Fall 2022

Assessing Nursing Student Engagement in Clinical and Simulation Experiences

Karrie Osborne

LOYOLA UNIVERSITY CHICAGO

ASSESSING NURSING STUDENT ENGAGEMENT IN CLINICAL AND SIMULATION EXPERIENCES

A DISSERTATION SUBMITTED TO

THE FACULTY OF THE GRADUATE SCHOOL

IN CANDIDACY FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

PROGRAM IN NURSING

BY

KARRIE E. OSBORNE

CHICAGO, IL

AUGUST 2022

ACKNOWLEDGEMENTS

Many days of prayer and discussion with the Lord, my God, helped see me through this entire process. I thank Him first and foremost for His blessings on me throughout this journey.

This process is certainly arduous and, as they say, it takes a village. I want to express my deepest and most sincere gratitude to my dissertation co-chairs, Dr. Carol Kostovich and Dr. Lee Schmidt, for guiding me through the dissertation journey to completion. I am especially grateful for your patience, encouragement, and support throughout the process. I know I have grown as a researcher in so many ways and that is attributed to the time and effort you, as well as committee member Dr. Jenny O'Rourke, invested in me.

To my husband, David and my sweet daughters Leah and Kathleen, thank you so much for your love and support throughout this journey. To say that I could not have done this without you is an understatement. Thank you for understanding when I may have been distracted or difficult as I was working through challenges during this entire process. Your patience and love kept me moving forward. I also want to acknowledge the love of my mom, Greta Cope, who always is encouraging to me in my endeavors.

Finally, I want to acknowledge my girls DeLisa Flynn, Dr. Lisa Harton, and Laura Robbins-Frank. We experienced this journey together from the very beginning as classmates and I am thankful that we are now such good friends. You all were a sounding board when I needed it, always believed in me, and encouraged me along the way. I do not know what I would have done without your love and support.

Ignite the mind’s spark to rise the sun in you.

Florence Nightingale

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

In higher education, researchers have shown that student engagement is related to personal development and learning. The overall purpose of this non-experimental, cross-sectional, correlational study was to examine differences in student engagement across active learning experiences in prelicensure nursing clinical education. The specific active clinical learning experiences that were examined included the traditional clinical experience, clinical post-conference, the simulation experience, and simulation debriefing. In addition, this study explored the relation between student engagement and the contribution of the instructor as well as the relation between nursing student engagement in clinical education and academic burnout. Nursing students completed an online survey to self-report their engagement and the instructor contribution in either the clinical experience, the clinical post-conference, the simulation experience, or the simulation debriefing. Additionally, all students self-reported levels of academic burnout. Engagement scores were compared between the various clinical activities to identify problem areas in nursing education. Findings from this study will help to inform best practices that can be used in designing clinical experiences for prelicensure nursing students, to optimize learning and improve learning outcomes.

CHAPTER ONE

INTRODUCTION

Nursing is one of the largest professions in the United States, with over 2.9 million nurses nationwide (Bureau of Labor Statistics, 2020). Nurses carry a primary responsibility to provide safe and competent care and the decisions of the nurse can influence patient outcomes, either positively or negatively. Caring for patients in the current healthcare environment has become more complex, as nurses are experiencing an increased workload with increased stress, shorter length of patient stay, and higher acuity of patients (Agency for Healthcare Research and Quality [AHRQ], 2018; American Association of Colleges of Nursing [AACN], 2019a).

There is evidence, however, that not all new nurses are adequately prepared for practice in this complex setting (Hatzenbuhler & Klein, 2019). In a recent study, researchers examined the entry-level competency and practice of new nurses and found that only 23 percent of new graduate nurses demonstrated entry-level readiness for practice (Kavanagh & Szweda, 2017). This is concerning because the preparedness of the nurse affects patient outcomes (AACN, 2019b). These findings indicate that there continues to be a gap between education and practice and there is a continued need to examine teaching methods being used to better prepare students to transition to practice and provide care in the complex healthcare environment.

The National League for Nursing's (NLN, 2020d) current research priorities call for nurse educators to establish best practices for clinical education and evaluate the impact of

teaching practices on learning and engagement. One way that nurse educators can engage learners is through the use of active methods of instruction. Active learning strategies have been shown to promote student learning (Fuller et al., 2018) and it is suggested that they can better prepare new nurses for the complex healthcare system in which they will practice (AACN, 2021; Benner et al., 2010).

Clinical and simulation experiences are ways that faculty offer active learning opportunities to nursing students. The goal of this study was to better understand student engagement in undergraduate nursing clinical education, including traditional clinical experiences, clinical post-conference, simulation experiences, and simulation debriefing. Based on a review of the literature, little is known about how students engage in these active learning strategies. This chapter will serve as an introduction, providing background information that will contextualize and provide a broad overview of the study.

Active Learning

Active learning is defined as any educational approach in which students are encouraged to engage in the learning process, as opposed to passively receiving information (Center for Educational Innovation, 2021). Active learning can take on many forms and encourages students to talk about what they are learning, write about it, relate it to past experiences and apply it to their daily lives. It can also take place outside of the classroom in internships, job programs, or practicum experiences. Active learning is a shift from traditional, passive methods that were focused on activities such as reading, lectures, and memorization to more student-directed learning, where the faculty are not simply the expert presenting information but are facilitators of learning (Center for Educational Innovation, 2021; Chickering & Gamson, 1987). Further, active

learning requires that students are accountable for their learning and use their knowledge to, "…reflect, analyze, judge, resolve, discover, interact, and create" (AACN, 2021, p. 5).

There are many different strategies that can be used to promote active learning. One of the active learning strategies that is of higher complexity includes participation in experiential learning opportunities (Center for Educational Innovation, 2021), such as participation in clinical experiences. Clinical experiences provide students with opportunities to practice in their field and develop various profession-specific skills under the supervision of a skilled practitioner (Mazerolle et al., 2014). Little is known about the effectiveness of clinical experiences in nursing education (Jayasekara et al., 2018; Leighton et al., 2021). It is, however, suggested that engagement in active learning, which includes clinical experiences, impacts student success and yields positive learning outcomes and higher achievement (Fuller et al., 2018; Popkess & McDaniel, 2011; Reschly & Christenson, 2012).

Nursing clinical education has evolved over time and now includes more than just the traditional clinical experience. Other strategies used to promote active learning in nursing clinical education include the clinical post-conference, simulation experiences, and simulation debriefings. These strategies used in nursing clinical education provide the student with the opportunity for engagement in patient interaction with time for feedback and reflection.

Traditional Clinical Experiences and Clinical Post-Conference

Many professional health discipline programs offer traditional clinical experiences as part of the curriculum. Students in various health professions such as medicine, physical therapy, and athletic training have identified important characteristics of traditional clinical experiences. These characteristics include patient interactions, active participation, communication and

positive relationships between the student and the preceptor or faculty, instructor feedback, and opportunities for reflection on experiences (Canton et al., 2018; Healey, 2008; Mazerolle et al., 2014; Pearson & Lucas, 2011). Similar characteristics have been identified in nursing clinical education (Miles, 2018).

It is asserted that traditional clinical learning experiences in nursing allow students to apply what has been learned in the classroom and prioritize care (Ironside et al., 2014). During traditional clinical learning experiences, eight to ten nursing students are supervised by a nursing faculty member at a clinical site. Each student is typically assigned to a patient to provide total direct care. Although clinical learning experiences allow students to gain an understanding of unique patient care situations, there are instances where the student might not be allowed to actively engage in certain aspects of the patient's care. For example, if the patient needs an extensive procedure that the student is not trained to do or if the clinical site does not allow the student to perform a particular care activity, the student often assumes the role of an observer while the nurse completes this care. Because of this, traditional clinical learning experiences are often variable and reliant on the care that is needed by the patient to which the student is assigned and the opportunities for learning that are presented during the clinical day (Leighton et al., 2021; Miles, 2018). In turn, the clinical experiences students have may or may not relate to what they have learned in the classroom. Therefore, it is uncertain if students are actively involved in significant learning experiences, or if they may be taking on more passive roles that are less relevant. Ultimately, the variability in clinical experiences could influence students' opportunities to engage, potentially impacting learning outcomes.

