychometrically-sound scale to measure the effectiveness of professional integration factors on student retention. The purpose of this study is to describe the multi-step process used to develop and evaluate the psychometric properties of the Professional Integration Factors-Retention Strategies Survey (PIF-RSS) through examination of reliability and content and construct validity.

Background and Conceptual Framework

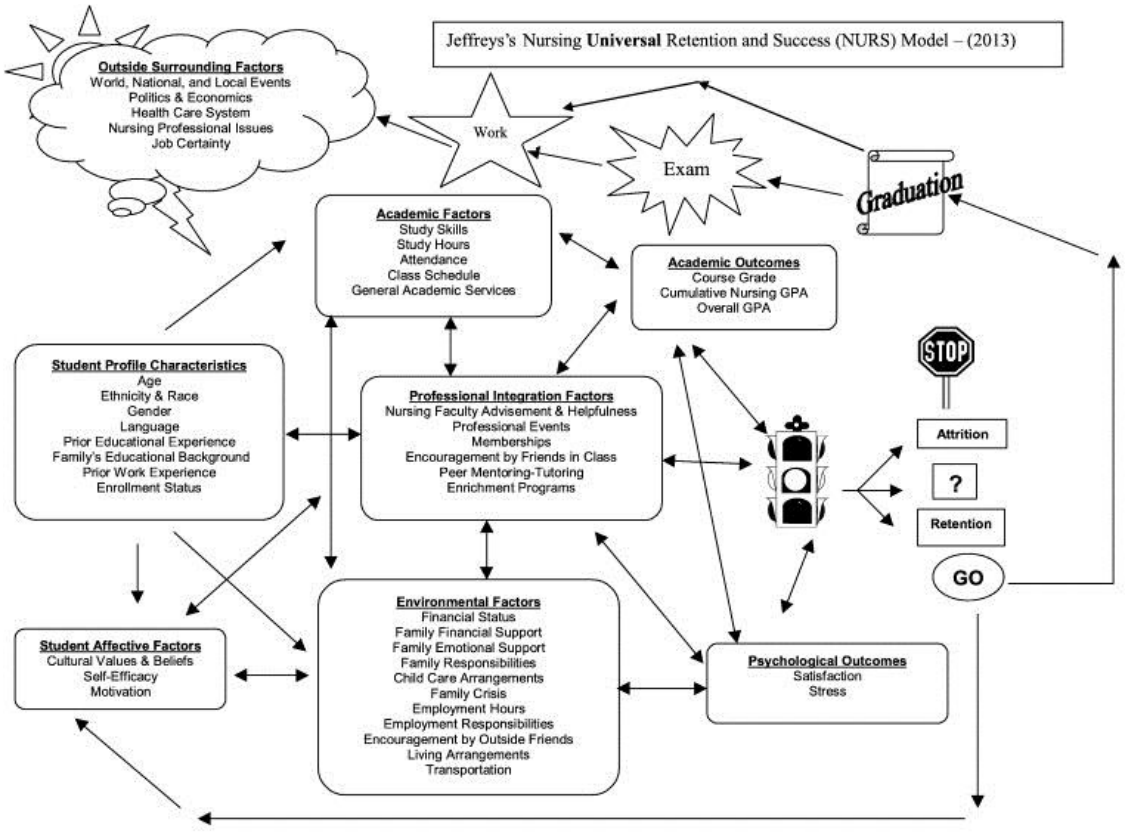
Successful students report academic and social integration within the institution (Tinto, 1990); positive thoughts about their program (Hamshire, Willgoss, & Wibberly, 2013); personal, peer, and faculty support (Cameron, Roxburgh, Taylor, & Lauder, 2011); and a strong desire to persist and attain a degree (Wray, Aspland, & Barrett, 2014). Many conceptual models are available to address general undergraduate student retention (Bean & Metzner, 1985; Tinto, 1990); however, few retention models are available to specific to nursing and health profession students. As aforementioned, nursing students experience higher attrition rates than the general college population. Multiple factors influence nursing student retention, such as rigorous curriculums, academic workloads, and time demands necessary to complete all clinical and didactic

requirements of a nursing program. A retention model specific to nursing students that comprehensively examines retention factors assists academic institutions to address all aspects related to retention.

The Nursing Undergraduate Retention and Success (Jeffreys, 2012) model, later adapted as the Nursing Universal Retention and Success (NURS) model (Jeffreys, 2015) is an empirically-based model that examines domains contributing to nursing student retention (Figure 1). These domains include student profile characteristics such as age, race/ethnicity, and gender; affective factors concerning self-efficacy and cultural values and beliefs; environmental factors involving finances, employment issues, and family obligations and support; psychological outcomes concerning student satisfaction and stress; academic factors such as study skills and habits, attendance, and class scheduling; academic outcomes including course grades and grade point averages; and outside surrounding factors including global events and political and economic circumstances (Jeffreys, 2012; Jeffreys, 2015). At the center of the NURS model are professional integration factors, which include nursing faculty advisement and helpfulness, professional events, professional memberships, encouragement by friends in class, peer mentoring-tutoring, and enrichment programs. These factors can enhance student interactions within the institution's social system and promote professional socialization and career development.

Professional integration factors outlined within the NURS model (Jeffreys, 2015) represent proactive strategies that can be incorporated by nursing programs to optimize student retention. These factors provide the foundation for development of the PIF-RSS instrument and an organizing framework for examination of multidimensional factors that

most influence nursing student retention. As the central component of the NURS model, nursing programs can utilize professional integration factors to devise student support services, activities, and resources to promote retention. No published instrument is available to survey the use of institutional strategies that incorporate the professional integration factors outlined in the NURS model; therefore, the newly developed survey tool, Professional Integration Factors - Retention Strategies Survey (PIF-RSS), will undergo psychometric analysis. This exploration attempts to determine if the Professional Integration Factors - Retention Strategies Survey (PIF-RSS) is a psychometrically sound instrument for measuring professional integration factors that optimize nursing student retention.



Adapted from Jeffreys's Nursing Undergraduate Retention and Success (NURS) Model – (2012).
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Figure 1. Nursing Universal Retention Success (2015) Model.
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Procedures for Instrument Development

A concept analysis of the term *optimize* clarified the application of the concept within an academic context. A thorough examination of the literature identified strategies important to undergraduate nursing student retention. These strategies were found to align with factors described within the NURS model (Jeffreys, 2015) and outlined proactive measures that could be incorporated by nursing programs to optimize retention efforts. Awareness of optimization modeling processes is a necessary first step as this strategy designates specific benchmarks for improvement, identifies a process to rank variables according to importance and the ability to sustain improvements, and can assist

nursing programs to be more strategic in implementing retention improvement measures. The PIF-RSS was developed based on the six professional integration factors of the NURS model: nursing faculty advisement and helpfulness, professional events, memberships, encouragement by friends in class, peer mentoring-tutoring, and/or enrichment programs. Items, based on Professional Integration Factors from the NURS model (Jeffreys, 2012; Jeffreys, 2015), were developed from their theoretical definitions (Table 1), helping to reduce threats to construct validity (Polit & Beck, 2017). Two instruments were identified measuring partial professional integration factors. The Nursing Program Retention Strategies (NPRS) measures aspects of faculty helpfulness, peer mentor-tutoring, and availability of academic enrichment programming (Tracey, 2003). The Online Survey Tool (OST) measures aspects of faculty helpfulness, peer mentor-tutoring, memberships, and availability of enrichment programming (Baker, 2007). Content validity is reported for both instruments, but neither reported reliability statistics. No items were utilized in development of the PIF-RSS instrument.

Table 1

PIF-RSS: Subscales

	Domains	Definition
1.	Faculty Advisement and Helpfulness	Faculty involvement in student academic endeavors, career goals, and professional socialization (Jeffreys, 2012). "Advisement" occurs within formal classroom and office settings while "helpfulness" occurs within informal faculty-student encounters and settings.
2.	Professional Events	Activities that may include nursing conferences, workshops, meetings, volunteer services, and social activities that have specific goals relevant for nursing education, practice, research, or theory that encourage professional integration, socialization, career development, and professional commitment (Jeffreys, 2012; Jeffreys 2015).
3.	Memberships	Nursing student affiliation or participation within nursing organizations or associations as a member prescribed by the respective bylaws (Jeffreys, 2012). Nursing organizations/associations may include the National Student Nurses Association (NSNA), the school's student nurse club (SNC), and specialty nursing organizations that permit student nurse membership.
4.	Encouragement by Friends in Class	Peers who interact positively with each other by establishing and maintaining friendships in class that are continued within the context of the college learning environment. Peers are mutually bonded in career goals, expectations, and stage of educational and professional development. (Jeffreys, 2012).
5.	Peer Mentoring-Tutoring	Formalized, structured collaborative partnership in learning and professional development between a peer mentor-tutor (PMT), and one or more students, described as protégé's or mentees. The aspect of tutoring provides academic support to enrich and enhance cognitive knowledge and/or psychomotor skills while mentoring activities emphasize professional integration and socialization through relationships (Jeffreys, 2012).
6.	Enrichment Programs	A formal, multiservice program providing additional services to enhance the nursing student experience. Services may include specialized orientation, newsletters, career advisement and guidance, workshops, study groups, networking, transitional support, financial stipend, and/or referral (Jeffreys, 2012).

Four content experts were selected based upon knowledge and credentials with regard to measured constructs and the target population (Polit & Beck, 2017) and chosen from doctorally-prepared nurse educators who are familiar with retention issues, have researched aspects of student retention related to the six professional integration factors, and have published in nursing education and higher education peer-reviewed journals. The nursing education content specialists reviewed PIF-RSS scale items to verify content

validity. Experts rated items for relevance, clarity, and provided recommendations to either retain, revise, or discard survey items. Content experts provided additional relevant comments, such as how item wording could be improved. Feedback demonstrated all 49 preliminary scale items were moderately-to-highly relevant with no items suggested to be discarded. A Content Validity Index (CVI) score was calculated to summarize the degree of expert panel agreement (Table 2), only four items were scored below 1.00. The average CVI was 0.98 and survey items with a CVI below 0.78 were carefully scrutinized and revised (Polit & Beck, 2017). Based upon reviewer feedback, slight editorial changes were made to subscale items of faculty advisement and helpfulness to clarify all items pertained to nurse faculty. All items within the professional events subscale were retained as written. Within the memberships subscale, item 17 was divided into two separate items to differentiate between availability of school-sponsored student nurse clubs and a National Student Nurse Association chapter. Likewise, item 18 was divided into two separate items to differentiate if memberships were mandatory or encouraged. Item 19, pertaining to social events, was relocated to the subscale of encouragement by friends in class as it related more to aspects of peer socialization than memberships. Item 26 was rephrased for clarity as three of four content experts rated the item as being highly relevant with recommendations to retain. Items 28, 29, 30, and 31 within the subscale of encouragement by friends in class scored less than 0.78 and were consolidated into one item as the primary objective of examining group learning activities was to determine if a variety of learner-centered, interactive teaching-learning strategies, rather than individual activities, were being regularly incorporated within and between courses. To fully examine retention strategies, two additional questions were added to the peer mentoring-

tutoring (PMT) subscale to examine if PMTs lead weekly study groups and/or provided individual one-on-one PMT sessions. Within the enrichment programming subscale, an item was added to determine if a nursing program offered enrichment programming to be consistent with a similar item presented within the PMT subscale. Three additional items were incorporated to examine if transitional workshops between semesters were offered for progressing students as a similar question queried if workshops were available for new students, if offerings were evaluated each semester for effectiveness, and if the program published a newsletter to communicate program information. Following these revisions, the updated instrument consisted of 54-items (Appendix B).

Table 2

Content Validity Index (CVI) for the PIF-RSS: Items Rated by Content Experts as Moderately (3) or Highly-relevant (4) on 4-Point Relevance Scale

Item	Expert 1	Expert 2	Expert 3	Expert 4	Experts in agreement	Item CVI
Nursing Faculty Advisement & Helpfulness						
1 Receive training on culturally…	X	X	X	X	4	1.00
2 Receive training on advising…	X	X	X	X	4	1.00
3 Initiates contact with students…	X	X	X	X	4	1.00
4 Offers to meet with students,,,	X	X	X	X	4	1.00
5 Engages students outside…	X	X	X	X	4	1.00
6 Provides mentoring guidance…	X	X	X	X	4	1.00
7 Verbalizes belief in the student's…	X	X	X	X	4	1.00
8 Makes time to listen…	X	X	X	X	4	1.00
9 Refers students to Univ…	X	X	X	X	4	1.00
10 Actively involved in the…	X	X	X	X	4	1.00
Sub-total						1.00
Professional Events						
11 Student attendance at a prof…	X	X	X	X	4	1.00
12 Student completion of volunteer…	X	X	X	X	4	1.00
13 Students are invited to develop…	X	X	X	X	4	1.00
14 Nursing program sponsors a prof…	X	X	X	X	4	1.00
15 Registration fees are reduced…	X	X	X	X	4	1.00
16 Collaborates with clinical agency…	X	X	X	X	4	1.00
Sub-total						1.00
Memberships						
17 Sponsors a formal nursing student…	X	X	X	X	4	1.00
18 For sponsored student nurse org..	X	X	X	X	4	1.00
19 A nursing program social event…	X	X	X	X	4	1.00
20 For sponsored student nurse org…	X	X	X	X	4	1.00
21 For sponsored student nurse org…	X	X	X	X	4	1.00
22 For sponsored student nurse org…	X	X	X	X	4	1.00
Sub-total						1.00

Item	Expert 1	Expert 2	Expert 3	Expert 4	Experts in agreement	Item CVI
Encouragement by Friends in Class						
23 Promote peer interaction through…	X	X	X	X	4	1.00
24 Promote peer interaction through…	X	X	X	X	4	1.00
25 Collaborate with colleagues to…	X	X	X	X	4	1.00
26 Participate in prof dev activities…	X	X	---	X	3	0.75
27 Conduct a curricular self-assess…	X	X	X	X	4	1.00
28 Group discussion is used as an…	X	X	X	X	4	1.00
29 simulated role-play is used as…	---	X	X	X	3	0.75
30 Debate is used as an active…	---	X	X	X	3	0.75
31 Group presentations are used…	---	---	X	X	2	0.50
Sub-total						0.86
Peer Mentoring-Tutoring						
32 A formal peer tutoring program…	X	X	X	X	4	1.00
33 Peer tutors are paid for tutoring…	X	X	X	X	4	1.00
34 Grant funding assists to support…	X	X	X	X	4	1.00
35 A grant proposal has been submit…	X	X	X	X	4	1.00
36 Peer tutors receive orientation…	X	X	X	X	4	1.00
37 A nursing faculty member provides...	X	X	X	X	4	1.00
38 Peer tutors routinely meet with…	X	X	X	X	4	1.00
39 Peer tutors are utilized within…	X	X	X	X	4	1.00
40 Newly-enrolled nursing students…	X	X	X	X	4	1.00
Sub-total						1.00
Enrichment Programs						
41 Conducts a needs assessment each…	X	X	X	X	4	1.00
42 Sponsors a study skills seminar…	X	X	X	X	4	1.00
43 Sponsors a test-taking preparation…	X	X	X	X	4	1.00
44 Sponsors a résumé writing work…	X	X	X	X	4	1.00
45 Sponsors a career workshop each…	X	X	X	X	4	1.00
46 Sponsors a financial aid workshop…	X	X	X	X	4	1.00
47 Provides tailored orientation for…	X	X	X	X	4	1.00
48 Provides nursing skills lab and sim…	X	X	X	X	4	1.00
49 Provides an orientation program…	X	X	X	X	4	1.00
Sub-total						1.00
Average Item Content Validity I-CVI						0.98

Description, Administration, and Scoring of the Instrument

The 54-item survey aims to measure professional integration factors that may influence academic retention among nursing students and is designed to elicit feedback from nursing programs to determine current strategies being implemented to promote student retention. Scale subcategories include faculty advisement and helpfulness, professional events, memberships, encouragement by friends in class, peer mentoring-tutoring, and enrichment programs. The PIF-RSS is designed to be rated on a 6-point Likert-scale: *0 unknown, 1 not offered, 2 strongly disagree, 3 disagree, 4 agree, and 5 strongly agree.* This scaling metric allows nursing programs to acknowledge definitive agreement or disagreement if specific retention strategies are offered, or to acknowledge if strategies are not offered or of unknown status. A neutral option is not provided to prompt a definitive response (Dillman, Smyth, & Christian, 2014). Each survey item is scored individually to determine the most common retention strategies utilized while professional integration factor subscale scores will expand the depth of research related to comprehensive strategies being implemented to optimize student retention.

