2023

The Perceived Effectiveness and Evolution of First-Semester Nursing Students' Studying Methods

Elizabeth Brown
Walden University

Walden University

College of Nursing

This is to certify that the doctoral dissertation by

Elizabeth Brown

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Janice Long, Committee Chairperson, Nursing Faculty
Dr. Carolyn Sipes, Committee Member, Nursing Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2023

Abstract

The Perceived Effectiveness and Evolution of First-Semester Nursing Students' Studying Methods

by

Elizabeth Brown

MSN, University of Phoenix, 2012

Diploma, Huron School of Nursing, 2008

MS, California State University, Stanislaus 1996

BS, University of Tampa, 1991

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Nursing

Walden University

August 2023

Abstract

Little research has been done to identify the study strategies used by nursing students during their first nursing classes despite studies indicating they have poor study skills, making the nursing program challenging and causing many of the students to decide to leave after their first semester. The purpose of this qualitative study was to improve the understanding of registered nursing students' study strategies during their first semester of nursing classes. Winne and Hadwin's self-regulated learning model was used as the conceptual framework to answer the research questions about students' study strategies during their first semester of nursing classes, how they determined strategy effectiveness, and whether they modified those strategies. A basic qualitative descriptive research approach was used in which one-on-one audio interviews were conducted by phone or Zoom with six participants who were recruited by posting flyers on Facebook and LinkedIn and through an email blast to National League for Nursing members. Interviews continued until saturation was reached. Interviews were transcribed manually and then analyzed using Braun and Clark's six phases of thematic analysis. Results revealed four main themes: individualized study strategies and routines, study strategy evolution, getting help from others, and barriers to studying. The findings can be used to promote positive social change by bringing awareness to faculty about first semester nursing students' study strategies so they may incorporate these strategies into their lessons, which can further assist students by giving them the tools to improve their test performance. Future research should further explore these study strategies and if strategy modifications continue throughout the nursing program.

The Perceived Effectiveness and Evolution of First-Semester Nursing Students' Studying Methods

by

Elizabeth Brown

MSN, University of Phoenix, 2012

Diploma, Huron School of Nursing, 2008

MS, California State University, Stanislaus 1996

BS, University of Tampa, 1991

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Nursing

Walden University

August 2023

Dedication

I would like to dedicate this dissertation to my daughter and parents who have been supportive through my nursing education journey, which started when I went back to school to become a RN, then later pursued my MSN, and finally am now completing my doctorate. Thank you for being there, making some sacrifices along the way, and encouraging me, especially during those times when I was ready to give up during this long process of obtaining my Doctor of Philosophy in Nursing.

Acknowledgments

I would like to thank my committee members both past and present: Dr. Janice Long, Dr. Carolyn Sipes, Dr. Maria Ojeda, Dr. Anna Valdez, and Dr. Deborah Lewis. Thank you for your feedback throughout this dissertation process, which allowed me to further enhance my work and complete this journey.

Table of Contents

List of Tables

Chapter 1: Introduction to the Study

Introduction

In the United States, nurse shortages continue to be a problem as a result of nursing retirements, job burnout, a larger aging population that has multiple comorbidities, expansion of community-based services, and nurse turnover (American Association of Colleges of Nursing, 2020; American Nurses Association, n.d.; Buerhaus et al., 2017; Goldman & Gaudette, 2015; United States Bureau of Labor Statistics, 2020). Potential students must first meet rigid acceptance requirements to get admitted to the program and then are often required to achieve specific grade requirements and passage of National Council Licensure Examination (NCLEX) predictor tests in order to graduate (American Association of Colleges of Nursing, 2020; Frith et al., 2008; Kim et al., 2019; Sears et al., 2015; Simon et al., 2013). Even after completing the nursing program, graduates must pass the NCLEX to gain their registered nursing license.

Success in the nursing program is necessary to achieve this and to add them to the workforce, yet up to 50% of nursing students choose to drop out of their program, often deciding to leave in their first semester (California Board of Registered Nursing, 2019; Frieda Paton, 2018). These lowered retention rates result in a smaller number of nursing graduates and thus fewer candidates who would be eligible to sit for the NCLEX.

Given the importance of students' early success in their nursing program to promote retention and improve test performance, a better understanding of their study strategies was required. In the current study, I sought to uncover the study strategies used by nursing students during the first semester of their nursing classes. Furthermore, I

sought to discover how students determine study strategies' effectiveness and to identify whether students evolve their study skills throughout the semester based on their test performance. The potential social implications of this study were that faculty would better understand students' study strategies, which could then be capitalized on by incorporating student preferred methods into the curriculum. If nursing students complete the nursing program and successfully pass the NCLEX, the community and society would benefit by gaining more licensed registered nurses to offset shortages when healthcare needs are increasing.

This chapter provides additional background information on the topic and includes this study's problem statement and purpose. The research questions are outlined, and the conceptual framework and nature of the study are described. Key terms, assumptions, scope, delimitations, and limitations are defined, and the significance of the study is explained.

Background

College students begin their higher education journey often unsure of what to expect in their classes and may be surprised with their initial experiences and the studying required, which is not unique to the nursing program. Lukas and McConnell (2014) acknowledged that students often leave their Science, Technology, Engineering, or Math program because of dissatisfaction or negative experiences in their first program-related class, a trend that has been observed in nursing programs. They sought to identify any differences in motivation between high and low performers and university versus community college students taking their first-semester geology class. They interviewed

students from two universities and three community colleges in the United States. Their results indicated that students are performance-driven with high prioritization to do well on examinations, which influences their focus, actions, and knowledge attainment. High-performing students tended to aim for mastery of the content, whereas low performers merely wanted to learn the specific task required, which impacted how they approached their studying. Their study illustrated the benefits of interviews to obtain more elaborate detail on students' studying while their results table presented a means for displaying findings that include codes, definitions, subcodes, and examples of participants' responses.

Despite the importance of having early success in the nursing program to continue progression and promote a positive experience, little research had been done on nursing students' study strategies, especially regarding the first semester of nursing classes. Although not specifically focused on study strategies, Langtree et al. (2018) examined the factors that may inhibit first-year nursing students from being successful at a South African nursing college. First-year nursing students who enrolled for at least 7 months were asked to complete a questionnaire that included demographic and Likert-type questions. Students identified some of their top challenges as having harder assignments and poor study methods. These students felt they did not know what they were getting into before starting their nursing program and that nursing coursework was much harder than high school. Sixty percent of these students agreed that it was more difficult to achieve well academically in nursing school and teaching was different and moved at a faster pace than previously experienced. Their lack of study skills and other family and

financial stressors negatively affected their grades. Such results supported the need to identify the study strategies currently used by nursing students because of the difficulty in nursing coursework, faster teaching methods, and poor grade attainment found in this study. The authors recommended incorporating study skill techniques and time management skills into nursing mentoring workshops based on student responses. However, they were unable to provide further recommendations as to the specific strategies to include as they had not asked students the study methods used or their level of effectiveness.

Shahida et al. (2014) aimed to explore the quality of study skills, believing it had a key role in academic success. They examined study skills in medicine, nursing, and laboratory technology students newly admitted to an Iranian university. A questionnaire was distributed to all of these students during their first semester and included questions on demographic information, time management, concentration, class note-taking, studying, and taking examinations. They found that students scored below the normal level in concentration, time management, and studying, leading to their recommendation that study skill courses be included in their curriculum or offered as separate workshops. Further elaboration of the specific study skills to include could not be provided given their use of a Likert-style questionnaire.

A general evaluation of study skills of Bachelor of Science Nursing students was completed by Patidar (2019) using the South Central College Chicago Study Skills Inventory. Patidar distributed this questionnaire, which had questions on textbook reading, note-taking, memory, test preparation, concentration, and time management, to

all nursing students attending a college in India regardless of the semester they were in. Students ranked their frequency of study skill use with a 5-point scale, limiting some of the information gained from the study. However, Patidar found that the highest possible need for change was in time management and note-taking skills, although these results were for all nursing students and not limited to students in a particular semester of nursing courses.

Dapremont (2014) took a different approach by exploring Black nursing graduates' study strategies while attending a predominately White college. A qualitative descriptive design involving telephone or face-to-face interviews was used. Participants were asked to recall the strategies they used throughout their nursing program. They described using study strategies such as establishing daily study schedules, participating in diverse peer study group sessions, reading the textbook and notes, and writing and reviewing note cards. In addition, participants consistently reported needing improvement in their study skills, with a particular focus on organizational skills and gaining confidence that they were studying the correct information. Furthermore, nursing graduates indicated that they did not use these strategies immediately upon entering their nursing program, suggesting modifications were made based on their performance. However, the evolution of those changes could not be identified as nursing graduates were interviewed and asked to recall from memory.

While these studies addressed study strategies during the nursing program, Felicilda-Reynaldo et al. (2017) used focus groups of junior or senior Bachelor of Science nursing students at one college to understand their study habits when taking their

general education and prerequisite nursing courses. Their use of interviews provided more detail on the study strategies being used as participants were not limited by Likert scales or multiple choice answers. Participants conveyed that the material was easier to understand in these classes, so less studying and fewer hours were required. Furthermore, they preferred to study alone and would study more when the material was difficult, such as in the sciences. These initial study skill themes provided insight into the earliest study habits of nursing students before starting their nursing classes and provided a comparison to determine if changes happen as students begin their nursing coursework.

Finally, Roldán-Merino et al. (2019) focused on the relationship between nursing students and faculty who served as their peer tutors while also considering the use of group meetings to facilitate learning. They gathered their information using focus groups: two groups were comprised of tutors, one contained students in Years 1 and 2, and another consisted of students in Years 3 and 4. Their analysis revealed three main categories: peer tutoring as a supportive relationship, peer tutors providing a link between theory and practice, and group meetings as sources of support and learning. While demonstrating students' perceptions of the benefits of faculty tutoring and group sessions, other study strategies were excluded, preventing a clear understanding of nursing students' study process.

Students in other fields showed they can adapt their studying and incorporated more modern study methods previously not considered in nursing studies. Bierer and Dannefer (2016) provided insight into the evolution of medical students' study habits as they transitioned from traditional assessment-based college classes to a portfolio-based,

mastery-focused medical school. The authors used a qualitative design scheduling three separate one-on-one interviews with participants over their first year of medical school. In college, these students stated they used lecture notes and flashcards, studied tests from previous years, rewrote notes, read textbooks, listened to class recordings, attended faculty review sessions, and crammed for tests. Adaptations to their study strategies occurred as they transitioned into medical school, given its new focus. Additional comparisons of these study strategies with nursing techniques were made. Furthermore, the identification of alterations in student study strategies highlighted the importance of capturing these subtle changes within the first year of entering a medical-related program.

Kinnison et al. (2017) explored the use of a more technological resource, Twitter, as a tool to prepare for veterinary final examinations. Faculty tweeted various test questions to student followers from veterinary schools throughout the world, and students responded with their answers. These authors used a mixed-methods approach to examine the use of this Twitter account and to interview focus groups of active participants to explore students' perspectives regarding the activities, benefits, barriers, motivation, and support received as a result of these Twitter interactions. The authors found that only a small percentage of students actively responded to the tweets, with the majority likely just following the conversation threads as lurkers. Interviewed students described the Twitter exercises as a way to self-test knowledge, identify revisions needed for their studying based on knowledge deficits, and a means to receive faculty feedback. Students found peer interactions to be positive and negative, depending on whether responses provided further clarification or were used to highlight and embarrass participants who

gave incorrect answers. Because lurkers were not interviewed, the authors could not determine the benefits they may have received by observing these interactions. This study demonstrated the use of a social media platform as one tool to prepare for examinations. Although the focus was on veterinary schools, this form of studying may have been used by nurses, but was not previously investigated as a study strategy.

In this study, I aimed to address the literature gap regarding registered nursing students' study strategies during their first semester of nursing classes attending colleges in the United States. As shown, previous work was limited by utilization of study skill questionnaires, specific nursing student populations often in other countries, some of which were reliant on participant recall, or focused on one study strategy such as peer tutors. To explore all possible strategies that were being used simultaneously in preparation for a nursing exam, a qualitative design was used to allow participants to elaborate on their study habits and provide any insight to more technologically advanced tools being used, such as social media platforms. This information was needed by faculty to better capitalize on students' study preferences, further build student-faculty relationships, and promote student retention, given that students often contemplate leaving a program during their first semester of program-related classes.

Problem Statement

Concerns about nursing workforce shortages exist due to the aging of the baby boomer generation, increased nursing retirements, and job burnout. Projections indicate that by 2030, life expectancy will increase to 85.1 years, while the expected years of life with a disability at age 65 will have risen to 8.6 years from 7.4 years in 2010 (Goldman &

Gaudette, 2015). By that same year, 23.2% of the population will be 65 or older in the United States (United States Census Bureau, 2017). Furthermore, 40% of Medicare beneficiaries will likely have three or more chronic health conditions (Goldman & Gaudette, 2015). This need also does not account for geographic-specific increases that could result from an influx in population. In Florida, for instance, the population is projected to grow an additional 21% by 2035, with higher increases seen in the 65 to 74 and 75 and older age groups (Iacobucci et al., 2021).

While more patients need care, 1 million nurses will likely retire during this timeframe (Buerhaus et al., 2017). Growth in registered nurse employment may rise as much as 12% from 2018 to 2028 as a result of the increased medical needs of the elderly, expansion of care in long-term care facilities and home health, nurse retirements, and progression of community-based care (American Nurses Association, n.d.; United States Bureau of Labor Statistics, 2020). In Florida, for example, the projected population shift by 2035 will result in a need for an additional 37,400 registered nurses, with numbers projected as high as 65,400 needed if healthcare barriers are reduced, and more individuals can get medical care (Iacobucci et al., 2021).

Meanwhile, further challenges exist in keeping nurses in the profession, especially due to the COVID-19 virus pandemic. Raso et al. (2021) found that 2% of the 5,088 nurses, nursing managers, and directors who participated in their study were ready to leave the profession, with another 8% undecided about leaving. Eighty-four percent of these participants ranked the pandemic as highly impacting their practice, with those who scored it at the highest level indicating they were more likely to leave their position (Raso

et al., 2021). The authors acknowledged that these results are from surveys completed in July and August 2020, which was earlier in the pandemic and may not represent current trends. Since then, there have been multiple surges of COVID infections, staffing challenges, and bed shortages, which may impact nurses' perspectives about their careers. It is unclear how this pandemic may influence nurses to take early retirement or leave the profession due to burnout and mental exhaustion. Given the increased healthcare needs, older population, nursing retirements, and nursing shortages, an influx of newly licensed nursing graduates are needed to meet this increased demand.

For nursing graduates in the United States to obtain their registered nursing license and begin working, they must complete their nursing program and pass the NCLEX (National Council of State Boards of Nursing, 2020). Many nursing programs, wanting to achieve higher pass rates on the NCLEX and maintain their reputations, have implemented high-stake nursing predictor test requirements prohibiting students from progressing or completing their program if they fail these tests (Hunsicker & Chitwood, 2018). Furthermore, many of these nursing programs have implemented nursing course grade requirements as studies have indicated that students who earned Cs in their nursing courses, failed a single nursing course, or had lower nursing GPAs had increased NCLEX failure rates (Frith et al., 2008; Kim et al., 2019; Sears et al., 2015; Simon et al., 2013). Given these grade and test requirements, it is no surprise that Gale et al. (2015) and Langtree et al. (2018) found that students experienced stress during their first year of nursing school. Furthermore, some of these students stated that they considered leaving nursing school as a result (Gale et al., 2015), with other studies indicating that up to 50%

of nursing students dropped out of their program, with many leaving after their first semester (California Board of Registered Nursing, 2019; Frieda Paton, 2018).

Researchers have found that some nursing students attribute poor study skills as a contributor to their stress (Langtree et al., 2018). Nursing school graduates have also indicated the need to improve study strategies to succeed in nursing school (Dapremont, 2014). Despite students' articulation of the importance of these skills, there are gaps in the literature regarding the study strategies used by nursing students. Studies have focused on the benefits of peer tutoring (Higgins, 2004), the role of test anxiety (Custer, 2018), and interventions to decrease test anxiety (Farner et al., 2019; Johnson, 2019; Poorman et al., 2019). Only two studies focused on the study techniques used in prerequisite nonnursing courses (Felicilda-Reynaldo et al., 2017; Shahida et al., 2014); however, neither of them examined study methods used for nursing-specific coursework. Felicilda-Reynaldo et al. (2017) examined Bachelor of Science nursing students' study habits while in general education and prerequisite courses at one college using focus group interviews. They identified study techniques that included reviewing general concepts only, incorporating cramming techniques, shorter studying sessions due to ease of material in most classes, a preference for studying alone, and making studying adjustments in their science classes because of harder content (Felicilda-Reynaldo et al., 2017). Shahida et al. (2014) administered a study skill questionnaire to nursing, medical, and laboratory technology students while in their first semester at an Iranian college and found issues with class note-taking, time management, and studying. Such problems included 45.1% of students who would wait to study material the night before exams and

77.6% of students who did not create a study plan in advance (Shahida et al., 2014). In this dissertation, I aimed to fill the literature gap regarding the nature of nursing students' study habits by describing the perceived effectiveness and evolution of those study skills while participating in their first semester of nursing coursework. This information should help faculty understand student study preferences and promote the incorporation of useful techniques into the nursing curriculum to further help students succeed in their classes and NCLEX.

Purpose

The purpose of this study was to improve the understanding of registered nursing students' study habits during their first semester of nursing classes. Thus, I sought to elicit participants' descriptions of what study methods they perceived to be effective and to identify any changes made as a result of their performance. A qualitative design was selected to allow participants to elaborate on their answers to open-ended questions in one-on-one interviews. The qualitative methodology was expected to help identify study strategies previously unknown due to the limitations of quantitative survey tools that were restricted by the use of multiple-choice answers. The one-to-one interview format allowed me to gather more detailed information from participants while creating an environment that promoted such disclosure as they were isolated from the peer pressure or influence that could be present in focus groups.

Research Questions

The research questions asked in this study were the following:

- What study strategies do registered nursing students initially use to prepare for nursing examinations during their first semester?
- How did study strategies change throughout their first-semester nursing classes?
- How are nursing students determining whether their study strategies are effective?

Conceptual Framework

Study strategies and modifications made as a result of a student's performance and evaluation of strategy effectiveness were the key concepts grounding this study. As such, Winne and Hadwin's (1998) self-regulated learning model was selected as the conceptual framework as it outlined four stages of studying that included task definition, goal setting and planning, study tactics and strategies enactment, and studying adaptations. Although alterations to the order of these model's stages are possible, students often implement them in the following pattern which depicts the interrelatedness of one stage to the other. Initially, the student determines the features of the task and then will establish an initial goal by which the task can be judged (Winne & Hadwin, 1998). Sometimes, this goal will align with the instructor's goal for the student (Winne & Hadwin, 1998). During goal setting and planning, students may modify the goal based on their personal standards and begin developing a plan of how to approach the task (Winne & Hadwin, 1998). Goals can range from passing the test or completing the assignment to longer-term understanding and knowledge retainment. Students begin to determine the study strategies they will use based on the task's difficulty and the goal set during this stage. Once study tactics and strategies are enacted, students perform internal evaluations as to their effectiveness and determine if they will continue with the task (Winne &

Hadwin, 1998). Finally, in the studying adaptations stage, students examine their performance and outcomes to determine if any adaptations are needed in future tasks, goals, plans, or strategies to improve results (Winne & Hadwin, 1998). These adaptations may include changes to conditions for future studying and altering orientation from task-focused to mastery-based (Winne & Hadwin, 1998).

This model provided a contextual lens when exploring nursing students' initial study strategies during test preparation (the task) and how those strategies were adapted as the student progresses through the semester and was able to evaluate their performance on tests. The four stages aligned with this study's research questions that asked nursing students about their study strategies, determination of study strategy effectiveness, and possible modifications made as a result of test performance. The qualitative approach of the study allowed students to elaborate on their strategies and their strategy selection process, providing more information relevant to the model. Chapter 2 defines in more detail each of the four main stages, how this model has been used in other similar studies, and its relevancy to this study.

Nature of the Study

The nature of this study was qualitative as this format allows researchers to understand people's experiences and viewpoints while looking for complexities and contextualization, identifying relationships, and providing descriptions, while using the inductive process (Ravitch & Carl, 2016). In previous studies on nursing students' study habits, participants were restricted to a quantitative format using a Likert scoring system on a questionnaire, preventing more comprehensive descriptions and clarification of

answers (Patidar, 2019; Shahida et al., 2014). Using a qualitative methodology provided more robust data as students were able to elaborate on their answers during one-on-one interviews. A basic qualitative descriptive research approach was selected as this approach involved in-depth interviews using purposeful sampling with those who understood the perspectives, process, or phenomenon being researched (see Bradshaw et al., 2017, Doyle et al., 2020; Kim et al., 2017). Using this approach, a semistructured interview guide was used, and thematic or content analysis was done for data analysis, resulting in a comprehensive summary that remained close to participants' accounts (see Bradshaw et al., 2017; Doyle et al., 2020; Kim et al., 2017). I used this interview format to elicit in-depth responses from nursing students to understand their initial study strategies and how these strategies were modified over the first semester of their nursing classes.

One-on-one interviews were conducted between the participants and me via phone or online conferencing and included students who completed their first semester or who were currently in their second semester of nursing classes. A semistructured interview guide was developed to ensure all areas of interest were explored during the interview and aligned with the conceptual framework. Interviews were recorded and later transcribed by me. Data analysis involved a coding scheme developed using Braun and Clark's (2006) six phases of thematic analysis. The results from this study could be used by nursing faculty to help students better prepare for and perform on their nursing examinations so that they succeed in their nursing classes.

Definitions

Common terms used in this study were defined as follows:

Study habits: Study habits were defined as "the ways and means students use to pursue and acquire knowledge" (Merritt, 2021, p. 10) that are developed over a student's educational journey (Felicilda-Reynaldo et al., 2017). Study habits included the methods used to prepare for exams, the amount of time spent studying, study patterns, use of study groups or partners, instructor tutoring sessions, and instructional materials (Felicilda-Reynaldo et al., 2017).

Study skills: Study skills were defined as "learned abilities, capabilities, and capacities for acquiring knowledge and competence" (Merritt, 2021, p. 11). They encompassed broader study-related categories, such as time management, note-taking, textbook reading, memorization, test preparation, concentration, listening skills, and research skills (Merritt, 2021; Patidar, 2019).

Study strategies: Study strategies identified included "having a daily routine, meeting with a diverse peer study group, reading the course content, and using note cards" (Dapremont, 2014, p. 158).

Study tactics: Study tactics were defined as the activities aimed at enhancing the effectiveness of study skills, such as creating summaries, using first-letter mnemonics, underlining, outlining, creating concept maps or webs, rereading text, and identifying key words (Winne & Hadwin, 1998).