Clinical patient care experiences are typically followed by a clinical post-conference. In the clinical post-conference, students have group discussion related to their individual patient care experiences during the clinical day, so that they can learn from one another. Students may spend 10-15% of their clinical time in clinical post-conference (Vezeau, 2016). An important component of learning in the clinical post-conference is guided reflection (Benner et al., 2010). It is believed that the faculty-facilitated discussion in clinical post-conference can be used to link theory to practice through reflection on what was learned in the classroom and how that compares to the patient care in which the students participated during the clinical day (Hsu, 2007; Vezeau, 2016). Facilitation of post-conference discussion can be difficult, especially for novice or poorly trained faculty. Varying levels of faculty expertise can cause variability in the student experience and learning in post-conference (Harvey, 2015; Leighton et al., 2021).

Simulation Experiences and Simulation Debriefing

Simulation is an educational strategy that replaces or amplifies real experiences with guided experiences (INACSL Standards Committee et al., 2021c). One advantage to the simulation environment is that there is more control over what the student will experience, and the experience can be related back to what has been taught in the classroom, so that students can connect what was learned to real-life situations. There are other significant advantages to simulated learning that have been documented, including: improved critical thinking skills, increased confidence, the ability to learn about rare events, the ability to work in teams, the ability to practice in a safe learning environment without harming a live patient, the ability to give detailed feedback, and the ability to evaluate student performance (Society for Simulation in Healthcare, n.d.). It has been found that simulation in prelicensure nursing education is as

effective as traditional clinical learning experiences when faculty are formally trained, there are an adequate number of faculty to support learning, debriefing is theory-based, and the environment is realistic (Hayden et al., 2014). To an extent, simulation can be substituted for a certain percentage of traditional or 'real' patient clinical learning experiences in the nursing curriculum (Hayden et al., 2014). The percentage of substitution allowed is determined by the Board of Nursing for each state.

There are three phases to a simulation, which include a prebriefing, participation in the scenario and a debriefing (INACSL Standards Committee et al., 2021d). For the purpose of this study, however, prebriefing and participation in the scenario will be referred to as the simulation experience and the simulation debriefing will be referred to separately. This delineation is due to the fact that the researcher will be examining these phases of simulation separately.

The prebriefing occurs prior to participation in the simulation scenario. During this time, students are given instructions and preparatory information (INACSL Standards Committee et al., 2021c). The prebriefing should set the tone for the learning experience. During prebriefing, objectives, roles, and expectations are clarified and students are oriented to the environment (Rudolph et al., 2014). After the prebriefing, the simulation scenario takes place. Here, students participate in small groups to provide direct care to a live simulated patient played by an actor or a human patient simulator that is interactive and realistic. The scenarios used are based on realistic and standardized cases. Students may provide direct care or may rotate between active caregiver and observer roles. Participating in simulation scenarios allow students to practice without harming a real patient and consider how they would prioritize and provide care in various situations.

The simulation scenario phase is followed by a debriefing, which is a time of reflection and active discussion, with the instructor as a facilitator. Debriefing is a dialogue to discuss the actions and thought processes involved in a particular patient care situation, encourage reflection on those actions and thought processes, and discuss ways to improve future performance (Agency for Healthcare Research and Quality [AHRQ], 2019). Debriefing integrates experience and reflection, which is necessary in learning. During debriefing, students should have adequate time and a psychologically safe environment to explore emotions, ask questions, and reflect. The purpose of debriefing is to acquire knowledge that can be applied in future learning and in future patient care experiences, as well as enhance clinical reasoning (INACSL Standards Committee et al., 2021a).

Although there are many advantages to simulated learning, students do report a level of anxiety and uncertainty related to participating in simulation experiences. This uncertainty can be attributed to various factors including being afraid of making mistakes, being watched, and feeling unprepared (Walton et al., 2013; Yockey & Henry, 2019). Additionally, in simulation, students are able to perform independently in the role of the nurse instead of being reliant on their instructor (Miles, 2018; Sullivan et al., 2019; Walton et al., 2013), which can create additional pressure in the learning experience. These feelings can pose threats to student engagement and learning in the simulation experience and debriefing (Crowley, 2013; Rudolph et al., 2014). In simulation experiences and debriefing, taking risks for the purposes of learning is a critical aspect of engagement for the student and it is believed that certain practices by the faculty facilitator can enhance or impair learner engagement (Kostovich et al., 2020; Rudolph et al., 2014; Stephen, et al., 2020). Other factors that could impair the student experience in

simulation include the team dynamic, the control the learner has in the learning, and the amount of time the learner is given to prebrief and debrief (Stephen et al., 2020).

Student Engagement in Active Learning

Student engagement is defined as the level of effort and involvement in authentic learning activities that lead to success (Kuh, 2009; Reschly & Christenson, 2012). Engagement is a multifaceted construct and includes three dimensions: behavioral, affective, and cognitive (Fuller et al., 2018; Kahu, 2013; Reschly & Christenson, 2012; Trowler, 2010; Wiggins et al., 2017). Behavioral engagement refers to being on task, the level of participation, involvement, and the time a student invests in learning (Chapman, 2003; Trowler, 2010). The affective dimension of engagement refers to the student's sense of belonging, interest, investment, and attitude towards the learning (Chapman, 2003). Finally, cognitive engagement refers to investment, thoughtfulness, and willingness to exert effort to comprehend complex ideas (Mahatmya et al., 2012). It is believed that the affective and cognitive aspects of engagement precede changes in behavioral engagement (Reschly & Christenson, 2012).

Student engagement is context-dependent, meaning it is reliant on learner factors or characteristics, the learning activity, and relationships with the instructor and peers (Fredricks, 2011; Kahu, 2013; Padgett et al., 2018). Despite the importance of student engagement in active learning, little attention has been given to the concept in the nursing education literature and there are many assumptions that are made related to student engagement in learning, particularly in nursing clinical education. This is largely due to the fact that examination of engagement has been challenging because of a limited understanding of the concept and limited measurement and assessment in the clinical context (Padgett et al., 2018). While researchers have examined

student engagement in various active learning approaches, there is little known about the levels of student engagement in the various experiences in clinical learning in nursing education.

Statement of the Problem

Engagement is important to explore because examining the extent to which students do or do not engage in various active learning strategies will help to assess the effectiveness of the strategies being used (Wiggins et al., 2017). There has been very little focus on engagement in nursing clinical education research, despite the fact that there are links between engagement, educational practices, and student outcomes (Chi & Wylie, 2014; Finn & Zimmer, 2012; Kuh, 2001). In a search of the Cumulative Index of Nursing and Allied Health Literature (CINAHL), Scopus, Educational Resources Information Center (ERIC), MEDLINE, Dissertations and Theses through ProQuest, and Google Scholar, there were only seven studies published since 2010 that explored student engagement in prelicensure nursing clinical experiences, clinical post-conference, simulation experiences, or simulation debriefing. There were mixed findings related to student engagement in these learning experiences.

A secondary analysis of the National Survey of Student Engagement (NSSE) data from 2003 found that nursing students were more academically challenged, but less engaged in active and collaborative learning than students in education or other health profession programs (Popkess & McDaniel, 2011). Another secondary analysis of the 2003 and 2010 NSSE data found a slight non-significant decrease in active and collaborative learning in nursing students between these years (Johnson, 2015). Since 2010, there has been a more widespread use of simulation in the nursing curriculum, but nursing student data from the NSSE has not been reevaluated.