Methods

Participants and Data Collection

This study was aimed to elicit information regarding the psychometric properties of the PIF-RSS; therefore, the target and accessible populations were accredited nursing programs. Accredited programs are peer-reviewed for education quality standards and are more likely to provide support services to promote student success (Association of Specialized and Professional Accreditors, 2016), suggesting more meaningful data would be obtained. As the largest program type with similar program lengths, accredited

traditional Bachelor's in Nursing (BS Nursing, BSN) programs were selected to increase the likelihood of strong response rates and confidence in sample validity (Portney & Watkins, 2015). Information was obtained from deans, directors, or program coordinators from a pool of 916 public and private accredited traditional Bachelor's in Nursing (BS in Nursing, BSN) programs in the United States. Practical, diploma, associate degree, accelerated/second-degree Bachelor's in Nursing programs, RN-BSN completion programs, non-accredited nursing programs, or those located outside of the United States were ineligible. A range of 270-540 participants was desired for psychometric analysis, as 5-10 responses per item is recommended when field testing an instrument (Polit & Beck, 2017). As the pool of 916 schools is the total population, a pilot analysis was not conducted and all accredited traditional Bachelor's in Nursing (BSN in Nursing, BSN) programs were surveyed to strengthen response rates for to obtain adequate sample for psychometric testing. Participants were recruited via email invitation with email addresses and contact information obtained from online published lists of accredited nursing programs located on the websites of the three national nursing accreditation agencies. Following institutional review board approval (Appendix A), an initial invitation email presenting the study with an online survey link to complete the survey was distributed. Of the initial 916 programs surveyed, 54 programs were identified to be non-traditional, such as RN-BSN completion options, and were removed, leaving 862 eligible programs. A total of 270 responses were received. Following data screening, 69 cases were excluded from analysis as consent to participate could not be verified or survey responses were incomplete and did not make a significant contribution. For remaining cases, missing values were identified for less than one percent of total

responses; therefore, mean substitution was employed to replace missing values with the means of the corresponding items within the subscale (Polit & Beck, 2017). A total of 201 valid cases remained for analysis.

Analysis

Exploratory factor analysis was performed on 54 items to explore the factor structure of the sample, examine the relationship between items, and trim the instrument by dropping low-loading and cross-loading items (Williams, Brown, & Onsman, 2012). Cronbach's α was used to assess overall reliability for the 47 item scale and subscale factors (Field, 2013).

Results

Exploratory factor analysis (EFA) utilizing principal axis factoring was performed. Results of the initial EFA yielded 16 factors with a total variance explained of 68.04% using the SPSS default Kaiser's criterion of eigenvalues greater than one. The KMO value was .76 indicating sampling adequacy was met. Bartlett's Test of Sphericity was significant, χ^2 (1432) = 4874.529, $p < .001$, suggesting a non-zero correlation matrix in the data and the assumption of multicollinearity was met as item correlations were <.8. Descriptive statistics showed varied skewed distributions of the subscales and Kolmogorov-Smirnov results were significant ($p < .001$) for each subscale. As is was exploratory, exploratory factor analysis proceeded despite non-normality of the data.

To determine the number of factors to retain, a parallel analysis was employed as this validated procedure is most recommended (O'Conner, 2000) and considered to be more accurate than examination of Kaiser's criteria of eigenvalues (Costello & Osborne, 2005). The results suggested a 5-factor solution. Inspection of the scree plot showed a

point of inflection between three and five factors, supporting the parallel analysis to retain similar items. Given the exploratory nature of EFA, solutions of seven, six, five, and four factors were each evaluated in SPSS using EFA with oblique rotation as factors were theoretically correlated (Costello & Osborne, 2005). However, the results showed a solution with factors below four altered the relationship of attributes defining the construct and was not pursued further. Consequently, the five-factor solution proved to be a simple and clean structure explaining a total variance explained of 39.96% with the most interpretative factors. The following items were deleted due to low loadings of less than .30 (Field, 2013): item 5 from the faculty subscale, item 16 from professional events subscale, item 20 from the membership subscale, items 28, 29, and 30 from encouragement by friends in class subscale, and item 49 from enrichment programs. As a result, a five-factor solution of 47 items was retained as this was the most economical factor solution that contained sufficient factors from the six proposed subscales (Table 3).

Table 3

Pattern Coefficients and Eigenvalues

Variables/Factors	Factor 1 PMT	Factor 2 EP	Factor 3 FAC	Factor 4 PE MBR Enc FIC EP	Factor 5 FAC PE MBR
PMT Q31	**.897**	-.095	.056	.007	-.021
PMT Q36	**.855**	-.085	.031	-.122	.060
PMT Q35	**.828**	-.067	.021	.109	-.083
PMT Q41	**.818**	-.017	.052	.032	-.228
PMT Q37	**.790**	-.057	.066	-.101	.044
PMT Q32	**.726**	.098	.106	.070	-.112
PMT Q40	**.652**	.148	-.083	.068	-.048
PMT Q38	**.628**	-.021	-.037	.100	.212
PMT Q39	**.561**	.016	-.042	.116	.042
PMT Q33	**.516**	.262	-.086	-.111	.135
PMT Q34	**.489**	.264	-.090	-.112	.158
EP Q44	-.076	**.741**	.009	.051	-.046
EP Q53	-.038	**.686**	.113	-.100	.121
EP Q45	-.056	**.627**	.050	.184	-.144
EP Q43	.026	**.563**	-.158	-.101	.146
EP Q48	.029	**.521**	-.131	.037	-.038
EP Q42	.021	**.492**	.094	-.037	.063
EP Q54	.162	**.449**	-.056	-.231	.154
EP Q51	.222	**.424**	-.092	.086	-.031
EP Q47	-.060	**.423**	.051	.340	-.043
EP Q52	.111	**.361**	-.075	.044	.110
EP Q50	.047	**.318**	.044	.314	.008
FAC Q8	.067	-.013	**.824**	.008	-.009
FAC Q7	.051	.035	**.803**	-.055	-.010
FAC Q4	.019	-.096	**.677**	-.039	.106
FAC Q3	.052	-.071	**.607**	.006	.017
FAC Q10	-.147	.009	**.448**	.087	.279

Variables/Factors	Factor 1 PMT	Factor 2 EP	Factor 3 FAC	Factor 4 PE MBR Enc FIC EP	Factor 5 FAC PE MBR
FAC Q9	-.079	.058	**.386**	.239	.159
MBR Q22	.071	-.034	.075	**.535**	-.039
PE Q11	.077	-.065	-.085	**.500**	.196
Enc FIC Q25	-.035	.085	-.029	**.439**	-.044
PE Q15	.058	-.128	.006	**.426**	.397
EP Q46	-.016	.333	.105	**.393**	-.174
Enc FIC Q26	-.054	-.085	-.143	**.359**	.186
MBR Q19	.030	-.028	-.030	**.352**	.035
PE Q12	-.048	.115	-.098	**.339**	.128
Enc FIC Q24	-.079	.021	.065	**.316**	-.032
MBR Q21	-.010	.000	-.119	**.308**	.302
MBR Q18	.095	-.051	.026	**.307**	-.029
PE Q13	.050	-.152	.048	.244	**.545**
Enc FIC Q27	-.160	.243	-.031	-.136	**.512**
PE Q14	-.001	-.101	-.050	.314	**.467**
FAC Q2	-.091	.188	.186	.062	**.424**
FAC Q1	.017	.007	.239	-.034	**.414**
MBR Q23	.080	.056	.128	.075	**.343**
FAC Q6	.035	.034	.287	-.239	**.313**
MBR Q17	.059	-.013	.056	.070	**.300**

Extraction Method: Principal Axis Factoring.
Rotation Method: Promax with Kaiser Normalization
Rotation converged in 12 iterations
FAC = Faculty Advisement and Helpfulness; PE = Professional Events; MBR = Professional Memberships; Enc FIC = Encouragement by Friends in Class; PMT = Peer Mentoring-Tutoring; EP = Enrichment Programming

Cronbach's α estimates for the overall scale (0.90) and subscales of Factor one (.92) and Factor two (.83) were above .80, confirming desirable internal consistency. Internal consistency for Factor three (.79), and Factor four (.70) were satisfactory while Factor five (.68) was slightly below recommendations (Table 4). Cronbach's α greater than .70 are satisfactory measurements of internal consistency; however, values greater

than .80 are desired for new scales (Field, 2013). Review of item-total correlations and reliability if item deleted showed no items would increase reliability from Factors 1, 2, 4, or 5 if deleted. However, within Factor 3, reliability would increase ($\alpha = .80$) if FAC Q10 were deleted. This item was retained to ensure adequate items within the original professional integration factor subscales for future psychometric analysis.

Table 4

PIF-RSS: Internal Consistency for Factorally-derived Subscales and Total scale

Factor	Factor 1 PMT	Factor 2 EP	Factor 3 FAC	Factor 4 PE MBR Enc FIC EP	Factor 5 FAC PE MBR	Total
Cronbach's α	.92	.83	.79	.70	.68	.90

FAC = Faculty Advisement and Helpfulness; PE = Professional Events; MBR = Professional Memberships; Enc FIC = Encouragement by Friends in Class; PMT = Peer Mentoring-Tutoring; EP = Enrichment Programming

Discussion

The results of the exploratory factor analysis indicated a five-factor structure as being most economical, with seven items removed from further analysis as they consistently reported loadings below .30 among all factors. The first three factors aligned with their initial theoretical subscale definitions: peer mentoring-tutoring, enrichment programs, and faculty advisement and helpfulness, while the remaining two factors combined remaining theoretical subscales of professional events, memberships, and encouragement by friends in class and demonstrated the lowest internal consistency. It is noted that these three theoretical subscales contained fewer items than subscales of peer mentoring-tutoring, enrichment programming, and faculty advisement and helpfulness.

Future refinement of the scale by adding items to these three subscale categories can strengthen internal consistency (Polit & Beck, 2017).

The PIF-RSS was developed in conjunction with a national research study to examine student retention as no other instrument measured all key constructs. EFA was utilized to eliminate low-loading and cross-loaded items. A five-factor structure was retained as it contained items from the six theoretical subscales; however, the factor solution may vary when examined with different samples. A confirmatory factor analysis (CFA) is needed to further evaluate scale construct validity and to establish psychometric properties of the instrument. The original six subscales will be fitted onto the data utilizing a different sample to examine the proposed theoretical model. While the PIF-RSS shows promise as a useful instrument to measure professional integration factors incorporated by institutions to promote retention, additional testing among other nursing program types and health profession programs is recommended to complete psychometric analysis.

Limitations

All accredited traditional Bachelor's in Nursing programs were surveyed to strengthen response rates with the intent to obtain adequate sample to perform CFA besides EFA to assess construct validity; however, only 201 of the 270-540 responses needed were obtained. CFA was not conducted with considerations of statistical power. Despite sampling of all nationally-accredited Bachelor's in Nursing (BS in Nursing, BSN) programs, the response rate of eligible programs (23%) and singular focus on one type of nursing program limits generalizability. The resulting professional integration factor subscales for professional events, memberships, and encouragement by friends in

class had fewer items, which may impact reliability scoring. The internal consistency coefficients showed low reliability for factor five. Additional scale items will help strengthen reliability measures.

Conclusion

The academic rigor associated with nursing school is challenging. Retention and program completion are pivotal to support and sustain a depleting nursing workforce and a new nursing generation. As academic institutions must also increase graduation rates to remain competitive within performance funding metrics, it is imperative that undergraduate student nurses be retained within their respective programs of nursing and graduate successfully. Although numerous writings describe attrition risks and challenges, few focus on proactive retention efforts to optimize student retention. Institutional strategies, guided by the professional integration factors of nursing faculty advisement and helpfulness, professional events, memberships, encouragement by friends in class, peer mentoring-tutoring, and/or enrichment programs, can positively contribute to nursing student retention and provides nursing programs an opportunity to proactively develop targeted strategies to promote student success and optimize academic persistence behaviors. This study provides preliminary evidence of the psychometric properties of the PIF-RSS instrument designed to measure implemented strategies to optimize student nurse retention. The tool may be useful to identify the most effective professional integration factors incorporated by programs of nursing to promote student retention and inform the development, implementation, and evaluation of additional strategies to promote student success. Additional studies are recommended to further examine the PIF-RSS instrument and elucidate the psychometric properties for different nursing

program types, as well as to evaluate the role of professional integration factors on student retention. The results of this study and future studies will enhance the confidence of nursing and health profession programs to implement holistic, quality proactive solutions that are effective in strengthening student retention.

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Chapter 4

Optimizing Student Retention: Measurement and Analysis of Strategies Implemented within Bachelor's in Nursing Programs

Abstract

Background/Problem: As the nursing shortage continues to rise and fewer individuals are choosing a nursing career, it is critical that nursing programs implement effective strategies to optimize student retention. While multidimensional factors influence retention, strategies that incorporate professional integration factors (PIF) may assist students in degree completion.

General Purpose: To identify strategies used within nursing programs that incorporate PIFs to optimize student retention and evaluate their degree of effectiveness.

Research Questions: This study sought to identify what strategies incorporating PIFs of nursing faculty advisement and helpfulness, professional events, professional memberships, encouragement by friends in class, peer mentoring-tutoring, and/or enrichment programs have been implemented by public and private accredited traditional Bachelor's in Nursing programs to optimize retention. Also examined were relationships of PIFs to student retention, and to what extent retention rates were explained after accounting for student demographic characteristics.

Methods: Descriptive correlational design, cross-sectional research method using Jeffreys NURS model as a conceptual framework. Nine-hundred sixteen BSN programs were sampled.

Results: A one-way ANOVA analyzed survey data. Strategies that emphasized encouragement by peers and faculty were utilized most with peer mentoring-tutoring utilized least. Retention rates were not significantly correlated to PIFs; however, narrative remarks added to the body of knowledge.

Significance: Limited information is available regarding the use of retention strategies among nursing programs and their relationship to student retention. This study contributes to the existing body of knowledge and supports additional research endeavors to strengthen student retention.

Keywords: retention strategies, student retention, undergraduate nursing education, enrichment strategies

Optimizing Student Retention: Measurement and Analysis of Strategies Implemented within Bachelor's in Nursing Programs

Academic retention continues to be a complex, heavily-studied phenomenon within North American postsecondary institutions with little improvement in the general college population over the past 30 years (Fisher & Engemann, 2009). The highest risk of dropout occurs during a student's first academic year, with an average withdraw rate of 17-20% at the conclusion of the freshmen year (Chen, 2012; Ryan, 2004) due to social and cognitive transition issues (Williams & Butler, 2010). Research suggests higher retention rates are associated with student academic and social integration within the institution (Tinto, 1990). To address retention issues, many colleges and universities offer various resource services to minimize social and cognitive transition issues (Williams & Butler, 2010) and better support academic, social, and financial needs.

During a time of economic shortfalls for academic institutions, high attrition rates can significantly impact fiscal viability as many states require achievement of performance metrics, such as graduation rates, to receive allocated budget funding (National Conference of State Legislatures, 2015). Academic institutions may encounter financial losses for students who fail to steadily progress in credit hour production and complete a degree program (Fisher & Engemann, 2009; Merkley, 2016). Further, many federal, state, and institutional financial aid programs require enforcement of retention policies for students to maintain financial assistance. Policies often stipulate maximum timeframes allowed for program completion and grade-based minimum standards of satisfactory academic progress (U.S. Department of Education Office of Federal Student Aid, 2014). For the academic institution, student retention is necessary for survival.