Assumptions

Certain assumptions were made in this study. I assumed that students were honest and forthcoming during the screening process and the interviews so that the information obtained was representative of the perspectives of nursing students from the desired population. Second, I assumed that students disclosed successful and ineffective study strategies and did not withhold information because they were trying to answer how they thought their peers would or were embarrassed about their performance. Such disclosure was necessary to identify any modifications made in study strategies based on test performance or self-evaluation.

Scope and Delimitations

Little research had been conducted exploring the study strategies of students in their first semester of nursing classes and how they modified these strategies over the semester, which was the reason it was selected for this study. Previous studies limited students' answers because of the use of questionnaires, prohibiting the discovery of more technological methods that may have been used. Furthermore, these studies often focused on one particular study intervention, a specific college population, or nursing students from other countries. Thus, a qualitative methodology was selected for this study so that students could elaborate on their study strategies while sharing how they determined strategy effectiveness and whether modifications were made to their study methods. By exploring the study methods used by nursing students, faculty would be better able to incorporate them into their curriculum while sharing strategies students may be underutilizing.

Criteria were established for this study to define which nursing students were interviewed, and a conceptual framework was selected. Students were 18 years of age or older, training to be registered nurses, enrolled in a nursing program in the United States, and had just completed their first semester or were in their second semester of nursing classes. The only exclusion criterion was that participants could not be students I previously taught.

Six different self-regulated learning models by Zimmerman (2000), Boekaerts (1996, 2011), Winne and Hadwin (1998), Pintrich (2000), Efklides (2011), and Hadwin et al. (2017) were considered for the conceptual framework. Zimmerman's cyclical phase of self-regulated learning, Boekarts's dual processing model, Pintrich's, and Efklides's models were not selected as students' motivational beliefs were a key component of their learning models. Furthermore, Zimmerman's research focus was on students' athletic skills, which was not comparable to students studying nursing. In addition, Boekarts's dual processing model emphasized the importance of emotions and well-being (as cited in Panadero, 2017), whereas motivation and affect were highlighted in Pintrich's and Efklides's models. In this dissertation, I concentrated on nursing student study strategies and did not examine their motivations, affect, or emotions, thus eliminating these models from further consideration. Hadwin et al.'s shared self-regulation model was not chosen as it focused on group collaboration and group sharing of learning goals, tasks, and strategies and would have excluded those nursing students who chose to study alone. Ultimately, Winne and Hadwin's model was selected as it was best adapted for adolescents and adult learners (see Panadero, 2017) and contained key concepts such as

goal setting, incorporation of study strategies, study plan implementation, and modifications to study strategies. Furthermore, it is an effective model for technological-based learning (Looi & Wong, 2014; Tuysuzoglu & Greene, 2015; Zheng et al., 2018). Transferability of the study was obtained using participants from multiple sites and by providing thick descriptions of their perspectives.

Limitations

A potential limitation was in the recruitment of participants who had just completed their first semester of study or who were currently in their second semester as this considerably narrowed the population of interest. However, by recruiting students from registered nursing programs throughout the United States using Facebook, LinkedIn, and a recruitment eblast through the National League for Nursing, this challenge was minimized. Potential researcher bias was considered in the interpretation of the results in that my previous roles included being a nursing instructor and a former nursing student who had successfully progressed through a nursing program. However, reflective journaling reduced this bias. Through reflective journaling, the researcher actively monitors personal roles and influences on the study, ensuring personal position, subjectivity, and that assumptions are not altering the interpretation of participants' answers (Ravitch & Carl, 2016).

Additional limitations regarding transferability and dependability were considered. Transferability was achieved by using participants from multiple colleges and by providing descriptions. Dependability of the data was achieved as rationales were provided throughout the design plan and data analysis, and audit trails were used to

ensure alignment with the research questions, stability and reliability of the data, and repeatability of the study (see Ravitch & Carl, 2016).

Significance

This study filled a gap in understanding the study techniques used by nursing students when preparing for their first semester of nursing course examinations. Previous research on nursing students' study habits have been limited to general curriculum classes (Felicilda-Reynaldo et al., 2017; Shahidi et al., 2014), specific student populations from outside the United States (Patidar, 2019; Shahidi et al., 2014), and nursing students from specific ethnicities (Dapremont, 2014). Some of these studies were quantitative and involved questionnaires with Likert scores or multiple choice answers, which limited their choices and prohibited students from elaborating on study skill modifications made over time (Patidar, 2019; Shahidi et al., 2014). Because study methods may vary between countries due to differences in education systems and study skill exposures, this study focused on nursing students in the United States. A basic qualitative descriptive study using open–ended questions elicited students' descriptions of the strategies they perceived as effective and the evolution of these techniques during their first semester of nursing coursework.

Nursing instructors need to understand the study strategies that students perceive as effective and recognize that their assumptions about how students have been studying may be incorrect. Nursing instructors may have used strategies such as highlighting notes, writing outlines, making vocabulary cards, and rereading textbook assignments, assuming students are using these same strategies. On the other hand, students may not be

familiar with studying strategies that had been effective for nursing instructors. Identifying tools used by students help faculty determine if there are strategies nursing educators can offer to students as alternative methods. Additionally, the information gleaned from this study can allow faculty to create instructional materials that leverage the use of the study strategies most preferred by students.

Positive social change could be achieved as these results bring awareness to nursing faculty about the study strategies used by nursing students, especially nontraditional technology-based tools previously not identified. In addition, nursing faculty could better understand how students determine whether a strategy is effective and if they made modifications to those strategies over that first semester of their nursing program. The information gained from this study may lead to more extensive studies to further evaluate and refine the information on the most effective study strategies for nursing students. Furthermore, faculty could use this information to guide and support their students and incorporate preferred study methods into their curriculum while teaching strategies unknown to students. Students could benefit by having the study strategies necessary to improve their test performance, thus leading to better grades, and successful completion of the nursing program. Such study strategies could also be used to improve performance on the NCLEX resulting in more registered nurses. This study might also indirectly affect positive social change in that healthcare facilities could benefit if there were more registered nurses available to fill vacancies, which could help reduce the burden of excessive patient caseloads created by nursing shortages. Finally,

communities and society could have the nursing staff available to meet the demands of an increasingly aging population who require more extensive nursing care.

Summary

This study addressed some of the gaps in the literature regarding the study strategies used by students during their first semester of nursing classes and how they may have modified their strategies over that semester. Such information was necessary to help faculty better use these strategies in the classroom while identifying strategies that might be unfamiliar to students that could be taught to them. Given the projected nursing shortages, it was essential to identify ways to help support nursing students so they could acquire the necessary test grades in their classes and complete their nursing program. In this study, I sought to focus on registered nursing students in the United States and used a qualitative methodology to explore all strategies used by these students when preparing for a nursing exam during their first semester. Winne and Hadwin's (1998) self-regulated learning model was selected as the conceptual framework as it addressed multiple stages in the study process and aligned best with the adolescent and adult learner and accommodated the use of technological methods in learning. Positive social change could be achieved as nursing faculty maximize the use of preferred study strategies in their lessons, further supporting the student to be successful in the nursing program.

In Chapter 2, details of the literature review are provided, including the search terms, databases, and search engines used to research this topic and the selected conceptual framework. Key concepts in study strategies used by nursing students and other college students are outlined. In addition, further details are provided on Winne and

Hadwin's (1998) self-regulated learning model, including elaboration on this model's stages, its use in other similar studies, and its relevancy to this study.

Chapter 2: Literature Review

Introduction

The need for nurses continues to increase as a result of nurse retirements, expansion of community-based care, a larger aging population, higher acuity patients, and nurse turnover (American Association of Colleges of Nursing, 2020; American Nurses Association, n.d.; Buerhaus et al., 2017; Goldman & Gaudette, 2015; United States Bureau of Labor Statistics, 2020). To help fill this nursing shortage, new nursing graduates are required. Nursing schools have tried to meet this need by expanding programs or adding new ones, often having more eligible students than their programs could accommodate. According to the American Association of Colleges of Nursing (2020), 80,407 qualified applicants for baccalaureate and graduate nursing programs were turned away in 2019 as there were not enough openings, making these programs competitive to get into.

Once accepted into a nursing program, these nursing students were often required to achieve specific grade requirements in their nursing classes and scores on the NCLEX predictor tests as studies have shown that these were strong predictors of successfully passing the NCLEX (Frith et al., 2008; Kim et al., 2019; Sears et al., 2015; Simon et al., 2013). Success on the NCLEX and nursing program completion is required for nursing graduates to obtain their registered nursing license (National Council of State Boards of Nursing, 2020). However, up to 50% of nursing students choose to drop out, with many of them deciding to leave in their first semester (California Board of Registered Nursing, 2019; Frieda Paton, 2018). Thus, it is important to ensure students have the study skills

necessary to do well on these nursing examinations and predictor tests to help improve attrition rates. Success on these high-stakes tests requires strong study skills, yet nursing students have often articulated a need to improve such skills (Dapremont, 2014; Langtree et al., 2018). Because researchers have not identified preferred nursing students' study strategies, faculty might not be capitalizing on their use in the classroom, which, if incorporated, might further enhance student learning and promote collaboration between the student and teacher.

Previous research on nursing students' study skills has been limited in scope, resulting in an incomplete examination of all strategies used or how these strategies might have been modified while in nursing school. Some studies have focused on the effectiveness of a particular intervention to assist with test anxiety or self-efficacy (Farner et al., 2019; Johnson, 2019; Miller et al., 2016; Rajagopal et al., 2012), improve collaboration with the instructor and provide personal feedback on exams (Gerdes, 2018), and increase at-risk student retention by using peer tutoring (Higgins, 2004). Because only one intervention or strategy was focused on, it was unclear what other strategies were being used by the student in conjunction with this new intervention. Two studies focused on study strategies used in prerequisite nonnursing classes (Felicilda-Reynaldo et al., 2017; Shahida et al., 2014). The current literature lacks studies focusing on the study methods that nursing students use to improve their performance in nursing coursework. In this research, I sought to fill the gap in the literature regarding the nature of nursing students' study habits while in their first semester of nursing coursework. Thus, the purpose of this study was to improve the understanding of registered nursing students'

study habits during their first semester of nursing classes by describing the perceived effectiveness and evolution of those study skills. This information could help faculty understand student study preferences and promote the incorporation of useful techniques to further help students succeed in their classes and the NCLEX.

When examining students' study skills while in nursing classes, researchers have frequently used quantitative methods involving a Study Skills Inventory or questionnaire with a Likert scale (Patidar, 2019; Shahida et al., 2014). However, such studies have limited students' responses by not allowing the elaboration of answers or providing the means to articulate strategies that may not have been listed on the tool. Therefore, in this study, I used a qualitative methodology with an individual interview format using open-ended questions to elicit information on nursing students' study habits. This allowed students to convey if they modified their strategies during their first semester of nursing classes. This aspect had not been previously explored, although nursing graduates had indicated they added study strategies while in their nursing program (Dapremont, 2014).

In this chapter, I explain the methods used to search the literature, expand on the main concepts in the conceptual framework, and outline the key concepts of this study. I explain the literature search methods used by identifying the words, phrases, search engines, databases, and processes for finding articles relevant to this study. I also describe the four stages of Winne and Hadwin's (1998) self-regulated learning model while demonstrating this model's relevancy to this study. Furthermore, I elaborate upon the information currently known about nursing students' study strategies while comparing

what has been observed in other college students. Finally, I summarize the main points of the chapter and identify how this dissertation filled some of the gaps in the literature.

Literature Search Strategy

Articles relevant to this study were found by performing electronic searches using the Cumulative Index to Nursing and Allied Health Literature, Education Resources Information Center, Proquest, PubMed, SAGE Journals, Science Direct databases, and the Google Scholar search engine. Keywords searched included *study habits AND nursing student, study habits AND college student, study skills AND nursing student, study skills AND college student, study strategies AND nursing student,* and *study strategies AND college student.* The terms *study habits, study skills, study strategies,* and *first-year students* were searched individually to expand the search further. Initial searches were done using the timeframe of 2015 thru 2020. In addition to using these databases and search engines, I examined the reference lists from retrieved articles to identify further sources. The articles selected were written in the English language and peer-reviewed. Additional literature searches were conducted to identify articles on Winne and Hadwin's (1998) self-regulated learning model as well as research that used this model. A total of 27 articles were included in the conceptual framework and literature review.

Conceptual Framework

The conceptual framework selected for this study was Winne and Hadwin's (1998) self-regulated learning model. Winne and Hadwin stated that studying had many common features that included activities such as independent study, teacher goal setting,

searching and synthesis of information, creating an optimal studying environment, and producing visual cues such as concept maps, diagrams, outlines, and notes, which represent a student's cognitive processes. They developed a model that incorporates self-regulated learning with a metacognitive perspective (Winne & Hadwin, 1998). Students learn from monitoring their progress, asserting goals, and then self-regulating their actions (Panadero, 2017). Winne and Hadwin's model included four major stages of studying: task definition, goal setting and planning, study tactics and strategies enactment, and studying adaptations. Students often implement these stages in order, although alterations are possible depending on the familiarity of the task, the student's self-evaluation skills, and ability to recognize the need for adaptations (Winne & Hadwin, 1998).

Task Definition

In task definition, the student must determine the study task and identify available resources as well as potential barriers (Winne & Hadwin, 1998). For instance, if the task is to review for an exam, the student considers the test difficulty, test format, and the type of materials that could be used during the exam, such as notes and textbooks (Winne & Hadwin, 1998). These factors influence the study strategies chosen, the amount of time spent studying, and the level of review required, thus impacting the study plan.

Goal Setting and Planning

Once the task is defined, the student establishes goals related to the task and begins creating a plan (Winne & Hadwin, 1998). Goals could encompass various standards and are simple, such as studying a chapter within a set timeframe, or more

complex, like reviewing the material until it is fully comprehended (Winne & Hadwin, 1998). As mentioned, the teacher might have initiated these goals; however, the student often modifies the goals based on personal standards (Winne & Hadwin, 1998). For instance, a student might desire to get the minimum test grade required, whereas the instructor's goals might be for the student to attain mastery of the information and perform in the top percentiles. In the example outlined, the student's goals involve incorporating strategies in which just general concepts and themes are studied instead of studying as long as necessary to achieve full understanding and mastery of the material.

Study Tactics and Strategies

During the enactment stage, the student implements the study plan, incorporating the study strategies thought to be beneficial in achieving the set goals (Winne & Hadwin, 1998). Examples of study tactics include underlining and highlighting text, writing summaries, creating mnemonics, and reviewing key concepts (Winne & Hadwin, 1998). While implementing these tactics, the student begins self-evaluating abilities and skill areas, potentially identifying areas of weakness (Winne & Hadwin, 1998). Based on that assessment, modifications could be made to the study plan (Winne & Hadwin, 1998). If the student determines none of the study tactics would work, a decision might be made to quit the studying task (Winne & Hadwin, 1998).

Studying Adaptations

Finally, the student evaluates the outcomes of the study task and uses cognitive skills to determine if adaptations are needed to achieve better results in current and future study tasks (Winne & Hadwin, 1998). These alterations could cause changes in how the

student acquires knowledge and uses study skills and might impact future motivation and beliefs (Winne & Hadwin, 1998). After a study session, the student evaluates if the session's goals were achieved and makes changes to study strategies in the next session (Winne & Hadwin, 1998). For example, if reading and highlighting text did not result in complete comprehension, the student might add writing summaries and answer chapter questions to improve the study session's outcome. Likewise, poor performance on an exam might lead to adaptations in the study goals, plan, and tactics used for future tests. In some cases, however, the student might instead lower personal standards of success, thus lowering goal expectations (Winne & Hadwin, 1998).

Self-Regulated Learning Model in Previous Studies

The application of Winne and Hadwin's (1998) self-regulated learning model in educational research has involved the use of some or all four of the model's stages. Chen et al. (2016) focused on the goal-setting and planning stage of this model when examining low-performing high school students doing a science laboratory exercise. They found that the students in the treatment group who were given goals and planning suggestions tended to choose low-level goals, with the females selecting more goals than the males (Chen et al., 2016). When performance on a postconceptual test was compared with a pretest, the males in the treatment group did better than the control group and had improved attitudes towards science (Chen et al., 2016). The two female groups' results were less differentiated as the treatment group did not outperform the control group; however, both performed better on the posttest. Their results indicated that low-performing students were challenged with identifying the correct number of goals and

level of difficulty during goal selection. The results suggested that faculty intervention might help guide students to create better goals and improve self-regulation. Furthermore, the authors noted that goal setting and planning was only one aspect of this model, prompting their suggestion to include more interventions and model stages in future studies (Chen et al., 2016).

Other research has included all four stages of their self-regulation learning model while also being applied to technological-based learning. One such research area is in mobile learning. Mobile learning encompasses learning using a device, such as a smartphone, tablet, iPod, virtual reality, or augmented reality (Palalas & Wark, 2020). These technologies have evolved to include more interactive learning experiences and might enhance efficiency, effectiveness, personalization, and adaptation when learning new material (Palalas & Wark, 2020). These technologies' mobility provide flexibility and portability, allowing learners to use them as studying and metacognitive tools at any time or location (Palalas & Wark, 2020). In addition, Looi and Wong (2014) used the four stages of this model as a cornerstone for their mobile learning model when developing an implementation plan transforming primary science curriculum to include multiple technologies used in the classroom and at home. These mobile technological exercises included small-group activities, data collections, geo-tagging, scientific experiments, discussions, animations, concept mapping, and knowledge question exercises (Looi & Wong, 2014). This new curriculum helped students better self-regulate and personalized their learning resulting in further expansion of the program to other classrooms (Looi & Wong, 2014).

Similarly, Zheng et al. (2018) developed a mobile self-regulated learning approach system using this model. They tested to see if college students who were given access to this system performed better on English posttests after reading four passages than those who were only given the passage and test questions (Zheng et al., 2018). They found that students who had been given the self-regulated learning approach system performed better on the reading comprehension tests and had higher self-regulated learning skills than the control group (Zheng et al., 2018). These students articulated that they found the system helpful and useful in improving their self-regulated skills and that they would recommend the system to their friends (Zheng et al., 2018).

Besides mobile learning, this model has been used in other technological-based programs such as hypermedia learning environments. This environment involves a computer-based platform that contains multiple sources of information, such as videos, audio, animations, text, and graphic representations (Tuysuzoglu & Greene, 2015). The student controls which areas to access, so learning can be individualized based on specific needs or knowledge deficits. Tuysuzoglu and Greene (2015) used a hypermedia learning environment on the circulatory system for college students at one university to determine the effect on posttest performance when students adapted their strategies if they did not understand the information compared to those who continued using existing strategies despite their ineffectiveness. A positive relationship was found between adaptive strategies and posttest performance (Tuysuzoglu & Greene, 2015). In addition, a negative relationship in posttest performance existed when students maintained a static strategy and did not alter the study strategies used (Tuysuzoglu & Greene, 2015). This

study revealed the importance of identifying ineffective strategies and making necessary modifications to studying strategies to improve test performance.

Relevance of Self-Regulated Learning to This Study

Winne and Hadwin's (1998) self-regulated learning model aligned with this dissertation as I considered goal setting, incorporation of study strategies, implementation of a study plan, and adaptations to study strategies based on self-evaluation and performance. Panadero (2017) suggested that Winne and Hadwin's self-regulated learning model is more appropriate to use when focusing on mature students, such as adolescents and adults, because more cognitive skills are needed at this level. Furthermore, college classrooms have higher amounts of student versus teacher control, which offer more opportunities for self-directed learning and self-regulation (Greene & Azevedo, 2007). Even with less control, faculty still play an important role in the process by assisting students with their self-regulated learning through the promotion of effective study tactics and identification of inaccurate student self-evaluations (Greene & Azevedo, 2007; Sanders & Cleary, 2011).

For students studying medicine, Sanders and Cleary (2011) promoted the use of a self-regulated learning model to improve academic and clinical performance. They suggested faculty could help students develop their studying goals, studying strategies, and self-evaluation skills, especially when medical students are struggling (Sanders & Cleary, 2011). To do this, faculty must first understand students' current preferred study strategies and identify whether adaptations to these strategies occur as a result of self-evaluations and external performance outcomes such as test grades. In addition, faculty

must know whether students were struggling because of knowledge deficits regarding alternative study strategies or could not recognize when adaptations were needed (Tuysuzoglu & Greene, 2015). This dissertation provided this initial information using qualitative inquiry to explore these strategies and adaptations in nursing students. Nursing faculty could use the information to better assist students with their study goals, strategies, and self-evaluations.

Furthermore, studies had indicated the effectiveness of using Winne and Hadwin's model for technological-based learning (Looi & Wong, 2014; Tuysuzoglu & Greene, 2015; Zheng et al., 2018). Previous studies on nursing study strategies for class examinations had focused on non-technological methods; however, such strategies might be a more integral part of studying given the mobility and flexibility provided by smartphones and tablets. As such, the self-regulated learning model selected for this dissertation must include technology use, and the Winne and Hadwin model was applied in this type of research.

Literature Review

Measurement of Study Strategies

To get a broader understanding of college students' study skills, researchers had often used inventories or study skills scales to examine students' concentration, time management, test preparation, memory, note-taking, textbook use, reading abilities, or test anxiety. Students ranked their use of skills within these categories, and researchers could then compare results using gender, departments, or minimum study effectiveness scores.

Bulent et al. (2015) used the Study Skills Scale to determine the effect of School of Education undergraduate students' study skills on academic achievement and whether there were significant differences in those skills when considering gender or department. The scale was given to 159 undergraduates at a university in Turkey who were in the Departments of Computer Instructional Technologies, Pre-school Teaching, or Science Teaching. The Study Skills Scale included questions on motivation, time management, and test preparation with students using a 5-point Likert scale to rank them. The mean average score for each of these three areas was high, indicating students consider them all important. Significant positive correlations occurred, suggesting that motivation, time management, and test preparation were related. Females had significantly higher scores compared to males in time management. In addition, significant differences were observed in the Primary School Teaching and Computer Instructional Technologies departments compared to Pre-school Teaching and Science Teaching, although no explanation was given on factors that might have contributed to this variation.

Patidar (2019) assessed 200 students' study skills in a Bachelor of Science nursing program in India using the South Central College Chicago Study Skills Inventory. This inventory tool contained 51 questions that examined six study skill areas: textbook skills, note-taking, memory, test preparation, concentration, and time management. Students used a 5-point scale to indicate their use of a particular skill when completing the questionnaire. The scores in each category were added and compared to a minimum study effectiveness score to determine if improvement was needed. Demographic data revealed participants were primarily female, with most of them being

in the 18-19-year-old age group. Every study skill category showed some students needing improvement, with more than 59.5% of students needing help in time management, 43% in note-taking, 34% in textbook reading skills, 23.5% in concentration, 20% in memory, and 15.5% in test preparation (Patidar, 2019). These results indicated that nursing student study weaknesses were varied and were not limited to one specific category. A breakdown of scores for each question was not provided, so it was impossible to determine which specific skills students were under-utilizing or not using. Furthermore, it was important to note that the test preparation section questions might have been assigned higher total scores because they covered topics such as eating balanced meals, exercising daily, and completing homework which could explain the lower percentage. In contrast, the other questions in the tool seemed more relevant to the category assigned. Because of using a scale and set questions, students were prevented from further elaborating on their study skills or mentioning skills that were not presented in one of the questions. Furthermore, nursing students of all levels were included in the study, so the authors could not differentiate between skills used early on in the nursing program versus those that had been modified.