In two more recent studies, nursing students did report higher levels of engagement in the hands-on practical experiences that occur in clinical experiences and simulation (D'Souza et al., 2014; Hudson et al., 2019). However, the levels of student engagement in the specific areas used in nursing clinical education including the clinical experience, clinical post-conference, simulation experience, and simulation debriefing, are unknown and there are characteristics of each of these active learning experiences that could affect student engagement.

While traditional clinical experiences allow students to participate in actual, 'real life' patient care (Miles, 2018), there have been many shortfalls that have been noted in the literature. Some of these shortfalls include a limited amount of time for faculty to spend with each student, limited learning experiences, unavoidable downtime, a large amount of time spent engaged in task-oriented activities, and an emphasis on lower-level cognitive activities, such as recall of information (Ironside et al., 2010; Ironside et al., 2014; Pauly-O'Neill & Cooper, 2013; Sullivan et al., 2019; Tanner, 2010). Limited findings from the literature indicate that discussion in clinical post-conference is often focused on recall of information and lower-level, task-oriented questions are asked more frequently by faculty (Hsu, 2007; Sullivan et al., 2019). Megel et al. (2013) found that student involvement and innovative teaching in post-conference was low. Additionally, there is no standard for conducting a clinical post-conference, which causes variability in student experiences (Harvey, 2015; Leighton et al., 2021; Vezeau, 2016). All of these factors could affect learner engagement in clinical experiences and clinical post-conference.

There have been several differences noted in the literature between clinical experiences and simulation experiences. Sullivan et al. (2019) found that in simulation experiences, including

debriefing, students have more focused and efficient learning because the environment allows students to function independently with specific objectives for each scenario. In addition, they found that students participating in a simulation scenario and debriefing spend more time participating in higher level cognitive activities than in traditional clinical experiences and clinical post-conference (Sullivan et al., 2019). Another difference noted in the literature was that simulation allows students to perform independently in the role of the nurse (Miles, 2018; Sullivan et al., 2019; Walton et al., 2013), whereas in traditional clinical experiences, students are more reliant on their instructor or preceptor to engage in nursing practice. Finally, for students, getting feedback is an essential part of learning; however, after traditional clinical experiences, feedback is variable, and students have said that they don't receive feedback as frequently as they do in simulation (Miles, 2018).

Many of the characteristics of simulation found in the literature indicate that students would be highly engaged in this environment. However, it is suggested that engagement can be affected when students do not buy into the strategy or when they feel threatened or exposed during the simulation experience or debriefing (Crowley, 2013; Kostovich, 2020; Rudolph et al., 2014). In addition, the fidelity, or level of realism, is thought to affect student engagement in the simulation experience (Crowley, 2013; Rudolph et al., 2014; Stokes-Parish et al., 2020). There is a lack of empirical evidence to support the impact of various design factors on engagement in simulation (Padgett et al., 2018).

It has been indicated that nursing students have higher engagement in clinical experiences and simulation, compared to the classroom environment (D'Souza et al., 2014; Hudson et al., 2019). However, the level of student engagement in each of the specific experiences in clinical

education is essentially unexplored. If differences in levels of student engagement across clinical experiences, clinical post-conference, simulation experiences, and simulation debriefing exist, finding where the differences occur will help to identify areas for improvement and educators can formulate strategies to optimize nursing education. Examining the relation among student engagement, active learning approaches, and outcomes will contribute to educational science.

Purpose of the Study

The purpose of this study was to examine differences in student engagement across active learning experiences in prelicensure nursing clinical education. The specific active learning experiences that were examined included the traditional clinical experience, clinical post-conference, the simulation experience, and simulation debriefing. In addition, this study examined the relation between student engagement and the contribution of the instructor in clinical education. Finally, the study aimed to determine the influence of academic burnout on student engagement. It is suggested that burnout is on the opposite end of the spectrum from engagement (Schaufeli et al., 2002), thus students with higher levels of engagement will have lower levels of burnout. Academic burnout is characterized by feelings of exhaustion and an attitude of withdrawal from studies (Reis et al., 2015). If there is burnout present, it is proposed that students may have some depleted energy, which may influence their engagement in the learning experiences.

Findings from this study will contribute to educational science to inform best practices that can be used in designing clinical and simulation experiences for prelicensure nursing students to optimize learning and improve learning outcomes. Additionally, findings will help

educators to potentially find balance between the mix of clinical experiences and simulation experiences.

Research Questions and Hypotheses

To address the gaps in the literature, this study answered the following research questions:

- What are the differences in student engagement between traditional clinical experiences and simulation experiences in prelicensure baccalaureate nursing students?

Hypothesis: There will be significant differences in student engagement across different active learning experiences in pre-licensure nursing education, specifically clinical experiences and simulation experiences.

- What are the differences in student engagement between clinical post-conference experiences and simulation debriefing experiences in prelicensure baccalaureate nursing students?

Hypothesis: There will be significant differences in student engagement across different active learning experiences in prelicensure nursing education, specifically in clinical post-conference and simulation debriefing.

- What is the instructor's contribution to student engagement during traditional clinical experiences and simulation experiences?

Hypothesis: There will be a significant and positive relation between student engagement and instructor contribution to learning in clinical experiences and simulation experiences.

- What is the instructor's contribution to student engagement during clinical post-conferences and simulation debriefing?

Hypothesis: There will be a significant and positive relation between student engagement and instructor contribution to learning in clinical post-conference and simulation debriefing.

- What is the influence of academic burnout on prelicensure baccalaureate nursing student engagement in clinical education?

Hypothesis: There will be a significant and negative relation between academic burnout and student engagement in clinical education.

The first two research questions addressed student engagement across active learning experiences and the third and fourth research questions examined the relation between student engagement and the instructor's contribution. Finally, the fifth research question examined the relation between academic burnout and student engagement.

Theoretical Framework

This study was guided by social exchange theory, which is a behaviorist theory that is based on small group research. The theory proposes that an individual's social behavior is determined by measuring the cost and rewards of an action and considering the profit that would be gained from the behavior, that is profit = reward – cost (Homans, 1958, 1974). If the cost is higher than the reward and there is little profit, an individual is less likely to repeat an action; and the opposite is also true. Therefore, in the frame of social exchange theory, the benefits from learning are analogous to profits and so it is proposed that students are engaged in their learning because the benefits outweigh the cost.

According to social exchange theory, the more value a person derives from an action, the more likely they are to perform that action (Homans, 1974). Based on this theory, it was proposed that students would place more value on and invest more effort in certain activities;

thus, student engagement is dependent on the value the student places on the activity and the effort they invest in the learning. Because value and effort vary based on the activity, it was hypothesized that student engagement would vary across the different clinical activities used in nursing education, including clinical experiences, clinical post-conference, simulation experiences, and simulation debriefing.

Additionally, social exchange proposes that the relationships between the individuals involved in the exchange influence the social exchange and power influences behavior (Blau, 1986). Thus, based on social exchange theory, it was proposed that the instructor has power over the student and will influence their behavior. Because of this, it was hypothesized that there will be a relation between student engagement and the instructor contribution in the various clinical activities.

Significance of the Study

In higher education, researchers have shown that student engagement is related to personal development and learning. Studies of engagement have shown that early patterns of engaged behavior affect later patterns of behavior (Finn & Zimmer, 2012). A longitudinal study by Rudman & Gustavsson (2012) found that higher levels of disengagement and exhaustion during nursing education was related to lower mastery of occupational tasks as a nurse and higher turnover intentions. This suggests that nursing student engagement may impact engagement as a professional nurse.