Student persistence and degree completion continues to be a significant concern for nursing programs. Retention rates within nursing programs have been noted to be lower than the general college population; however, little variance has been found between program types with approximately 50% of baccalaureate nursing students and 53% of associate degree nursing students completing a nursing program (Newton & Moore, 2009; Peter, 2005). Completion rates have been shown to vary by student demographic characteristics with minority nursing students experiencing significantly lower retention, ranging from 15% to 85% (Harris, Rosenberg, & O'Rourke, 2014). To make this issue more complex, there is no national benchmark to measure the outcome of nursing program completion, only benchmarks established through nursing accreditation standards and/or state board of nursing regulations.

The largest nursing accreditation body, Commission on Collegiate Nursing Education (CCNE) stipulates 70% as the minimum benchmark for baccalaureate nursing program completion. Within CCNE guidelines, each nursing program has the flexibility to specify the entry point and specific timeframe when completion rates will be measured and can determine the formula used for calculation. Programs that fall below the 70% standard can choose to exclude students from completion rate calculations for identified factors of family obligations, relocation, financial barriers, change in academic major, or institutional transfer (CCNE, 2013). Conversely, the Accreditation Commission for Education in Nursing (ACEN) allows programs of nursing to designate their own level of achievement; however, ACEN specifies a required method of calculation based upon 150% of the stated nursing program length beginning with enrollment on the first day in the first nursing course (ACEN, 2017). The National League for Nursing Commission for

Nursing Education Accreditation (CNEA) allows programs of nursing to designate their own level of achievement for program completion based on consideration of student demographics as long as a rationale is provided explaining how the benchmark was determined (CNEA, 2016). Consistent and accurate measures of nursing program retention remains a complicated issue due to institutional differences in retention rate calculations, the timeframe within the curriculum when retention rates will be measured, and delays in analysis while awaiting cohorts to complete the program. These complexities impede the ability to promptly and accurately address retention issues (Cameron, Roxburgh, Taylor, & Lauder, 2011). Unless a national standard for measurement and calculation of nursing program completion rates is established, comparison of retention rates between baccalaureate programs of nursing may be futile due to numerous possible inconsistencies.

One method to improve retention rates is the use of rigorous admission criteria to competitively admit the most academically qualified nursing students, increasing the likelihood of successful program completion. However, despite pre-admission strategies to admit high academic performers, institutions have little influence on external factors that distract students from academic success following program admission, such as personal issues, financial status, employment responsibilities, and family stressors. While institutions are challenged to provide personal and social retention resources, opportunities are available to positively influence a student's academic success through formal support of professional integration factors (PIFs), such as nursing faculty advisement and helpfulness, encouraged professional memberships and event attendance, encouragement by friends in class, peer mentoring-tutoring opportunities, and formal

enrichment programs. Such focused professional integration factor initiatives provide strategic support and may assist students to maintain satisfactory academic progress (Jeffreys, 2012).

Student persistence and degree completion is vital to many key stakeholders, including the individual student, the institution, and society. For the individual student, median earnings of young adults with a bachelor's degree is 66% higher than the median earnings of high school graduates (National Center for Education Statistics, 2014). Students who fail to complete academic degrees remain within a lowered socioeconomic standard, often with educational debt, and fail to qualify for professional nursing positions (Gajewski & Mather, 2015; Yeom, 2013). Subsequently, these individuals may doubt their ability to earn a college degree in the future (Yeom, 2013).

Poor retention rates can have serious repercussions for nursing programs, greatly impacting approval and accreditation status, reputation, and enrollment ability (Jeffreys, 1998; Trofino, 2013). A negative financial impact can result from increased educational costs due to lost tuition revenue and underutilized resources (Ascend Learning, 2012).

In the midst of a national nursing shortage, nursing program retention rates affect healthcare agencies seeking to employ more licensed nurses as attrition losses contribute to present and future nursing shortages and reduce nursing workforce demographic representativeness of the population (Mulholland, Anionwu, Atkins, Tappern, & Franks, 2008). The sustainability of the current nursing workforce remains uncertain and projected shortages are expected to severely impact the nation’s healthcare system through the year 2030 (Juraschek, Zhang, Ranganathan, & Lin, 2012; Shelton, 2012). With a growing national nursing shortage projected to result in 1.05 million registered

nurse job openings by the year 2022 (Bureau of Labor Statistics, 2012), an aging workforce nearing retirement, and fewer individuals pursuing a career in nursing (Buerhaus, Staigner, & Auerbach, 2000), nursing programs must aggressively confront issues negatively impacting student retention and design institutional strategies to optimize program completion and sustain the nursing profession.

It is imperative for nurses to possess high levels of critical thinking and clinical reasoning to ensure delivery of safe and competent care; therefore, nursing curricula must maintain rigorous standards to ensure a well-prepared nursing workforce capable of safe and competent nursing practice (Trofino, 2013). Within high-impact curricula, nursing students often struggle to manage these intense academic workloads, meet high professional standards, and may experience increased stress and anxiety. As a result, students may encounter challenges in nursing course progression and degree completion (Pulido-Martos, Augusto-Landa, & Lopez-Zafra, 2012). Just as population health goals seek to encourage individuals to proactively engage in health promotive behaviors to reduce the risk of developing chronic disease, nursing programs have an opportunity to positively influence student retention through proactive institutionally-led initiatives incorporating professional integration factors (PIFs) of nursing faculty advisement and helpfulness, professional events, professional memberships, encouragement by friends in class, peer mentoring-tutoring, and enrichment programs. Understanding the relationship of PIFs on student retention and identifying effective retention strategies is critical to nursing education. This knowledge can assist educators and nursing programs to develop targeted interventions to improve retention outcomes. While general resource services may address academic, financial, and social needs, additional formal support by the

nursing program utilizing PIFs are needed to optimize satisfactory academic progress and nursing student retention (Jeffreys, 2015).

Attrition challenges faced by students and institutions of higher learning are well reported in the literature, yet limited information is available regarding specific strategies being implemented to optimize nursing student retention within traditional bachelors in nursing programs and their degree of effectiveness. There is noted absence in the literature regarding perspectives of program administrators, as strategic program leaders, and the selection and implementation of retention strategies. A better understanding of the number and types of retention strategies being implemented by nursing programs across the nation and which strategies have been found to be most effective provides nursing programs the opportunity to evaluate and compare retention strategy effectiveness. As a result, nursing programs could confidently employ operational strategic approaches to strengthen current retention efforts and devise additional retention efforts according to ranked effectiveness for the greatest investment return. Therefore, the purpose of this study is to identify formal strategies currently used within public and private accredited traditional Bachelor's in Nursing (BS in Nursing or BSN) programs that incorporate professional integration factors of nursing faculty advisement and helpfulness, professional events, professional memberships, encouragement by friends in class, peer mentoring-tutoring, and/or enrichment programs and how these strategies affect student retention.

Theoretical Framework

Student success in a nursing program is not related to a single factor, but multiple factors. As multidimensional student factors and student social relationships with the

academic institution influence student retention, proactive targeted efforts, early recognition of at-risk students, and emphasis on persistence strengths are necessary to promote success. While many conceptual models are available to address general student attrition, few models are available specific to nursing students. The Nursing Undergraduate Retention and Success model (Jeffreys, 2012), later adapted to the Nursing Universal Retention and Success (NURS) model (Jeffreys, 2015) provides an empirically-based organizing framework to encourage comprehensive examination of multidimensional factors that promote nursing student retention while incorporating the importance of social interaction and integration within both the academic institution and the nursing profession (Jeffreys, 2015).

No conceptual model can definitively address all factors contributing to student retention issues; however, the NURS model comprehensively addresses those factors identified to most commonly influence nursing students. These include student profile characteristics, such as age, race/ethnicity, and gender; affective factors concerning self-efficacy and cultural values and beliefs; environmental factors involving finances, employment issues, and family obligations and support; psychological outcomes concerning student satisfaction and stress; academic factors such as study skills and habits, attendance, and class scheduling; and academic outcomes including course grades and grade point averages. Additional outside surrounding factors, including global events and political and economic circumstances, can influence retention beyond the academic setting and may influence students or the newly-credentialed nurse following graduation (Jeffreys, 2012; Jeffreys, 2015). Factors within the NURS model can individually, or through interaction, affect student persistence behaviors and retention in positive or

negative ways. At the center of the NURS model, and linked to all other factors encircling the model, are professional integration factors (PIFs), which include nursing faculty advisement and helpfulness, professional events, professional memberships, encouragement by friends in class, peer mentoring-tutoring, and enrichment programs. These factors are central to retention success as they often represent a crucial point in a student's decision to withdraw or persist. PIFs enhance student interactions within the institution's social system pertaining to professional socialization and career development and denote the broad influence of the academic institution to enhance student interaction, socialization, and persistence behaviors (Jeffreys, 2012). Due to multifactorial issues impacting student persistence decisions, the academic institution has limited ability to positively influence nursing student retention; however, utilizing the central component of the NURS model, nursing programs can utilize professional integration factors to devise student support services, activities, and resources to promote retention. The focus of this study is to identify formal strategies used by nursing programs that incorporate professional integration factors outlined within the NURS model to promote student retention (Jeffreys, 2015) and their degree of effectiveness.

Review of Literature

There are numerous studies highlighting student-centered factors affecting retention that include academic, social, financial, and environmental variables. Successful students report perceptions of positive family and peer support (Bowden, 2008; Cameron et al., 2011; Wray, Aspland, & Barrett, 2014) and strong career goals and academic perseverance (Fowler & Norrie, 2009; Wray et al., 2014). Conversely, students who struggle academically and dropout or consider stopout from academic programs report

negative influences of socioeconomic and financial difficulties (Wray et al., 2014) and employment hours and responsibilities (Jeffreys, 2007; Jeffreys, 2012; Peter, 2005). These students often represent non-traditional age groups (Jeffreys, 1998; Jeffreys, 2001; Jeffreys, 2007; Wray et al., 2014), minority and underrepresented populations (Diefenbeck, Michalec, & Alexander, 2016; Jeffreys, 2007), have fewer personal support structures (Wray et al., 2014), and poor quality academic support (Hoeve, Castelein, Jansen, & Roodbol, 2017; Wray et al., 2014).

Student Retention

Student retention is a complex phenomenon that is influenced by many factors, difficult to measure due to varied definitions, timeframes, and admission policies across programs of study, and challenging to compare across institutions and student populations (Cameron et al., 2011). Although much research has focused on reasons *why* students leave an academic institution, few studies evaluate factors that influence student decisions to *remain* enrolled. A study conducted by Hamshire, Willgoss, and Wibberly (2013) of 999 nursing and allied health students in England reported 47% of respondents (n = 465) had considered leaving the program, citing as primary reasons dissatisfaction with academic workload and support, clinical placement difficulties, and personal challenges. Of those respondents, 48% (n = 223) reported dissatisfaction with campus-based learning and support resources, specifically academic workload (26%), unsupportive academic staff (14%), and poor learning opportunities during clinical placement (14%). While not included in data analysis, researchers acknowledged students who had not considered leaving the institution expressed positive thoughts about their program and studies (Hamshire et al., 2013). Similarly, a study conducted by Wray et al.

(2014) found that greater than 50% of nursing students had considered voluntary withdrawal from their nursing program (n = 195), but losses were mitigated through personal support, peer and faculty support, and intrinsic desires to persist despite life challenges to attain a nursing degree. These findings are supported by an integrative literature review conducted by Cameron et al. (2011) that identified themes of personal commitment and support from the programme, peers, and family as essential to retention. There are no studies or available estimates concerning the number of baccalaureate nursing students within the United States who have considered voluntary withdrawal from a nursing program and the reasons that influence their academic persistence. This is an unknown phenomenon. As such, nursing programs will always experience a degree of student attrition; however, greater understanding of factors that promote student retention can reduce progression barriers and assist in the design of effective retention strategies.

Professional Integration Factors

The NURS model outlines professional integration factors (PIFs), which can be used as a framework for the evaluation and design of proactive retention strategies and support initiatives to enhance student connection within the institution as well as the nursing profession (Jeffreys, 2012).

Nursing faculty advisement and helpfulness. The literature strongly supports the importance of faculty helpfulness as critical to student retention within nursing programs and this factor is often reported as the most important determinant of student success. Many findings found faculty who demonstrate personal interest and caring for student well-being (Karimshah, 2013; Labrague et al., 2016); share hospitality and create a welcoming environment (Veal, Bull, & Miller, 2012); and understand rapport, positive

encouragement, and relationship building optimize student success (Fowler & Norrie, 2009; Johnson, 2014; Labrague et al., 2016; Williams, 2010). A qualitative study conducted by Bowden (2008) found 22% of respondents (n = 46) had seriously considered nursing program withdrawal on one or more occasions due to academic issues and difficulty coping with life stressors; however, faculty and staff helpfulness contributed the needed support to persist. This is consistent with Shelton's (2012) reported positive correlations of nursing student's perceived positive faculty support and program persistence ($p < .001$) compared to students who voluntarily withdrew or failed academically ($p = .353$). Jeffreys (2007) contends that students identified the factors of institutional and faculty emotional support as more important than academic and financial factors to promote retention while Diefenbeck et al. (2016) suggested interactions with faculty, either positive or negative, as the most frequently discussed factor impacting underrepresented minority student experiences. Regarding these students, reported negative experiences were related to student perceptions of culturally-incompetent faculty. Similarly, Loftin, Newman, Bond, Dumas, and Gilden (2012) identified faculty demeanor, availability, consideration of student and family needs, and appreciation of cultural values as most influential to promote minority student retention. For nontraditional associate degree nursing students, faculty who utilized principles of Adult Learning Theory and possessed personal characteristics of caring, trust, and respect positively influenced student empowerment and retention (Rudel, 2004).

Professional events. Professional events, such as attendance at nursing conferences and workshops, providing volunteer services, and participating in professional social activities promote positive reinforcement outside of the academic

setting and contribute to student integration into the nursing profession (Jeffreys, 2012). Activities encourage professional role-modeling and mentoring, foster a sense of purpose, and provide motivation to persist toward goal attainment. These behaviors are consistent with persistence behaviors studied by Astin (1984) that showed positive correlations between student participation in co-curricular and extracurricular school activities and continued academic persistence. Professional events provide an avenue for student transition into practice through networking opportunities and commitment to life-long learning (Jeffreys, 2012). Loftin et al. (2012) identified incorporation of professional socialization within curriculum, campus, and community events as an important factor among Hispanic and underrepresented nursing students to promote retention. Johnson (2014) reported 55% of student participants (n = 22) in a healthcare learning community indicated their experience supported career knowledge and opportunities, assisted to understand changes in the field, and provided an opportunity to gain experience and training. There is limited research available that supports the role of professional events to enhance student retention. Interestingly, Bond, Gray, Baxley, Cason, and Denke (2008) reported some students being unaware of the existence of professional organizations or other professional socialization opportunities and many indicated an inability to participate due to limited time availability. This highlights a significant gap in the literature and additional research is needed to further evaluate the significance of this factor in promoting student retention.

Professional memberships. Nursing student clubs and professional nursing organizational memberships promote professional integration and socialization and are an essential activity to enhance career growth and development (Jeffreys, 2012). Group

memberships positively influence well-being and are vital during periods of life transitions (Riecher & Haslam, 2006), providing a sense of belonging and connectedness. Developing a professional identity early in the nursing program increases student commitment and desire to be part of the nursing profession. A student nurse club or organization provides structure and a social outlet to promote peer connections, persistence behaviors, and development of learning communities (Williams, 2010). Wray, Barrett, Aspland, & Gardiner (2012) found students who experienced greater positive academic and social involvement with the institution and academic peers had stronger feelings to remain enrolled. The National Student Nurses Association (NSNA) provides professional development and socialization activities, educational resources, and career development and leadership opportunities (NSNA, n.d.), while professional nursing organizations, such as the American Nurses Association and International Transcultural Nursing Society, allow and encourage student memberships (Jeffreys, 2012).