Study Habits of Nursing Students

While general study skills could be obtained through inventories and study skills scales, additional research had focused on specific study habits used when preparing for exams. A study habit was often differentiated as a specific task done which often would fall under the more general category of a study skill. For instance, a 30-minute study

period each day could be considered a study habit under the general study skill of time management.

Study habits appeared to be a factor in affecting academic performance in nursing students. Alos et al. (2015) examined the importance of five different factors (personal conditions, teacher, school, home, and study habits) on academic performance for fourth-year nursing students at one college in the Philippines. Seventy-four students, primarily female, were given a self-reporting questionnaire in which they assigned a score of 1 (no impact) to 5 (very high impact) to each question. Nine questions were included under the subheading of study habits. Based on the students' feedback, teacher-related factors had the most significant impact, followed by study habits which had an overall mean score of being highly impactful. The highest score within study habits was given to the question about studying only when there was an upcoming quiz. Other statements given a high impact score in this category included that students were often disturbed during their studying. They studied only when they wanted to, preferring to watch television or listen to the radio instead. They also scored highly that they did not have time to study at home. Even in their fourth year, it appeared many of these students had ineffective study habits.

A descriptive qualitative study done by Felicilda-Reynaldo et al. (2017) explored the study habits of 19 Bachelor of Science in Nursing students who attended a Midwestern university in the United States. Students, in their junior and senior year, were asked to participate in focus groups and reflect upon their study habits while taking general education and prerequisite nursing classes. Students stated they often crammed for exams, waiting until the night before the test to memorize and learn the content. Their

focus was on merely reviewing general concepts as it was sufficient to be successful on tests. Students used methods such as listening to lectures while in class, memorizing words or main concepts using flashcards or web applications such as Quizlet, and skimming through the textbook. These memorization techniques were used most frequently in science prerequisite classes. Some students acknowledged they did not even open their textbook during their class. Study location did not seem important, although students shared it needed to be where they would not be distracted. The amount of time spent studying ranged from 30 minutes to 1 hour, although more time was taken for difficult classes such as anatomy and physiology. When multiple exams were to occur within the week, such as during midterms, students often would not begin studying until 2 to 3 days before the exam. Students often relied on the professor's prompts in class to determine which materials to read or review. Study guides and professor's PowerPoint slides or notes were used frequently, but other supplemental materials were ignored as students felt they were not needed. Students felt they often learned many general concepts while listening to the instructor's lectures in class. When taking the prerequisite science classes, some students also reached out to the instructor for additional help or clarification of lessons, but usually, this did not occur until they failed an exam. The majority of time spent studying was done alone, although students occasionally used a partner to study vocabulary. This preference was mainly due to the cramming strategy used as students studied at times convenient for them, and study sessions tended to be for short periods. Some students participated in study groups while taking the prerequisite

science classes as the material was complex, and students could learn from and quiz one another.

Although their research provided some information about students studying before starting their nursing classes, these authors interviewed nursing students in their junior and senior years of college who reflected on previous study habits. Their perceptions of what was used may be altered due to the time that had passed and may inadvertently contain some strategies the students implemented when starting their nursing courses. The authors noted that the high dependence on using cramming techniques prohibited long-term memory retention, which was needed to build on foundational information and apply critical thinking in nursing.

To capture some of the academic transitions and alterations in expectations experienced by first-year nursing students, Pryjmachuk et al. (2019) had students at an English university write a reflection during weeks 8-12 of an online study skills module. Of the 161 reflections submitted with permission to be reviewed, the researchers analyzed 50 to reach information power. Grounded Theory principles were used to conduct thematic content analysis. Two main themes identified were: managing expectations and practical tools and support aids. In their reflection, many students conveyed they found the first semester rather challenging, while some questioned whether they were capable of doing what was required. First-year nursing students noted that having good planning and time management skills assisted them in their nursing courses. They identified that a good support network was significant in helping them with the transition to college. These students found seminar groups, peer-assisted student

support sessions, inquiry-based learning sessions, online resources, podcast lectures, and virtual guides to be helpful tools. Group sessions allowed fellow nursing students to discuss the week's topics and explain material if there was a misunderstanding. In addition, they valued learning guides, PowerPoint slides, and flashcards to aid in their comprehension and retention of information. Further elaboration was not provided regarding how these students used these aids, resources, or support sessions when preparing for their nursing exams. Those students who had previous college or university experience stated they were better equipped to take notes and revise their study skills, often experimenting with different techniques until they found strategies that worked for them.

Faculty Tutors and Peer Tutors

Some studies had focused on faculty and peer tutoring as a potentially effective strategy for students. Personal tutoring could help promote academic and professional development, provide personal support, enhance relationships with faculty and peers, and improve a students' self-reflective approach to learning. These one-on-one interactions could be between students and faculty or amongst nursing students either in the same or different levels in the program. Initial interactions with faculty and peers could largely influence whether students would continue to pursue this avenue of help with their studying.

Roldán -Merino et al. (2019) explored the personal tutoring experiences of nursing students and faculty tutors at one university. Four focus groups of 6-8 people were interviewed: one with students in Years 1 and 2 of the nursing program, one with

students in Years 3 and 4, and two comprising of faculty tutors. From these interviews, the authors identified three main themes which included personal tutoring as a supportive relationship, a means for linking theory and practice, and an opportunity to get peer support and learn from others. Students and faculty found the relationship emotionally beneficial with students noting that it provided a sense of security and belongingness. Students stated their tutors helped them make sense of the content and incorporated personal clinical experiences, further connecting theory and practice for them. For these interactions to be positive, students felt tutors should consider the student's views, understand that different approaches can be used when doing things, and be open to learning from their students. Such statements reflect that some nursing faculty may not be in tune with their students' preferred approaches when learning new subject material. Some students did not experience a supportive relationship with their tutors and saw these interactions as merely a course requirement, which increased their workload and added stress to their lives. The first tutorial session largely influenced the student's perception of tutoring and its effectiveness, often determining whether they would continue participating. At this university, nursing students of all levels gathered twice a year in group sessions, which allowed them to share experiences. Although these experiences were mainly about clinical placements and disclosure of what future nursing classes would entail, students valued these exchanges and felt they could be more open with fellow nursing students. Overall, faculty and peer tutoring were considered beneficial.

The importance of faculty support services such as tutoring or group sessions and their availability to students was also found by Chan et al. (2019). Chan et al. (2019) did a systematic review of attrition among undergraduate nursing students. One of the four major themes they found contributing to students' success was student support services such as tutoring. Students often required emotional and academic support, especially as first-year students, given the heavier academic load and requirements expected in a nursing program. Having access to faculty and other supportive services was highly rated, often preventing students from dropping out of their courses. However, they did find in the literature that students had some challenges with faculty tutors and clinical staff. The faculty was not always readily available due to their workloads, schedules, communication and rapport issues, or lack of resources. A negative interaction impacted future use of these services. Furthermore, fellow nursing students' experiences with these services and personal perceptions about getting assistance also influenced whether they will try them.

Social Media, Digital Tools, and Study Habits

With the advancement of technology, concerns were raised whether social media would have a negative or positive impact on college students and their study habits. Social media could take time away from studying as students might use it for personal rather than educational purposes. On the other hand, it could be a new innovative method to incorporate into the learning process. As social media evolved, so did digital technology. Further technological advances included newer digital tools in the form of electronic devices, new hardware, and more interactive software programs. In addition,

students could now more readily access these tools and social media with the availability of the Internet and WiFi services, giving them the flexibility to use them at any location or time. Some research had been done on college students' use of these digital platforms and technologies regarding their learning or studying.

Thalluri and Penman (2015) decided to explore Facebook as a tool for group work for undergraduate science classes at an Australian university. Case scenarios were posted on Facebook and assigned to students in a pathology class and to nursing students taking a clinical science class. Students created PowerPoint presentations and short videos to answer questions related to their assigned scenario, which they posted on Facebook. Once the project was over, they also completed a questionnaire that contained open-ended questions about their Facebook encounters as well as questions using a Likert scale. Although this was the main focus of the study, the instructor also used Facebook to post enriching activities such as sample quizzes, multiple-choice questions, YouTube videos, and other online materials. Students reported that Facebook allowed them to have more communication and interactions with their instructor and peers. They felt the enrichment activities, such as the quizzes and discussions on past exam questions, kept them engaged in their learning. In addition, they could get information and updates immediately and at times that were convenient for them, especially because many accessed Facebook through their cell phone. The only concerns they mentioned with Facebook were the potentials for getting too distracted, resulting in them getting off task, or that people would not use appropriate etiquette, inadvertently creating a hostile environment. The

authors concluded by stating that Facebook was beneficial, suggesting that it be incorporated into student learning.

The actual impact of social media use on nursing students' study habits was explored by Ogbuiyi et al. (2020) at a university in West Africa. In this study, the researchers sent out structured questionnaires to 96 300-level nursing students with most of them being age 21 or under and female. Of these students, 68.8% indicated they checked their social media multiple times a day, with many spending one or more hours a day on it. The three most common social media sites used were WhatsApp, YouTube, and Snapchat. Nursing students indicated they used social media to share information and opinions with each other, remain current in news and events, research literature, collaborate with classmates, and discuss content with their faculty. When asked about their study habits, these students indicated they do not spend time on social media when studying. They reviewed their notes within one day of class and researched material online or in the library when needed. The majority of students also would study at times when they were most alert, starting with the most challenging subjects. Despite selecting the most alert times, they did not formally make a study schedule plan at the beginning of the week. When asked specifically if social media impacted their study habits, concentration, reading, or writing abilities, they indicated no effect. The regression done by the researchers indicated that social media had no effect on their study habits. However, approximately half of the students stated that they checked their phone for the latest updates on social media, suggesting some time may be taken away from their focus and studying.

Social media use by Generation Z nursing students was examined by Vizcaya-Moreno and Pérez-Cañaveras (2020) focusing on the nursing clinical learning environment. From a university in Spain, 127 nursing students, with at least one clinical experience and aged 25 or less, were given a 41-question survey. The questions on the survey were about social media use, teaching methods during clinicals, and characteristics of Generation Z students. Students ranked their level of agreement or frequency of use with a Likert scale ranging from 0 to 5. Students were in their second thru the fourth year of the nursing program. The majority of these students agreed they were high consumers of technology and they preferred the digital world. Students spent an average of 1.37 hours per day on social media for clinical learning and 2.56 hours for personal use. Although they used WhatsApp, YouTube, and Instagram for clinical learning, they preferred using Google Currents/Google+. They used social media relative to clinical learning to help link mentorship to clinical experience, complete readings, and for its online tutorials, videos, interactive games, and virtual learning environments. While not focused specifically on the classroom environment or as a studying tool, this research reflected nursing students' preference to use digital methods of learning and digital tools, such as videos, games, and tutorials.

Social networking site use, perceived benefits, and impact on nursing students' study habits were also investigated by Valdez et al. (2020). Their quantitative cross-sectional study involved Bachelor of Science in Nursing students in their first- to fifth-year of college from five countries: Israel, Iraq, Oman, the Philippines, and Turkey. An online survey tool containing demographic, social networking sites (SNS) utilization,

study habits, and perceived benefits of SNS questions was administered and completed by 1,137 students. Students used a Likert scale for all but the demographic questions. The majority of the students were 20 to 22 years old, female, and in their third year. Like the previous study, students stated Whatsapp was frequently used, but these students also preferred Facebook and Google, with a small percentage using Snapchat or YouTube. Similarities were found regarding nursing students' use of these sites to get updates on school activities, learn more about current topics, share opinions and thoughts with others, and do group research. They also indicated these sites assisted with assignments and projects and helped them learn proper nursing skill techniques. Students indicated they created a study plan that included studying daily, setting specific times to study, determining the best time to study, and reviewing material daily or weekly. The focus was also made on setting goals that included knowing the importance of earning high grades and prioritizing studying over other activities. Their study found a significant positive correlation between students' study habits and social networking site utilization, suggesting that as students become more devoted to their study habits, the more they use social networking sites.

Various digital tools and programs were examined regarding college students' learning and studying. Incorporation of video podcasting (vodcasts) to help physiotherapy students learn clinical skills was explored by Hurst (2016). In this study, a series of focus groups was done with undergraduate and pre-registered physiotherapy students attending a university in the United Kingdom. Various video podcasts were posted on the students' online virtual learning environment. In the focus groups, students

were asked to share their experiences regarding these vodcasts and describe the experiences that best help them learn clinical skills. The students shared that they used the vodcasts to learn skills especially related to the musculoskeletal and neurological systems. They accessed these videos with their laptops, tablets, and phones and liked being able to retrieve them anytime or at any location, often even reviewing them at their clinical locations. They felt these vodcasts and their textbooks allowed them to construct their own learning process. When struggling with content, they could review the vodcasts repeatedly and rewind on a particular skill if they were struggling with it. They stated the vodcasts allowed them to reflect upon their technique, remind them of theory related to the skill, and help them build confidence in their abilities and knowledge retention. They acknowledged this was a piece of their learning process, often highlighting other beneficial learning techniques such as case scenarios, classroom practice, tutoring, and instructor feedback. The students viewed these vodcasts before learning the material in class to provide some background information, during class to supplement instruction, and after class for review. Although the sample size was small and included only 31 students, Hurst demonstrated that students would incorporate vodcast technology into their learning process as an additional supplemental tool to their learning.

In their study, Dabbagh and Fake (2017) examined college students' perceptions of personal learning environments. Students in undergraduate and graduate programs at one university and graduate students at another university within the United States were asked to blogpost the answers to five questions on their ideal personal learning environment, learning interests, and preference for computer hardware, software, and

digital tools. Results from the university with undergraduate students found that almost all of them used laptops, with a high percentage using smartphones, and to lesser degree tablets, to learn. More than half of these students used three or more devices for their learning. When asked what digital tools they would like access to, they answered they would like concept-graphing, graphic organizers, infographs, and other organizational tools. One-fourth of these students also desired progress-tracking tools to ensure they were staying on track with grade and class expectations. For software, students tended to use search engines, social networks, and online videos. When describing their personal learning environment, some students misunderstood the question and described a quiet personal space, while others saw it as a digital environment. They also described their learning space as containing other learners to discuss ideas, a location to access educational materials, and a way to obtain feedback on their learning. Specific comments were made that they enjoyed learning through digital platforms that could be used from multiple electronic devices, giving them the freedom to access it anywhere and anytime. While this study did not specifically focus on study strategies, it did show that these students incorporated digital technology into their learning process.

Effectiveness of Study Strategies

The progression from high school to college courses often requires students to recognize potential ineffectiveness with previously used study strategies and make adjustments to master more difficult material and meet rigorous course requirements. However, research suggested that college students might need some prompting to make these changes. They might also have challenges identifying ineffective strategies.

Blasiman et al. (2017) compared college students' intentions to study with their actual study behaviors while also investigating their beliefs about the effectiveness of ten common study strategies. A total of 268 college students from 11 different lower-level division classes were surveyed at one Midwestern university. During the first week of class, students were given a survey that asked them how much time they planned to study each day during the 2 weeks before the exam. Also, they were asked to use a Likert scale to indicate how much they planned to use each of the 10 common study strategies as well as identify how effective they thought these strategies were. Over the semester, these students were given six subsequent surveys, distributed every 2 to 3 weeks. On these surveys, students had to identify how many minutes they spent studying and how often they used each of the ten study strategies. The authors found a statistically significant difference between what students intended to do and what they actually did regarding their studying. Students had intended to use flashcards and practice tests; however, these were used most infrequently. Instead, they selected strategies such as rereading text and notes, highlighting information, and making simple outlines which were less valuable given they were more passive forms of learning. Interestingly, they thought specific strategies such as highlighting text or creating simple outlines were ineffective strategies, yet they consistently used them anyway. Discrepancies were also found between their intended and actual study times. Students had intended to spend more time studying 2 weeks before the exam, with more intensive studying done within 2 days of the exam. In actuality, students studied far less within that 2 week period, often cramming the night before the exam for an average of 45 minutes. This cramming session was part of their

original study plan suggesting this was an accepted practice by college students. Throughout the semester, these students continued to choose to study fewer hours than originally planned and they continued to rely on ineffective study strategies that they knew were less beneficial. Being first-time students, the misuse of time and preference for ineffective study strategies might be influenced by the fact that this was their first experience with college and had not yet learned to make the necessary adaptations.

Dang et al. (2018) evaluated the use of interventions to help students' with their self-evaluation skills, ability to identify the need for studying adaptations, and effect on exam performance while taking an introductory biology course. Two cohorts of biology and biochemistry students consisting of 171 students at one university in California were required to complete pre-lecture guided homework assignments, participate in peer discussions, do individual and group quizzes, and write reflections after taking exams. Metacognitive awareness inventories were also done prior to exam one and at the end of the semester to identify changes in metacognitive and self-evaluation abilities. When students were asked how they thought they performed on the first exam prior to getting test scores, many overestimated their performance. Over-estimators tended to perform lower on exams compared to those that under-estimated their performance. However, improvements were noted in their test performance estimation and test scores by the third exam. At the beginning of the semester, 20 students completed reflective exercises and identified some of their strengths as taking an appropriate amount of time to learn material, having the ability to paraphrase material, using visual aids, making connections, and being able to breakdown learning into smaller manageable parts. Weaknesses

included trouble with memorization, not really understanding the material, being easily distracted, and having difficulties with multi-tasking and procrastination. Many of these students acknowledged applying new strategies that included reading and studying before the lecture and studying with other students or in groups. However, no significant changes were found in the metacognitive inventory scores when a comparison was done between the beginning and end of the semester suggesting students' metacognitive abilities and self-evaluation had not improved significantly despite these interventions. Unfortunately, a control group was not done so it is unclear the degree to which these interventions might have helped assist students with adding some new study strategies even though significant changes to their metacognitive scores had not occurred. In addition, the control group would have identified whether students were able to self-evaluate and make studying adaptations without any instructor-led interventions.

The need for instructor prompts and feedback to help students identify potential studying weaknesses was also found by Gerdes (2018). In this study, prospective nursing students in a pathophysiology class at one university in the United State had to complete a post-exam reflection exercise using an online course platform. Within 48 hours of the test, students were asked to identify their satisfaction with their test performance and list the techniques and resources used to study for the exam. They also had to identify if they were going to change how they prepared for a test and include the type of new strategies or resources they planned to incorporate into future studying sessions. Gerdes examined their test grades and reflections prior to providing feedback to identify at-risk students, provide interventions when appropriate, and quickly address students' needs. The author

noted the students often needed assistance in evaluating their test performance and identifying ineffective study habits. Furthermore, they often experienced their first academic challenges while taking this pathophysiology class. As an instructor, Gerdes was able to identify potential teaching strategy changes that would be required to meet the students' needs, although specifics of these changes were not provided. Evaluation of test score improvement was not done in this study and comparisons were not made with a control group. As a result, it was unclear whether these students actually adapted their study habits based on the feedback or if improvements even occurred with test performance. Furthermore, the absence of a control group prevented a comparison to see if students would have self-identified studying ineffectiveness and made self-adjustments without the teacher's feedback.

While these studies indicated college students had difficulty identifying ineffective study strategies or making adaptations to their study strategies, another study found that self-regulating students could make these changes without instructor prompting. Rovers et al. (2018) used a mixed methods approach to investigate how highly effective self-regulating undergraduate medical students approach learning. The study involved 26 first- and second-year students from a university in the Netherlands who were identified by faculty as using effective learning strategies based on observations of problem-based learning exercises involving small student tutorial groups. Student participants were aged 18 to 23 with the majority of them being female. Prior to the focus groups, students were asked to complete a learning strategy questionnaire which contained questions with a 5-point Likert-scale and also some with an open-ended

format. For the focus group exercises, students were divided into one of four groups. Four months later, member checking was done in follow-up focus groups. Grounded theory methodology was used and consisted of open coding, axial coding, and selective coding.

Students were found to frequently use effective strategies such as taking practice exams, creating self-explanations, and asking questions of themselves to test their knowledge. Students also watched videos and created diagrams, mind maps, figures, and drawings to help them with their learning. Their study sessions were spaced out over time and not done in one session the night before. Some less effective strategies, such as highlighting, mental imagery, rereading, and summarizations were also used. Students acknowledged they developed their study strategies through experience and by using a trial-error approach. When asked what kind of education they would most like to change regarding their study strategies, they indicated they would like more exercises with the instructor and more videos as their preferences. Many of these students had established personal learning goals with the focus often on long-term understanding versus short-term memorization. They made adjustments to their study strategies based on available time, study location restrictions, grade performance, and/or test demands. Students recognized that open question tests required a greater understanding of content and more study time than a multiple choice test format. This study indicated college students with highly effective self-regulating learning strategies were able to adapt their methods depending on their goals, situation, time restrictions, and test format. However, the students were selected for appearing to have these abilities so it was unclear how much

prompting would be required for those students that have ineffective self-regulating learning strategies. The students also noted they changed their strategies based on experience and trial-and-error although they were not asked at what point in their program they were able to identify the need for alterations.

Geller et al. (2018) found similar results regarding high-performing students in their study that examined students' academic performance, achievement goals, and use of study strategies. Undergraduate students in an introductory biology course at a midwestern state university were asked to participate in a survey with 931 students completing the survey. Representation occurred from all class levels with more than half of the participants being in their freshman year. Students were asked to complete an adapted version of the Hartwig and Dunlosky survey which asked questions on study habits, learning beliefs, and grade point average as well as the achievement goals questionnaires. Achievement goals were divided into four categories: mastery approach (receive high grade and master the material), performance approach (focus on getting the highest grade), mastery avoidance (get the highest grade without making mistakes), and performance avoidance (avoid failing the class). Higher-performing students, as indicated by higher grade point averages, were more likely than low-performing students to self-test, use diagrams, pictures, and charts, ask questions in class, and were less likely to cram. The majority of all the students tended to focus their studying based on deadlines, prioritizing what was due soonest or overdue unless they had higher GPAs as often they would create a study schedule in advance and follow it. Most students did some form of cramming a few days before the test with even high performers doing it if motivated by

avoidance goals. Unlike the students in Rovers et al.'s study, these college students indicated they studied the same regardless whether the exam was going to consist of multiple choice or open-ended questions. Rereading, highlighting, underlining text, using flashcards, and studying with friends were frequently used strategies. Self-testing was often done to determine how well they knew the material. Most students indicated if they understood a question, they would move onto other material. Although specific adaptations were not identified, high performing students tended to select more effective study strategies aiming for mastery although even they could use cramming if driven by avoidance goals.