Student engagement in active learning approaches has been shown to have a positive relation with learning outcomes such as skill attainment, knowledge, communication, problem solving, critical thinking, and persistence (Fuller et al., 2018; Reschly & Christenson, 2012;

Popkess & McDaniel, 2011). Nurse educators rely on clinical education as a means of active learning for application of concepts learned in the classroom, which is believed to lessen the theory-practice gap that exists (Hatzenbuhler & Klein, 2019; Ironside et al., 2014). Traditional clinical models continue to be used, despite the fact that there is a lack of evidence that supports the effectiveness of the models (Jayasekara et al., 2018; Leighton et al., 2021). With traditional models of clinical education, there is an inability to control available learning experiences for each student and there is no guarantee that all students will have the same or similar experiences (AACN, 2019a; Leighton et al., 2021).

Incorporating simulation into the nursing curriculum has helped to address the lack of control in learning experiences in that students can provide care for simulated patients in standardized scenarios. Therefore, simulation can offer students more standardized experiences (Sullivan et al., 2019; Leighton et al., 2021). Although simulation can be substituted for some traditional clinical experiences, there is still a lack of consistency and guidance about the amount of simulation that can be substituted and how simulation experiences compare to clinical experiences (Bradley et al., 2019; Breymier et al., 2015; Sullivan). This presents a challenge for educators as they are developing or revising the nursing curriculum. Comparing the levels of student engagement in clinical experiences and simulation offer more evidence related to the effectiveness of the strategies and further inform the substitution of clinical experiences with simulation.

Students today are calling for changes in how they are taught, based on recognition of how they learn (AACN, 2019a). Nurse educators are faced with the challenge of better preparing students to care for patients in the increasingly complex healthcare system, while still addressing

the needs of the learner (AACN, 2019a; NLN, 2020a). To address the challenges facing nursing educators, it is essential that current teaching methods are evaluated and adapted to advance nursing education, which will help to better prepare nurses for practice. Examination of student engagement across clinical education contributes scientific evidence that informs the strategies that are used in nursing education.

Definition of Terms

The following are definitions of key terms to ensure understanding of the use of the terms throughout the study.

Active Learning

Any approach to instruction in which students are required to engage by talking about the learning, writing about it, relating it to past experiences, and applying it to their daily lives is considered active learning (Center for Educational Innovation, 2021; Chickering & Gamson, 1987).

Student Engagement

The operational definition of engagement for this study was, “students’ cognitive investment, active participation, and emotional engagement with specific learning tasks” (Chapman, 2003, p. 1). Further, it is defined as the level of effort and involvement in authentic learning activities that lead to student success (Kuh, 2009; Reschly & Christenson, 2012).

Academic Burnout

Academic burnout is a state where engagement is lost (Schaufeli et al., 2002) and is characterized by feelings of exhaustion and withdrawal from studies (Reis et al., 2015).

Clinical Education

Clinical education is a time that faculty facilitate learning with small groups of students in either real or simulated situations to allow students to gain experience and promote discussion and clinical reasoning (AACN, 2021). For the purpose of this study, clinical education includes traditional clinical experiences, clinical post-conference, simulation experiences, and simulation debriefing.

Clinical Experience

The traditional clinical experience is an academic time for learning outside of the classroom with observation or hands-on experiences with patients (Hayden et al., 2014). For the purpose of this study, the clinical experience refers to a time when nursing students are individually assigned to a 'real' patient in a clinical agency under the supervision of a faculty member.

Clinical Post-Conference

The clinical post-conference is the time after the clinical experience when nursing students have group discussion related to their clinical day, facilitated by faculty. During clinical post-conference, behavioral, cognitive, and affective aspects of patient care that was provided can be addressed (Vezeau, 2016).

Simulation

A simulation is an educational strategy that replaces or amplifies a real experience with guided experiences that replicate aspects of the real world in an interactive way (INACSL Standards Committee et al., 2021c).

Simulation Experience

The term simulation experience refers to student participation in a structured activity that represents an actual situation that allows the student the opportunity to analyze and respond to the situation (INACSL Standards Committee et al., 2021c). For the purpose of this study, the simulation experience includes the prebriefing phase and participation in a patient scenario, in which students provide care to a high-fidelity mannequin.

Simulation Debriefing

The simulation debriefing is a dialogue to discuss the actions and thought processes involved in a particular patient care situation, encourage reflection on those actions and thought processes, and discuss ways to improve future performance (AHRQ, 2019).

Summary and Organization

Little is known about the levels of student engagement in clinical education. A better understanding of this phenomenon will help to assess the effectiveness of the strategies that are used in traditional clinical experiences, clinical post-conference, simulation experiences, and simulation debriefing. To address this gap in knowledge, this study examined the differences in levels of student engagement across nursing clinical education experiences. In addition, the contribution of the instructor to student engagement across clinical education experiences and nursing student academic burnout were examined. Chapter One has been presented as the introduction to the study, consisting of the statement of the problem, purpose of the study, research questions, theoretical framework, significance of the study, and definition of terms. Chapter Two will present the review of the literature.

CHAPTER TWO

LITERATURE REVIEW

Chapter Two presents a review of the literature. The first section of the review presents social exchange theory, which is the theoretical framework that will be used to guide the study. This is followed by a discussion of the concept of student engagement and provides justification for social exchange as a theoretical basis for student engagement. Finally, the concept of student engagement was aligned with nursing education and clinical education, including clinical experiences, clinical post-conference, simulation experiences, and simulation debriefing in a review of the literature. The review identified gaps in the literature and provided supporting evidence for the research questions and the purpose of the study.

Theoretical Framework

As discussed in Chapter One, social exchange theory guided this study and can inform student engagement. Social exchange theory is a major theoretical perspective in the field of social psychology largely influenced by the works of George Homans, Peter Blau, and Richard Emerson. Social exchange theory is derived from utilitarianism and behaviorism and proposes that social behavior is determined by an exchange process between two or more individuals that results in a cost or reward (Cook & Rice, 2006).

According to Homans (1958, 1974), social exchange contains five general propositions that explain human behavior. These propositions include:

- The success proposition, which states that if behavior is rewarded, it will likely be repeated;
- The stimulus proposition, which asserts that if a behavior or action was rewarded in the past, it is likely to be repeated in similar situations;
- The value proposition, which states that the more valuable the result of an action, the more likely an individual will repeat a behavior;
- The deprivation-satiation proposition, which says that receiving a reward often and recently causes a person to become satiated with it and the reward becomes less valuable;
- The aggression-approval proposition, which asserts that a person will be angry if the reward is not received as expected or if punishment is received. In this instance, a person will also be more likely to demonstrate aggressive behavior.

The assumption of social exchange theory is that individuals make choices based on costs, including time, energy, or money; and rewards (Blau, 1986; Emerson, 1976). An individual's social behavior is determined by measuring the cost and rewards of an action and considering the profit that would be gained from the behavior, that is profit = reward - cost (Homans, 1974). Therefore, if the cost is higher than the reward and there is little profit, an individual is less likely to repeat an action; and the opposite is also true. The costs and rewards can be material, like money, goods, or services; or intangible, such as love, approval, value, or effort.

Social exchange may be built on reinforcement principles or can be viewed through a utilitarian view. From the reinforcement perspective, people value what was rewarding to them in the past. Therefore, people will value rewarded behavior from past experience to determine

future behaviors. The utilitarian view is more forward-looking, with behaviors and relationships determined by anticipated rewards. In the utilitarian frame, courses of action are determined by what is most beneficial, while minimizing costs (Cook & Rice, 2006).