Similar to professional events, there is limited research to support the role of professional memberships to enhance student retention. Extracurricular collegiate groups and committees provide positive benefits to assist with future employability, career development, and academic retention (Gerrard & Billington, 2014). As previous literature has suggested, some students were unaware that professional organizations existed, were unaware of the opportunity to participate, and reported little time available to participate in activities (Bond et al., 2008). These findings may also closely relate to the limitations encountered by students who did not participate in professional events. This significant literature gap confirms that additional research is needed.

Encouragement by friends in class. There is a wealth of literature suggesting peer encouragement is a powerful, positive force to promote academic retention. Class peers are a significant support mechanism (Jeffreys, 2007; Wray et al., 2014) and understand the academic challenges and rigor of nursing school, often better than family and friends (Cameron et al., 2011). Theories of integration (Tinto, 1990) and student involvement (Astin, 1984) posit that persistence and retention are related to student social integration and involvement in the academic institution. Developing cohesive relationships and participating in social engagements allow students to experience a stronger sense of belonging and connection to the academic environment, increasing institutional commitment and probability of program and degree completion. Nursing programs and faculty can support opportunities to establish supportive peer networks (Fisher & Engemann, 2009) and foster peer-to-peer connections and social bonds through networking and in-class group participation activities (Williams, 2010). Qualitative student comments reinforce the effectiveness of interactive, group learning activities to assist in forming class connections, student bonding, and social support (Williams, 2010). Additional research is needed to fully investigate the relationship of classroom interactive group activities, peer networks, and retention behaviors within nursing student populations.

Peer mentoring-tutoring. The literature provides many broad examples of successful peer mentoring and/or tutoring interventions to support academic learning across disciplines. While mentoring emphasizes professional integration, socialization, and relationships, tutoring is concerned with academic support and cognitive learning. When combined, peer mentoring-tutoring (PMT) assists students to achieve both social

integration and academic goals within the academic institution and nursing profession and can occur within didactic, clinical, and skills laboratory environments (Jeffreys, 2012). For example, Higgins (2004) identified attrition rates decreased nine percent within a medical-surgical nursing course (n = 26) following peer tutoring sessions while Penman and White (2006) found motivation and persistence improved for at-risk nursing students participating in mentoring relationships. A pilot program for at-risk students conducted by Robinson and Niemer (2010) recorded an overall pass rate of 92% in courses receiving PMT support while practical nursing students participating in a 2-year PMT program experienced 40% higher retention rates, improved study skills and class preparation, and reported better understanding of the nursing profession and increased confidence (Jacobs, Atack, Ng, Haghiri-Vijeh, & Dell-Elce, 2015).

Students participating within clinical and skills laboratory PMT programs reported gains of mutual support, commitment, communication and cooperation (Sims-Giddens, Helton, & Hope, 2010). Mentees involved in a clinical role-modeling activity reported reduced anxiety and improved confidence, time management, and organizational skills (Giordana & Wedin, 2010) while peer mentors reported strengthened skills currency, opportunities to network with faculty and fellow students (Dennison, 2010; Smith, Beattie, & Kyle, 2015), and improved preparation for role transition into nursing practice (Smith et al., 2015). While the literature provides many examples of PMT benefits, additional research is needed to better quantify effects of PMT in optimizing academic retention.

Enrichment programs. Enrichment programs (EP) offer numerous academic and non-academic services designed to improve learning experiences, promote retention,

maximize academic outcomes, and enhance professional socialization and development (Jeffreys, 2012; Jeffreys, 2014). Studies identified supportive academic services, such as study skills and test-taking seminars (Dapremont, 2013); pre-semester orientation workshops consisting of note-taking strategies, classroom preparation, review of course outlines (Jacobs, 2016); as well as new-student orientation (Colalillo, 2007) and transitional orientation sessions for progressing students (Williams, 2010) assisted student connections and integration within the academic program and increased understanding of program expectations and time commitments. Program newsletters and family orientation sessions assist to establish connections between students, faculty, and families and communicate important strategies and resources. These activities provide encouragement to persist in the nursing program (Williams, 2010) and enhance student-family understanding of the commitment necessary to be successful in a nursing program (Cameron et al., 2011). White Coat Ceremony opportunities are becoming popular among nursing programs as a formal reminder of the profession's commitment to caring and compassion and may further strengthen social integration into the profession and promote retention behaviors (Arnold P. Gold Foundation, n.d.). Effective EPs provide general and targeted offerings for students in key transitional academic periods, such as emphasizing peer and program connections and study skills upon program admission and professional transitions into the nursing role during the final nursing semester. Offerings can be strategically scheduled at the beginning of each semester to equip students to be academically successful, as well as ongoing throughout a program to assist students experiencing academic challenges (Jeffreys, 2012). Studies indicate EP participants are highly satisfied with the experience, are less likely to fail academic courses and/or

withdraw from nursing programs (Colalillo, 2007), and are more likely to experience higher academic success, positive psychological outcomes, and perceive greater faculty and peer support (Jeffreys, 2001; Jeffreys, 2002). Nursing programs may be implementing various enrichment activities to support retention; however, this information is unpublished and relatively unknown. Additional research is needed to determine the extent that EPs are offered within nursing programs and if these strategies have been found to be effective.

Student Profile Characteristics

Certain demographic characteristics, such as racial/ethnic background, age, and gender, increase nursing student attrition risks and represent a significant percentage of baccalaureate nursing program enrollment (National League for Nursing, 2014). A national survey of nursing schools (National League for Nursing, 2014) discovered demographic enrollment within bachelor's in nursing programs consisted of 12.8% minority students, 18% nontraditional students over the age of 30, and 15% male students. Within this demographic, minority students described factors heavily influencing academic experiences included academic and faculty support (Sutherland, Hamilton, & Goodman, 2007), faculty interactions and experiences, family-oriented social support, and encouraging the individual's determination and motivation to be a nurse (Diefenbeck et al., 2016).

Nontraditional students are reported to be older, greater than 25 years of age; experience increased attrition due to life stressors related to finances, employment, and family responsibilities (Bednarz, Schim, & Doorenbos, 2010; Jeffreys, 2007; Jeffreys, 2012); and thought to have less interaction with the academic environment because of

greater responsibilities external to the collegiate institution. Cameron et al. (2011) posited that adult students, as independent learners with stronger coping skills, may be hesitant to seek help and support, which may lead to higher rates of attrition, whereas a study conducted by Wray et al. (2012) identified older students as more likely to progress than their younger peers ($n = 695$, $p < .001$) as they possess more life skills and experience. Further, as a historically female-dominated profession, males represent 9.6% of the total registered nurse population (U.S. Census Bureau, 2013) and are less likely to complete a nursing program due to academic failure (Pryjmachuk, Easton, & Littlewood, 2009) or feelings of isolation and clinical exclusion (Stott, 2007).

While impacting attrition, it is unclear the degree of influence student profile characteristics have on student retention. Studies suggest helpful interventions for at-risk students include faculty mentorship and coaching, peer support, improving study habits, and learning test taking skills (Jeffreys, 2007; Jeffreys, 2012; Peter, 2005). Specifically for minority students, academic and faculty support (Sutherland et al., 2007), institutional diversity support, appreciation of cultural values and student families, and faculty availability are reported as beneficial and correlate highly with graduation rates (Loftin et al., 2012). These interventions for high-risk students involve PIF aspects of nursing faculty advisement and helpfulness, encouragement by friends in class, and enrichment programs; therefore, student demographic items of age, gender, and racial/ethnic background will be included within the conducted study survey.

Conceptual and Operational Definitions

Table 5 presents definitions of measured concepts. Conceptual definitions describe the variable or concept within general terms whereas operational definitions define the unique meaning and measurement method within this study (Portney & Watkins, 2015).

Research Questions

1. What support strategies incorporating professional integration factors of nursing faculty advisement and helpfulness, professional events, professional memberships, encouragement by friends in class, peer mentoring-tutoring, and/or enrichment programs have been implemented by public and private accredited traditional Bachelor's in Nursing (BS in Nursing, BSN) programs to optimize academic retention among students?
2. What is the relationship between incorporated professional integration factors of nursing faculty advisement and helpfulness, professional events, professional memberships, encouragement by friends in class, peer mentoring-tutoring, and/or enrichment programs and accredited traditional Bachelor's in Nursing (BS in Nursing, BSN) retention rates?
3. To what extent are retention rates explained after accounting for student profile characteristics of age, gender, and racial/ethnic background by strategies that incorporate professional integration factors of nursing faculty advisement and helpfulness, professional events, professional memberships, encouragement by friends in class, peer mentoring-tutoring, and/or enrichment programs?

Table 5

Conceptual and Operational Definitions

Variable	Conceptual definition	Operational definition
Nursing Program Completion/ Retention Rate	The continuous enrollment in a nursing program (part-or full-time) by taking the required courses sequentially until meeting the program's graduation requirements, possibly including courses repeated for previous withdrawal and/or failure (Jeffreys, 2012).	The percentage of the original cohort of most recent program graduates that completed the nursing program within the maximum timeframe allowed for program completion. The maximum timeframe for completion is calculated by multiplying the standard program length in semesters for normally progressing students by 1.5 (e.g. 150% of the standard program length).
Professional Integration Factors		
Nursing Faculty Advisement and Helpfulness	Active faculty involvement in student academic endeavors, career goals, and professional socialization (Jeffreys, 2012). "Advisement" occurs within formal classroom and office settings while "helpfulness" occurs within informal faculty-student encounters and settings.	Professional Integration Factors - Retention Strategies Survey (PIF-RSS): Nursing Faculty Advisement and Helpfulness subscale. The subscale is comprised of 9 items, Likert scale 0 unknown, 1 not offered, 2 strongly disagree, 3 disagree, 4 agree, and 5 strongly agree. Items examine the extent to which nursing faculty are actively involved in student academic endeavors, career goals, and professional socialization. Scores range from 0-5.
Professional Events	Consist of activities that may include nursing conferences, workshops, meetings, volunteer services, and social activities that have specific goals relevant for nursing education, practice, research, or theory that encourage professional integration, socialization, career development, and professional commitment (Jeffreys, 2012; Jeffreys 2015).	Professional Integration Factors - Retention Strategies Survey (PIF-RSS): Professional Events subscale. The subscale is comprised of 5 items, Likert scale 0 unknown, 1 not offered, 2 strongly disagree, 3 disagree, 4 agree, and 5 strongly agree. Items examine the extent to which the nursing program implements strategies to promote student opportunities for professional socialization, integration, and affiliation or participation through nursing professional events and volunteer service. Scores range from 0-5.
Professional Memberships	Nursing student affiliation or participation within nursing organizations or associations as a member prescribed by the respective bylaws (Jeffreys, 2012). Nursing organizations/associations may include the National Student Nurses Association (NSNA), the school's student nurse club (SNC), and specialty nursing organizations that permit student nurse membership.	Professional Integration Factors - Retention Strategies Survey (PIF-RSS): Professional Memberships subscale. The subscale is comprised of 6 items, Likert scale 0 unknown, 1 not offered, 2 strongly disagree, 3 disagree, 4 agree, and 5 strongly agree. Items examine the extent to which the nursing programs sponsor and/or promote student participation in professional events, conferences, workshops, social activities, and volunteer services to enhance professional socialization, networking opportunities, knowledge expansion, and professional role development. Scores range from 0-5.

Variable	Conceptual definition	Operational definition
Encouragement by Friends in Class	Consists of peers who interact positively with each other by establishing and maintaining friendships in class that are continued within the context of the college learning environment. Peers are mutually bonded in career goals, expectations, and stage of educational and professional development. (Jeffreys, 2012).	Professional Integration Factors - Retention Strategies Survey (PIF-RSS): Encouragement by Friends in Class subscale. The subscale is comprised of 4 items, Likert scale 0 unknown, 1 not offered, 2 strongly disagree, 3 disagree, 4 agree, and 5 strongly agree. Items examine the extent to which nursing faculty and/or the nursing program create opportunities and conditions to promote and support student partnerships and positive peer interactions through student-centered, interactive experiences within and outside the classroom. Scores range from 0-5.
Peer Mentoring-Tutoring	Formalized, structured collaborative partnership in learning and professional development between a peer mentor-tutor (PMT), and one or more students, described as protégé's or mentees. The aspect of tutoring provides academic support to enrich and enhance cognitive knowledge and/or psychomotor skills while mentoring activities emphasize professional integration and socialization through relationships (Jeffreys, 2012).	Professional Integration Factors - Retention Strategies Survey (PIF-RSS): Peer Mentoring-Tutoring subscale. The subscale is comprised of 11 items, Likert scale 0 unknown, 1 not offered, 2 strongly disagree, 3 disagree, 4 agree, and 5 strongly agree. Items examine the extent to which the nursing program offers a formalized and structured peer mentoring-tutoring program that augments academic support and/or psychomotor skills, and emphasizes professional integration and socialization. Scores range from 0-5.
Enrichment Programs	A formal, multiservice program providing additional services to enhance the nursing student experience. Services may include specialized orientation, newsletters, career advisement and guidance, workshops, study groups, networking, transitional support, financial stipend, and/or referral (Jeffreys, 2012).	Professional Integration Factors - Retention Strategies Survey (PIF-RSS): Enrichment Programs subscale. The subscale is comprised of 12 items, Likert scale 0 unknown, 1 not offered, 2 strongly disagree, 3 disagree, 4 agree, and 5 strongly agree. Items examine the extent to which the nursing program offers multiservice formal enrichment programs that are designed to enrich the total nursing student experience. Scores range from 0-5.
Student Profile Characteristics		
Race/Ethnicity	Denoting or relating to the division of the human species into races on grounds of physical characteristics ("Racial", 2018, para 1). A social group that shares a common and distinctive culture, religion, or language ("Ethnicity", 2018, para 1).	Professional Integration Factors - Retention Strategies Survey (PIF-RSS): Student Demographics question categorized as nominal variable classifications: American Indian/Alaska Native, Asian, Black/African American, Caucasian/White, Hispanic/Latino, Other, and Unknown/Missing.
Age	The length of time during which a being or thing has existed; length of life or existence to the time spoken of or referred to ("Age", 2018, para 1).	Professional Integration Factors - Retention Strategies Survey (PIF-RSS): Student Demographics question categorized as ordinal range: 18-24 year olds, 25-54 year olds, and 55+ year olds.

Variable	Conceptual definition	Operational definition
Gender	Either the male or female division of a species, especially as differentiated by social and cultural roles and behavior ("Gender", 2018, para 1).	Professional Integration Factors - Retention Strategies Survey (PIF-RSS): Student Demographics question categorized as dichotomous variable: male or female.

Research Design

This study utilized a descriptive correlational approach using a cross-sectional research method to answer the research questions. Participants will be queried only once and data generated will assist to expand the depth of research that identifies comprehensive strategies being implemented by nursing programs to optimize student retention.

Methods

Sample and Setting

The population of interest was deans, directors, and program coordinators of public and private accredited traditional Bachelor's in Nursing (BS in Nursing, BSN) programs in the United States. Accredited programs are peer-reviewed for education quality standards, evaluate adequacy of preparation to enter the professional field, and are more likely to provide support services to promote student success (Association of Specialized and Professional Accreditors, 2016). To strengthen response rates for research question analysis, all 916 public and private accredited traditional Bachelor's in Nursing (BS in Nursing, BSN) programs within the United States were surveyed. Specifically, 160 programs accredited by ACEN, 701 programs accredited by CCNE, and one program accredited by CNEA. This method was representative of the target population, increased confidence in sample validity, and eliminated differences that could

be experienced between target and accessible populations (Portney & Watkins, 2015). The descriptive correlational research design sought to identify relationships between institutional strategies that incorporate the six professional integration factors, student profile characteristics, and student retention. An *a priori* power analysis was conducted in G*Power (Faul, Erdfelder, Lang & Buchner, 2007) for a multiple regression model with nine predictors using a medium effect size, power of .80 to reduce probability of a type II error, and an alpha of .05 to reduce probability of a type I error (Polit & Beck, 2017; Portney & Watkins, 2015). The results suggested a minimum required sample size of n = 114 to answer the research questions.