Strengths and Weaknesses of Research Approaches

Some research had been done on college students' study strategies; however, few pertained to students while in their nursing program. In addition, many of these studies involved students attending colleges in different countries other than the United States so it was unclear the transferability of the information gleaned as the educational systems were different. Limitations created by inventories or questionnaires using Likert-scales further restricted the information gleaned from quantitative studies. Such questionnaires forced students to select from predefined study strategies which might be answered in a way that would be more socially desirable to fellow peers and faculty. Furthermore, students might be rating them according to their perceived importance instead of their actual use.

Qualitative studies presented thus far indicated more detailed information was provided by students when asked to perform reflective written exercises or participate in

focus groups. Students were able to provide more detail on their experience and expand on tools they were using for learning as they were not restricted to predefined methods. Such information suggested the importance of using a qualitative approach to identify all the different study strategies used by nursing students when they prepare for exams. Finally, the research on nursing students' study strategies presented had not indicated whether students were able to self-identify the need to adapt their study strategies nor the type of changes they made. Furthermore, focus was not on the first semester nursing students in these studies. Given pre-nursing students were found to have ineffective strategies, such as cramming, while taking general education and prerequisite classes, this validated the need to explore the study adaptations taken during the first semester of nursing especially because nursing course requirements were harder.

Summary and Conclusions

The success of nursing students is imperative so that they may graduate from their program, pass the NCLEX, and attain their license to gain employment and meet the healthcare demands of the community. However, the literature indicated that up to half of nursing students contemplate dropping out of their nursing program often within their first semester (California Board of Registered Nursing, 2019; Frieda Paton, 2018). This attrition issue occurred even though many of these students met rigorous entrance requirements, which should have filtered in many of the top-performing students who would be expected to have better study skills. A review of the literature demonstrated that college students often lack study skills or are selecting ineffective ones. Limited knowledge was known about the study strategies of nursing students, especially during

their first semester of their nursing classes, in which unsuccessfulness this early on in the program could result in students deciding to leave the program entirely.

Previous research showed that pre-nursing students used strategies such as focusing only on main concepts and cramming when preparing for exams in their prerequisite classes (Felicilda-Reynaldo et al., 2017). They relied heavily on instructor prompts to determine the content they should study, often ignoring essential materials such as the textbook (Felicilda-Reynaldo et al., 2017). Furthermore, prospective nursing students seemed to need instructor feedback to help them identify they were selecting ineffective study strategies (Gerdes, 2018). This dependence could be problematic if faculty were not providing enough guidance due to availability limitations, time constraints, communication, or rapport issues (Chan et al., 2019).

Research on first-year nursing students indicated that good planning, time management skills, a supportive network, and a variety of resources could be helpful in their transition to college, although exact study strategies were not explored (Pryjmachuk et al., 2019). Studies on nursing students in their junior or senior year of their nursing program indicated that many students were still using cramming as a strategy to prepare for an exam (Alos, 2015). Other studies included a sampling of nursing students represented in all levels of the nursing program from the first year to the fourth year. Faculty tutors were crucial in providing students with a supportive relationship and someone to help them link theory with practice (Roldán -Merino et al., 2019). Peer tutoring also allowed students to learn from classmates and more experienced nursing students (Roldán -Merino et al., 2019). When examining nursing students' use of study

skills in general, improvements were found to be needed in all areas, including time management, note-taking, textbook reading, concentration, memory, and test preparation, suggesting their study weaknesses are varied and not isolated to a single strategy deficit (Patidar, 2019). Unfortunately, these studies did not examine students who were entering their first semester of the nursing program when faced with the intensity and difficulty of nursing classes with class requirements that were higher than what was required in their prerequisite courses. Given that many will decide whether to continue in the program based on their first experiences in nursing classes, research was needed on this particular student population.

Additional limitations existed with the previous studies as many of them were focused on a particular college population, country, or specific strategy and ignored the incorporation of more technological advancements. Most of these nursing research studies were done outside of the United States and might not be reflective of what is found in this country, given differences in educational systems and technological accessibility. Studies showed that nursing students were using social media to share information, collaborate with classmates, find current literature, discuss with faculty, and perform group research (Ogbuiyi et al., 2020; Valdez et al., 2020; Vizcaya-Moreno & Pérez-Cañaveras, 2020). They also used online tutorials, videos, interactive games, and virtual learning environments (Vizcaya-Moreno & Pérez-Cañaveras, 2020). Despite their frequent use, these digital resources had not been focused on as a potential study tool. Student inventories and questionnaires had not included such questions and had limited student responses to Likert ranking scales or multiple-choice selections so that their use

could not be uncovered. This further supported the need for this study to be qualitative so that all study strategies were identified without being limited by a study's research design or focus on a particular study strategy.

Winne and Hadwin's (1998) self-regulated learning model provided the conceptual framework for this study, suggesting students would participate in the four major stages of studying: task definition, goal setting and planning, study tactics and strategies enactment, and studying adaptations. While college students were shown to identify goals and strategies, some discrepancies were found in their actual implementation and use (Blasiman et al., 2017). Some challenges also existed in them being able to self-identify the need for study adaptations without instructor feedback, especially as newer college students (Dang et al., 2018; Gerdes, 2018). Less was known about nursing students' ability to adapt their studying strategies and whether they could do this during their first semester of nursing. Prospective nursing students were found to need instructor prompts and feedback to help identify study strategy weaknesses (Gerdes, 2018), suggesting students in their first semester of nursing classes might not have the ability to do this yet. This dissertation explored what study methods first-semester nursing students were using and perceived to be effective. Furthermore, it sought to identify any changes students make to their study methods due to their performance.

In order to elicit more detailed information from nursing students, a qualitative design format was selected for this dissertation so that students could elaborate on their answers during one-on-one interviews and would not be restricted by the types of questions, answer choice selections, or ranking scales used in previous studies. This

qualitative format should also provide information on whether students at this level can self-identify that modifications are needed in their studying methods and the type of study strategy alterations made as a result. Chapter 3 will further outline this qualitative design format, participation selection, methodology, and data analysis. That chapter will also address issues related to the role of the researcher, trustworthiness, and ethical concerns.

Chapter 3: Research Method

Introduction

The purpose of this study was to improve the understanding of registered nursing students' study habits during their first semester of nursing classes. I sought to elicit participants' descriptions of what study methods they perceived to be effective and to identify any changes made as a result of their performance. A qualitative methodology was selected to allow participants to elaborate on their answers to open-ended questions in one-on-one interviews. This methodology was expected to help me identify study strategies previously unknown, given prior studies had used a quantitative format that used questionnaires and restricted students to multiple-choice answers. These answer choices had not included all possible study strategies, such as technology-based tools. The one-to-one interview format allowed me to gather more detailed information from participants while creating an environment that promoted such disclosure because they were isolated from the peer pressure or influence that could be present in focus groups.

Chapter 3 provides details regarding the qualitative design selected for this study. I explain my role as the researcher, including any potential biases. The methodology section provides details on the population that was sampled, sampling criteria, data collection instrument, recruitment, and the data analysis plan. Furthermore, any potential issues of trustworthiness or ethical problems are outlined.

Research Design and Rationale

I explored the study habits of registered nursing students when preparing for examinations during their first semester of nursing courses and identified how students

determined these strategies were effective. Furthermore, I explored whether nursing students modified their study strategies throughout the semester in response to test performance and self-evaluation of study effectiveness. The specific research questions asked in this study were the following:

- What study strategies do registered nursing students initially use to prepare for nursing examinations during their first semester?
- How did study strategies change throughout their first-semester nursing classes?
- How are nursing students determining whether their study strategies are effective?

This study used a qualitative methodology because I sought to understand how things work, provide insight into people's perspectives and experiences, identify relationships, and uncover meaningful patterns and themes (see Patton, 2015; Ravitch & Carl, 2016). This format was chosen as participants were able to disclose all the study strategies used, provide descriptions to their studying methods, and explain how they evolved those strategies over the semester. Previous studies have been quantitative, with questions and limited answer choices on a questionnaire, often excluding some study strategies and preventing students from disclosing their studying process. In the current study, one-on-one interviews with open-ended questions provided students the opportunity to elaborate on their answers, thereby providing more robust data. A basic qualitative descriptive research approach was selected because this approach includes

open-ended questions to learn more about a problem by uncovering the perspectives of participants without framing the inquiry to a particular tradition (see Patton, 2015).

Role of the Researcher

My role in this study was that of participant and observer as I interacted directly with the participants during one-on-one interviews while observing subtle behavioral cues they exhibited during our conversation. Having these personal experiences with the participants, I had to be conscious of my biases, experiences, background, and values. Creswell and Creswell (2018) suggested that qualitative researchers do reflexive thinking to identify the impact that previous personal, educational, and work experiences could have on the research problem, participant interactions, and interpretations of findings. Also, consideration must be made regarding any connections that could occur between the researcher and the participants or as a result of the researcher's familiarity with a research site (Creswell & Creswell, 2018).

Although I was conscious of personal biases and experiences, concerns about power or supervisory relationships with the participants were nonexistent because I did not teach any nursing courses during this study. In addition, an exclusion criterion was established to exclude any students I had previously taught from this study. During data collection, analysis, and interpretation of results, I ensured I did not incorporate my personal experiences or biases as a former nursing student. Furthermore, I did not judge the strategies these students used, given my own work experience as a nursing instructor. These biases could have influenced the results and led to inaccurate conclusions if provisions were not placed to reduce this. Reflective journaling was used to minimize

these biases. In reflective journaling, the researcher actively monitors and records their roles and influences on the study, ensuring individual position, subjectivity, and assumptions are not altering the interpretation of participants' answers (Ravitch & Carl, 2016).

Methodology

Participant Selection Logic

Purposeful sampling was used to recruit registered nursing students in the United States who had completed their first semester of nursing courses or who were currently in their second semester. Purposeful sampling was selected because it emphasizes an in-depth understanding of cases central to the purpose of the research (see Patton, 2015). Potential participants were recruited by posting a flyer (see Appendix A) on Facebook and LinkedIn, and through an email blast to members from the National League for Nursing who agreed to receive such communication. Students who expressed an interest in participating in the study were contacted to determine whether they met screening criteria. Informed consent was obtained from each participant before the interview. One-on-one interviews through phone conversations or video conferencing without camera were conducted using open-ended questions to allow for fuller, more meaningful descriptions of students' perspectives. These individual interviews maximized the number of responses obtained compared to focus groups in which only a few individuals might have answered. Also, individual interviews provided more scheduling flexibility between me and the participants who may have been from different geographic regions.

Inclusion and exclusion criteria were established for participation selection. The inclusion criteria for participants of this study were the following:

- Participants were nursing students in a nursing program in the United States.
- Participants were training to be registered nurses.
- Participants were over the age of 18 (preventing the need for parental/minor consent).
- Participants had completed their first semester or were currently in their second semester of nursing courses.

Excluded from the study were nursing students whom I had taught. When initial contact was made with potential participants, they were asked questions from a screening tool to ensure they met criteria requirements (see Appendix B).

A minimal sample size was selected for this study, which allowed for modifications to this number based on the data obtained. According to Patton (2015), a minimal sample size should be selected when doing purposeful sampling to guide the researcher while allowing flexibility should additional participants be needed to meet the study's purpose and stakeholder interests. Some flexibility in sample size for qualitative studies is required when the researcher is unsure of the level of detail that will be provided by the interviewees, which may result in reaching saturation sooner (Patton, 2015). If the detail provided is limited, a larger sample size is required (Patton, 2015). Saturation is reached when analysis of the interviews reveals no new information or themes (Patton, 2015). Guest et al. (2006) suggested that a sample size of 12 is sufficient when doing individual interviews with a relatively homogenous group to understand

common perceptions and experiences. In a systematic review of single-interview-per-participant designs within three health-related journals over a 15-year period, Vasileiou et al. (2018) found that mean sample sizes involved 18.1 to 44.5 interviews, with the minimum number of interviews being six. Dapremont (2014) reached thematic saturation after interviewing 18 Black nursing graduates in a study on prenursing study strategies. Based on the information provided by these studies, I anticipated that the minimal sample size for the current study would be 12 to 18 interviews. However, this sample size would be expanded if new information or themes were being uncovered, or the sample size would be reduced if saturation was reached with fewer than 12 participants.

Instrumentation

A demographic questionnaire and an interview guide were developed for this study. The demographic questionnaire consisted of four questions (see Appendix C). An interview guide was created for the one-on-one semistructured interviews. The interview guide consisted of nine open-ended main questions and five open-ended subquestions (see Appendix D). The subquestions were asked if more detail was needed from participants regarding the main topics. I developed the questions based on information obtained from previous studies and ensured alignment of the questions with the four main concepts of the conceptual framework.

Researcher-Developed Instruments

The questions found in the Interview Guide were created by me and developed based on concepts and participants' answers found in Felicilda-Reynaldo et al. (2017) and Dapremont (2011, 2014), while also ensuring information would be gained to answer

the research questions. Felicilda-Reynaldo et al. developed research questions specifically to understand nursing students' studying habits during general education and prerequisite courses using focus groups. They asked questions on how students prepared for their prenursing classes and tests, the number of hours spent studying, utilization of study groups, instructor assistance, and the use of other instructional materials (Felicilda-Reynaldo et al., 2017). Dapremont (2014) conducted individual interviews of Black nursing graduates from a predominantly White student population, asking them about their study strategies and experiences at a specific college. Although their specific questions could not be used for this study as they focused on prerequisite general education classes or a specific population, they provided the insight necessary to develop the questions for this study. For instance, Dapremont (2014) found that nursing graduates who were interviewed adjusted their studying schedules and created specific studying plans while in their nursing program, which led to my question asking students to identify their study routines.

Furthermore, Dapremont (2014) stated that participants did not immediately use all of their identified studying strategies, but, instead, they developed and modified them throughout their program. Based on this information, I created a question that asked nursing students how their study strategies evolved, especially after taking their first nursing tests. To further explore why a student might have been motivated to adjust their study habits or keep existing strategies, I asked how effective their initial studying strategies were. This line of questioning allowed me to identify how the student came to

decide what strategies to keep and what new techniques were implemented to further assist in helping them achieve their required grades.

The questions in the Interview Guide (see Appendix D) were reviewed for validity and to ensure they aligned with the research questions. To achieve validity, the questions were compared to Winne and Hadwin's (1998) self-regulated learning model to ensure all four main concepts were addressed (see Table 1). In addition, the questions were reviewed, and feedback was provided by my dissertation chair and member, both of whom were doctorally prepared nursing educators. These questions provided the information required to answer all three research questions, which aimed to determine the study strategies of registered nursing students during their first semester of nursing classes, the evolution of those strategies over the semester, and how students determined they were effective to use.

Table 1

Comparison of Interview Guide Questions With Conceptual Framework Concepts

Question on interview guide	Concept from Winne and Hadwin's (1998) self-regulated learning model	Explanation of how question reflects on concept
Can you describe the study strategies you used when preparing for your first exams during your first semester of nursing classes?	Study tactics and strategies enactment	Elaboration of students' study strategies addressed the study tactics used prior to taking an exam
Why did you think those particular study strategies would be beneficial?	Task definition, goal setting and planning	Addressed selection of studying strategies in the planning stages when determining studying methods and time needed to study
How effective did you find those study strategies after taking your first nursing exams?	Studying adaptations	Sought to identify if student recognized the effectiveness of study strategies after reviewing test scores which was required prior to self-identifying need for study adaptations
What is your specific routine for studying for your nursing classes?	Task definition, goal setting and planning	Encouraged the student to provide detail on when they recognized the need to start studying for a test (task definition) and goal setting/planning to complete this task
How many hours per week do you spend studying for your nursing classes and exams?	Task definition, goal setting and planning	Identified goal setting and planning of time to prepare for a test (task)
How has the amount of time changed throughout the semester?	Studying adaptations	Addressed adaptations in time spent studying for tests as the semester progressed
What role did a study group or a study partner have in your study strategies?	Study tactics and strategies enactment	Sought to determine if students were using study groups or partners as one of their strategies

Question on interview guide	Concept from Winne and Hadwin's (1998) self-regulated learning model	Explanation of how question reflects on concept
What experiences did you have with study groups or study partners?	Study tactics and strategies enactment; Studying adaptations	Sought to understand if the experience with study groups or partners resulted in the continued use of this strategy or if it was eliminated as a strategy
Can you describe situations in which you reached out to your instructor for studying strategies or help with studying for nursing examinations?	Study tactics and strategies enactment	Sought to determine if the student was using instructor support as a study strategy
What advice or helpful hints did this instructor give you?	Study tactics and strategies enactment; Studying adaptations	Identified additional strategies recommended by the instructor, some of which were incorporated into future study sessions
How frequently did you reach out to your instructor for studying strategies or help with studying for nursing examinations?	Goal setting and planning; Study tactics and strategies enactment	Helped determine if student incorporated instructor assistance as a strategy and part of their study plan
What instructional materials or tools did you use to supplement your learning when preparing for nursing exams?	Study tactics and strategies enactment	Explored additional resources used for study strategies
How did you modify your study habits based on your exam performance during the first semester of nursing classes?	Studying adaptations	Identified adaptations made to studying and study strategies as the first semester progressed

Procedures for Recruitment, Participation, and Data Collection

I collected data by interviewing registered nursing students recruited from Facebook, LinkedIn, and an email blast sent by the National League for Nursing to those members who agreed to receive this communication. When initial contact was made with potential participants, I asked them questions from a screening tool to ensure they met criteria requirements (see Appendix B). Potential participants not meeting screening criteria were thanked for their willingness to participate, but they were informed that they must be withdrawn from the study because they did not meet criteria. Potential participants who met screening criteria were sent a written consent via email and given the opportunity to ask any questions they may have, which I answered. Once consent was obtained, an email was sent to establish the interview date and time which was based on the participant and my availability (see Appendix E). These potential participants were asked to do a one-on-one interview with me by telephone or online conferencing without video, which was scheduled for 60 minutes. Each consented participant was assigned a number that was used on all future audio recordings, notes, transcriptions, and coding analysis to maintain the participant's anonymity. After the interview, they were sent a copy of the interview transcript via email and asked to review it for accuracy. When recruitment of participants became challenging, snowball sampling was used to locate additional participants. Potential participants were asked to forward the information to others who may be interested in participating.

Data collection began once institutional review board (IRB) approval was obtained and continued until data saturation was reached. The one-hour interviews

included me asking participants demographic questions (see Appendix C) and interview guide questions (see Appendix D). Participants were informed that all interviews were audio-recorded and stored on my computer, which I had sole access. I transcribed verbatim responses to each question. Video was not taken to protect the anonymity of the participant. Participants were asked to provide any additional insight before the interview was concluded. Each participant was sent a $15 electronic gift card as a thank you gift after the interview, sent to their email. Once the interview was transcribed, a copy of the transcript was sent to participants via email so they could review them to ensure accuracy. This email also instructed them to provide any additional information regarding their study strategies that they may have thought of after the interview (see Appendix F). Participants were informed of this final review step and that this debriefing concluded their participation in the study. Once the data collection had been completed and the gift cards were delivered, the list of participant email addresses was destroyed.

Data Analysis Plan

The information obtained through these interviews was analyzed to identify key themes related to students' study strategies, determination of study strategies' effectiveness, and modifications made based on test performance. Each recorded interview was transcribed verbatim by me. A coding scheme was developed using the six phases of thematic analysis by Braun & Clark (2006). Thematic analysis is a method that identifies, analyzes, and reports themes in participants' experiences, perspectives, and realities (Braun & Clarke, 2006). A theme captures important data relevant to the research question and represents some pattern or meaning found within the study's data

set (Braun & Clarke, 2006). The six phases of Braun and Clark's (2006) thematic analysis include (a) reading and rereading the transcripts while taking notes, (b) generating initial codes, (c) gathering and combining codes into potential themes, (d) reviewing and refining themes to see if they align with the codes, (e) naming and defining the themes, and (f) creating a final analysis report that includes extracting examples and relates to the research questions. Hand coding was done by me using Excel spreadsheets. Continual review of codes and themes and offering participants the opportunity to member check the transcripts reduced discrepant cases.

Issues of Trustworthiness

Trustworthiness was established by examining the study's credibility, transferability, dependability, and confirmability (Ravitch & Carl, 2016). Credibility involved the researcher's ability to consider the complexities of a study and draw meaningful inferences from the data and tools used (Ravitch & Carl, 2016). This credibility was established by doing high-quality interviews, performing systematic and conscientious data analysis, and using strategies such as member checking, reflexivity, saturation, and peer reviewers (Creswell & Creswell, 2018; Patton, 2015; Ravitch & Carl, 2016). In this study, participants were invited to member check by reviewing the transcript generated from the interview to ensure accurate representation. I practiced reflexivity with journaling throughout the study to identify biases. Data was continually compared and memos written about the codes and their definitions to ensure there was no shift in the definition of codes (Creswell & Creswell, 2018). Sampling and analysis continued until saturation was reached to ensure no additional information was learned

(Ravitch & Carl, 2016). Furthermore, my dissertation chair and committee member served as experts overseeing the analysis.

Transferability was the ability of the study's results to be transferred to broader contexts or other participants (Ravitch & Carl, 2016). Transferability was accomplished by writing thick descriptions and having varied participation selections (Ravitch & Carl, 2016). Participants in this study were recruited from multiple sites, thus resulting in varied participation. Descriptions were provided to further assist in determining whether transferability occurred.

The study's dependability referred to the stability and reliability of the data over time, its alignment to the research questions, and its ability to be repeated (Ravitch & Carl, 2016). The sequencing of methods with well-articulated rationales, audit trails, and triangulation are the methods used to achieve dependability (Ravitch & Carl, 2016). Throughout this study, rationales were provided when discussing the design plan, research approach, and data analysis plan. Furthermore, audit trails were done to systematically document the processes used.

Finally, confirmability sought to remove researcher biases in the study by exploring how those biases and prejudices may have impacted the data (Ravitch & Carl, 2016). Confirmability can be achieved through triangulation, researcher reflexivity exercises, and external audits (Ravitch & Carl, 2016). I did reflexive journaling to understand my perspectives, monitor personal influences and assumptions, and prevent alterations or misinterpretations of participants' answers.

Ethical Procedures

Potential ethical issues were considered prior to doing any research and involved concerns such as intrusiveness, lack of privacy, the vulnerability of specific populations, potential harm, informed consent, and confidentiality (Patton, 2015). Serious consideration was given on how to reduce such concerns. Approvals were required from my dissertation chair, committee member, university research reviewer, and Walden University's IRB before data collection began. The IRB granted approval on August 24, 2022, and assigned approval number 08-25-22-0738161.