There are some conditions that affect processes of exchange, which include the character and development of the relationship between people involved in the exchange, the nature of benefits and costs, and the social context in which the exchanges take place (Blau, 1986). There is also a connection between power and social exchange. According to social exchange theory, power is established by control of highly valued resources (Blau, 1986; Homans, 1974). Therefore, power over others can be obtained by providing benefits, such as services or information, that others cannot do without (Blau, 1986).

There are many contexts in which social exchange theory has been applied in research to explain human behavior. In a search of the literature using the terms social exchange theory and engagement, many studies were found related to employee engagement. Social exchange theory has been the most accepted and widely used theory in research on employee engagement (Andrew & Sofian, 2012). While there were no studies found in the literature that examined student engagement from the social exchange perspective, the next section discusses the concept and theories surrounding student engagement. The subsequent section addresses how social exchange theory guided this study of nursing student engagement in clinical education.

Student Engagement Conceptualization

Student engagement has been recognized as an important part of the learning process, with a positive impact on learning outcomes and student success (Carini et al., 2006; Kuh, 2009; Reschly & Christenson, 2012; Popkess & McDaniel, 2011). Engagement is defined as the level

of student effort and involvement in authentic learning activities that lead to success (Kuh, 2009; Reschly & Christenson, 2012). The idea is that if students study, spend time, practice, and get feedback, the deeper they will understand what they are learning and will become more skilled (Kuh, 2009).

Dimensions of Student Engagement

Student engagement is a multidimensional phenomenon and includes behavioral, affective, and cognitive dimensions (Chapman, 2003; Fuller et al., 2018; Kahu, 2013; Reschly & Christenson, 2012; Trowler, 2010; Wiggins et al., 2017). Behavioral engagement refers to being on task, the level of participation, involvement, and the time a student invests in learning (Chapman, 2003; Trowler, 2010). A student who is behaviorally engaged would actively respond and participate in relevant discussion (Chapman, 2003). In addition, behaviorally engaged students comply with norms and would not exhibit any disruptive behaviors (Trowler, 2010).

The affective dimension of engagement is the student's investment and emotional reactions to the learning activity (Chapman, 2003). It refers to the sense of belonging, interest, investment, and attitude towards learning tasks (Trowler, 2010). This would include the student's enthusiasm for the topic of study (Kahu, 2013) and emotional response to the learning tasks (Chapman, 2003).

Finally, the cognitive dimension of engagement refers to investment, thoughtfulness and willingness to exert effort to comprehend complex ideas (Mahatmya et al., 2012). It is the extent that students expend mental effort in the activity and includes effort to integrate previous knowledge (Chapman, 2003). Students who are cognitively engaged would meet or exceed activity requirements and go above and beyond required work (Trowler, 2010). Active learning is

said to promote a student's cognitive engagement by allowing the student to actively construct their knowledge (Chi & Wylie, 2014; Trowler, 2010).

Student Engagement and Burnout

Definitions of engagement disagree about whether to include opposites of engagement such as burnout (Skinner & Pitzer, 2012). Academic burnout is considered to be a loss of engagement (Schaufeli et al., 2002) and is characterized by feelings of exhaustion and withdrawal from studies (Reis et al., 2015). Like engagement, it has been associated with a mismatch of cost and reward (Schaufeli, 2006). Some conceptualize engagement and burnout on a continuum and place them on opposite ends of the spectrum (Maslach & Leiter, 1997; Skinner & Pitzer, 2012) while others argue that they are two distinct concepts (Maroco et al., 2020; Schaufeli, 2006). In the latter view, it is argued that student engagement and academic burnout are antecedents and consequences of each other (Maroco et al., 2020). In both views, the concepts have a negative relation, and it is proposed that students with higher levels of engagement in clinical education will have lower levels of academic burnout.

Influences on Student Engagement

Student engagement is a distinct concept, but it is influenced by the interplay between many factors. It is suggested that individual factors such as the students' background or demographic characteristics may influence engagement (Wiggins et al., 2017). There are also individual psychosocial influences such as motivation, skill level, and self-efficacy (Kahu, 2013; Padgett et al., 2018). However, engagement in active learning does not solely rely on student characteristics. There are also outside structural influences such as classroom culture, learning environment, and the characteristics of the activity (Kahu, 2013; Padgett et al., 2018).

Additionally, relationships with instructors and peers are important contextual factors that influence engagement (Fredricks, 2011; Kahu, 2013). Therefore, engagement is not solely the responsibility of the student, it also relies on the influence of the activity and the influence of the instructor.

Influence of the activity. It is believed that engagement is dependent on the context and certain individuals will more easily engage in certain environments or with certain activities (Fredricks, 2011; Padgett et al., 2017). Students want to be actively involved in relevant and enjoyable learning experiences (Callaco, 2017). Findings from the literature support that the value of the activity and personal effort invested in an activity are two key factors that promote student engagement (Dweck, 1986; Eccles, 2005; Hidi & Renninger, 2006; Hulleman et al., 2008; Svinicki, 2004; Wiggins et al., 2017).

Value of the activity. Different tasks provide different opportunities for individuals. The value that the individual places on the task influences the decisions they make about activities, participation, and the degree of engagement (Eccles, 2005). According to Eccles et al. (1983), the value of a task to an individual can be influenced by four components including attainment value; intrinsic or interest value; utility value; and perceived cost.

Eccles et al. (1983) define the attainment value as the personal importance attached to doing well or participating in a given task. The attainment component links motivation and engagement to the extent to which tasks and activities fulfill needs of autonomy, competence, and relatedness. The intrinsic and interest value refers to the enjoyment one gains or expects to gain from doing a task or activity. Interest has been recognized as a powerful influence on learning (Hidi & Renninger, 2006). The utility value refers to how the task fits into an

individual's future plans. The values (attainment; intrinsic or interest; and utility) of the task are reliant on the costs of participating in an activity. The cost refers to what the individual has to give up and the effort needed to complete the task. There are several factors that can influence cost. For example, the amount of effort, anxiety, rejection by peers, or various fears, including fear of failure, can all be perceived costs to the student. (Eccles, 2005; Eccles et al., 1983).

Personal effort. Though effort can be perceived as a cost, students who are expending effort in learning are thought to be engaged cognitively (Chapman, 2003). Students gain more when they devote more time to certain activities that require more cognitive effort than others (Kuh, 2009). In the Interactive Constructive Active and Passive (ICAP) framework, Chi and Wylie (2014) propose that learning activities and resulting engagement behaviors are on a continuum from passive to interactive. They suggest that the positive outcomes from engaging occur because students are provided with active learning experiences in the interactive mode versus the passive mode because these activities require more effort. As students participate in higher order activities, from passive to interactive, the task becomes more effortful and deeper learning is achieved. (Chi & Wylie, 2014).

Influence of the instructor. It is believed that the instructor may play the single-most important role in student learning (Umbach & Wawrzynski, 2005). There are various factors that have been identified that are impacted by instructor practices, including student engagement behaviors (Kuh, 2001; Kuh, 2003). There are three domains of the instructor and student relationship including emotional, organizational, and instructional (Pianta et al., 2012).

The emotional domain refers to the qualities of the instructor, such as being caring and supportive (Pianta et al., 2012). Instructors need to create a physically and psychologically safe

environment for learning (Callaco, 2017; Rudolph et al., 2014; Stephen et al., 2020). The organizational domain refers to the way the instructor manages behaviors, productivity, and the learning formats that are used (Pianta et al., 2012). Finally, the instructional domain refers to the extent that the instructor provides interesting activities, instruction, or projects and facilitates those activities (Pianta et al., 2012). Students are more likely to be engaged when instructors use strategies that are challenging and interesting, when they connect with students, and when they allow students to develop and share ideas (Fredricks, 2011). Instructors need to get students involved, should use multiple teaching strategies, and should incorporate interactive activities related to course materials (Callaco, 2017). Students are likely to engage if their instructors are engaged with them (Bryson & Hand, 2007; Callaco, 2017).