Human Subjects Protection

Ethical approval through the Institutional Review Board (IRB) of the University of Texas at Tyler was obtained prior to survey distribution and data collection (Appendix A). Respondents acknowledged consent to participate in the research study by voluntarily completing an online survey questionnaire. Respondent autonomy and self-determination was protected through anonymous, voluntary participation in the survey process. The risks of survey completion were negligible; however, benefits of participation included greater awareness and consideration by survey respondents of proactive strategies their nursing program(s) could incorporate to promote student retention. No control or experimental groups were utilized in this study design and respondents were selected from public and private accredited traditional Bachelor's in Nursing (BS in Nursing, BSN) program deans, directors, or program coordinators to ensure equity in the research process (Portney & Watkins, 2015). Ethical considerations to ensure protection of human subjects included participant acknowledgement of informed consent prior to survey

completion. The consent (Appendix B) was written in language and readability levels understandable to participants and included the following requirements: study purpose; duration of participation; potential risks and benefits; procedure for maintaining participant confidentiality; data collection methods; contact information for the principle investigator and IRB; and that survey completion was voluntary (Office of Human Research Protections, 2009).

Instruments

The Professional Integration Factors-Retention Strategies Survey (PIF-RSS) was developed to measure institutional strategies implemented by nursing programs that incorporate professional integration factors of nursing faculty advisement and helpfulness, professional events, professional memberships, encouragement by friends in class, peer mentoring-tutoring, and/or enrichment programs to optimize student retention. Survey items were developed through a literature review utilizing the NURS model (Jeffreys, 2015) as a conceptual framework and designed with Likert-scale items: *0 unknown, 1 not offered, 2 strongly disagree, 3 disagree, 4 agree, and 5 strongly agree* (Appendix C). Section one includes 54 survey items measuring the extent to which nursing faculty or the nursing program are implementing a list of strategies for each of the professional integration factor subscale variables. A narrative section is provided following each subscale for respondents to share additional information felt to be beneficial to student retention within the given category. The second section, consisting of three items, provides respondents a narrative option to comment which retention strategies implemented by their nursing program have been most beneficial to promote retention, which strategies described within the survey will be implemented within the

next 12 months, and which strategies not included or described in the survey would be recommended to promote student retention. The final section, consisting of 10 items, includes the program's last reported program completion/retention rate and additional program demographics, such as academic institution public or private designation, location of program, nursing program accreditation, number of cohorts admitted annually, and current student population. Student demographic data includes information regarding current student enrollment stratified by age, gender, and racial/ethnic group. The instrument underwent initial psychometric analysis in conjunction with the research study and is discussed in chapter three of this manuscript. Cronbach's α estimates for the overall scale during psychometric analysis utilizing a sample size of $n = 201$ was 0.90. Cronbach's α greater than .70 are satisfactory measurements of internal consistency; however, values greater than .80 are desired for new scales (Field, 2013).

Data Collection

Psychometric testing of the PIF-RSS instrument was conducted in conjunction with the research study. Participants were recruited during the fall 2017 academic semester via email invitation utilizing contact information obtained from online published lists of accredited nursing programs. Sampling occurred between the months of October - December 2017. Initial email invitations with an online survey link and required information regarding study participation was distributed to all eligible programs. Inclusion criteria included deans, directors, or program coordinators of public and private accredited traditional Bachelor's in Nursing (BS in Nursing, BSN) programs within the United States. Participants were able to read English language and willing to complete an online survey. Exclusion criteria included practical, diploma, associate degree, and

accelerated/second-degree Bachelor's in Nursing programs, non-accredited programs, participants unable to read English language, nursing programs located outside of the United States, or individuals unwilling to complete the survey. The survey remained open for six weeks and participants were emailed weekly by the principle investigator to prompt survey completion. Data was recorded within Qualtrics software and downloaded into a Statistical Package for the Social Sciences (SPSS) Version 23.0 data file for data storage, tabulation, and the generation of statistical analysis.

Analysis

In accordance with best research practices to maintain confidentiality, all research-related data were maintained within a password-protected database with access limited to the researcher, dissertation co-chairs, and statistician. Specific details of psychometric analysis for the PIF-RSS instrument is described in chapter three of this manuscript.

Procedures to Enhance Control

Survey data were screened for missing values, outliers, and normality. Of the initial 916 programs surveyed, 54 programs were later identified to be non-traditional, such as RN-BSN completion options, and removed from analysis, leaving 862 eligible programs. Of 270 responses received, 69 cases were excluded for inability to verify consent to participate or incomplete responses and 32 additional cases deleted for missing program completion rate data, leaving 169 valid cases. All 169 cases provided complete data regarding the six independent variable scales; however, several study participants did not provide data for student profile characteristic variables of gender, age, and

race/ethnicity. Therefore, the number of missing scores were reported along with all valid data.

Assumption testing of the dependent variable, program retention rates, was significantly non-normally distributed, skew (-.363) and kurtosis (10.671). Visualization of the histogram revealed a leptokurtic-distribution overly clustered around the mean value (Figure 2). Greater than 40% of responses indicated a program completion rate between 91-100%, with 90% of responses reporting a program completion rate greater than 70%. The Kolmogorov-Smirnov test was also found to be statistically significant, $p < .05$, confirming non-normality of the distribution. Group categories were created to further analyze the data due to non-normality: 91%-100%, 70%-90%, and 69% and below. Groupings were selected based upon the distribution aligning into three distinct categories. The largest nursing accrediting agency identifies 70% as the minimum program completion rate benchmark (CCNE, 2013), which aligns with 90% of responses reporting retention rates of 70% or higher. To capture high-performing programs, the high-grouping category of 91-100% was established. The final category, below 69%, sought to identify programs performing below benchmark.

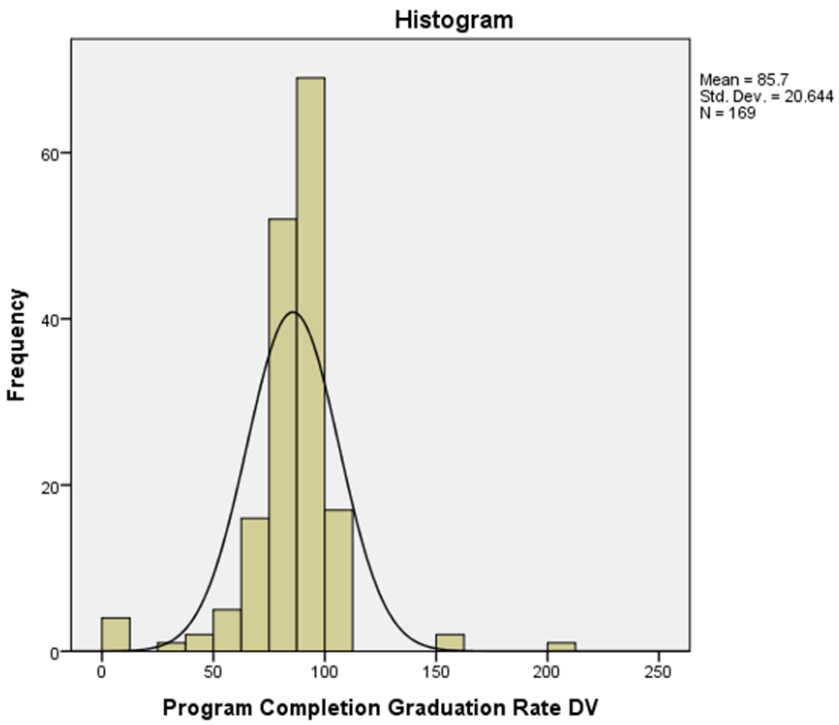

Figure 2. Distribution of Program Retention Rate Scores.

As the dependent variable, program completion rates, was identified to be non-normally distributed, an additional power analysis for One-Way ANOVA was calculated utilizing G*power software, medium effect size (Cohen's $f^2 = .25$), three groups, with power .80 and alpha set at .05. The results suggested a minimum required sample size of $n = 159$. Therefore, the current sample of 169 study participants can be assumed to achieve the expected power.

Results

Descriptive Statistics

Table 6 presents a descriptive analysis of categorical study variables. Student demographics showed a majority of female students (85.12%) between 18-24 years of age (69.40) identifying race or ethnic background as White/Caucasian (74.39%). Data indicated that the typical program reported a governing institution designation of public

(*n* = 75, 44.4%) or private (*n* = 85, 50.3%). The majority of respondents reported nursing accreditation body designation of CCNE (*n* = 137, 82.0%), with continuing accreditation status (*n* = 148, *SD* = 88.1), and admission of one cohort to the program annually (*n* = 96, 58.2%). Regarding program retention rates, 40.8% (*n* = 69) of the sample reported a range of 91%-100% retention, while 49.1% (*n* = 83) reported 70%-90% retention, and 10.1% (*n* = 17) reported retention rates 69% and below.

Table 6

Descriptive Analysis of Categorical Study Variables

Variable	*N*	%
Gender (Missing n = 27)		
Male		14.88
Female		85.12
Race/Ethnicity (*Missing = 99)*		
White/Caucasian		74.39
Non-White/Caucasian		25.61
Age (*Missing = 95*)		
18–24 years		69.40
Over 24 years		30.60
Private	85	50.4
Nonprofit	8	4.7
Proprietary	1	0.6
Nursing Accreditation Body		
ACEN	29	17.4
CCNE	137	82
CNEA	1	0.6
Missing	2	
Nursing Accreditation Status		
Initial Accreditation	18	10.7
Continuing Accreditation	148	88.1
Continuing Accreditation with Conditions	2	1.2
Missing	1	
Number of Cohorts Admitted Each Year		
1	96	58.2
2	56	33.9
3	8	4.8
4 or more	5	3.0
Missing	4	
Program Retention Rate		
91%–100%	69	40.8
70%–90%	83	49.1
69% and below	17	10.1

Table 7 presents a frequency analysis of retention strategies implemented by Bachelor's in Nursing programs according to professional integration factor subscales. Data indicated that 83% of faculty integrated culturally-congruent student advisement strategies with 70.4% of responding programs completing professional development activities to strengthen advising effectiveness. Of respondents, over 88% maintained mentoring faculty-student relationships while 96% reported the referral of students to appropriate supportive services when needed. Within professional event and membership activities, 64% of respondents required student professional event attendance within one or more nursing courses. Healthcare-related volunteer hours were required within 60% of programs. School-sponsored professional events were open to students within 82% of programs with 72% reducing or waving registration fees. National student organization chapters were offered within 77% of programs with 23% mandating student membership and 81% encouraging students to assume leadership positions.

Respondents reported interactive group learning activities were incorporated within classroom (99%) and out-of-classroom (95%) settings. Formal peer mentoring-tutoring (PMT) programs were available within 58% of responding programs with 34% of students receiving payment for providing PMT services. Of these programs, 33% offered PMT services within simulation and skills laboratory settings. Only 14% of PMT programs reported receiving grant funding with 15% submitting grant funding proposals. A PMT program director was available within 49% of programs. One or more enrichment programming services was offered within 75% of responding programs, yet only 23% conducted a needs assessment to ascertain student needs or requests. Offered academic services included study skills (50%) and test preparation (56%) workshops.

Table 7

Frequency Analysis of Retention Strategies – 47 items (n = 169)

Variable	Unknown (0) *N* (%)	Not Offered (1) *N* (%)	Strongly Disagree (2) *N* (%)	Disagree (3) *N* (%)	Agree (4) *N* (%)	Strongly Agree (5) *N* (%)
Faculty Advisement and Helpfulness Subscale						
Q1: Cultural Congruent Strategies	10 (5.9)	8 (4.7)	0	11 (6.5)	99 (56.6)	41 (24.3)
Q2: Prof Dev to Strengthen Advising	3 (1.8)	20 (11.8)	2 (1.2)	25 (14.8)	85 (50.3)	34 (20.1)
Q3: Prof Boundaries	1 (0.6)	1 (0.6)	0	2 (1.2)	67 (39.6)	98 (58)
Q4: Flexible Office Hours	1 (0.6)	1 (0.6)	0	7 (4.1)	69 (40.8)	91 (53.8)
Q6: Mentor Students	4 (2.4)	5 (3.0)	0	11 (6.5)	84 (49.7)	65 (38.5)
Q7: Encourage Students to Succeed	1 (0.6)	0	0	0	57 (33.7)	110 (65.1)
Q8: Listens to Students	0	0	1 (0.6)	1 (0.6)	54 (32)	113 (66.9)
Q9: Refer Students to Support Services	1 (0.6)	1 (0.6)	0	4 (2.4)	48 (28.4)	115 (68)
Q10: Assists in Ed and Career Goals	4 (2.4)	0	0	6 (3.6)	77 (45.6)	82 (48.5)
Professional Events Subscale						
Q11: Student Attendance Required	2 (1.2)	31 (18.3)	3 (1.8)	25 (14.8)	60 (35.5)	48 (28.4)
Q12: Student Volunteer Service	1 (0.6)	32 (18.9)	4 (2.4)	30 (17.8)	45 (26.6)	57 (33.7)
Q13: Student Presentations	1 (0.6)	17 (10.7)	2 (1.2)	14 (8.3)	65 (38.5)	70 (41.4)
Q14: Nursing Program Events Available to Students	2 (1.2)	21 (12.4)	1 (0.6)	7 (4.1)	70 (41.4)	68 (40.2)
Q15: Student Fees Waived or Reduced for School Events	10 (5.9)	29 (17.2)	0	8 (4.7)	55 (32.5)	67 (39.6)

Variable	Unknown (0) *N* (%)	Not Offered (1) *N* (%)	Strongly Disagree (2) *N* (%)	Disagree (3) *N* (%)	Agree (4) *N* (%)	Strongly Agree (5) *N* (%)
Professional Memberships Subscale						
Q17: Nursing Program Sponsors NSNA Chapter	1 (0.6)	26 (15.4)	0	12 (7.1)	40 (23.7)	90 (53.3)
Q18: Nursing Program Sponsors SNC	0	37 (21.9)	1 (0.6)	12 (7.1)	38 (22.5)	81 (47.9)
Q19: Mandatory Club Membership	2 (1.2)	19 (11.2)	36 (21.3)	73 (43.2)	9 (5.3)	30 (17.8)
Q21: Discounted Memberships Available for Student Clubs	16 (9.5)	32 (18.9)	4 (2.4)	23 (13.6)	64 (37.9)	30 (17.8)
Q22: SNC Meetings Scheduled in Advance	3 (1.8)	8 (4.7)	1 (0.6)	10 (5.9)	77 (45.6)	70 (41.4)
Q23: Student Leadership in Clubs	5 (3.0)	10 (5.9)	4 (2.4)	13 (7.7)	79 (46.7)	58 (34.3)
Encouragement by Friends in Class Subscale						
Q24: Classroom Group Learning Activities	2 (1.2)	0	0	0	0	167 (98.8)
Q25: Out of Class Group Learning Activities	4 (2.4)	1 (0.6)	0	4 (2.4)	0	160 (94.7)
Q26: Faculty Collaborate to Develop Student Networking	3 (1.8)	4 (2.4)	0	9 (5.3)	0	153 (90.5)
Q27: Faculty Prof Dev to Promote Student Networking	11 (6.5)	9 (5.3)	0	21 (12.4)	0	128 (75.7)
Peer Mentoring-Tutoring Subscale						
Q31: Formal PMT Program	0	51 (30.2)	1 (0.6)	19 (11.2)	51 (30.2)	47 (27.8)
Q32: PMTs Paid	3 (1.8)	66 (39.1)	10 (5.9)	33 (19.5)	31 (18.3)	26 (15.4)
Q33: PMT Program Grant Funded	10 (5.9)	78 (46.2)	19 (11.2)	38 (22.5)	14 (8.3)	10 (5.9)
Q34: Grant Proposal Submitted	10 (5.9)	69 (40.8)	21 (12.4)	44 (26.0)	14 (8.3)	11 (6.5)
Q35: PMTs Oriented	6 (3.5)	56 (33.1)	7 (4.1)	19 (11.2)	53 (31.4)	28 (16.6)
Q36: PMT Program Director	0	55 (32.5)	10 (5.9)	22 (13.0)	50 (29.6)	32 (18.9)