Participants were recruited from Facebook and LinkedIn. The National League for Nursing distributed recruitment information about my study one time in a weekly eblast to members who agreed to receive this information. Potential participants responded to these posts reducing the risk of intrusiveness. Individual interviews were done so the participants could disclose their experiences at a time and at a location that provided them the most privacy. Participants were assigned a number once it was determined they met the study's criteria so that they were de-identified during the data collection and analysis stages, ensuring they were not personally linked to their responses. None of these participants were from a vulnerable population. The risk of potential harm was minimal, given the nature of the questions to be asked during the interview.

Written informed consent was obtained by email prior to scheduling the interview. In this consent, participants were made aware of the study's purpose, methodology, and use of the data. Furthermore, participants were informed that this study

was entirely voluntary, and they could stop participating in the study at any time. Confidentiality was maintained and included such measures as de-identification of their interviews and data analysis. Participants were told upfront that interviews would be recorded and transcribed. Data was stored electronically on my computer with a backup on a flash drive which was password protected. During the data analysis phase, data was shared with my dissertation committee when needed. This data was stored and will be accessible only by me for five years following the study and then destroyed. Participants were informed that the information they provided during the interview would be shared in my dissertation and may be in possible journal publications; however, they will be de-identified, protecting their privacy and confidentiality.

Summary

In this chapter, I outlined the research design and rationale, my role as a researcher, selection of participants, data collection methods, and the data analysis plan for my dissertation. Rationales were provided explaining the decisions made in selecting the methods and analysis chosen. Furthermore, details were provided on how I reduced issues regarding trustworthiness and ethical concerns. In Chapter 4, I provide the study's results including information on the study's setting, participants' demographic background, data collection and analysis, and evidence of trustworthiness.

Chapter 4: Results

Introduction

Limited research has been conducted on the study strategies of first-semester nursing students despite studies indicating they have poor study skills, making the coursework challenging and causing some of them to leave their nursing program after their first semester. The purpose of this study was to improve the understanding of registered nursing students' study habits during their first semester of nursing classes and to identify if they modified those strategies during that time. To explore this topic, the research questions asked in this study were the following:

- What study strategies do registered nursing students initially use to prepare for nursing examinations during their first semester?
- How did study strategies change throughout their first-semester nursing classes?
- How are nursing students determining whether their study strategies are effective?

Chapter 4 includes information about the setting, participants' demographic background, and a summary of the data collection process. In addition, a description of the data analysis process and evidence of trustworthiness is provided, and the results are outlined.

Setting

Participants were recruited from flyers posted on Facebook, LinkedIn, and via an email blast sent by the National League for Nursing to members willing to receive

notifications. The participants contacted me if they were interested in participating in the study. Once the participant was found to meet the study's criteria, gave email consent to participate, and selected the interview format (phone or Zoom), a meeting date was established. Participants were encouraged to find a private location during the phone or Zoom (audio only) interview. I assumed they were in a private location but could not confirm this as there were no visual cues during the interview. There did not appear to be any condition influencing the participants' responses.

Demographics

Participants were asked demographic questions on their identified gender, age group, nursing degree program, and whether they had a previous college degree in another field. A total of six participants were interviewed, with all of them identifying as female. Five participants were aged 18 to 25, and one was in the 36 to 45 age group. Two of these participants were pursuing their Associate of Science degree in nursing, while four were in a Bachelor of Science nursing program. None of the participants had a previous college degree.

Data Collection

Initially, ten individuals expressed interest in participating in this study. Each potential participant was asked questions from a screening tool to determine if they met the criterion for the study. The criterion included that they were nursing students in the United States, training to be registered nurses, were over 18 years of age, had completed their first semester or were in their second semester of nursing classes, and were not students I had taught. Potential participants who did not meet the criteria were thanked

for their assistance but informed that they would not be progressing further in the study as they did not meet the study's criteria. If a participant met the criteria, I emailed a consent form. Once the consent was signed, participants were asked about their preferred format for the interview (phone or Zoom) and their availability to schedule the interview. I sent an email message verifying the date and time of the interview, my contact information should they have any questions or need to reschedule, and a link if they opted for the Zoom meeting.

Six participants met the study's criteria, signed the consent, and participated in an interview. Each participant who agreed to participate in the study was assigned a number (e.g. P1 for Participant 1) that was used on all digital recordings, notes, transcriptions, analysis, and reporting to maintain their confidentiality. On the day of the interview, each participant was asked four demographic questions (see Appendix C) and semistructured questions from the interview guide (see Appendix D) based on the information and level of detail provided in their responses.

Location, Frequency, and Duration of Data Collection

Before data collection, my dissertation committee and Walden University's IRB approved this study and associated tools. The IRB granted approval on August 24, 2022. Initial recruitment and data collection began in September 2022 and continued through February 2023.

All participants participated in a one-on-one interview with me, which was scheduled for 60 minutes on a date and time that worked for both individuals. Participants selected whether the interview was done by phone or Zoom. Four of the

participants chose to do the interview by phone, and two did it via Zoom. If Zoom was selected, the camera remained off, so the interview was only audio recorded. Participants were encouraged to find a location that provided them privacy for the interview. During these interviews, I was in a private office to maintain privacy and confidentiality. If a participant selected the phone option for the interview, I called them at the phone number they provided at the designated time. If the Zoom meeting was selected, I met the participant in the Zoom meeting room accessible to both parties via a link.

Each participant was asked to participate in one 60-minute interview and then to review a transcript of the interview for accuracy, which was expected to take approximately 20 minutes. Each participant was encouraged and allowed to provide any additional information after the interview by emailing or calling me. Interviews took an average of 45 minutes, ranging from 36 to 50 minutes.

Recording of Data

Each interview was audio recorded with the file saved to my computer. I transcribed each interview verbatim in a Word document. A copy of the transcript was sent to the participant for review to ensure its accuracy. In addition, notes were taken during and immediately after the interview, and a reflective researcher journal entry was made. These notes were entered in a Word document and saved in a folder on my computer. The number assigned to the participant (e.g., P1) was used on all recordings, transcriptions, and notes, so no personal identifiers were associated with these materials. These materials were stored electronically on my computer with a backup on a flash drive, with both of them being password protected.

Variations in Data Collection

Initially, participant recruitment was done by posting the recruitment flyer on Facebook. I posted the flyer on my Facebook account and nursing student-related groups. However, to expand the potential participant pool because of limited response, I requested an amendment from Walden University's IRB that included posting my recruitment flyer on my LinkedIn account. In addition, I requested permission to complete a participant recruitment form for the National League for Nursing. The National League for Nursing Communications department includes a study's information in a one-time email blast to members who agree to participate in these notifications. Furthermore, in my modification request, I clarified that snowball sampling would be used by asking those who read the flyer or email blast and who participated in the study to forward the study's information to individuals who may be interested.

The IRB approved all of the modifications requested on November 28, 2022. Once approval was obtained, the National League for Nursing's research participant recruitment form was submitted, approval was granted shortly after that, and they sent the information in an email blast on January 9, 2023. The recruitment flyer was posted on my LinkedIn account on December 4, 2022. With each of these additional recruitment methods, potential participants reached out to me if interested in participating. The same data collection procedures were followed once initial contact was made regarding screening potential participants, written consent, establishing a meeting date, time, and format, and the interview process. Response rates to these postings could not be

calculated as it is unknown how many Facebook, LinkedIn, and National League for Nursing members viewed the posts.

No significant unusual circumstances occurred when interviewing the participants. At the end of one of the interviews, a toddler cried in the background momentarily. When asked if everything was all right, the participant indicated everything was fine with the toddler, and the crying subsided. The participant continued the interview and did not appear to shorten or alter responses.

Data Analysis

Data analysis was completed following Braun and Clarke's (2006) six phases of thematic analysis. As recommended by Braun and Clarke for Phase 1, I transcribed each interview, allowing me to familiarize myself with the data by listening to the interview, typing out the text of the interview into a Word document, rereading the transcript, and taking some preliminary notes throughout the process. In Phase 2, I began generating initial codes following Braun and Clarke's recommendation to code as many potential concepts or patterns as possible while including some relevant surrounding data in the code to maintain context. Examples of creating codes with surrounding data can be found in Table 2 and include codes such as detailed flashcards, notecard descriptions, review notes, and review material.

For each individual code, text was copied directly from the transcript and placed into its own line in an Excel spreadsheet with the code assigned to it put in the column next to it. If a section of the interview had multiple meanings and thus would be assigned different codes, each code was put in its own line in the spreadsheet. This process was

continued for the entire interview. One tab contained the coded interviews, which could then more easily be sorted by code. During this phase, similar codes were grouped together into categories. This process allowed me to better sort similar material given the large number of initial codes generated, especially for the study strategies. An example of this is shown in Table 2. For instance, I assigned the category of notecards to any initial code labeled notecards, notecard descriptions, or detailed flashcards (see Table 2).

Table 2

Sample of a Subtheme, Associated Categories, and Initial Codes

Subtheme	Categories	Initial codes
Traditional study strategies	Notecards	Notecards, notecard descriptions, detailed flashcards
	PowerPoints	PowerPoints, review PowerPoints, take notes on PowerPoints
	Textbook	Reading/skimming textbook, textbook, textbook use, not reading textbook
	Reread	Reread, reread notes, reread everything
	Review	Review material, review notes, review PowerPoints, review charts/tables/diagrams in book

During Phase 3, the codes were sorted into potential subthemes and themes, as described by Braun and Clark (2006). To do this, I began to group categories and their associated codes and excerpts into similar groupings. A single word or phrase was

assigned to these groupings to encompass their meaning. These groupings became subthemes. For instance, the categories of notecards, Power Points, textbook, rereading, and reviewing of materials were grouped together and labeled traditional study strategies as these were commonly known study methods. Simulation, rewriting notes, and writing notes were placed into the subtheme of kinesthetic learning as it best summarized the participants' learning through some physical activity. To assist with this grouping process, filters were added to the Excel spreadsheet, allowing me to sort by codes and categories that let me see similar patterns and create potential subthemes or themes. Then, I compared the codes and associated interview excerpts from multiple interviews to ensure they should be grouped together.

During this process, larger themes also began to emerge. Subthemes that appeared similar in concepts were cut and pasted into a new Excel spreadsheet representing a possible specific theme. This process allowed me to see the relatedness of codes, categories, subthemes, and the emerging main-arching themes. During Phase 4, the themes were reviewed and refinements were made as some potential themes were not separate themes but could be combined with other themes (see Braun & Clark, 2006). Initially, for instance, I had five themes, with one potential theme assigned to the role of the instructor. However, in reviewing the codes, subthemes, and transcript excerpts from this theme, I realized the instructor could be incorporated into the getting help from others theme. Although the participants did not go to the instructor for direct assistance, they indirectly relied on their instructors for cues, suggestions, materials, and review sessions, which were a form of assistance. The remaining themes, subthemes, and codes

were reviewed, leading to the final list that included 22 subthemes and four themes. Discrepant cases were not found during this analysis.

Phase 5 of Braun and Clarke's (2006) thematic analysis includes naming and defining themes. The four themes identified in this study included individualized study strategies and routine, study strategy evolution, getting help from others, and barriers to studying. The associated subthemes for each of these themes are shown in Table 3. Phase 6 is the producing of the report, which contains the final analysis and explanation of themes and exemplars from the data set while showing the relationship of these themes to the initial research questions. This more detailed explanation of the themes and exemplars are contained in the results section of this chapter.

Table 3

Themes and Subthemes

Themes	Subthemes
Individualized study strategies & routine	Traditional study strategies
	Technology-based tools
	Practice
	Kinesthetic learning
	Auditory learning
	Teaching
	Time management
	Organization management
	Study setting
Study strategy evolution	Strategy modifications
	Strategy effectiveness
	Self-evaluation & self-realization
	Future study strategies
Getting help from others	Instructor guidance & materials
	Nursing tutor/course enrichment specialist assistance
	Study group, study partner, & other peer support
	Family support
Barriers to studying	Physical issues
	Emotional issues
	Psychological barriers
	Time constraints
	Financial concerns

Evidence of Trustworthiness

In qualitative research, the trustworthiness of the data must be established by examining four areas: credibility, transferability, dependability, and confirmability (Ravitch & Carl, 2016). The evidence of achieving each of these components is further described in this section.

Credibility

Credibility was achieved through detailed interviews, systematic data analysis, participant review of the transcript, researcher reflexivity, thematic saturation, and peer review of the data (see Creswell & Creswell, 2018; Patton, 2015; Ravitch & Carl, 2016). During the interviews, follow-up probing questions were asked to obtain detailed information from the participants. Codes were continually reviewed and organized following Braun and Clarke's (2006) methods, with notes taken throughout the process to ensure no coding or data analysis shift. Each participant was asked to review their transcript for accuracy and to notify me of any changes. They were also invited to provide any additional study strategies or comments. Three participants responded that no changes were required and had no additional information or comments. Those who did not respond within the deadline were assumed to have no issues or additional comments (see Appendix F).

Throughout the data collection, I maintained a reflective journal to note my reflections after the interview and to identify potential biases. No apparent biases occurred during the interviews or analysis. Interviews were conducted until thematic saturation was reached, which occurred at six participants. No new themes or subthemes

were identified by the sixth interview. My dissertation chair was consulted throughout this analysis and agreed that saturation had been reached at six participants. The transcripts and coding of each interview were reviewed by my dissertation chair, with final analysis and thematic summaries in this chapter reviewed by my dissertation committee, ensuring peer review of the data had occurred.

Transferability

Transferability was the ability to transfer the study's results to broader contexts or other participants (Ravitch & Carl, 2016). Transferability was accomplished by having variability in the participants and writing thick descriptions (Ravitch & Carl, 2016). In this study, participants were recruited through Facebook, LinkedIn, or the National League for Nursing email blast resulting in the representation of participants from various colleges and registered nursing programs. Probing questions were asked throughout the interviews allowing participants to provide detailed descriptions of their perspectives and experiences.

Dependability

Dependability refers to the stability and reliability of the data over time, having alignment with the research questions, and the ability to repeat the study, which was achieved through the use of rationales and audit trails (Ravitch & Carl, 2016). Careful documentation and audit trails were done during the data collection and analysis stages to ensure the steps could be well-documented in this study. These details have been articulated throughout this study, allowing others to replicate the design. Furthermore, alignment with the research questions has been provided.

Confirmability

Confirmability sought to remove researcher biases in the study by exploring them in researcher reflexivity exercises (Ravitch & Carl, 2016). I maintained a reflective journal throughout the study, allowing me to document any biases, prejudices, or personal assumptions to ensure that no alterations in the data or undue influence swayed the interview process or data analysis. Although I have experience as a former nursing student and faculty member, no biases or researcher influences occurred.

Results

After data collection, analysis was done following Braun and Clarke's six phases of thematic analysis and resulted in the identification of four distinct themes. The themes were individualized study strategies and routines, study strategy evolution, getting help from others, and barriers to studying.

Theme 1: Individualized Study Strategies and Routine

Participants used various study strategies simultaneously, with each plan specifically customized to their individual needs. While multiple participants used a specific strategy, variability occurred amongst their study strategy plans and routines. For instance, Participant 2 described the strategies used as follows:

> Oh, that's when I kind of would start rehandwriting those notes. I would relook over the PowerPoints, um, go back to those charts and tables and diagrams in the book. Um, and, as well as we had those videos, that like of those skills from lab. We had access to those all the time, so sometimes I would relook over those videos to help me study as well.

Participant 4 used slightly different strategies stating, “But for the most part, I really focused on using just the materials that they gave us like the ATI books, textbooks, their notes, or any notes that I got from class.” Participant 5 used strategies that included the following:

> Um, so I did use, um, like I said, you know, the flashcards we received and the textbook, um, not flashcards the textbook that we received and the PowerPoints that we received, and I used that, and then I also was able to use um just like NCLEX style questions that are online or given to me by my program. Um, those were mostly what I used to study.

These examples illustrate some of the varied strategies used by the participants. Nine subthemes were identified regarding their individualized study strategies and study routines and include: traditional study strategies, technology-based tools, practice, kinesthetic learning, auditory learning, teaching, time management, organization management, and study setting. Each of these was outlined in more detail to provide better insight into the strategies used and to address the first research question.

Traditional Study Strategies

All of the participants used some traditional study strategies which included notecards, PowerPoint slides, and textbooks or incorporated practices such as rereading and reviewing the materials provided to them. Participants 1 and 2 preferred using notecards, whereas Participant 3 tried the use of notecards initially prior to the first exam. Participant 1 described the notecards as a means to quiz oneself, whereas Participant 2 used them to write out any potential question that may be asked on the test.

PowerPoint slides were used in studying by four of the participants. Participant 6 explained, “I would just simply go over them again and just like looking at them. It depended whether or not I felt like I needed more.” Participant 2 stated, “For my nursing courses, I really just use the textbook, um, and the PowerPoints my teacher gives us.” Participant 5 had a different viewpoint of their benefits:

> Um, so we received PowerPoints. I don’t really believe that they were helpful a lot of the time. Like they were helpful to know what was on the test, but they didn’t provide me extra knowledge. Often, they would just be a PowerPoint slide with like a table number in our book, and we would use that to look at the table, and they would say this information will be on your test.

The use of the textbook varied depending on the participant, with only Participant 1 stating they did not read the textbook. Participants 2 and 4 described skimming through the chapters in the textbook while focusing more on essential concepts, figures, and special text boxes. Participant 6 used the textbook as follows:

> So the first thing that I do is when I’m going through the textbook, I make sure to write down any key terms in like a Quizlet bank, so any definitions that they have highlighted, any other terms that I see, different medications, depending on the class.

Participant 5, on the other hand, approached the textbook differently:

> So I would begin on the chapter I would go to the very end of the chapter and read or the beginning wherever they lied, wherever they were in that

> book. So if the learning objectives were in the beginning of the book, I would read those, but if they were in the or the beginning of the chapter, I would read those and then I would read those, and then I would flip to the end of the chapter, and I would read each subheading working my way backwards. And some of them, you know, I would start reading, and I would realize, ok, so this isn't very important knowledge, it doesn't align with the learning goals we have this week, so I would just kind of skim it and then others I would read and I would review the charts because that was more in-depth knowledge that I knew I needed to know.

Participants also described practices that involved reviewing notes and rereading the textbook. Participant 5 best described it as "I would use the textbook and reread that. I would review important um charts and notes that our professors had highlighted in lecture and I would certainly reread um past kind of course knowledge."

Technology-Based Tools

The use of technology-based tools as a study strategy was quite prevalent in the participants with many of them using Quizlets, YouTube videos, PrepU, and ATI online modules and practice test questions. Participants described using Quizlet to create word banks with definitions, enter potential test questions, and include information from important tables on which they will be tested on. Participant 6 stated,

> I like Quizlet just because it is not only flashcards, but it also has other kinds of things that you can do like you can put it in learning mode. You can put it into a test for you to take.

Participant 4 described the benefits of Quizlet saying,

> I don't do physical notecards. I normally just type them up on Quizlet. It's a little bit more portable for me; that way I don't have a stack of notecards that I'm pulling out. I just pull out the Quizlet on my phone.

While those using Quizlet expressed that they created their own Quizlets, some did mention using Quizlets they found online. Participant 6 stated, "I'll search specific questions just on Google. Um, I find if you just search like a certain question that you are struggling with on Google, usually there's a Quizlet for it." Participant 4 stated,

> I would look them up by like our textbook theme. I would look at the text, whatever chapter I was on and the name of our textbook, and it seemed to populate questions up that would be relevant um and if anything I would see if Quizlet, make a copy of them, um, and then I would just kind of like edit the questions or delete questions that I didn't feel like were necessary and add things if I needed to um.

Some participants found YouTube videos or other videos could be helpful when learning new skills or having difficulty with some nursing content. For example, Participant 1 said,

> I've used YouTube a few times to try to understand concepts specifically in um Patho um like the what's it called the renin-aldosterone, the RAAS is what is called (hesitant), um just like disease processes that I wasn't really very clear on, I looked up in YouTube.

Participant 6 had the same experience stating, "Uh, I found certain YouTube channels of nurses who go over topics have been really helpful." When asked how they determined the validity of the videos, one participant stated that the instructor shared the video links. However, Participant 1 stated,

> I would look at the date and see, you know, if it was something from 2000 or, you know, I don't know when YouTube started, but if it was old, um, I would kind of pass on those. I would definitely look at the date of it um, but other than that, I don't. I would kind of also go on how many views it had.

Participant 6 stated, "I would compare it to what I was being taught, so if it matched what I was learning in class, then I knew that it was ok to use." In addition to the YouTube videos, Participants 2 and 5 shared that they used videos on skills provided at school. As Participant 2 stated, "We had access to those all the time, so sometimes I would re-look over those videos to help me study as well."

Two participants had access to and used PrepU, as it was a technological tool supplementing their textbook. Participant 6 described it as "so Lippincott has PrepU, which is just practice questions," further explaining that "it has the remediation and the remediation if you click on it, it will also bring you to the page in the textbook that talks about it." Participant 4 acknowledged their nursing instructor assigned Prep U stating,

> It's basically just, um banks of practice questions for each of the diff, broken up for each of the different chapters, um so she assigned us to do

> those to a certain mastery level, so I think we had to get to the mastery level like 3 or 4 out of 10 or out of 8.

Finally, the participants mentioned using ATI and HESI online modules and practice questions as well as instructor-developed questions in Kahoot. The use of ATI and HESI varied and could depend on what the instructor had assigned. Participant 4, for instance, stated, "Um, so we had normally like 1 or 2 ATI assignments for my lab class. Um, and we had to spend 30 minutes in each of those." Participant 1 noted, "So the teacher will assign them (practice tests) through ATI." That experience differed from Participant 3, who said, "I use the ATI, and I'll go through, and I'll just do like the quiz bank or whatever from that." HESI online modules and practice tests were used in only two of the participants' nursing programs. One nursing program did not implement HESI until the end of the semester, whereas, Participant 6 noted,

> I used HESI like a couple weeks before we had to take our HESI exam, but I didn't use it throughout the (first) semester, unlike I am now, which I guess is a difference from last semester to this semester.

Finally, one participant mentioned that the instructor used Kahoot not only as a tool in the classroom but also provided additional Kahoots for the students to access independently. Participant 6 described it as practice questions "in like a game format, kind of like a jeopardy." This software was just another example of a technological tool used by nursing students to help prepare for their nursing exams.

Practice

All the participants expressed the importance of using practice test questions before taking an exam, whether the source of those questions was technology-based, such as ATI, HESI, or PrepU, or came from other sources. These practice questions allowed participants to "try to gauge what I know and what I don't know" or to "try to refresh myself." Other sources of questions included the textbook test questions at the end of the chapter and examples the teacher or program provided. One participant even used questions from an NCLEX preparation book she had found and purchased independently.