Student Engagement Guided by Social Exchange Theory

Gaining a better understanding of the concept of student engagement allows for a better understanding of the use of social exchange theory to guide this study. Social exchange theory proposes that reward and cost determine human behavior. Likewise, theoretical perspectives of student engagement suggest that students place more value on tasks that they see are rewarding and cost is also an important factor (Eccles et al., 1983). Homans' (1974) value proposition in social exchange theory states that the more value there is in the result of an action, the more likely an individual is to repeat the action. Based on this proposition, it is theorized that if a student perceives value in engaging in a learning activity, they will more likely put effort into the activity. In addition, it is proposed that students will place more value on and invest more effort into different activities, thus there will be varying levels of engagement in different activities.

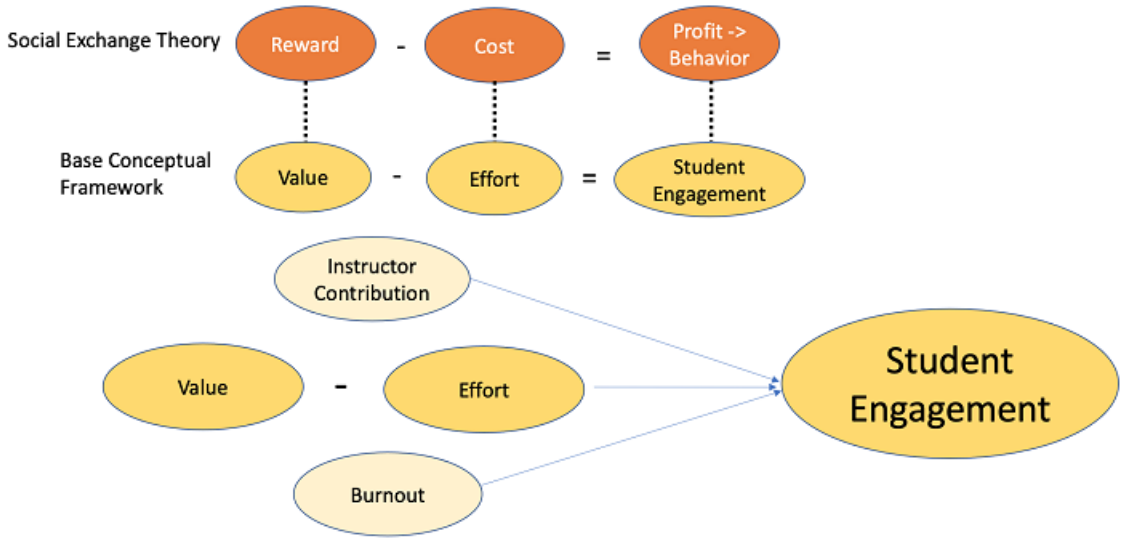
Social exchange proposes that social behavior is determined by cost and reward. Based on social exchange theory, the desired behavior of student engagement in learning occurs because the reward from engaging outweighs the cost. Rewards and costs can be derived from the student engagement literature. Rewards for the student would be related to the consequences or outcomes of student engagement and would include learning, achievement, satisfaction, well-being, higher grades, skill attainment, knowledge, critical thinking skills, work success, personal growth, and persistence (Kahu, 2013; Fuller et al., 2018; Reschly & Christenson, 2012). Costs to the student for engaging may include time, effort, anxiety, uncertainty, fear of failure, or fear of ridicule due to making mistakes (Crowley, 2013; Eccles, 2005; Kahu, 2013; Rudolph et al., 2014).

Factors that influence social exchange include the nature of relationships in the exchange as well as the social context in which the exchanges take place (Blau, 1986). According to social exchange theory, power influences behavior (Blau, 1986; Homans, 1974). In the relationship between the instructor and student, the instructor controls resources that are valuable to the student in that they have control over the information that will be taught and the strategies that will be used to teach. Therefore, the instructor has power over the student and can influence student behavior. Because of this, it is proposed that student engagement is dependent on the contribution of the instructor to the learning activities.

In summary, although social exchange theory has not previously been used as a theoretical basis for research on student engagement, it provides a theoretical explanation for how and why students engage in learning. Students choose to engage in learning activities because they perceive value in the activity. They also choose to engage because of the rewards of

engagement, which lead to student success. Social exchange theory specifies variables that influence student engagement, including the context of learning and the influence of the instructor. Social exchange theory offers a basis for the hypotheses that will be tested in the study. Figure 1 illustrates the conceptual framework and the expected relations between the variables in this study.

Figure 1. Conceptual Framework: Derivation of Social Exchange Theory



Literature Review

A review of the literature was conducted to gain a better understanding of student engagement in prelicensure nursing education and in clinical education to identify gaps. Additionally, the review sought to better understand the relation between engagement and burnout of prelicensure nursing students. The databases used for the review included Cumulative Index of Nursing and Allied Health Literature (CINAHL), Scopus, Educational Resources Information Center (ERIC), MEDLINE, Dissertations and Theses through ProQuest, and Google Scholar. These were each searched using the terms nursing education, clinical education, clinical

post-conference, simulation, debriefing, faculty interaction, and burnout. The terms were each combined with student engagement, learner engagement, and involvement to further narrow the search. In addition, the reference lists of relevant articles were reviewed for other potential articles that could be included in the review.

Eligibility for inclusion in the final review are peer-reviewed studies, literature reviews, and dissertations that were published in English since 2011 through 2021. Literature in nursing, medicine, and related fields were included in the final sample. Studies that specifically explored engagement in various classroom activities, engagement in online learning, and engagement in virtual reality simulation, augmented reality simulation and computer-based simulation were all excluded from the final sample. There were seventeen studies and reviews that were included in the final sample.

The first part of the review will discuss student engagement in the broader context of nursing education. Next, student engagement in clinical education, including clinical experiences and clinical post conference, as well as simulation experiences and simulation debriefing will be presented. Finally, findings that explore the relation between student engagement and burnout in nursing education will be discussed.

Student Engagement in Nursing Education

The purpose of this section of the review is to provide a review of the literature related to student engagement in the broader context of nursing education. There are three articles that will be discussed in this section.

A study by Popkess and McDaniel published in 2011 sought to determine levels of engagement of nursing students compared to students majoring in education and other health

professions. This study was framed by Astin's (1984) model of involvement, which explains how students develop in college using the elements of inputs, environment, and outcomes. Inputs are variables such as student characteristics and demographic variables. Environment is the exposure to the program, policies, faculty, peers, and educational experiences. The outcomes are the student characteristics after the exposure (Astin, 1984). This study used a descriptive, correlational design to analyze secondary data from the National Survey of Student Engagement (NSSE).

The NSSE was introduced in 2000 and is a student self-report instrument that assesses the extent of engagement in evidence-based educational practices that promote high level of learning and development (NSSE, n.d.). The survey reports on all first year and senior bachelor's degree-seeking students (NSSE). According to Popkess and McDaniel (2011), the NSSE collects information about student participation in educationally purposeful activities on five subscales including: level of academic challenge (11 items), student interactions with faculty (6 items), supportive campus environment (6 items), active and collaborative learning (7 items), and enriching educational experiences (11 items). They reported acceptable reliability evidence for the instrument ($\alpha = 0.84$-0.90).

In this study, Popkess and McDaniel (2011) used a random sample of 3,000 students that participated in the NSSE in the spring semester of 2003. They included 1,000 nursing students, 1,000 students from other health professions, and 1,000 education students in the sample. Each group of 1,000 students included 500 freshmen and 500 seniors. They found that freshman nursing students had significantly lower engagement scores than senior students in four of the

five subscales ($p < .001$). The only subscale where there was no significant difference between freshmen and seniors was the supportive campus environment subscale ($p = .825$).