Variable	Unknown (0) *N* (%)	Not Offered (1) *N* (%)	Strongly Disagree (2) *N* (%)	Disagree (3) *N* (%)	Agree (4) *N* (%)	Strongly Agree (5) *N* (%)
Q37: PMT Routine Mtgs with Director	8 (4.7)	57 (33.7)	7 (4.1)	26 (15.4)	48 (28.4)	23 (13.6)
Q38: PMTs in Sim and Skills Lab	3 (1.8)	66 (39.1)	11 (6.5)	33 (19.5)	36 (21.3)	20 (11.8)
Q39: Big Brother/Sister Mentor	3 (1.8)	67 (39.6)	12 (7.1)	29 (17.2)	39 (23.1)	19 (11.2)
Q40: PMT Weekly Study Groups	7 (4.1)	75 (44.4)	14 (8.3)	35 (20.7)	24 (14.2)	14 (8.3)
Q41: PMT Individual Sessions	7 (4.1)	60 (35.5)	8 (4.7)	22 (13.0)	47 (27.8)	25 (14.8)
Enrichment Programming Subscale						
Q42: One or More Services Available	2 (1.2)	30 (17.8)	1 (0.6)	10 (5.9)	82 (48.5)	44 (26.0)
Q43: Conducts Needs Assessment Each Semester	4 (2.4)	64 (37.9)	11 (6.5)	52 (30.8)	26 (15.4)	12 (7.1)
Q44: Study Skills Workshop	4 (2.4)	50 (29.6)	5 (3.0)	26 (15.4)	44 (26.0)	40 (23.7)
Q45: Test Prep Workshop	4 (2.4)	41 (24.3)	4 (2.4)	26 (15.4)	59 (34.9)	35 (20.7)
Q46: Resume Workshop	4 (2.4)	14 (8.3)	0	10 (5.9)	80 (47.3)	61 (36.1)
Q47: Career Workshop	5 (3.0)	32 (18.9)	3 (1.8)	23 (13.6)	63 (37.3)	43 (25.4)
Q48: Financial Aid Workshop	16 (9.5)	60 (35.5)	2 (1.2)	31 (18.3)	37 (21.9)	23 (13.6)
Q50: Sim and Skills Lab Tours	4 (2.4)	23 (13.6)	4 (2.4)	8 (4.7)	70 (41.4)	60 (35.5)
Q51: Family Orientation Offered	2 (1.2)	57 (33.7)	8 (4.7)	33 (19.5)	40 (23.7)	29 (17.2)
Q52: Transitional Workshops Offered	5 (3.0)	65 (37.3)	8 (4.7)	41 (24.3)	35 (20.7)	17 (10.1)
Q53: EP Evaluation Each Semester	7 (4.1)	47 (27.8)	10 (5.9)	37 (21.9)	47 (27.8)	21 (12.4)
Q54: Newsletter	3 (1.8)	67 (39.6)	9 (5.3)	45 (26.6)	29 (17.2)	16 (9.5)

Research Questions

1. **PIFs Implemented by Nursing Programs:** As outlined in Table 7, responding nursing programs are implementing a variety of retention strategies aligned with professional integration factors, especially related to faculty advising, mentoring, and group learning activities. One-third of respondents do not offer a formal peer mentoring-tutoring (PMT) program while 40% of programs sponsoring PMT services do not extend PMT offerings within simulation and skills laboratory settings. New students are assigned an upper-class peer mentor within only 34% of programs. In addition to academic workshops, career workshops are available to students within 63% of responding programs with 31% of programs sponsoring transitional workshops for students progressing to the next semester of the nursing curriculum. To facilitate program connections, 77% of programs incorporate simulation/skills laboratory tours for new students. However, only 41% of programs include friends and family within orientation activities and approximately 27% sponsor a program newsletter.

Table 8 shows the average nursing program reports Mean scores of faculty advisement and helpfulness 4.31/5.00 (*SD* = .49); professional events 3.71/5.00 (*SD* = .97); professional memberships 3.65/5.00 (*SD* = .78); encouragement by friends in class 4.67/5.00 (*SD* = .63); peer mentoring-tutoring 2.58/5.00 (*SD* = 1.15); and enrichment programming 3.04/5.00 (*SD* = .88). Respondents heavily utilized encouragement by friends in class strategies with confirmation that faculty advisement and helpfulness strategies were also being employed. Programs reported low utilization of professional event, memberships, and enrichment programming. Peer mentoring-tutoring was implemented less than all other strategies.

Table 8

Descriptive Analysis of Continuous Study Variables (n = 169)

Subscale	Mean(*SD*)	Range	Skew (SE)	Kurtosis (SE)
Faculty Advisement/Helpfulness	4.31 (.49)	2.78–5.00	-.66 (.19)	.32 (.37)
Professional Events	3.71 (.97)	1.00–5.00	-.87 (.19)	.30 (.37)
Professional Memberships	3.63 (.78)	1.50–5.00	-.48 (.19)	-.18 (.37)
Enc. by Friends in Class	4.67 (.63)	2.00–5.00	-2.17 (.19)	4.46 (.37)
Peer Mentoring-Tutoring	2.58 (1.15)	.82–5.00	-.11 (.19)	-1.20 (.37)
Enrichment Programs	3.04 (.88)	.67–5.00	-.23 (.19)	-.17 (.37)

* $n = 162$

2. **PIF Relationships to Program Retention:** Table 9 presents a one-way ANOVA analysis examining mean scores of the independent variables by program retention rates. Analysis indicated that mean scores for the independent variables did not differ at a statistically significant level by categories of retention rates for the faculty advisement and helpfulness subscale, $F(2, 166) = .03$, $p = .97$; the professional events subscale, $F(2, 166) = .34$, $p = .71$; the professional membership subscale, $F(2, 166) = .13$, $p = .88$; the encouragement by friends in class subscale, $F(2, 166) = 1.82$, $p = .17$; the peer mentoring-tutoring subscale, $F(2, 166) = .54$, $p = .58$; or the enrichment programs subscale, $F(2, 166) = .50$, $p = .61$. Table 10 further examines the relationship between retention rates, measured as a continuous variable, with independent professional integration factor variables utilizing Pearson's r correlation. Retention rates were not significantly correlated with the faculty subscale, r(167) =.00, *p*=.96; professional events subscale, r(167) = -.07, p=.34; the membership subscale, r(167) =.07, p=.38; encouragement by friends in class subscale, r(167) =.09, p=.27; PMT subscale, r(167) =.07, p=.35; EP subscale, r(167) = -.05, p=.51; or the total scale, r(167) =.02, p=.76.

Table 9

One-Way ANOVA Analysis Examining Mean Level Scores of Independent and Covariate Variables by Program Retention Rates (n = 169)

Variable	*n*	M(*SD*)	*F*(*df*)	*p*
Faculty Advisement and Helpfulness Subscale			.03 (2, 166)	.97
91–100	69	4.32 (.56)		
70–90	83	4.30 (.43)		
69 and below	17	4.33 (.46)		
Professional Events Subscale			.34 (2, 166)	.71
91–100	69	3.63 (1.03)		
70–90	83	3.75 (.93)		
69 and below	17	3.80 (.91)		
Professional Memberships Subscale			.13 (2, 166)	.88
91–100	69	3.66 (.75)		
70–90	83	3.61 (.79)		
69 and below	17	3.57 (.84)		
Encouragement by Friends in Class Subscale			1.82 (2, 166)	.17
91–100	69	4.78 (.48)		
70–90	83	4.60 (.72)		
69 and below	17	4.57 (.68)		
Peer Mentoring-Tutoring Subscale			.54 (2, 166)	.58
91–100	69	2.69 (1.21)		
70–90	83	2.50 (1.03)		
69 and below	17	2.57 (1.43)		
Enrichment Programs Subscale			.50 (2, 166)	.61
91–100	69	3.12 (.82)		
70–90	83	2.97 (.89)		
69 and below	17	3.01 (1.03)		
Gender: Percent Male (n = 142 programs reporting)			.66 (2, 139)	.52
91–100	65	15.78%		
70–90	64	14.76%		
69 and below	13	10.96%		

Variable	*n*	M(*SD*)	*F*(*df*)	*p*
Age: Percent Between ages 18-24 (n = 74 programs reporting)			.39 (2, 71)	.68
91–100	34	66.39%		
70–90	32	72.03%		
69 and below	8	71.69%		
Race: Percent White/Caucasian (n = 77 programs reporting)			2.91 (2, 74)	.06
91–100	30	68.20%		
70–90	39	78.42%		
69 and below	8	77.94%		

As the retention variable was non-normally distributed, correlations using the non-parametric Spearman's rho test were conducted. All correlations were in agreement with ANOVA findings, showing no significant relationship between retention rates and PIF variables.

Narrative responses: Faculty advisement and helpfulness. Respondent narrative comments provided additional information valuable in understanding successful retention efforts. Strategies implemented for faculty advisement and helpfulness can be stratified into two main categories: advising and classroom support. The majority of respondents reported nursing faculty provide academic advisement for nursing students with a few programs reporting non-nursing faculty advisement. Of interest, respondents reported nursing faculty were proactive in initiating contact with the student, such as use of intrusive advising techniques, and many programs provided a faculty advising checklist for consistency. Faculty sessions with students were deliberate, intentional, and included mentoring support. For programs that did not employ designated retention coordinators, faculty assumed the role to mentor academically at-risk students. While establishing relationships were stressed in narrative responses, clear boundaries and communicated expectations were also clearly enforced.

Table 10

Pearson's r Correlation between Retention Rates and Independent Variables (n = 169)

Variable	1	2	3	4	5	6	7	8
1. Retention rates	—	.00	-.07	.07	.09	-.05	.07	.02
2. Faculty subscale		—	.37**	.09	.28**	.27**	.30**	.51**
3. Professional events subscale			—	.21**	.34**	.34**	.39**	.71**
4. PMT subscale				—	.07	.43**	.21**	.63**
5. Encouragement by FIC subscale					—	.31**	.30**	.55**
6. Enrichment programming subscale						—	.30**	.72**
7. Membership subscale							—	.64**
8. Total scale (all 6 subscales combined)								—

**$p < .01$.

Some programs required faculty/student one-to-one meetings as a course requirement for struggling students.

Narrative responses: Professional events and memberships. Professional event activities were inconsistent among respondents, offered by a few schools, and usually connected to the local Sigma Theta Tau Chapter or sponsored by a nearby healthcare partner. Volunteer activities were not mandated by a majority of respondents; however, extracurricular opportunities were available through the local Student Nurse Association, health fairs, and/or mission trips. Of note, several programs required advocacy hours, such as attendance at a Nurse's Day at the Capital event.

Professional membership narratives reported strong associations with the NSNA, Sigma Theta Tau International, as well as other organizations including the National Black Nurses Association, honor societies, and several faith-based nursing organizations. Several programs sponsored NSNA chapter leaders to attend state association meetings.

A few programs reported pre-nursing students were given opportunities to join student nurse organizations and clubs prior to official enrollment in the nursing program to foster early program connections.

Narrative responses: Encouragement by friends in class. In review of responses, it was noted that several encouragement by friends in class strategies to facilitate peer/program connections overlapped with membership and PMT strategies that also facilitated connections. However, respondents acknowledged social events, either sponsored by the nursing program or the local nursing student chapter (NSNA or SNC), occurred at least once per semester. Two programs utilized skills laboratory and simulation activities to promote peer connections while another program designed student well-being activities each semester, such as yoga or hand massages, to promote program connections and to therapeutically address student anxiety and stress. In many cases, the student nurse club or NSNA chapter assumed responsibility for planning social activities. One program incorporated a White Coat Ceremony into program activities.

Narrative responses: Peer mentoring-tutoring. There was mixed adoption and perceptions of success for PMT programs among respondents. Few programs reported adopting a formal, nursing program-led initiative. Most programs that offered tutoring options reported University-centralized tutoring programs for most academic courses, including nursing. For nursing program sponsored PMT initiatives, PMT funds were allocated through the department's budget, secured grants, or a University success center. Many respondents reported previous unsuccessful PMT ventures that had been suspended due to poor outcomes and organization. While several programs reported informal peer connections and study groups, others were attempting to initiate a formalized PMT plan

or have identified the need to initiate PMT activity. One program reported successful experiences of a nursing workforce mentoring opportunity through a social media platform coordinated by the University/Alumni Association. Barriers to implementing PMT programs were widely reported, including disinterested students viewed as desiring to only participate in required course activities or fears of potential board of nursing violations if students were considered to be "teaching" in the skills laboratory.

Narrative responses: Enrichment programming. Enrichment program activities were incorporated within a few nursing programs, but reported as closely tied to the admission cycle. Among responses, career development workshops and activities were generally centralized to University/College Career Centers. Many programs utilized various techniques, such as social media, blogs, and newsletters to communicate program information, with oversight provided by either the nursing program or local SNC/Sigma Theta Tau chapter.

Narrative responses: Retention strategies most beneficial. Narrative feedback for strategies identified to be most beneficial heavily identified faculty-student connections through advising, mentoring, or supportive encouragement as the most effective to retain students. Additional recommendations included academic support initiatives and workshops, such as test-taking, tutoring, and time management skills. Peer connections and mentoring were also highly suggested as well as early communication and connections through orientation programming. Respondents discussed the importance of academic admission standards to ensure admission of the most qualified students, as well as early recognition of at-risk students for early intervention.

Narrative responses: Retention strategies planned to implement. Nursing programs planned to implement several proposed strategies over the course of 12 months, particularly peer mentoring, more formalized PMT programs, and newsletter communications. Other notable mentions included enrichment programming, specifically transitional workshops and testing-taking strategies, as well as peer connections modeled after a Big Brother/Big Sister design. Several programs acknowledged the need to conduct a needs assessment to determine priorities while others were satisfied with current strategies being implemented with no plans to add additional activities. Finances were reported as a concern with respondents planning to seek grant funding to support retention initiatives.

Narrative responses: Retention strategies not described. Finally, respondents provided additional feedback of strategies not described that would be recommended to optimize student retention. Fewer suggestions were offered; however, monthly luncheons with the Dean and greater scrutiny of admission criteria and applicant screening were suggested. Early connections through pre-nursing faculty engagement activities prior to program admission, early introductions into the nursing profession, and emphasis of professional character were also proposed to promote early socialization. Suggested nursing program initiatives included early clinical experiences, expanded evening skills laboratory hours, and design of welcoming study spaces on campus. Opportunities for undergraduate research, with or without faculty, as well as study abroad opportunities were also mentioned. Finally, graduate transition workshops were recommended as well as nursing summer intensives to “jump start” newly-admitted students into the rigors of the program.

3. Retention Relationship to Student Profile Characteristics: The student demographic variable of race/ethnicity was problematic to analyze all categories; therefore, the data were stratified into two groupings, White/Caucasian and non-White/Caucasian identity. Data indicated that the average program (Table 2) reported attendees as mostly female (85.12%), of White/Caucasian racial identity (74.39%), between 18-24 years of age (69.40%), with a program enrollment of 206.48 (*SD* = 169.40). Similar to relationships of PIFs to retention, categories of retention rates did not demonstrate statistically significant differences by the percentages of males, $F(2, 139) = .66$, $p = .52$; students between the ages of 18-24, $F(2, 71) = .39$, $p = .68$; or percentage of students reporting a White/Caucasian racial identity, $F(2, 74) = 2.91$, $p = .06$ (Table 8).