Participants 2 and 6 commented that they would simulate taking a test when using these questions, which helped them pace themselves when taking the exam while also providing the benefit of getting practice. Participant 6 best summarized the benefits of these practice questions:

> So practice questions are really just the most helpful I found because not only are you like helping yourself memorize material, but you're actually learning it and applying it, and I find that like more helpful than just like going over like the textbook or PowerPoints over and over again. So just like practicing it and applying it is super helpful.

Kinesthetic Learning

Some participants incorporated kinesthetic learning strategies into their learning through simulation exercises, taking notes, or rewriting notes. Participant 2 described an intake and output simulation exercise involving different stations where students calculated volumes that were consumed orally, intravenous fluids taken, urine output, and

even vomiting amounts stating “that really helped being able to do that hands on stuff to prep for the exam.” Participants 1, 4, 5, and 6 took notes either during class, on their PowerPoint slides, or while reading the textbook with Participant 5 elaborating,

> I would upload the PowerPoints to my IPad and then notate on the PowerPoints as well as I had a separate um notebook in my, in an app that I use on my IPad and that was for when I read I took notes, I wrote any questions I had down, I wrote what seemed like important information um and then of course after class, I would go back and review those notes.

Participants 2, 3, 5, and 6 would rewrite their notes, finding it a helpful way to review the material. Participant 2 described it as “I like to just kind of slowly re-handwrite all of those just to kind of get it back and refresh my memory.” Depending on the individual, this duplication could include rewriting the PowerPoints, study guides, notes taken in class, and the material the instructor emphasized.

Auditory Learning

Only two participants mentioned using auditory learning as part of their studying process. Participant 6 used auditory skills when going over the textbook stating, “I have it read it to me because it’s easier for me to focus on it, personally, if I have it reading to me while I go along with it.” Participant 1 used it as part of her studying process by relistening to her instructor’s Webex exam review: “I just listened to that recording over and over and over probably like seven times because it was like an hour long.” However, this participant acknowledged this might not be a means of actively studying, given that

she does it when driving. Although less frequently used, this method of studying was one of the strategies incorporated into some of the students' methods.

Teaching

Two participants mentioned using a form of teaching others to help with their studying. Participant 5 described the process as follows: "If I could be able to teach it, that was often the question that I would ask myself. Could I teach someone else this? And then, if I could, I would move on from that." This participant stated she often did not have a person in front of her but would "kind of went through a process in my head of trying to teach, of course, someone else who wasn't actually there." Participant 6 described her teaching process as follows:

> I'm kind of trying to teach it to them (mom and dad). I'm not necessarily like lecturing it to them, but I'm going over it, and I'm like explaining it in detail, even add extra things that I remember as I go through it.

These participants were using a teach-back method to reinforce the material they were studying.

Time Management

When it came to the number of hours studied per week, variation was found among all the participants and depended on how close it was to the next exam. Participants stated they studied from 2 to 40 hours a week, with more significant time spent studying as a test date approached. Participant 2, for instance, thought she studied about 2 hours a week when there was no test and six to eight hours when a test was approaching. Alterations were also noted throughout the semester. Participants 3 and 4

mentioned lowering their study times as the semester progressed. For example, Participant 4 commented she studied more in the beginning of the semester:

> Definitely the first couple of weeks, I spent a lot of time, um probably, I would say maybe like 20 to 25 hours a week just doing like extra studying and extra review of material um just because I wasn't exactly sure what to expect.

These participants acknowledged these were estimates of their studying times as they had not been formally tracking them. However, much variation did exist and may have been influenced by some of the barriers some of the participants were experiencing, which will be outlined in Theme 4.

Organization Management

Four participants used some organizational strategy to help plot out their assignments and assist with studying for the tests. Checklists, tasks, assignments, test topics, or chapters to study were written down on sticky notes posted to the computer, study lists, or study planners. These tools were used to help establish priorities, determine the goals for the day, and record due dates. Participant 6 said a study planner "keeps me on track with what I have to do and also when am I going to study for this."

Some participants organized their studying based on the available time, or they dedicated specific days to a class. For instance, Participant 1 chose to do the easiest and quickest tasks, leaving the studying for tests and writing of papers for later in the week. Participant 4 would do easier items such as creating Quizlets or ATI modules on days she had to work. Whereas Participant 6 illustrated,

> So like, I'll study on Friday for health assessment, and then I'll study for, on Saturday, for pharmacology. And just let's say those are the tests that I have next week; I'll dedicate days to just doing it, or then I'll also have a day where I'm kind of going back and forth between the two or whichever.

Participants incorporated organizational and time management skills to develop their study plan.

Study Setting

Although not a specific study strategy, it is important to note that participants had similar descriptions of the study setting they used. Participants who described their setting tended to choose quiet environments such as a room in their home or the library, limiting noise by using fans, white noise machines, or even playing music. They described limiting distractions and creating a relaxing environment to promote their studying. Participant 5 preferred the library to study noting, "At home I get distracted and start doing things like dusting my baseboards and getting distracted by all of that stuff." These participants have identified the study environment that works best for them.

As shown, participants are using various study strategies when preparing for their nursing examinations. These strategies align with their personal preferences and what they deem individually effective through a process of study strategy evolution outlined in more detail in Theme 2.

Theme 2: Study Strategy Evolution

Each participant described a similar evolution of their study strategies which began with the initial use of past study strategies, a decision to modify those strategies, and then a self-evaluation of the effectiveness of those strategies. Participants appeared to self-realize which strategies worked for them individually, sometimes leading to additional revisions to those strategies. Furthermore, many of them described their plan to make additional future changes to their study strategies as they progressed in their nursing program.

Initial modifications to study strategies were described by all participants as occurring within the beginning weeks of their first semester of nursing classes, usually sometime after their first exam. Participant 5 explained her changes as follows:

> So the following exam, when they added all the stuff I hadn't known before, it wasn't just like reinforcement of the knowledge or like um word, like um like clarification on the knowledge, so for the second exam, I had to do more of the whole applying it to real-life scenarios rather than just like repeat, repetitive knowledge if that makes sense.

Participant 4 described it as follows:

> The only way like my study methods may have changed after the first exam is I stopped doing so much, like if that makes sense, like I didn't read the whole textbook um, and I kind of like learned what she (the instructor) was looking for.

Participant 6, on the other hand, made this change: “Just increasing the frequency of my studying was all I needed to do. I didn’t need to add anything. I just needed to study more.”

Regardless of the change, each participant made some alterations to their study strategies. They commented there were differences between their earlier general education classes and nursing classes, giving examples such as “in prior courses it was more of in those courses I did more, I did more of like a learn it to like repeat it verbatim”, or “with my prereqs it was more like memorization”. Participant 6 described it as follows:

> For the most part in high school or gen ed, I didn’t have to study as much. I think nursing is just a lot more, just in general. So, there’s a lot more for you to do, a lot more for your study, and it’s just kind of heavier than uh gen ed or high school.

To determine the effectiveness of their study strategies, participants described reviewing not only their test performance but how they felt about their studying. Participant 3 expressed it best: “I didn’t really do bad on my first test even though I didn’t study the way I do now but I feel like I didn’t really remember what I needed to know anyways.” Furthermore, this participant added, “My last 2 exams I actually scored higher than I have the entire semester.”

Participant 4 explained it as follows:

> Um, I think I did about equal on all of my exams, like there wasn’t one exam, like I didn’t score higher or lower my first exam compared to my

> others. I think they were all relatively around the same scores. Um, so I didn't see like my performance on the exams change too much. It was just I felt like I was being a little more effective when I was studying.

Through this self-evaluation process, participants identified which study strategies worked best. For example, "writing it down um helps me remember more", "um so to reinforce the concepts I would um max out the mastery level so I would just go past like what our professor asked us to do", or "I just thought it (practice questions) would be the easiest way for me to apply the knowledge." Furthermore, it helped them hone in on their preferences such as "I prefer to study alone for the most part and just kind of figure it out" or "I guess I'm more of an independent studier" or "I learn by doing and by um like participating."

Even once study strategies were selected, the participants mentioned possible changes they would make in their studying as they progressed in the nursing program. Participant 4 stated,

> Like next semester we have Pathophys and Pharm and I think that is going to be a lot more, um memorization, so I definitely see myself making more Quizlets and collaborating with classmates to make Quizlets, flashcards, and those kinds of things those things that are going to be more memorization whereas this semester was more about patient safety and those kind of things which isn't too much memorization its more about understanding concepts.

Participant 5 described her projected change: “I definitely think that in this upcoming semester, I will find or maybe lean into having a study group a little bit more.” Other possible strategies included “definitely get NCLEX books so that I can practice those questions more and practice that critical thinking” and incorporating more outside resources such as websites, other NCLEX preparation tools, and online modules.

Throughout this study strategy evolution process, participants not only modified their strategies, they also self-evaluated them and made further revisions. Their evaluation incorporated an analysis of the study strategies’ effectiveness and allowed them to identify the strategies that were most effective for them. Even with this information, they acknowledged that further revisions might be necessary as they progress in their program and prepare for the NCLEX examination. As shown, this theme also addresses the questions asked in research questions two and three.

Theme 3: Getting Help From Others

In addition to implementing various study strategies, the participants consistently referenced receiving help from others, whether it was receiving study tools, helpful hints, assistance with studying, or some other form of support. This theme of getting help from others was further distinguished by whom that help was from: the class instructor, nursing tutor, study partner, study groups, other peer support, and family.

Instructor Guidance and Materials

Participants expressed multiple ways in which an instructor assists them such as providing instructor cues during lectures, giving general studying guidance to the class, hosting instructor-led test reviews, or sharing informational materials such as

PowerPoints and study guides. Regarding the cues provided, Participant 2 explained that "everything that she writes on the board is going to be on the test." Participant 3 described her process as "I really just kind of, you know, really focused on like how much time and how many times they would repeat the same thing over and over again." Instructors also suggested students focus on the ATI books, practice test questions, lecture notes, the textbook, and specific websites. In addition, the instructors would require the completion of PrepU exercises, ATI modules, and their study guides. Participants also found instructor demonstrations helpful in making linkages between what was being learned in the lecture and the skill. One participant mentioned being allowed to video record these demonstrations, which she would later review.

Some participants stated that their instructor provided review sessions before the test, either in-person or via an online method such as Webex or Zoom. These review sessions were described as "mostly sample questions and specific points that are going to be on the exam, so like what we need to focus on," "going over the lecture highlights," or "just go over the study guides." One participant mentioned being told the tables, figures, or chapter topics to focus on and was also told the number of questions on the test. Students were also allowed to ask questions during these sessions.

Participants described using the materials the instructors provided when studying. These materials included PowerPoint slides, lecture highlights, study guides, workbooks, practice questions, and test questions on Kahoot. Some of these materials contained specific detailed information, while others nearly referenced tables, figures, or concepts that the student should review. The degree of detail was dependent on the instructor.

While the participants focused heavily on the instructor cues, guidance, review sessions, and materials, they did not go to them for individualized tutoring assistance. When asked why they had not gone to their instructor, the participants replied, “I feel like there was maybe a couple who kind of make you feel stupid for having, not really understanding,” “she just had a lot on her plate last semester so we often didn’t reach out to her specifically,” or “because basically they’ll just tell you to do ATI and I was already doing that.” Furthermore, some stated they felt the instructor had already shared everything with them in class. While the instructor played a vital role in the materials chosen to study and the content to focus on during study sessions, the participants did not use their instructors’ expertise to help get more personalized study strategies.

Nursing Tutor/Course Enrichment Specialist Assistance

Although the participants did not go to their instructor for additional tutoring support, two did use their nursing program’s resource specialist or nursing tutor. Participant 2 would visit her school’s course enrichment specialist the day before her exams. This participant described the tutors as “they’ll help you since they’ll see you’re not getting something, they’ll kind of help you figure out a way. Like how can we figure out how to study best for the test tomorrow”. Participant 5 described this assistance as follows:

> But our program does have a retention specialist who, um, was able to help with study aids and just like how to study and what to study so often I would reach out to her and explain like the trouble I was having, a problem I was having with something specific information or applying

> specific information and we would discuss that and um usually she would give me a tool to help get that knowledge in my head.

This tutoring assistance was free of charge and allowed these participants to ask specific nursing questions or get hints on more general study strategies. The participants chose to use these sources instead of going to their class instructor, who would have been more familiar with the information covered in class and the content contained in the test.

Study Group, Study Partner, and Other Peer Support

The use of, purpose, and benefits gained from a study group, study partner, or other peer support varied depending on the participant. For instance, three participants found that study groups provided socialization but did not assist with their studying. They found the study groups could be more distracting and not helpful. Participant 1, however, was actively involved with her study group of three other female students. This participant found it was a great way to distribute tasks for assignments, share information and resources, and acquire knowledge from the other members' expertise because they worked in healthcare. Participant 5 would occasionally meet with a student group to quiz each other. Whereas, Participant 6 explained it as follows:

> We would just go over questions together, so pull it up on the screen, and we would go through them together. Like read the question together and discuss do we think it was this answer or this answer and we would go through it, and then at the end, we could see the remediation, we'd talk about it, explain like, oh, that's why this is.

While the larger group setting may not have worked for some, one participant had a study partner that she worked with. Participant 4 stated,

> I have like a study partner um she definitely just likes kind of helps hold us accountable as we like a, we have like the same classes together, um so if we have like an hour between classes we would normally um sit down, get some homework done for like a half hour and we ask each other questions if we have questions on material or assignments whatever, um so we just like having someone that kind of like kept you accountable.

In addition to the support they had from fellow students at school, some participants also sought study strategy suggestions from outside sources, such as nursing student support groups on Facebook. Participant 1 described it as "but I do read the posts that are posted there (Facebook) just to see if there is extra like tips or similar circumstances or you know things that could be helpful." Participant 5 commented on this type of support:

> It has been very helpful I'm a part of… the nursing um student page (Facebook). Sometimes I feel like they provide good videos or good um people who post their videos that I'm able to like recognize it when I google it.

Such recommendations were used by these participants to find additional resources and possible strategies to try to incorporate into their practices.

Family Support

Family played a role in many of these participants studying, whether through direct tutoring help or more indirect means such as emotional and financial support.

Participant 1 had her husband and daughter assist by quizzing her, role-playing as patients, and helping her find ways to improve her studying. Her spouse, for instance, noticed she retained information better when writing notecards suggesting that she change her study methods a bit. Participant 1 also stated,

> And sometimes, he would make connections with things that I wouldn't have made, and it would help me remember certain things, like with the cranial nerves; when we were doing the cranial nerves, he was starting to make jokes about them and for some odd reason that helped me like remember which cranial nerve did what.

Participant 6 would teach the information to her parents by sharing study guide materials or interesting facts she had learned. She used this to determine how well she knew the material stating, "So I would if I could teach it to my mom and dad then I must know the information".

While these were examples of direct tutoring assistance, the family was also crucial in providing other types of support. For some participants, this took the form of encouraging them while in the nursing program or sharing family goals of what would occur once the degree was obtained. Participant 6 described it as follows: "As long as I focus on nursing school and I do well and graduate and they're (parents) proud of me". Participant 1's family would remind her of the goal to help keep her focused as once her degree was earned they planned to move closer to her spouse's family in another country. The family support for one participant was in the form of childcare assistance for her toddler, allowing her the time to attend classes and study. In addition, some participants

received financial assistance from their families, allowing them to focus solely on their studies and not have to work.

Theme 4: Barriers to Studying

While not a direct focus of this study, participants continually mentioned different barriers that impacted their studying, leading to this final theme. These barriers could be physical, emotional, psychological, time-related, or financial. Physical issues included hunger that caused a lack of focus, fatigue that prevented information from being retained, and illness that led to lost studying time. Emotional and psychological barriers included feelings of frustration, overload, anxiety, short attention spans, and problems with procrastination. Participant 6 said, "Uh just that it can seem a little frustrating and like stress. It can be a lot sometimes." Participant 1 expressed anxiety and worry about the high-stakes testing and learning all of the material, giving an example: "It's the lab values that really kind of scared me off because it's a lot of memorization and you know obviously there is a lot of critical thinking in there too."

Three of the participants mentioned a concern of being overloaded with information. Participant 5 indicated this sense of overload somewhat inhibited her studying, stating, "Being loaded with so much all at once I definitely did kind of had a struggle in the beginning of making myself sit down and study." Participant 3 mentioned reducing her study time because of concerns about having an overload of information:

> I just felt like it was too much information that I had got to a point where I felt like I was kind of wasting my time because I wasn't remembering like

I should have. So I shortened that time just to make sure that I wasn't like overloading myself.

Additional negative barriers included issues with attention spans and problems with procrastination. Tasks such as reading the textbook or studying were often done in shorter increments, for example 20 to 60 minutes, with lots of breaks incorporated between these sessions. Two participants expressed issues with procrastination, leading to last-minute cramming sessions that occurred a few days before the exam.

Finally, financial and time constraints impacted several of the participants. Three participants worked in addition to attending nursing school which affected when they could study. Participant 4 explained, "On the days I had class and work, I really didn't do too much studying." This same experience was described by the others who worked. Participant 5 shared that she has to work to pay the bills noting, "having to work so much that kind of hinders my studying a little bit." Other time constraints include obligations to care for family members, such as Participant 3, who had a toddler. All of these barriers had some impact on their studying.

Summary

In this chapter, I outlined the results obtained from the six interviews that were done, which was when thematic saturation was reached. These participants had completed their first semester or were in their second semester of nursing classes, attended a registered nursing program, and represented varied colleges. All six participants were female, with five of them in the 18-25 age group. The method of coding using Braun and Clark's six phases of thematic analysis was outlined. From this, four

main themes were identified: individualized study strategies and routines, study strategy evolution, getting help from others, and barriers to studying. Evidence of trustworthiness was provided by examining the credibility, transferability, dependability, and confirmability.

Each research question was addressed in the themes described. The main research question was to identify the study strategies nursing students initially used during their first semester of nursing classes. Based on the results of the interviews, students use a variety of study strategies and have differing routines that are customized to their needs. Nine subthemes related to study strategies were identified. They included the use of traditional study strategies, technology-based tools, practice, kinesthetic learning, auditory learning, teaching, time management, organization management, and customized study settings.

The participants in my study all identified a process of modifying their study strategies sometime after their first exam and, in some cases making additional revisions based on the effectiveness of those strategies. Effectiveness was determined by test performance and how they felt about their studying, thus addressing the third research question regarding how students determined strategy effectiveness. Their self-evaluation of strategy effectiveness and self-realization of the methods that best worked for them resulted in a fine-tuning of study strategies over that semester with the understanding that future modifications may be needed. The changes made included incorporating new strategies, modifying existing strategies, altering the amount of time they studied, or how they organized their studying tasks. Thus, the second research question was addressed,

which asked how they changed their study strategies over the semester. Based on their responses, additional study strategy modifications may occur as they progress in their nursing program and get closer to their NCLEX examination.

While not specifically addressing a particular research question, the themes of getting help from others and the barriers to their studying were included. Participants expressed the importance of receiving cues, tips, test reviews, and instructional materials from their instructors; however, they would not go to them for individualized assistance. Instead, these participants relied on nursing tutors, study partners, study groups, fellow nursing students on Facebook, or family to assist them directly with their studying, as a support system, or as a resource to obtain alternative study strategies. These participants also expressed a variety of physical, emotional, psychological, financial, and time-constraint barriers which affected how they studied. Given their continued reference to getting help from others and the impact of barriers on their studying, it was important to include these themes.

In Chapter 5, I will further relate these results to previous studies on this topic. I will also demonstrate the alignment with the conceptual framework and include any limitations of this study. Finally, I will make recommendations regarding future research based on this study's findings and describe the impact this study has on positive social change.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to improve the understanding of registered nursing students' study habits during their first semester of nursing classes. Thus, I sought to elicit participants' descriptions of what study methods they perceived to be effective and to identify any changes made as a result of their performance. To accomplish this, the nature of this study was qualitative as this format allowed participants to provide in-depth answers, whereas previous studies of first semester nursing students had been limited by questionnaires using a Likert scoring scale. This study was conducted to help identify unknown study strategies, uncover how students identify study strategy effectiveness, and determine if those study strategies are modified during the first semester of nursing courses. The results from this study could be used by nursing faculty to further assist students with their test preparation, thus helping them to perform better on their examinations and leading to successful completion of their nursing program.

From this study, four main themes were identified: individualized study strategies and routine, study strategy evolution, getting help from others, and barriers to studying. Students incorporated a variety of study strategies when preparing for their examinations, which were customized to their specific needs and preferences. Through this study, unknown study strategies were uncovered, such as the use of teach-back methods to review material as well as the widespread use of different technological tools. Their study strategies did not remain stagnant but rather evolved throughout the semester as students modified them, self-evaluated their effectiveness, self-realized which strategies were

working for them, and then made additional revisions if needed. They determined effectiveness by test performance as well as how they felt about their studying. Assistance from others was important to the study process and provided the student direct studying help, a way to share tasks and resources, and access to others' expertise, advice, financial assistance, or emotional support. Students, however, also face different physical, emotional, psychological, time-related, and financial barriers that interfere with their studying.

Interpretation of the Findings

The results of this study indicated that there are limitations to just focusing on a specific intervention or strategy (see Farner et al., 2019; Gerdes, 2018; Higgins, 2004; Johnson, 2019; Miller et al., 2016; Rajagopal et al., 2012), or using Study Skills Inventories or questionnaires with a Likert scale (Patidar, 2019; Shahida et al., 2014), which was done in previous studies. Participants were found to use various strategies simultaneously based on their individual needs and preferences. As was found in this study, participants did not use a single strategy in isolation from other strategies, making it more challenging to identify the effectiveness of a single strategy. Added benefits are likely gained by multiple strategy use. Furthermore, challenges exist when using Study Skills Inventories or questionnaires. The studies conducted by Patidar (2019) and Shahida et al. (2014) outlined the potential need for change in students' time management skills. However, they focused on comparing individual study domains, such as time management, concentration, and note taking, using the means to determine which was ranked lowest by students. While providing some general information on potential areas

to focus on, specific details were not provided on which individual study skills were lacking or being used, thus limiting the comparison to this study. Furthermore, on reviewing the Study Skills Inventory used by Patidar, there were no questions on some of the strategies found to be used by participants in my study, such as technology-based tools, teaching others the material, auditory learning skills, and practice.

Although this study encompassed a broader scope than the previous studies, some overlap was found. In this study, I discovered that first-semester nursing students used various study strategies and resources to study for their nursing examinations. More traditional study strategies, such as creating flashcards, reading and rereading the textbook, and reviewing notes and PowerPoint slides were used, which correlates with what was reported by first-year nursing students in Pryjmachuk et al. (2019)'s study. In Dapremont's (2014) study, nursing graduates found that rereading PowerPoint slides and notes given to them by the teacher and writing out and using notecards were also helpful. However, these graduates acknowledged that reading the textbook would have been beneficial, although they had not done this (Dapremont, 2014). Furthermore, using effective strategies such as taking practice exams, asking questions to test knowledge, and creating self-explanations of material was observed in this study and Rovers et al.'s (2018) study with undergraduate medical students. Other similar strategies included watching videos and rereading material (Rovers et al., 2018).