Additionally, they found that there were significant differences between group mean scores on the level of academic challenge and active and collaborative learning subscales. Post-hoc tests showed that nursing students scored significantly higher ($M = 58.71$) on the level of academic challenge subscale than education ($M = 55.22$) and health majors ($M = 56.14$) and nursing ($M = 46.44$) and other health majors ($M = 45.58$) had significantly lower engagement scores than education majors ($M = 48.59$) on the active and collaborative learning benchmark. No standard deviations or effect sizes were reported from the study (Popkess & McDaniel, 2011).

The findings of the study suggest that nursing students are challenged academically but do not perceive themselves as engaged in student-centered and interactive pedagogies. This study provides an overall description of levels of nursing student engagement in their program compared to other programs, which provides nurse educators with opportunities to make improvements in areas that may be lacking compared to other disciplines, such as active and collaborative learning. A limitation of this study is that it only examined inputs (demographic information) and environments (as assessed on the NSSE), but did not evaluate learning outcomes (GPA, standardized test scores, persistence) of engagement in the analysis (Popkess & McDaniel, 2011).

In a similar study, Johnson (2015) used secondary data from the NSSE to examine levels of nursing student engagement during college. This study was also guided by Astin's (1984) involvement theory and compared levels of nursing student engagement at two time points, 2003

and 2010, and in two geographic regions. In 2007, high-impact practices for higher education that have been shown to improve student outcomes were identified by the National Leadership Council for Liberal Education and America's Promise (Kuh, 2008). The goal was to gain a better understanding of engagement before and after these practices were recommended.

Senior nursing students from 2003 and 2010 were included in the sample. There were 1,886 students in the 2003 dataset and 9,073 students in the 2010 data set. The increase in the number of students between years corresponded to an increase in the number of students who completed the NSSE. Johnson (2015) examined levels of engagement for three of the NSSE benchmarks to test study hypotheses including the level of academic challenge, active and collaborative learning, and student-faculty interaction.

Johnson (2015) found slightly higher scores in 2010 than in 2003 with statistically significant differences between the groups on the level of academic challenge ($p = 0.037$) and the student faculty interaction scores ($p = 0.008$). Effect sizes for each of the benchmarks were very small ($d = .053$ and $d = .069$, respectively). The mean score between the two groups on the active and collaborative learning benchmark was slightly lower in 2010 ($M = 55.29$) compared to 2003 ($M = 55.32$), however, it was not a significant difference ($p = 0.957$). Because of the identification of high impact practices for higher education, it was hypothesized that the active and collaborative learning benchmark would be higher in 2010, however the differences in student engagement between 2003 and 2010 were minimal. Findings from the study indicate that nurse educators have room for improvement for engaging students, particularly in active and collaborative learning.

In a narrative review of the literature published in 2020, Ghasemi and colleagues sought to identify strategies that nurse educators have begun to incorporate to promote student engagement in nursing education. They were interested in strategies that were used in the classroom setting, as well as in clinical experiences. They reviewed the literature from 2000 to 2019 and found 32 articles that addressed teaching strategies to enhance nursing student engagement.

The strategies that were identified by Ghasemi et al. (2020) in the literature included technology-based strategies, collaborative strategies, simulation-based strategies, and research-based strategies. They found that technology played the most prominent role in the development of strategies to promote engagement in nursing students. Examples of strategies included games, audience response systems, online discussions, virtual communities, barcode scanning, peer assessment, and homework completion.

Most of the strategies they found in their literature review were activities that were used in the classroom setting or the clinical laboratory setting. Since a large percentage of nursing education takes place in the clinical setting, Ghasemi et al. (2020) identified a need for more research in student engagement in clinical education. They also identified a need for experimental research to gain a better understanding of the effectiveness of the strategies that are being used.

In summary, findings from the studies in this section of the review indicate there is more work to be done in implementing and researching active learning strategies that are used to engage students in nursing education. Data from 2003 and 2010 showed that nursing students did not perceive themselves as engaged in interactive pedagogies (Johnson, 2015; Popkess &

McDaniel, 2011). Since this time, there has been a call for an increase in the use of active learning strategies used in the nursing curriculum (AACN, 2021; Benner et al., 2010) and there has been a wider use of simulation (Aebersold, 2018). Despite the changes in the methods being used in nursing education, there has been little current research to evaluate the engagement of students and outcomes of engagement, especially in clinical education. A more current assessment of nursing student engagement is warranted.

Student Engagement in Clinical Education

The studies discussed in this section of the review of the literature will focus on student engagement in clinical education. Specifically, engagement in clinical experiences, clinical post-conference, simulation experiences, and simulation debriefing. There were eleven studies that were found in the literature that will be discussed in this section. This section will be organized by first discussing student engagement in clinical experiences and clinical post-conferences and will be followed by discussion of student engagement in simulation experiences and simulation debriefing.

Clinical experiences and clinical post-conference. The literature on student engagement in clinical experiences and clinical post-conference was sparse. Only three studies were identified in which researchers measured student engagement in clinical experiences. In two of the studies, researchers aimed to explore student engagement in the nursing curriculum but had specific and relevant findings related to engagement in clinical experiences. In the third study, the researcher aimed to examine the effect of the instructor behavior on student engagement. Finally, one study was found that examined student involvement in clinical post-conference.

Engagement in clinical experiences. D'Souza et al. (2014) aimed to explore student engagement in the cognitive, behavioral, and emotional aspects of learning in the undergraduate nursing curriculum in Oman. The study was guided by Astin's (1994) theory of involvement. They used an exploratory cross-sectional design to assess student engagement in the learning environment using the Student Engagement Questionnaire (SEQ).

The SEQ contains thirty-five items in three domains including meaningful processes, participation, and focused attention. Within the three domains, there are seventeen subdomains including critical thinking, creative thinking, self-managed learning, adaptability, problem solving, computer literacy, communication skills, interpersonal skills, active learning, feedback, relationships with teachers, relationships with peers, cooperative learning, assessment, workload, coherence of curriculum, and teaching for understanding. The items are scored on a five-point Likert-type scale. D'Souza et al. (2014) reported acceptable reliability ($\alpha = 0.82$). Open-ended questions were interpreted using analytical coding and thematic content analysis.

There were 250 nursing students from Oman who participated in the study. The majority of the students were less than 25 years of age (78%), female (80%), and pursing a baccalaureate nursing degree (80%). Overall, students had high mean scores in all the components of the three dimensions of student engagement (D'Souza et al., 2014). They found that cooperative learning and workload were highly associated with most of the demographic characteristics of the nursing students including age, cohort by graduation year, program (Bachelor of Science or Diploma), and siblings in the university. Younger students (less than 25) pursuing a Bachelor of Science in Nursing (BSN) showed more inclination towards engagement behaviors. The demographic characteristics of cohort and siblings in the university both had significant correlations with all

the subdomains ($p < .05$) and were the strongest predictors of engagement. Students in the different cohorts participate in different activities with differing objectives, which influenced their engagement. In addition, students with siblings in the university had higher engagement (D'Souza et al., 2014).

In the analysis of the open-ended questions, the data revealed that nursing students had higher engagement in the clinical setting. The data were analyzed by the three domains of the SEQ including meaningful learning, participation, and focused attention. In the meaningful learning domain, students preferred procedural and conceptual knowledge by engaging in hands-on practical experiences more than books. In the participation domain, students said that engaging in discussion, debate, simulation, real life patient experiences, and work relations all translated into practice. Finally, in the focused attention domain, students related various learning experiences and positive interactions that allowed them to engage in learning. (D'Souza et al., 2014). The findings of the study support other findings from the literature that various active learning strategies promote student engagement. In addition, the qualitative findings in the study demonstrate the importance of engagement in activities in the clinical setting to promote learning.