Discussion

PIFs Implemented by Nursing Programs

Frequency and mean scores denote the broad application of strategies to promote connections and relationships, either through encouragement by friends in class or faculty advisement and helpfulness. Programmatic strategies to promote connections include group learning and participation activities, which are widely recognized as a best teaching/learning practice for student engagement, particularly for the millennial generation (Harris et al., 2014). These activities are not cost-prohibitive and can easily be incorporated into the daily lecture routine. Classroom lectures, which are often passive learning experiences, should be minimized in deference to active discussion and engagement opportunities, such as case studies and narratives, to allow students to share and learn from each other's experiences. Encouraging peer-to-peer discussion prompts

critical thinking, provides an avenue for students to be actively involved in the learning process, and extends connections between all learners in the classroom environment, including those outside of the normal peer group. Various modes of communication, such as newsletters, open forums, and student organizations can create opportunities for peers to connect and establish informal social support groups (Williams, 2010).

Faculty connections are critical to provide psychological support within a learner-friendly atmosphere (McLaughlin, 2008). Students, as consumers, value faculty who are approachable, show respect for students and colleagues, are aware of cultural influences, and are genuinely interested in the student's progress. This is a basic tenet of customer service and personal relationships. Faculty possess role-authority within the faculty-student relationship and must cautiously balance professional boundaries with student perceptions of being unapproachable or uncaring. Student decisions to dropout or persist are often grounded in faculty behaviors, student relationships (Shelton, 2012), and the ability to personally connect. In a profession founded in caring behaviors that are culturally sensitive, it is imperative that nursing faculty role-model compassion, concern, and establish a trusting relationship with students to create a welcoming learning environment within the nursing program.

Review of frequency and mean scores for professional events, memberships, and enrichment programming show less utilization of these resources compared with those facilitating faculty-student connections. Such activities are often extra-curricular and may be challenging to attract student attendance due to external conflicts (Bond et al., 2008) or lack of established socialization within the nursing program. Narrative survey comments reported students who were engaged in event and membership activities were

frequently active in a student nurse club, NSNA, or Sigma Theta Tau chapter. Nursing programs must critically analyze available resources and opportunities for institutional and professional socialization. Formal organizations provide much needed structure and assist to unite a student group around a common purpose. Incidental findings of survey narratives show respondents often perceived students as disengaged and non-participative in activities. This is consistent with findings by Bond et al. (2008), who identified students were unaware of the availability of organizations, but commented their schedules did not support attendance. While 87% of responding programs schedule student nurse club meetings in advance, the survey did not specify if attendance was adequate; therefore, this information remains unexplored. Before scheduling events – nursing programs should query the student body for topics of interest and actively engage them in the process. Soliciting events that are of most interest to students and scheduling during times of student convenience and availability gives students a sense of ownership and control. These strategies further support professional identity growth and may improve activity attendance.

Although frequency and mean scores for enrichment programming (EP) offerings were low, narrative comments suggest enrichment activities, such as professional/career workshops and academic success seminars, are utilized, but not necessarily each semester. EP is a broad category and should be individualized to the nursing program and identified needs. While 75% of responding programs reported offering one or more EP services, only 23% queried the student body to determine needed services. Just as the first step in the nursing process is to complete a patient assessment, nursing programs should conduct a needs assessment to determine student priorities. Several programs supported

the premise of offering new student orientation and transitional workshops in the program. These strategies promote early academic confidence and connection with the program and foster a sense of continued academic and professional development as students matriculate. While approximately 27% of respondents publish a nursing program newsletter, incorporating innovative technology, such as social media, text messaging services, organizational pages within online learning management systems, and blogs can facilitate communication and are rapid, inexpensive alternatives to connect with students. Such connections can alleviate student stress and anxiety of unfamiliar program processes and provides support and encouragement (Boath et al., 2016) within common technologies familiar to multiple generations of learners. Strategies should be designed to foster an increased sense of belonging and desire to persist by communicating available resources and increasing awareness of available support.

Finally, respondents reported the least use of PMT strategies. Many narrative responses acknowledged interest in PMT offerings but reported significant barriers to implementation. These included previous PMT program suspensions due to poor outcomes, expense, student unwillingness to serve as PMTs, student lack of availability to function as PMTs, and limited understanding of how to design and implement a successful PMT program. Respondents reported concerns with previous peer tutoring programs because tutors, as upperclassmen, were not always current with course expectations and curricula for students being tutored. These circumstances often resulted in sharing of inaccurate or outdated information and negatively impacted academic success. Design and implementation of a PMT program is a lengthy endeavor that requires strategic planning, analysis, and support of key stakeholders (Jeffreys, 2012).

Nursing programs may choose to sponsor a PMT program or may desire to supplement the University's centralized tutoring service with nursing students who have received formal training. PMT programs have shown great benefit to foster student academic growth and professional socialization. Structured implementation, consistent orientation, and careful monitoring of outcomes is necessary for maximum success.

PIF Relationship to Program Retention

Despite non-significant study findings to quantitatively correlate and identify the most effective retention strategies, narrative anecdotal feedback from high-performing nursing programs provide experiential context for recommended retention strategies. Of survey respondents, 90% reported program retention rates of 70% or higher with 41% of the sample attaining retention rates greater than 90%. Of strategies reported to be most beneficial, respondents acknowledged the importance of relational connections between students and faculty as most important. Respondents suggested faculty support, mentoring, encouragement, and positive connections as most critical to promote student success. These suggestions are consistent with literature findings. Identification of "at risk" students and early connections to supportive resources were highly recommended. Secondly, respondents reported reinforcing academic skills, such as test-taking and time management, and scheduling new student and transitional orientation sessions provided positive student benefits. These resources, among others, are incorporated within enrichment programming activities. Such value-added services provide supplemental student support and further connect the student to the institution, the program, and the nursing faculty.

Retention Relationship to Student Profile Characteristics:

Insufficient data precluded analysis of student demographic items. Inferences regarding retention relationships cannot be extrapolated.

Strengths and Limitations

The strengths of this study included a national sampling of all 862 public and private accredited traditional Bachelor's in Nursing (BS in Nursing, BSN) programs from within the United States, providing a representative sample of the target population. The single-survey descriptive correlational design reduced risks of historical, maturational, testing, and attrition threats while the anonymous online survey reduced group interactional threats, providing an easy and convenient method for response. Valid responses can be assumed to have achieved the expected power. Although no statistically significant quantitative findings were identified, narrative anecdotal comments provided valuable contextual feedback of program administrator experiences and opinions regarding retention strategy implementation and effectiveness to optimize student retention. This information is useful to support future studies.

Study limitations consisted of threats to internal, external, construct, and content validity. The greatest threat to this study was the homogenous response. Despite national sampling, 90% of programs responding to the survey attained satisfactory or high-performing retention rates. As the data was non-normally distributed, regression analysis could not be conducted, limiting the overall study analysis and ability to conclusively answer the research questions. Further, there was little variance in responses, limiting the ability of the instrument to differentiate reliably. Additional internal validity threats included other factors listed within the NURS model (Jeffreys, 2015) that were not

analyzed within this study including those related to academics, student affect, environment, psychological outcomes, and academic outcomes. The confounding variables of student profile demographic characteristics of age, gender, and race/ethnic background were considered; however, inconsistent data precluded thorough examination and analysis. Additional threats included other unknown confounding variables that may contribute to student retention or increased attrition not considered or reported.

Threats to external validity included inconsistent benchmark standards for retention rate calculations and measurements, increasing the potential for inaccurate reports and limited ability to generalize results due to the homogenous response. Construct validity was threatened by use of a new measurement instrument (PIF-RSS) without prior psychometric measurements of internal consistency and reliability. Despite attempts to mitigate this threat through examination of comparable instruments and content expert review, preliminary psychometric results reported certain sections with internal consistency below recommendations. Additional psychometric analysis with a different sample is warranted.

Summary

As a national nursing shortage looms on the horizon, nursing student retention remains a critical issue at the forefront of nursing education to ensure an adequate future nursing workforce. While many factors influence student retention decisions, nursing programs have a unique opportunity to proactively design and implement strategies shown to optimize student retention. This study identified common retention strategies employed by Bachelor's in Nursing programs that aligned to professional integration factors of nursing faculty advisement and helpfulness, professional events, professional

memberships, encouragement by friends in class, peer mentoring-tutoring, and/or enrichment programs. Narrative anecdotal feedback provided additional contextual feedback of nurse administrator experiences and opinions of retention strategies implemented and their effectiveness. Although no statistically significant results were identified to quantify the most effective retention strategies, valuable information was gleaned to support future studies and adds to the body of nurse education knowledge.

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Chapter 5

Conclusions and Recommendations

The current and future nursing workforce must be sustained due to the growing national nursing shortage. Estimates project 1.05 million registered nurse job vacancies by the year 2022 (Bureau of Labor Statistics, 2012) and recent statistics from 2012 show approximately 53% of nursing graduates complete a baccalaureate in nursing (BSN) degree (Buerhaus, Auerbach, & Staigner, 2014; Newton & Moore, 2009). Aggressive measures are necessary to optimize nursing student retention to ensure a stable nursing workforce. Review of the concept, *optimize,* provided an academic context as it related to student success and retention. Proactive retention efforts are needed to optimize student persistence behaviors and mitigate attrition threats.

In considering optimal retention strategies, nursing programs are challenged to carefully scrutinize existing retention services to determine their overall value and success and develop evidence-based retention enhancements that are effective, sustainable, and meet the program's needs. The NURS model (Jeffreys, 2015) lists six professional integration factor (PIF) categories that enhance the student's social connection to the academic institution and the nursing profession and promotes persistence behaviors. These factors include faculty advisement and helpfulness, professional events, professional memberships, encouragement by friends in class, peer mentoring-tutoring, and/or enrichment programs. No valid or reliable tool was available that measured all professional integration factor subscales; therefore, the Professional

Integration Factors Retention Strategies Survey (PIF-RSS) was developed and underwent psychometric testing through exploratory factor analysis in conjunction with a broader research study surveying deans, directors, and program coordinators of public and private accredited traditional Bachelor's in Nursing (BS in Nursing, BSN) programs. The purpose of the study was to identify PIF strategies implemented by baccalaureate programs of nursing and their degree of effectiveness in promoting student retention. While quantitative data was not statistically significant, anecdotal narrative comments provided valuable feedback regarding the experiences and opinions of nurse administrators in implementing and evaluating the effectiveness of retention strategies. In completing this dissertation, the researcher filled a gap in the profession's knowledge by exploring the implementation of retention strategies and through anecdotal feedback, which retention strategies are suggested by program leaders to be most beneficial. Other researchers and academic leaders will benefit from greater understanding of current retention strategies implemented and their suggested effectiveness.

The researcher plans to continue this program of research related to nursing student retention, expanding the research to other nursing program types for broader understanding of the retention challenges faced by programs of nursing, the strategic planning utilized for effective implementation, and their evaluation of effectiveness. The newly-developed PIF-RSS instrument will be utilized to survey other program types for additional psychometric analysis. The researcher plans to solicit nursing retention experts in which to collaborate, expand, and disseminate this body of knowledge.

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Appendix A: Institutional Review Board Approval

THE UNIVERSITY OF TEXAS AT TYLER
3900 University Blvd. • Tyler, TX 75799 • 903.565.5774 • FAX: 903.565.5858

Office of Research and Technology Transfer

Institutional Review Board

October 24, 2017

Dear Ms. Gamble,

Your request to conduct the study: *Optimizing Student Retention: Measurement and Analysis of Strategies Implemented with Bachelor's in Nursing Programs,* IRB #F2017-33 has been approved by The University of Texas at Tyler Institutional Review Board as a study exempt from further IRB review. This approval includes a waiver of signed, written informed consent. In addition, please ensure that any research assistants are knowledgeable about research ethics and confidentiality, and any co-investigators have completed human protection training within the past three years, and have forwarded their certificates to the IRB office (G. Duke).

Please review the UT Tyler IRB Principal Investigator Responsibilities, and acknowledge your understanding of these responsibilities and the following through return of this email to the IRB Chair within one week after receipt of this approval letter:

- Prompt reporting to the UT Tyler IRB of any proposed changes to this research activity
- **Prompt reporting to the UT Tyler IRB and academic department administration will be done of any unanticipated problems involving risks to subjects or others**
- Suspension or termination of approval may be done if there is evidence of any serious or continuing noncompliance with Federal Regulations or any aberrations in original proposal.
- Any change in proposal procedures must be promptly reported to the IRB prior to implementing any changes except when necessary to eliminate apparent immediate hazards to the subject.
- Exempt with waiver

Best of luck in your research, and do not hesitate to contact me if you need any further assistance.

Sincerely,

Gloria Duke, PhD, RN
Chair, UT Tyler IRB

Appendix B: Study Consent

THE UNIVERSITY OF TEXAS AT TYLER

Informed Consent (Online, Anonymous) to Participate in Research
Institutional Review Board # F2017-33
Approval Date: October 23, 2017

You have been invited to participate in this study, titled, Optimizing Student Retention: Measurement and Analysis of Strategies Implemented within Bachelor's in Nursing Programs. The purpose of this study is to examine strategies being utilized by public and private traditional Bachelor's in Nursing (BS in Nursing, BSN) programs that promote undergraduate nursing student retention and how these strategies influence program retention rates. Your participation is completely voluntary, and if you begin participation and choose to not complete the survey, you are free to not continue without any adverse consequences.

If you agree to be in this study, we will ask you to do the following things:

- Complete a one-time, anonymous online survey that will take approximately 15 minutes.

We know of no known risks to this study, other than becoming a little tired of answering the questions, or you may even become a little stressed or distressed when answering some of the questions. If this happens, you are free to take a break and return to the survey to finish it, or, you can discontinue participation without any problems. Potential benefits to this study are:

- Increased awareness of institutional strategies that incorporate the professional integration factors of nursing faculty advisement and helpfulness, professional events, professional memberships, encouragement by friends in class, peer mentoring-tutoring, and enrichment programs to optimize undergraduate nursing retention.
- Assist in the advancement of nursing education research and validity of a new survey instrument.

I know my responses to the questions are anonymous. If I need to ask questions about this study, I can contact the principle researcher, Beth Gamble at bgamble2@patriots.uttyler.edu or, if I have any questions about my rights as a research participant, I can contact Dr. Gloria Duke, Chair of the UT Tyler Institutional Review Board at gduke@uttyler.edu, or 903-566-7023.

I have read and understood what has been explained to me. If I choose to participate in this study, I will click "Yes" in the box below and proceed to the survey. If I choose to not participate, I will click "No" in the box.

□ Yes, I choose to participate in this study.

□ No, I choose to not participate in this study.

Appendix C: Professional Integration Factors – Retention Strategies Survey (PIF-RSS)

Part 1: Survey – *The NURS model (Jeffreys, 2012, Jeffreys, 2015) provides a conceptual framework for this survey and brief definitions are provided for each strategy domain.*

Nursing Faculty Advisement and Helpfulness: Consists of active faculty involvement in student academic endeavors, career goals, and professional socialization. "Advisement" occurs within formal classroom and office settings while "helpfulness" occurs within informal faculty-student encounters and settings.

To what extent do you agree or disagree that the following strategies are currently provided by nursing faculty at your institution?

	Unknown	Not Offered	Strongly Disagree	Disagree	Agree	Strongly Agree
1. Integrate cultural congruent strategies when advising and helping diverse students	0	1	2	3	4	5
2. Complete ongoing professional development activities to strengthen advising techniques for student retention	0	1	2	3	4	5
3. Initiate faculty-student interactions within accepted professional boundaries	0	1	2	3	4	5
4. Maintain flexible office hours for student appointments and meetings	0	1	2	3	4	5
5. Interact with students outside of the classroom and office hours as a professional role model	0	1	2	3	4	5
6. Establish professional mentoring relationships with students	0	1	2	3	4	5
7. Provide encouragement to students in the student's ability to succeed in the nursing program	0	1	2	3	4	5
8. Make time to listen to student concerns or problems	0	1	2	3	4	5

9. Initiate student referrals to University/College support services when needed	0	1	2	3	4	5
10. Are actively involved to assist students in identifying educational and career goals	0	1	2	3	4	5

Narrative: Please provide additional information regarding **faculty advisement and helpfulness** NOT listed above that you feel is beneficial to student retention:

Professional Events: Activities may include nursing conferences, workshops, meetings, volunteer services, and social activities that have specific goals relevant for nursing education, practice, research, or theory that encourage professional integration, socialization, career development, and professional commitment.