While similarities were found in those studies, differences were discovered as these studies did not identify nursing students' use of simulation, listening to the material, teaching learned lessons, or using technological tools. In this study, some participants

found benefits in simulation exercises to help connect the content covered in class and the skill. Although listening can be a more passive study skill, some participants would listen to the textbook instead of reading it or repeatedly listen to instructor review sessions. This strategy allowed them to take notes while listening to the textbook or do other tasks, such as driving while listening to review sessions. Teaching the material to others was a strategy used by two participants to help gauge if they understood the content well enough. This process was done by either teaching it to others or by imagining that an audience was there.

Furthermore, in this study, the use of technological tools was found to be quite prevalent, with students using Quizlet, online modules and practice test questions found in ATI, HESI, and PrepU, as well as watching YouTube videos. For example, 50% of participants in this study used YouTube videos, similar to 38.5% who regularly used it and 29.2% who somewhat used it in Ogbuiyi et al.'s (2020) study. Quizlet was mentioned as a tool used by nursing students in their prerequisite nursing classes (Felicilda-Reynaldo et al., 2017), but it had yet to be highlighted as a tool in their nursing classes. Students found these technology-based tools accessible, transportable, viewable on multiple devices, convenient, easy to understand, and a means to learn the content covered on tests. Furthermore, these tools provided the practice to trial nursing exam questions and helped practice pacing themselves for taking a timed exam.

Variation occurred when exploring the hours spent studying and the process used to determine a study plan. Participants stated they studied between 2 to 40 hours a week, with more studying being done as an exam approached. These hours were based on their

best estimates of study time and may not truly represent actual study times as they had not been recording them. Some participants mentioned modifying their study time as the semester progressed, spending less time studying as they become more familiar with what to expect on the exams. Most participants also organized their studying by writing tasks, checklists, assignments, and study topics on study planners, study lists, or sticky notes. Participants described choosing quiet environments to study. While containing only some of these aspects in their study, participants in Dapremont's (2014) study described the importance of having weekly study plans and routines. Some participants mentioned setting aside 2 hours a day for studying, while others recognized that the routine could vary depending on the day of the week, with more studying often being done on the weekends (Dapremont, 2014).

While the use of these study strategies was important, the impact of getting help from others also contributed to their studying. The participants relied heavily on their instructors' cues, hints, PowerPoint slides, notes, study guides, and review sessions. This focus on instructor prompts and using PowerPoints and study guides were also observed in students in their prerequisite nonnursing classes (Felicilda-Reynaldo et al., 2017). Despite valuing their instructors' materials and guidance, however, participants in this study did not seek their counsel for individualized assistance. They had assumed their instructors had already shared all the helpful information, were too busy, or would consider the student stupid for asking such questions. Nursing students have expressed similar problems, such as communication and rapport issues with faculty, challenges contacting them, lack of availability, unresponsiveness to emails, or being too busy (Chan

et al., 2019). A negative encounter can largely impact if future encounters with their instructors occur. Assumptions regarding the instructor's availability and willingness to help may have also been a deterrent.

While uncomfortable going directly to the instructor, a few participants stated they went to the college's nursing tutor or course enrichment specialist to help understand specific topics or to get more general studying tips. Similarly, faculty peer tutors in Roldán-Merino et al.'s (2019) study were found to be beneficial in providing emotional support to the student, offering assistance with students' learning process, navigating communication with other faculty, and making the connections between theory and practice. However, the initial experience must be supportive, personal, and beneficial to further promote additional sessions. In my study, participants using this tutoring service found the experience helpful, and, as a result, continued to have additional sessions with the tutor. While potentially beneficial, not all nursing programs offer this tutoring service, which may further isolate struggling students, preventing them from seeking assistance.

Participants used study groups, partners, and other peer support to varying degrees. While some study groups were helpful as they provided a way to distribute assignments, share resources and expertise, and get assistance with studying, some participants found these groups mainly were for socialization and did not offer any benefits regarding their studying. Other nursing students have found that relationships with fellow nursing students not only help them discuss and learn nursing topics but assist them with their communication skills, improve their ability to interact with others from different cultures, and provide an opportunity to talk about their shared experiences

of nursing school (Darpremont, 2014; Pryjmachuk et al., 2019). Offering student group meetings in the nursing program has been another way to allow students to share their experiences, ask questions, and further foster a teamwork environment (Roldán-Merino et al., 2019). Positive initial encounters deemed beneficial by the student largely play a role in their continued use.

In this study, one participant found that a study partner was more beneficial as that individual had shared classes and helped with accountability in getting the work done. A few participants mentioned receiving advice, helpful hints, and additional study resources through Facebook nursing support groups. They planned to use some of the recommended resources and websites later on in their nursing studies, especially as they were getting closer to taking the NCLEX examination. The use of Facebook as a tool to interact with peers was also found by Thalluri and Penman (2015) and Valdez et al. (2020). Facebook provided an accessible platform for users and appeared to result in a positive experience, allowing them to get assistance with assignments, share thoughts and resources, and communicate with one another. However, the participants in Thalluri and Penman's study noted there is the potential for negative interactions with other members or incorrect information being posted on this platform. However, Vizcaya-Moreno and Pérez-Cañaveras (2020) found that Generation Z nursing students at one higher institution in Spain rarely used Facebook, instead preferring Google Currents, WhatsApp, and YouTube to help with their clinical learning. The use of study groups, study partners, or other peer support groups may be largely determined by student preference for such interactions.

Family played a role in the participants' studying, whether as members actively assisting with studying or providing other support. As shown, family members would quiz students, serve as practice patients, listen during student teaching sessions, or provide studying suggestions. They also encouraged the participants and provided resources such as money and childcare. The influence of family on studying has yet to be explored when it comes to nursing students. Pryjmachuk et al. (2019) mentioned family as a possible negative factor that may impact a more mature nursing student's studies and interfere with relationship-building with other students because it may impose additional financial and family-related issues on the student. However, they did not examine what positive ways the family may contribute to the student. Such negative impacts from family were not conveyed by any of my study participants.

Differences in studying were found between students' general education prerequisite classes and their nursing classes. Participants found they no longer could just memorize material, but rather they had to be able to apply the information. This trend coincides with the information provided by junior and senior nursing students who were reflecting back on their previous general education classes in Felicilda-Reynaldo et al.'s (2017) study. In that study, students stated they merely needed to review general concepts for their general education exams and thus could use cramming techniques. Students stated they would listen to lectures, skim the textbook, use flashcards, and review PowerPoints, with some also writing out their notes (Felicilda-Reynaldo et al., 2017). Students in my study identified these same strategies and continued using them to prepare for their nursing exams. The participants in Felicilda-Reynaldo et al.'s study did note

they spent less time studying during their prerequisite and general education classes than they did once they started nursing school, which was a similar trend observed by participants in my study. While participants preferred to study alone in Felicilda-Reynaldo et al.'s study, many participants in my study did use study groups, study partners, peers, or family to assist with their studying. Of note, participants stated they changed their study practices after performing poorly on their first exam (see Felicilda-Reynaldo et al., 2017). While students in my study modified their study strategies after their first exam, it was not always because of poor test performance but how they felt about their studying. As a result, they modified their study strategies during the first semester of their nursing program while stating that additional modifications may be needed.

These modifications were made after self-evaluation and self-reflection of their strategies to determine those strategies that worked best for them. This evaluation was done without the assistance of their instructor. However, Blasiman et al. (2017) and Gerdes (2018) found that beginning college students often need assistance with their studying strategies. College students beginning their studies can choose ineffective study strategies and misallocate their studying time, which could negatively affect their test performance (Blasiman et al., 2017; Gerdes, 2018). Suggestions to further assist students included having educators teach students effective study strategies or perform instructor reviews of posttest reflections and test grades, followed by individualized feedback to those students at-risk (Blasiman et al., 2017; Gerdes, 2018). While my study participants did not need this guidance, they may have been effective studiers and not at-risk students.

Participants were not required to submit their grades, so it is unclear how effective they were when studying. However, those interviewed indicated they were going on or were in the next level of nursing classes, suggesting they had successfully earned the grades required. Rovers et al. (2018) indicated that self-regulating students could modify their study strategies without the instructor's guidance or prompts, which align with the results.

Furthermore, the evolution of students' study strategies in this study aligns with the conceptual framework of Winne and Hadwin's (1998) self-regulated learning model. Winne and Hadwin's model includes four study stages: task definition, goal setting and planning, study tactics and strategies enactment, and studying adaptations. Each of these stages was observed in this study. During the task definition stage, the student determines the study task and identifies available resources and possible barriers (Winne & Hadwin, 1998). For instance, if the task involves reviewing for an exam, the student considers the difficulty of the test, the type of materials to study from, and the amount of time needed to study. The study participants mentioned that nursing exams required more critical thinking and analysis than just the regurgitation of learned material required during their prerequisite and general education classes. Furthermore, they identified the materials and methods needed to study for the exam while developing a study plan, which outlined the time and often the schedule for studying.

The second stage involves the student identifying goals and then establishing a plan to meet those goals (Winne & Hadwin, 1998). Goals can range from just studying enough for basic understanding to obtaining full mastery (Winne & Hadwin, 1998). Once

the goals are determined, a plan is established around those goals (Winne & Hadwin, 1998). Participants expressed that they modified their studying not only to achieve higher grades but also to better understand their material and identify more effective study methods. These goals influenced the type of strategies selected and the time allocated to study.

The third stage involves the enactment of the study strategies, which also encompasses a self-evaluation of the strategies and study plan to determine if changes may be needed (Winne & Hadwin, 1998). If changes are needed, modifications are made in the fourth stage. Participants detailed a similar pattern of using previous study strategies initially when preparing for their nursing examination and then modifying those strategies after the first test. They self-evaluated the effectiveness of those strategies by factoring in their test grade performance and how they felt about their studying. Through this process of reflection, they also identified which study methods worked best for them. In some cases, that resulted in additional revisions to their strategies. Even once reasonably satisfied with the study strategies and study plan selected as the semester advanced, they did mention the possible need to make additional modifications as they progressed further in their nursing program. This evolution of study strategies was apparent in this study and aligned with the four stages of the chosen conceptual model.

Finally, while this study focused on the study strategies used by nursing students, barriers were consistently mentioned that interfered with their studying. Fatigue, hunger, illness, anxiety, frustration, a sense of information overload, short attention spans,

procrastination, time limitations, and financial issues negatively impacted how much information could be retained and how much time could be dedicated to studying. Similarly, Alos (2015) found fourth-year nursing students ranked feeling bored, tired, sleepy, being disturbed during studying, having no time to study at home, having issues with being motivated to study, and procrastinating until a quiz as highly impacting their study habits. If faculty and support services do not provide care and support for students that are having issues with personal, academic, financial, or clinical placements, it can impact whether they consider dropping out of nursing (Chan et al., 2019). None of the study participants indicated that their barriers were so overwhelming that they considered leaving the nursing program. During the interviews, they merely mentioned how those issues impacted their studying. While it appears they successfully completed their first semester of the nursing program, it is unknown if these barriers will cause a more significant impact as the students' progress in their program.

Limitations

Some limitations were identified in this study and are discussed here. One such limitation included using a narrow population of interest as participants were required to have just completed their first semester of nursing classes or be in their second semester. Students were recruited from registered nursing programs throughout the United States using Facebook, LinkedIn, and a recruitment eblast through the National League for Nursing to help minimize this. Despite these efforts, no male respondents reached out to participate in this study. Although not thought to be a factor, it is unknown whether differences in studying strategies would have been found. In addition, the participants of

this study indicated they were either moving onto their next level nursing course or were currently in that class. This acknowledgment suggests they performed well enough on their tests to advance in their program. Although not a focus of this study, differences in study strategies may occur between students with effective strategies compared to those using ineffective ones and who are at risk of not advancing in the program. Further studies are needed to make that comparison.

Other possible limitations included problems with researcher bias, transferability, and dependability. Potential researcher bias was considered in the interpretation of the results, as my previous roles included being a nursing instructor and a former nursing student who successfully progressed through a nursing program. Through the use of reflective journaling, no apparent researcher bias was identified. Participants were from different colleges and programs and were asked probing questions resulting in thick descriptions for their answers, ensuring transferability. Rationales were provided throughout the design plan and data analysis, with comparisons made with the research questions to ensure stability and reliability of the data as well as repeatability of the study providing dependability.

Recommendations

This study expanded the information about nursing students' study strategies, especially regarding their initial entry into the nursing program. Participants were found to use a mix of study strategies specific to their individual needs and preferences. Further qualitative studies should try to include male respondents to ensure they are using the same strategies. Benefits may also be gained by interviewing nursing students from other

countries to determine if study strategies are different. Some differences occurred, for instance, when comparing participants' preferred social media platforms with other studies involving nursing students from different countries. Access to some of the technology-based tools may also vary.

Given the variation in the strategies used by nursing students, a recommendation would be made to modify and expand the questions asked in any future quantitative studies that involve questionnaires. Questions should include some of the less known or less explored strategies, such as the use of technology-based tools, simulation, listening to materials, and teaching the information to others. Incorporation of these possible study strategies will provide a more complete picture of what is being used by nursing students. Furthermore, the frequency of each strategy can then be calculated, allowing faculty to determine the most preferred study strategies.

Moreover, further studies are needed to determine if additional modifications are made to study strategies as nursing students advance in their nursing classes, given that many participants mentioned plans to make future changes. Such possible changes included using additional NCLEX preparation websites and phone apps. Identification of the potential resources considered to be used by students would be beneficial for faculty, who can then review and make recommendations as to which of these resources may be best. This information may be more helpful for students who often get recommendations from peers, which may be less reliable. In addition, the identification of study strategies used throughout the nursing program will allow comparisons between initial study strategies and those used at the end of the program. Such comparisons may identify

further refinement of study strategies and adaptations as the course content becomes more difficult.

Future studies might also explore the strategies used by students who are low performers on tests and are at risk of leaving the nursing program. The low test performing students may be choosing ineffective study strategies and would benefit from additional intervention, whether that involves direct individualized assistance from the instructor or through study strategy workshops that teach study skills. A different recruitment method may be needed to identify the high risk low performers who may be hesitant to respond to a qualitative study invitation via social media platforms like Facebook.

While students relied heavily on their instructors for materials, cues on topics to focus on, and test review sessions, they did not go to them for assistance. Instead, they chose to get help from nursing tutors, study groups, study partners, and peers. Their families also played a role in their studying, whether through direct study assistance or providing financial and emotional support or childcare. This aspect needs further exploration as to why they do not go to their instructors, who are the content experts on what information will be on their test. In addition, further studies should investigate the impact these tutors, peers, study groups, study partners, and family have on their studying. Questions arise as to whether having more of these resources readily available to a student ultimately improves the student's success rate in the nursing program.

Finally, barriers may have an impact on students studying yet are often not considered when investigating students' study strategies. As mentioned by some

participants in this study, the amount of studying done was influenced by the time they had available, with some having to navigate work schedules and family responsibilities. This constraint may impact the study strategies selected as they may not have the time or resources to write out notecards, create Quizlets, or read the textbook. Financial responsibilities may also add a further burden. Additional research is needed to determine how great an impact these barriers have on the study strategies chosen.

Implications

This study identified the various study strategies used by nursing students in the United States during their first semester of nursing classes. While commonly known strategies such as making notecards, reading the textbook, and reviewing notes were identified, less studied strategies such as using technology-based tools and teaching others the material were found. Participants frequently mentioned the use of Quizlet, ATI and HESI online modules, and YouTube videos for their studying as they provided practice, were easily accessible through multiple devices or would assist them in identifying knowledge deficits that could then be addressed. This preference for more technology-based tools can assist faculty in creating lessons and resources that better utilize them. In addition, faculty can help identify Quizlets, online modules, and YouTube videos that are current and correct, providing them as suggestions for the students' use.

Given that some of these materials were selected because of the number of views, other students' recommendations, or the students' best guess of accuracy and legitimacy, this guidance would be most beneficial, preventing students from incorrectly choosing

resources. Such guidance may be further needed given that some students have limited time and thus would be better served using that time to study instead of searching for or creating such technological resources. While possibly a bit time consuming for faculty, nursing programs may consider also creating Quizlets based on the content taught, especially given that students do not go to faculty with questions, choosing instead to go to outside sources.

This study contributes to positive social change as these results bring awareness to nursing faculty about the study strategies used by nursing students, including technology-based tools. In addition, it is evident that students select various strategies depending on their individual needs and preferences. Their studying methods are not a "one size fits all" phenomenon, so lessons must incorporate various strategies to meet students' needs. Exposure to multiple study strategies while in their program may also help students find a new strategy that is currently unknown. This exposure may be more beneficial, especially to those students with ineffective study strategies who are at risk of leaving the program.

From this study's results, nursing faculty also better understand how nursing students identify a strategy's effectiveness and how they modify their study strategies throughout the semester. Test performance and how they felt about studying were used to determine strategy effectiveness. Modifications were made to their study strategies if they were unsatisfied with their performance or thought improvements were needed. Such evolution of study strategies aligned with the conceptual model chosen, Winne and Hadwin's (1998) self-regulated learning model. Participants exhibited all four stages outlined in this model: task definition, goal setting and planning, study tactics and

strategies enactment, and studying adaptations. Such information can benefit faculty as it can provide a model to use in future qualitative studies on nursing student strategies. In addition, this strategy evolution also demonstrates how students may alter their strategies throughout the semester and their nursing program. Faculty can use this information to better guide students, especially after the first examination when modifications first occurred. This guidance may be beneficial for at-risk students who may need to learn how to modify their studying after performing low on an exam.

Students will benefit as faculty incorporate more of these varied study strategies into their lessons and resource materials and provide additional guidance to struggling students. Despite not going to the faculty for assistance, participants of this study listened to their instructors' cues and suggestions. They used the faculty's materials such as PowerPoint slides, study guides, practice questions, and review materials. Additional guidance from the instructor will assist with test performance and further build rapport with the instructor, perhaps reducing the hesitation to go to them for additional help. Students will benefit by having the resources to study and additional guidance, thus improving test performance, resulting in better course grades, and program completion. Such study strategies can be used to improve performance on the NCLEX, ultimately leading to more students obtaining their registered nurse license.

Indirect positive social changes may occur for healthcare facilities as they benefit from more nursing graduates successfully earning their registered nursing license. These potential candidates can help fill available vacancies, thus reducing patient caseloads created by current nursing shortages. Communities and society would benefit by having

the nursing staff to meet the increasing demands placed on the healthcare system, especially with an aging population that requires more advanced nursing care.

Conclusion

This study has begun to fill some of the literature gaps identified regarding nursing student study strategies, especially concerning their first semester of nursing classes. Participants were found to use a combination of strategies chosen based on their effectiveness for the individual student. Such study methods included more traditionally known strategies, such as writing and using notecards, reading the textbook, rereading material, and reviewing their notes. However, other study strategies were used such as listening to lessons or review sessions, simulation exercises, writing and rewriting notes, doing practice questions, and teaching others the material. Furthermore, this study identified that all participants used technology-based tools, such as Quizlet, ATI and HESI online modules, and YouTube videos. Furthermore, participants mentioned adding the use of nursing-specific phone apps and other websites as they progressed in their program. Despite this prevalence of technology use, participants had to create their Quizlets or search for such materials independently, using indicators such as peer recommendations, number of views, and own judgment to determine their appropriateness. Because they are in the novice stage of their nursing education, students could choose and use inaccurate or outdated material. Faculty could play a key role in helping students select the appropriate resources to use while incorporating Kahoot and Quizlet into their lessons and as student review materials.

This study also found parallels to Winne and Hadwin's (1998) self-regulated learning model as participants did demonstrate all four stages of that model: task definition, goal setting and planning, study tactics and strategies enactment, and studying adaptations. Participants recognized that nursing tests would require more critical thinking and analysis and then identified the study strategies to use best while also developing a study plan. Then, they would implement those study strategies, evaluate their effectiveness, and then make modifications based on that evaluation. Even once additional modifications were made, they recognized that further changes might be required as they advanced into more challenging classes.

While students' study strategies were the focus of this study, a consistent theme emerged regarding their use of others' help. Participants relied on the faculty for cues, materials, reviews, and suggestions in class but did not go to them for individualized assistance. Instead, they tended to go to nursing tutors, study groups, study partners, peers, or family for study support, potentially losing some of the content expertise of the instructor. The use of tutors, study groups, study partners, peers, and family seemed determined mainly by student preference for such interactions and if the student found them beneficial to their success.

While many studies on nursing student strategies focus on the use of specific strategies, participants frequently mentioned various barriers that interfered with their studying. This avenue is often not explored in such studies, yet it may contribute to the strategies chosen or the time spent studying. These barriers negatively impacted how much information could be retained and how much time could be allocated to studying.

As such, future studies should consider these barriers as they may significantly impact strategy selection.

From this study, positive social change can be achieved as nursing faculty now have an awareness of the study strategies used by first semester nursing students, how these students determine strategy effectiveness, and the evolution of those strategies as the semester progresses. With this information, modifications can be made to the classroom lessons incorporating preferred methods such as technology-based tools. While this study provides an understanding of students' study strategies and modifications from the beginning of their program, further studies can investigate the many avenues suggested in the recommendations previously described. Students will continue to benefit from a fuller understanding of their studying as faculty can further refine their classroom methods, thus assisting students to earn better grades, succeed in their program, and obtain their licensure. Such success is needed at a time when nurses are leaving the profession while healthcare needs are increasing.

References

Alos, S. B., Carranto, L. C., & David, J .J. T. (2015). Factors affecting the academic performance of the student nurses of BSU. *International Journal of Nursing Science, 5*(2), 60–65. https://doi.org/10.5923/j.nursing.20150502.04

American Association of Colleges of Nursing. (2020). *Fact sheet: Nursing shortage*. https://www.aacnnursing.org/news-information/fact-sheets/nursing-shortage

American Nurses Association. (n.d.). *Workforce*. http://www.nursingworld.org/practice-policy/workforce/

Bierer, S. B., & Dannefer, E. F. (2016). The learning environment counts: Longitudinal qualitative analysis of study strategies adopted by first–year medical students in a competency–based educational program. *Academic Medicine, 91*(11), S44–S52. https://doi.org/10.1097/ACM.0000000000001363

Blasiman, R. N., Dunlosky, J., & Rawson, K. A. (2017). The what, how much, and when of study strategies: Comparing intended versus actual study behavior. *Memory, 25*(6), 784–792. https://doi.org/10.1080/09658211.2016.1221974

Boekaerts, M. (1996). Self–regulated learning at the junction of cognition and motivation. *European Psychology, 2*, 100–112. https://doi.org/10.1027/1016–9040.1.2.100

Boekaerts, M. (2011). Emotions, emotion regulation, and self–regulation of learning. In B. J. Zimmerman & D. H. Schunk (Eds.), *Handbook of self–regulation of learning and performance* (pp. 408–425). Routledge.