To what extent do you agree or disagree that the following strategies are currently implemented by your nursing program?

	Unknown	Not Offered	Strongly Disagree	Disagree	Agree	Strongly Agree
11. Student attendance at a professional event is a required activity in one or more nursing courses	0	1	2	3	4	5
12. Student completion of healthcare-related volunteer service is a requirement in one or more nursing courses	0	1	2	3	4	5
13. Students are encouraged to develop and/or present projects, posters, and/or research proposals at professional events with faculty guidance	0	1	2	3	4	5
14. Professional events hosted by the nursing program are open to students	0	1	2	3	4	5
15. Registration fees for students are reduced or waived for school-sponsored professional events	0	1	2	3	4	5
16. The nursing program collaborates with clinical partners to allow student	0	1	2	3	4	5

attendance at a clinical facility-sponsored professional event

Narrative: Please provide additional information regarding **professional events** NOT listed above that you feel is beneficial to student retention:

Memberships: Professional memberships refer to affiliation or participation within nursing organizations or associations as a member prescribed by the respective bylaws. Nursing organizations/associations include the National Student Nurses Association (NSNA), the school's student nurse club (SNC), and specialty nursing organizations that permit student nurse membership.

To what extent do you agree or disagree that the following strategies are currently sponsored by your nursing program?

	Unknown	Not Offered	Strongly Disagree	Disagree	Agree	Strongly Agree
17. The nursing program sponsors a national nursing student organization chapter (e.g. NSNA)	0	1	2	3	4	5
18. The nursing program sponsors a school-based student nursing club (SNC)	0	1	2	3	4	5
19. For nursing program-sponsored organizations or clubs, nursing student membership is a mandatory requirement	0	1	2	3	4	5
20. Nursing students are encouraged to obtain memberships in professional nursing organizations (e.g. American Association of Critical Care Nurses, international Transcultural Nursing Society, National Black Nurses Association, etc…)	0	1	2	3	4	5
21. Discounted membership fees/scholarships are available for school-sponsored nursing student organizations/clubs.	0	1	2	3	4	5

22. Nursing program-sponsored organization/club meetings are scheduled on a regular basis with meeting dates published in advance	0	1	2	3	4	5
23. Students are encouraged to assume leadership positions at district, state, or national student nurse organization levels	0	1	2	3	4	5

Narrative: Please provide additional information regarding **professional memberships** NOT listed above that you feel is beneficial to student retention:

Encouragement by Friends in Class: Consists of peers who interact positively with each other by establishing and maintaining friendships in class that are continued within the context of the college learning environment. Peers are mutually bonded in career goals, expectations, and stage of educational and professional development.

To what extent do you agree or disagree that the following strategies are currently implemented by nursing faculty or within your nursing program?

	Unknown	Not Offered	Strongly Disagree	Disagree	Agree	Strongly Agree
24. Use of interactive group learning activities within the classroom, clinical, and/or online setting	0	1	2	3	4	5
25. Use of interactive group learning activities through out-of-class assignments and/or activities	0	1	2	3	4	5
26. Nursing faculty collaborate with colleagues to identify strategies that promote positive student networks/partnerships	0	1	2	3	4	5
27. Nursing faculty complete ongoing professional development activities to enhance the development of positive student networks and partnerships	0	1	2	3	4	5
28. Nursing program conducts an annual curricular self-	0	1	2	3	4	5

assessment to evaluate the use of student-centered learning approaches that promote positive student networks and partnerships						
29. Use of a variety of learner-centered, interactive teaching-learning strategies within and between courses (e.g. simulated role-play, debate, games and gaming, group presentations and discussions, paired problem-based learning, etc…)	0	1	2	3	4	5
30. A nursing program social event (e.g. student "meet and greet") is held at least once per semester	0	1	2	3	4	5

Narrative: Please provide additional information regarding **encouragement by friends in class** NOT listed above that you feel is beneficial to student retention:

Peer mentoring-tutoring: Formalized, structured collaborative partnership in learning and professional development between a peer mentor-tutor (PMT) and one or more students (protégé's or mentees). The aspect of tutoring provides academic support to enrich and enhance cognitive knowledge and/or psychomotor skills while mentoring activities emphasize professional integration and socialization through relationships.

To what extent do you agree or disagree that the following strategies are currently implemented by your nursing program?

	Unknown	Not Offered	Strongly Disagree	Disagree	Agree	Strongly Agree
31. A formal peer mentoring-tutoring (PMT) program is available for nursing students	0	1	2	3	4	5
32. Nursing student PMTs are paid for providing mentoring-tutoring services	0	1	2	3	4	5
33. Grant funding assists to support a nursing student PMT program	0	1	2	3	4	5

34. A grant proposal has been submitted to assist in funding a nursing student PMT program	0	1	2	3	4	5
35. Nursing student PMTs receive orientation prior to beginning mentoring-tutoring sessions.	0	1	2	3	4	5
36. A nursing faculty member/administrator provides oversight for a nursing student PMT program (i.e. program director).	0	1	2	3	4	5
37. Nursing student PMTs routinely communicate with the PMT program director throughout the semester to review tutoring progress and study group activities	0	1	2	3	4	5
38. Nursing student PMTs are utilized within the nursing skills and/or simulation lab to assist students with nursing skills and/or simulation assignments	0	1	2	3	4	5
39. Newly-enrolled nursing students are assigned to an upper class nursing student mentor (e.g. big brother/big sister program)	0	1	2	3	4	5
40. Nursing student PMTs lead weekly study groups	0	1	2	3	4	5
41. Nursing student PMTs provide individual (1:1) mentoring-tutoring sessions	0	1	2	3	4	5

Narrative: Please provide additional information regarding **peer mentoring and/or tutoring** NOT listed above that you feel is beneficial to student retention.

Enrichment Program: A formal, multiservice program providing additional services to enhance the nursing student experience. Services may include specialized orientation, newsletters, career advisement and guidance, workshops, study groups, networking, transitional support, financial stipends, and/or referral.

To what extent do you agree or disagree that the following strategies are currently offered by your <u>nursing program</u> and available for nursing students?

	Unknown	Not Offered	Strongly Disagree	Disagree	Agree	Strongly Agree
42. One or more Enrichment Program services are available	0	1	2	3	4	5
43. The nursing program conducts a student needs assessment each semester to determine enrichment service needs/requests.	0	1	2	3	4	5
44. A study skills seminar/workshop is provided each semester	0	1	2	3	4	5
45. A test-taking preparation workshop is provided each semester	0	1	2	3	4	5
46. A résumé writing workshop is provided for senior-level nursing students each semester	0	1	2	3	4	5
47. A career workshop is provided each semester	0	1	2	3	4	5
48. A financial aid workshop is provided each semester in collaboration with the financial aid office	0	1	2	3	4	5
49. New student orientation is offered to review program requirements and success strategies	0	1	2	3	4	5
50. Nursing skills lab and simulation center tours are scheduled during new student orientation	0	1	2	3	4	5
51. An orientation program is offered for family, friends, and support persons of students newly-enrolled in the nursing program	0	1	2	3	4	5
52. A transitional workshop is provided for currently enrolled nursing students prior to beginning the next semester	0	1	2	3	4	5

	Unknown	Not Offered	Strongly Disagree	Disagree	Agree	Strongly Agree
53. Enrichment program components are evaluated each semester	0	1	2	3	4	5
54. A nursing program newsletter is available for students and family/friends to communicate program information.	0	1	2	3	4	5

Narrative: Please provide additional information regarding a **formal enrichment program** NOT listed above that you feel is beneficial to student retention:

Part 2: Additional Narrative Comments

55. Of the strategies described in this survey, which have you identified to be MOST BENEFICIAL in promoting student retention within your program?

56. Of the strategies described in this survey, which do you PLAN TO IMPLEMENT within the next 12 months?

57. What strategies NOT DESCRIBED in this survey would you recommend to another nursing program to promote student retention?

Part 3: Program and Student Demographics

Please answer the following question about the most recent graduates from your traditional Bachelor's in Nursing (BS in Nursing/BSN) program:

58. What is the program's most recent completion/graduation rate?

_____ % Program Completion

(The percentage of the original cohort that graduated within the maximum timeframe allowed for program completion [The maximum timeframe is determined by multiplying the standard program length for normally progressing students by 1.5]. For example, if the standard program length for a Bachelor's in Nursing program is 4 semesters, then 1.5 times (150%) the standard program length would be 6 semesters).

Please answer the following questions about your traditional Bachelor's in Nursing (BS in Nursing/BSN) program:

59. What is the designation of your governing academic institution?

□ Public
□ Private
□ Consortium
□ Nonprofit
□ Proprietary

60. In what state, district or territory is your nursing program located?

61. Specify the national nursing accrediting body for your traditional Bachelor's in Nursing (BS in Nursing/BSN) program:

□ ACEN (Accreditation Commission for Education in Nursing)
□ CCNE (Commission on Collegiate Nursing Education)
□ CNEA (NLN Commission for Nursing Education Accreditation)
□ Not accredited

62. What is the current national nursing accreditation status of your traditional Bachelor's in Nursing (BS in Nursing/BSN) program?

□ Initial Accreditation
□ Continuing Accreditation
□ Continuing Accreditation with Conditions
□ Continuing Accreditation with Warning

63. How many traditional Bachelor's in Nursing (BS in Nursing/BSN) undergraduate nursing program cohorts are admitted each year?

□ 1
□ 2
□ 3
□ 4 or more

64. What is the total number of students currently enrolled in your traditional Bachelor's in Nursing (BSN in Nursing/BSN) nursing program as reported in the most recent annual report submitted to your state board of nursing or nursing accreditation agency?

_____ Total number of students currently enrolled

Please answer the following questions about students currently enrolled in your traditional Bachelor's in Nursing (BS in Nursing/BSN) program:

65. Student Gender: What is the total number of students enrolled in your traditional Bachelor's in Nursing (BS in Nursing/BSN) program stratified by gender as reported in the most recent annual report submitted to your state board of nursing or nursing accreditation agency?

_____ Females
_____ Males

66. Student Age Range: What is the total number of students enrolled in your traditional Bachelor's in Nursing (BS in Nursing/BSN) program stratified by age range as reported in the most recent annual report submitted to your state board of nursing or nursing accreditation agency?

_____ 18-24 year olds
_____ 25-54 year olds
_____ 55+ years

67. Student race/ethnicity: What is the total number of students enrolled in your traditional Bachelor's in Nursing (BS in Nursing/BSN) program stratified by race/ethnicity as reported in the most recent annual report submitted to your state board of nursing or nursing accreditation agency?

_____ American Indian/Alaska Native
_____ Asian
_____ Black/African American
_____ Caucasian/White
_____ Hispanic/Latino
_____ Other
_____ Unknown/missing

This is the end of the survey

The NURS model provides a conceptual framework for this survey and brief definitions are provided for each strategy domain from the following references:

Nursing Student Retention: Understanding the Process and Making a Difference, by M.R. Jeffreys, 2012, New York: NY. Springer Publishing Company. Copyright 2012 by Springer Publishing Company, LLC.

Jeffreys's Nursing Universal Retention and Success model: Overview and action ideas for optimizing outcomes A-Z, by M.R. Jeffreys, 2015, Nurse Education Today, 35, page 427, Figure 1. Reproduced with permission, Elsevier Inc.

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NAME: Gamble, Bethanie K.

POSITION TITLE: Doctoral Student

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE CERTIFICATION	COMPLETION DATE	FIELD OF STUDY
Burge School of Nursing Springfield MO	Diploma	07/1992	Nursing
Regis University Denver CO	B.S.	10/2009	Nursing
Regis University Denver CO	M.S.N.	12/2010	Nursing, Leadership in Healthcare Systems with Education Focus
Regis University Denver CO	Post-Masters Certificate	12/2010	Healthcare Education
The University of Texas at Tyler Tyler TX	Ph.D.	05/2018	Nursing

A. Personal Statement

My program of research focuses on examining nursing student success, particularly student retention. For my doctoral work, I examined strategies used by nursing programs to optimize student retention. In completing the dissertation, I have discovered the degree of utilization of retention strategies among BSN programs. While many programs of research address student success initiatives, there are aspects of institutionally-led strategies to optimize student retention and their implications left to be studied. I plan to continue my program of research on discovering effective, proactive strategies to address student retention. My hope in this endeavor is that I discover conclusive strategies to assist nurse educators and programs to strengthen student retention.

B. Positions and Honors

2015–Present	Department Chair and Assistant Professor, Associate Degree Nursing, Eastern Kentucky University, Richmond KY
2014–2015	Visiting Professor, Associate Degree Nursing, Eastern Kentucky University, Richmond KY
2010–2014	Assistant Professor and Course/Clinical Coordinator, Associate Degree Nursing, Midway College, Midway KY
2010–2010	Adjunct Clinical Instructor, Associate Degree Nursing, Midway College, Midway KY
2009–2009	Adjunct Clinical Instructor, Practical Nursing Program, Bluegrass Community and Technical College, Lexington KY

Other Experience and Professional Memberships

Experience:

2016–Present	Peer reviewer, *Nurse Education Today* (published in U.K.)
2015–Present	Program Reviewer; Accreditation Commission for Education in Nursing (ACEN), Atlanta GA

Memberships:

2010–Present,	Kentucky League for Nursing
2015–Present	Member, Kentucky Nursing Deans and Directors
2015–Present	Member, Kentucky Council of Associate Degree Nursing
2013–Present	Director at-Large, Kentucky Nurses Association, Bluegrass Chapter
2010–Present	Member, Kentucky Nurses Association, Bluegrass Chapter
2010–Present	Member, American Nurses Association
2010–Present	Member, National League of Nursing
2010–Present	Advisory Board Member, Southside Technical Center: Health Sciences, Fayette County Public Schools, Lexington KY
2016–Present	Member, Sigma Theta Tau International, Theta Nu Chapter, Richmond KY
2009–Present	Member, Sigma Theta Tau International, Alpha Kappa Chapter, Denver CO

Honors

2017	Smith County Medical Society Alliance Masters Nursing Fellowship Endowed Scholarship
2017	The Herbert C. Buie & Melvina Buie Presidential Scholarship for Doctoral Students in Nursing
2016	Selden Leavell Endowed Scholarship
2016	Phi Kappa Phi Honor Society
2015	Texas Alpha Chi Academic Honor Society
2013	Teacher of the Year, “Great Teacher Award”, Midway College Student Government Association, Midway KY

C. Contribution to Science

2018 Development and Testing of an Undergraduate Nursing Program Retention Strategies Survey; Nursing Education Research Conference, National League for Nursing/Sigma Theta Tau International, Washington DC, April 2018.

2018 Ready, Set, Debate! A Cooperative Teaching- Learning Strategy for Nursing Education; Concept-Based Learning Institute: Curriculum for the 21st Century, February 2018.

Gamble, B. K. Optimizing undergraduate nursing student retention: A concept analysis. Submitted to *Nurse Education in Practice*, March 2017 (in review).

2015 Differential Analysis of Nursing Student Priority Setting: A Basis for Improvement Measures; Kentucky Nursing Deans and Directors meeting, Versailles, KY

Gamble, B. K. (2013). Improprieties and Incivility in the Classroom: Creating a Positive Classroom Climate to Promote Learning; Midway College, (1) contact honor; Kentucky Board of Nursing Provider Offering Number 3-0041-12-17-003