Bradshaw, C., Atkinson, S., & Doody, O. (2017). Employing a qualitative description

approach in health care research. *Global Qualitative Nursing Research, 4*, 1-8. https://doi.org/10.1177/2333393617742282

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*, 77–101. https://doi.org/10.1191/1478088706qp063oa

Buerhaus, P. I., Skinner, L. E., Auerbach, D. I., & Staiger, D. O. (2017). Four challenges facing the nursing workforce in the United States. *Journal of Nursing Regulation*, *8*(2), 40–46. https://doi.org/10.1016/S2155-8256(17)30097-2

Bulent, A., Hakan, K., & Aydin, B. (2015). An analysis of undergraduates' study skills. *Procedia-Social and Behavioral Sciences*, *197*, 1355–1362. https://doi.org/10.1016/j.sbspro.2015.07.389

California Board of Registered Nursing. (2019, August 2). *Accreditation, attrition, and on time completion rates*. https://www.rn.ca.gov/education/attrition.shtml

Chan, Z. C. Y., Cheng, W. Y., Fong, M. K., Fung, Y. K., Ki, Y. M., Li, Y. L., Wong, H. T., Wong, T. L., & Tsoi, W. F. (2019). Curriculum design and attrition among undergraduate nursing students: A systematic review. *Nursing Education Today*, *74*, 41-53. https://doi.org/10.1016/j.nedt.2018.11.024

Chen, S., Huang, C. C., & Chou, T.-L. (2016). The effect of metacognitive scaffolds on low achievers' laboratory learning. *International Journal of Science and Math Education*, 14, 281–296. https://doi.org/10.1007/s10763-015-9691-9

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods* (5th ed.). Sage Publications.

Custer, N. (2018). Test anxiety and academic procrastination among prelicensure nursing

students. *Nursing Education Perspectives*, *39*(3), 162–163. https://doi.org/10.1097/01.NEP.0000000000000291

Dabbagh, N., & Fake, H. (2017). College students' perceptions of personal learning environments through the lens of digital tools, processes, and spaces. *Journal of New Approaches in Educational Research*, *6*(1), 28–36. https://doi.org/10.7821/naer.2017.1.215

Dang, N. V., Chiang, J. C., Brown, H. M., & McDonald, K. K. (2018). Curricular activities that promote metacognitive skills impact lower–performing students in an introductory biology course. *Journal of Microbiology & Biology Education*, *19*(1), 19.1.5. https://doi.org/10.1128/jmbe.v19i1.1324

Dapremont, J. A. (2011). Success in nursing school: Black nursing students' perception of peers, family, and faculty. *Journal of Nursing Education*, *50*(5), 254–260. https://doi.org/10.3928/01484834-20111-317-03

Dapremont, J. A. (2014). Black nursing students: Strategies for academic success. *Nursing Education Perspectives*, *35*(3), 157–161. https://doi.org/10.5480/11-563.1

Doyle, L., McCabe, C., Keogh, B., Brady, A., & McCann, M. (2020). An overview of the qualitative descriptive design within nursing research. *Journal of Research in Nursing*, *25* (5), 443-445. https://doi.org/10.1177/1744987119880234

Efklides, A. (2011). Interactions of metacognition with motivation and affect in self–regulated learning: The MASRL model. *Educational Psychology*, *46,* 6–25. https://doi.org/10.1080/00461520.2011.538645

Farner, J., Reed, M., Abbas, J., Shmina, K., & Bielawski, D. (2019). Aromatherapy hand massage for test anxiety and self–efficacy in nursing students: A pilot study. *Teaching and Learning in Nursing*, *14*(4), 225–230. https://doi.org/10.1016/j.teln.2019.04.008

Felicilda-Reynaldo, R. F. D., Cruz, J. P., Bigley, L., & Adams, K. (2017). Baccalaureate student nurses' study habits prior to admission to nursing program: A descriptive qualitative study. *Nurse Education Today*, *53*, 61–66. https://doi.org/10.1016/j.nedt.2017.04.009

Frieda Paton, M. C. (2018, September 26). High nursing student dropout rates are a global concern. https://nurseslabs.com/high-nursing-student-dropout-rates-are-a-globe-concern/

Frith, K. H., Sewell, J. P., & Clark, D. J. (2008). Best practices in NCLEX–RN readiness preparation for baccalaureate student success. *Computers, Informatics, Nursing*, *23*(6), 322–329. https://doi.org/10.1097/00024665-200511000-00008

Gale, J., Ooms, A., Newcombe, P., & Marks-Maran, D. (2015). Students' first year experience of a BSc (Hons) in nursing: A pilot study. *Nurse Education Today*, *35*(1), 256–264. https://doi.org/10.1016/j.nedt.2014.08.016

Geller, J., Toftness, A. R., Armstrong, P. I., Carpenter, S. K., Manz, C. L., Coffman, C. R., & Lamm, M. H. (2018). Study strategies and beliefs about learning as a function of academic achievement and achievement goals. *Memory*, *26*(5), 683–690. https://doi.org/10.1080/09658211.2017.139175

Gerdes, M. (2018). Teaching–learning strategy for promoting student success:

Asynchronous post–exam reflections. *Nursing Science Quarterly*, *31*(4), 335–339. https://doi.org/10/1177/0894318418792876

Goldman, D., & Gaudette, E. (2015, June 5). *Strengthening medical care for 2030: Health and health care of Medicare beneficiaries in 2030*. https://www.brookings.edu/wp-content/uploads/201607/Medicare2030_Chartbook.pdf

Greene, J. A., & Azevedo, R. (2007). A theoretical review of Winne and Hadwin's model of self–regulated learning: New perspectives and directions. *Review of Educational Research*, 77(3), 334–372. https://doi.org/10.3102/003465430303953

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough?: An experiment with data saturation and variability. *Field Methods*, *18*(1), 59–82. https:/doi.org/10.1177/1525822X05279903

Hadwin, A. F., Järvelä, S. and Miller, M. (2017). Self–regulation, co–regulation and shared regulation in collaborative learning environments. In D. H. Schunk & J. A. Greene (Eds.), *Handbook of self–regulation of learning and performance* (2nd ed.) https://www.researchgate.net/publication/313369294_Self–regulation_co-regulation_and_shared_regulation_in_collaborative_learning_environments

Higgins, B. (2004). Relationship between retention and peer tutoring for at–risk students. *Journal of Nursing Education*, *43*(7), 319–321. https://doi.org/10.3928/01484834-20040701-01

Hunsicker, J. & Chitwood, T. (2018). High–stakes testing in nursing education: A review of the literature. *Nurse Educator*, *43*(4), 183–186.

https://doi.org/10.1097/NNE.0000000000000475

Hurst, K. M. (2016). Using video podcasting to enhance the learning of clinical skills: A qualitative study of physiotherapy students' experiences. *Nurse Education Today, 45*, 206–211. https://doi.org/10.1016/j.nedt.2016.08.011

Iacobucci, W., Dall, T., Chakrabarti, R., Reynolds, R., & Jones, K. (2021, July 27). *Florida nurse workforce projections: 2019 to 2035*. Florida Hospital Association. http://www.fha.org/uploads/1/3/4/0/134061722/ihs_florida_nurse_workforce_report.pdf

Johnson, C. E. (2019). Effect of inhaled lemon essential oil on cognitive test anxiety among nursing students. *Holistic Nursing Practice*, 33(2), 95–100. https://doi.org/10.1097/HNP.0000000000000315

Kim, H. J., Nikstaitis, T. M., Park, H., Armstrong, L. J., & Mark, H. D. (2019). Predictors and students' perceptions of NCLEX–RN success in a BS program. *Journal of Nursing Education and Practice*, *9*(6), 32–40. https://doi.org/10.5430/jnep.v9n6p32

Kim, H., Sefcik, J.S., & Bradway, C. (2017). Characteristics of qualitative descriptive studies: A systematic review. *Research in Nursing & Health*. *40*(1), 23-42. https://doi.org/10.1002/nur.21768

Kinnison, T., Whiting, M., Magnier, K., & Mossop, L. (2017). Evaluating #VetFinals: Can Twitter help students prepare for final examinations? *Medical Teacher*, *39*(4), 436–443. https://doi.org/10.1080/0142159X.2017.1296561

Langtree, E. M. Razak, A., & Haffejee, F. (2018). Factors causing stress among first–year

students attending a nursing college in KwaZula-Natal, South Africa. *African Journal of Health Professions Education*, *10*(2), 90–95. https://doi.org/10.7196/AJHPE.2018.v10i2.993

Looi, C.-K. & Wong, L.-H. (2014). Implementing mobile learning curricula in schools: A programme of research from innovation to scaling. *Educational Technology & Society*, *17*(2), 72–84. https://www.researchgate.net/publication/286186694_Implementing_Mobile_Learning_Curricula_in_Schools_A_Programme_of_Research_from_Innovation_to_Scaling

Lukas, L. A., & McConnell, D. A. (2014). What motivates introductory geology students to study for an exam? *Journal of Geoscience Education*, *62*(4), 725–735. https://doi.org/10.5408/13-110.1

Merritt, R. D. (2021). *Teaching Study Skills.* Salem Press Encyclopedia.

Miller, P., Forehand, J. W., & McBride, M. (2016). Building first–semester nursing student confidence for test–taking: A STARS pilot project, *Teaching and Learning in Nursing*, *11*, 175–178. https://doi.org/10.1016/j.teln2016.08.002

National Council of State Boards of Nursing. (2020). Licensure. https://www.ncsbn.org/licensure.htm

Ogbuiyi, S. U., Oriogu, C. D., Lawal, F. M., & Onyebuchi, C. A. (2020). Assessment of social media use on study habits among nursing students: A case study of Babcock University. *Library Philosophy and Practice*, 1–18. https://digitalcommons.unl.edu/libphilprac/4224

Palalas, A. & Wark, N. (2020). The relationship between mobile learning and self–regulated learning: A systematic review. *Australasian Journal of Educational Technology*, *36*(4), 151–172. https://doi.org/10.14742/ajet.5650

Panadero, E. (2017). A review of self-regulated learning: Six models and four directions for research. *Frontiers in Psychology*, *8*, 422. https://doi.org/10.3389/fpsyg.2017.00422

Patidar, J. (2019). Evaluation of study skills in nursing students. *International Journal of Nursing Education*, *11*(3), 26–31. https://doi.org/10.5958/0974-9357.2019.00058.8

Patton, M. Q. (2015). *Qualitative Research & Evaluation Methods: Integrating Theory and Practice* (4th ed.). SAGE Publications.

Pintrich, P. R. (2000). The role of goal orientation in self–regulated learning. In M. Boekaerts, P.R. Pintrich, & M. Zeidner (Eds.), *Handbook of self–regulation* (pp. 452–502). Academic Press.

Poorman, S. G., Mastrorovich, M. L., & Gerwick, M. (2019). Interventions for test anxiety: How faculty can help. *Teaching and Learning in Nursing*, *14*(3), 186–191. https://doi.org/10.1016/j.teln.2019.02.007

Pryjmachuk, S., McWilliams, C., Hannity, B., Ellis, J., & Griffiths, J. (2019). Transitioning to university as a nursing student: Thematic analysis of written reflections. *Nurse Education Today*, *74*, 54–60. https://doi.org/10/1016/j.nedt.2018.12.003

Rajagopal, M., Pugazhanthi, S. S., & George, L. S. (2012). A study on effectiveness of

meditation on subjective wellbeing, anxiety and study habits of undergraduate nursing students. *International Journal of Nursing Education*, *4*(2), 137–140. https://www.researchgate.net/publication/299367434_A_study_on_effectiveness_of_meditation_on_subjective_wellbeing_anxiety_and_study_habits_of_undergraduate_nursing_students

Raso, R., Fitzpatrick, J. J., Masick, K. (2021). Nurses' intent to leave their position and the profession during the COVID–19 pandemic. *The Journal of Nursing Administration*, *51*(10), 488–494. https://doi.org/10.1097/NNA.0000000000001052

Ravitch, S. M. and Carl, N. M. (2016). *Qualitative research: Bridging the conceptual, theoretical, and methodological.* Age Publications.

Roldán-Merino, J., Miguel-Ruiz, D., Roca-Capara, N., & Rodrigo-Pedrosa, O. (2019). Personal tutoring in nursing studies: A supportive relationship experience aimed at integrating, curricular theory and professional practice. *Nurse Education in Practice*, *37*, 81–87. https://doi.org/10.1016/j.nepr.2019.05.005

Rovers, S. F. E., Stalmeijer, R. E., van Merrienboer, J .J. G., Savelberg, H. H. C. N., & de Bruin, A. B. H. (2018). How and why do students use learning strategies? A mixed methods study on learning strategies and desirable difficulties with effective strategy users. *Frontiers in Psychology*, *9*, 1–12. https://doi.org/10.3389/fpsyg.2018.02501

Sanders, J. & Cleary, T.J. (2011). Self-regulation theory: Applications to medical education: AMEE Guide No. 58. *Medical Teacher*, *33*, 875-888.

https://doi.org/10.3109/0142159X.2011.595434

Sears, N. A., Othman, M., & Mahoney, K. (2015). Examining the relationships between NCLEX–RN performance and nursing students factors, including undergraduate nursing program performance: A systematic review. *Journal of Nursing Education and Practice, 5*(11), 10–15. https://doi.org/10.5430/jnep.v5n11p10

Shahida, F., Dowlatkhah, H. R., Avand, A., Musavi, S. R., & Mohammadi, E. (2014). A study on the quality of study skills of newly–admitted students of Fasa University of Medical Sciences. *Journal of Advances in Medical Education and Professionalism, 2*(1), 45–50. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4235533/

Simon, E. B., McGinniss, S. P., & Krauss, B. J. (2013). Predictor variables for NCLEX–RN readiness exam performance. *Nursing Education Perspectives*, *34*(1), 18–24. https://doi.org/10.5480/1536-5026-34.1.18

Thalluri, J., & Penman, J. (2015). Social media for learning and teaching undergraduate sciences: Good practice guidelines from intervention. *The Electronic Journal of e–Learning*, *13*(6), 455–465. https://academic-publishing.org/index.php/ejel/article/view/1945

Tuysuzoglu, B.B., & Green, J. A. (2015). An investigation of the role of contingent metacognitive behavior in self-regulated learning. *Metacognition Learning*, *10*, 77-98. https://doi.org/10.1007/s11409-014-9126-y

United States Bureau of Labor Statistics. (2020, April 10). Occupational outlook handbook: Registered nurses. https://www.bls.gov/ooh/healthcare/registered-

nurses.htm#tab-6

United States Census Bureau. (2017). 2017 National population projections tables: Main series. https://www.census.gov/data/tables/2017/demo/popproj/2017-summary-tables.html

Valdez, G. F. D., Cayaban, A. R. R., Al-Fayyadh, S., Korkmaz, M., Obeid, S., Sanchez, C. L. A., Ajzoon, M. B., Fouly, H., & Cruz, J. P. (2020). The utilization of social networking sites, their perceived benefits and their potential for improving the study habits of nursing students in five countries. *BMC Nursing*, *19*, 1-14. https://doi.org/10.1186/s12912-020-00447-5

Vasileiou, K., Barnett, J., Thorpe, S., & Young, T. (2018). Characterising and justifying sample size sufficiency in interview–based studies: Systematic analysis of qualitative health research over a 15–year period. *BMC Medical Research Methodology*, *18*(1), 1-18. https://doi.org/10.1186/s12874-018-0594-7

Vizcaya-Moreno, M. F., & Pérez-Cañaveras, R. M. (2020). Social media used and teaching methods preferred by Generation Z students in the nursing learning environment: A cross–sectional research study. *International Journal of Environmental Research and Public Health*, *17*(21), 8267. https://doi.org/10.3390/ijerph17218267

Winne, P. H., & Hadwin, A. F. (1998). Studying as self–regulated engagement in learning. In D. Hacker, J. Dunlosky, and A. Graesser (Eds.), *Motivation and self–regulated learning: theory, research and applications* (pp.277–304). Erlbaum.

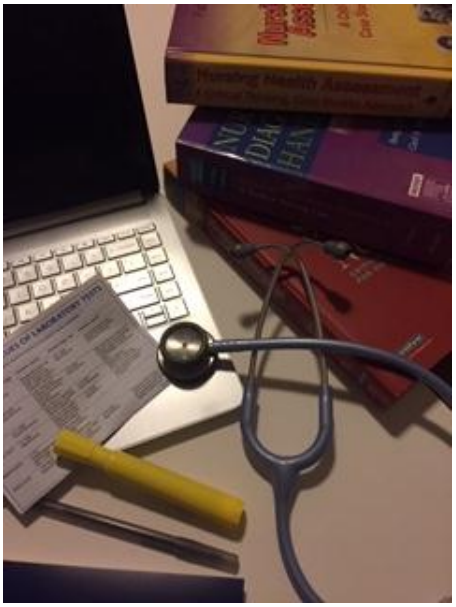
Zheng, L., Li, X., & Chen, F. (2018). Effects of a mobile self–regulated learning

approach on students' learning achievements and self–regulated learning skills. *Innovations in Education and Teaching International*, *55*(6), 616–624. https://doi.org/10.1080/14703297.2016.1259080

Zimmerman, B. J. (2000). Attaining self–regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self–regulation* (pp. 13–40). Academic Press. https://doi.org/10.1016/b978-012109890-2/50031-7

Appendix A: Social Media Flyer

Are you a nursing student who has just completed your first semester or are in your second semester of nursing classes?



Dissertation topic: The Perceived Effectiveness and Evolution of First-Semester Nursing Students' Studying Methods

Are you:

- 18 yrs. or older
- Pursuing a registered nursing program in the United States
- In your second semester of nursing classes or have just completed your first semester of your nursing program

If so, you can help us better understand how you study for nursing courses

Examples of questions asked during the interview include:

-Can you describe the study strategies you used when preparing for your first exams during your first semester of nursing classes?

-How effective did you find those study strategies after taking your first nursing exams?

This information can help faculty:

-better incorporate the study techniques you prefer into their lessons & identify study strategies you may not be aware of or are not using

Participation involves:

- Participate in a 1 hr. interview scheduled at your convenience
- Review the interview transcript for accuracy which may take approximately 20 minutes

You will receive a $15 electronic Target gift card as a thank you gift after completing the interview.

If interested, contact Elizabeth Brown at (redacted) or by email at (redacted)

This research study will be conducted by Elizabeth Brown, a doctoral candidate at Walden University, to meet the requirements of a dissertation.

Appendix B: Screening Questionnaire

The following screening questions will be asked of potential participants prior to the interview to ensure they meet inclusion criteria and do not have an exclusion prohibiting their participation.

1. What country is your nursing program located in?

2. What type of nursing program are you attending (e.g. RN, LPN)?

3. Are you over 18 years of age?

4. What semester of nursing classes are you currently in?

5. Have you had me as an instructor in any of your classes?

Closing Remarks for Ineligible Participants

Thank you for your interest in participating in my study. Unfortunately, based on the information you have provided, you do not meet the criteria to continue on in this study. I thank you for your time today.

Closing Remarks for Eligible Participants

Thank you for your interest in participating in my study and for answering these questions. Based on the information you have provided, you are eligible to take part in this study. I will be sending you a Consent form for this study to your email address. Should you decide to participate in the study after reading the consent, please send a reply email with the words “I consent”. After I have received that consent, I will send a follow-up email to schedule the interview day and time.

Appendix C: Demographic Questionnaire

Participant Assigned Number:

1. What gender do you identify with?

2. Which of the following age group are you in?

__ 18-25 __26-35 __36-45 __46-55 __56-65 __66-75 __>75

3. What nursing degree are you pursuing (diploma, ASN, BSN)?

4. Have you received a previous college degree in another field before pursuing this one?

Appendix D: Interview Guide

Interview Questions

1. Can you describe the study strategies you used when preparing for your first exams during your first semester of nursing classes?
    a) Why did you think those particular study strategies would be beneficial?
2. How effective did you find those study strategies after taking your first nursing exams?
3. What is your specific routine for studying for your nursing classes?
4. How many hours per week do you spend studying for your nursing classes and exams?
    a) How did the amount of time change throughout that semester?
5. What role did a study group or a study partner have in your study strategies?
    a) What experiences did you have with study groups or study partners?
6. Can you describe situations in which you reached out to your instructor for study strategies or help with studying for nursing examinations?
    a) What advice or helpful hints did this instructor give you?
    b) How frequently did you reach out to your instructor for study strategies or help with studying for nursing examinations?
7. What instructional materials or tools did you use to supplement your learning when preparing for nursing exams?
8. How did you modify your study habits based on your exam performance during the first semester of nursing classes?

9. Is there anything that you would like to add about your studying experiences before we conclude today's interview?

Closing Statement

Thank you for spending time with me today and sharing your experiences. Please feel free to contact me if you have any additional thoughts or insights that you would like to share. Once I have transcribed today's interview, I will send you a copy of it to review so that you can verify the content and add any additional remarks or corrections. Thank you for your assistance with my study and enjoy the rest of your day. Goodbye.

Appendix E: Email to Schedule Interview Once Consent Received

Thank you for completing the consent form. I would like to schedule the interview for a day and time that is convenient for you. Please answer the questions below regarding your availability and interview format preference.

1. What days and times are you available to schedule for the 1 hour interview?
2. Would you prefer to do the interview by phone or online conferencing?
    a) If your preference is by phone, what number should I reach you at on that day?
    b) If your preference is by online conferencing, I will send you an email with the meeting link for the interview. This will be an audio only interview so a camera will not be needed and should remain off during the interview.

I will confirm with you by phone or email the date and time for the interview. It is recommended that on the day of the interview that you select a location that provides you privacy. Thank you for agreeing to participate in the study and please contact me if you have any further questions or need to change the interview date and time. I can be reached at (redacted phone number) or (redacted email address).

Appendix F: Email for Transcript Review

Hello,

Thank you again for providing the information about your study strategies during our interview. I have attached a copy of the transcript from that interview. Please review the transcript to ensure I have captured the information correctly and let me know if there is anything that needs to be changed. Since that interview, you may have thought of additional strategies or comments that you would like to share and I would like to provide you this opportunity to do that. This information and your transcript review will conclude your participation in the study. Any revisions required to this transcript must be sent to me within 2 weeks of this email. If I have not heard back from you by that deadline, I will assume that the transcript is accurate and no modifications are needed. I thank you again for your participation and for doing this last step to ensure your experience has been captured correctly for my dissertation study. A summary of this study's results will be available to you in Google docs once the study has concluded and can be accessed by clicking on the following link: Summary of Results