Hudson et al. (2019) conducted a study that sought to examine nursing student engagement in the nursing curriculum. The authors present the Nursing Student Engagement Network Model (Hudson et al., 2019), which framed the study. It depicts the three components of nursing student engagement: the behavioral, emotional, and cognitive. Further, these components include attentiveness, active participation, commitment, intuition, collaboration,

teamwork, creativity, and integrative thinking. The framework also considers the aspects of relationships between the institution, the students, and the instructors.

Hudson et al. (2019) used a mixed-methods approach to examine levels of nursing student engagement and identify areas in need of improvement. Quantitative data were collected using the SEQ with mean scores calculated for the subscales and the differences examined across two levels, the second and fourth levels, and the three different campuses. Hudson et al. describe the SEQ differently than D'Souza et al. (2014). They describe five subscales (intellectual, working together, teaching, teacher-student relationship, and student-students relationship) that include 35 items that are scored on a 5-point Likert-type scale. Neither Hudson et al. or D'Souza et al. provide rationale for the factor structure of the instrument that they used, which raises questions about the construct validity of the measure. Hudson et al. did report that the instrument used in their study had an acceptable reliability overall ($\alpha = 0.94$) and on the subscales ($\alpha =$ 0.80-0.9). Qualitative data were collected, though it was not clear what method of collection and analysis were used for these data.

There were 247 nursing students included in the final sample. On a five-point scale, mean scores for all the subscales were overall high ($M = 3.99$ to $M = 4.31$). There was a significant difference ($p = 0.013$) in overall engagement between the levels, with fourth level students having higher engagement. There were no significant differences across campuses. There was no effect size reported. The qualitative data revealed that students perceived clinical experiences to be the best aspects of the program. In addition, students had positive responses to simulation experiences and skills lab sessions, reporting high levels of teamwork and collaboration. One

challenge that Hudson et al. (2019) identified from the qualitative data was that nursing students experience high levels of stress and anxiety.

In one other study found in the review of the literature, Knight (2016) sought to examine the effect of clinical instructor behavior on radiation science student engagement in clinical experiences. The study was guided by self-determination theory, which represents a broad framework for the study of motivation and personality. Knight used an online survey that consisted of a demographic questionnaire and several scales and questions.

In this study, Knight (2016) took parts of several other previously used measures to create the online survey. Many of the scales were designed to measure classroom experiences, so these had to be modified to reflect measurement in the clinical setting. Knight created scales to measure student engagement; students' tendency towards autonomy, control, and impersonal causality orientations; and students' perceptions of clinical instructor autonomy-supporting/thwarting, competency-supporting/thwarting, and relatedness-supporting/thwarting behaviors. Knight reported acceptable reliability evidence ($\alpha = 0.66 - 0.96$) for all subscales used in the study. There was no construct validity evidence presented to support the new instrument that was created for this study.

There were 751 radiation science students that participated in the study. There was a significant connection between overall need-supporting/thwarting behavior and student clinical engagement ($p < .001$). Knight (2016) found that clinical instructor relatedness-supporting/thwarting behaviors had the most influence on student clinical engagement ($p < .001$), followed by autonomy-supporting/thwarting behaviors ($p = .001$), followed by competency-supporting/thwarting behaviors ($p = .007$). Student characteristics were found to have little

influence on student behaviors. In addition, Knight found that over half of the variance in reported student clinical engagement was associated with psychological need-supporting/thwarting behaviors of the instructor. The findings of this study suggest that clinical instructors have a strong influence on students' motivation to engage in clinical activities.

Engagement in clinical post-conference. Megel et al. (2013) used the Clinical Post-Conference Learning Environment Survey (CPCLES; Letizia & Jennrich, 1998) to assess baccalaureate student and faculty perceptions of the clinical post-conference learning environment. The CPCLES is a 54-item measure divided among the six subscales of involvement, cohesion, teacher support, task orientation, order and organization, and innovation in teaching methods (Letizia & Jennrich, 1998). The items were measured on a 6-point Likert-type scale. The reliability of each of the subscales reported in the study was adequate ($\alpha = 0.851$ through $\alpha = 0.910$; Megel, 2013).

There were 136 students and 42 faculty or teacher's assistants that were included in the final sample. No power analysis calculation was reported and the researchers noted the sample size as a limitation of the study. Participants completed the survey twice, once to score the importance of each of the dimensions and another time to assess the actual use of clinical post-conference. Students and faculty both rated the importance of each of the subscales as significantly ($p < 0.025$) higher than the actual use of clinical post-conference (Megel et al., 2013).

The teacher support subscale was rated highest in importance and actual use by both students ($M = 48.5$, $M = 45.1$ respectively) and faculty ($M = 48.8$, $M = 45.5$ respectively). This further supports the importance of the instructor. The other subscale of interest for the current

review of the literature is involvement. This included students discussing issues, raising questions, being prepared, and putting effort into the activities. These are all aspects of being engaged. Low actual use scores (students M = 39.6, faculty M = 40.1) of involvement indicated that students were disengaged in clinical post-conference (Megel et al., 2013).

The researchers speculated that several factors affect involvement in clinical post-conference. They found low innovation (students M = 32.5, faculty M = 33.0) in the teaching methods used in clinical post-conference, which likely impacts involvement. Megel et al. (2013) reported inadequate technology, space, and time all as factors that impact innovation and involvement in clinical post-conference.

Summary of engagement in clinical experiences and clinical post-conference. The qualitative findings of the two mixed-methods, descriptive studies (D'Souza et al., 2014; Hudson et al., 2019) suggest that nursing students have high levels of engagement in learning in classroom and clinical experiences. The qualitative data in both studies revealed that students had higher levels of engagement in the clinical setting. Engagement in experiences in the clinical setting allowed for high levels of teamwork and collaboration and promoted learning (D'Souza et al., 2014; Hudson et al., 2019). On the other hand, Megel et al. (2013) found that there was low involvement and innovation in the clinical post-conference. Findings from Knight's (2016) study suggested that the instructor played an important role in clinical education. Additionally, findings indicated that teacher support was important in clinical post-conference (Megel, 2013).

Simulation experiences and simulation debriefing. Simulation experiences have been shown to improve prelicensure nursing students' knowledge, confidence, competence, psychomotor skills, and self-efficacy (Cant & Cooper, 2017; Doolen et al., 2016; Hayden et al.,

2014). Measuring student engagement can give a better understanding of the effectiveness of the use of simulation in the nursing curriculum and help optimize simulation experiences. According to the International Nursing Association for Clinical Simulation and Learning (INACSL, 2021d), the simulation design is one factor that impacts learner engagement. The structure of the simulation is believed to be an important design feature, as well as the level of fidelity or realism in the experience (INASCL; Rudolph et al., 2014). While these concepts are widely accepted, there was limited evidence found in the literature that support these ideas. There were five studies in which researchers measured student engagement in simulation experiences and two that specifically examined student engagement in simulation debriefing that will be discussed in this section.

Simulation structure and student engagement. One aspect of simulation design that is thought to impact student engagement is the structure or format of the simulation. One study was found in the review that supports the impact of structure of activities in simulation on student engagement. Howard (2017) explored student satisfaction, self-confidence, and engagement with and without defined observational roles in simulation using the NLN/Jeffries simulation theory as the theoretical framework. In the NLN/Jeffries simulation theory, there are seven components including context, background, design, simulation experience, facilitator and educational strategies, participant, and outcomes. The theory allows for the implementation of evidence-based simulation learning experiences (Jeffries et al., 2015).

Howard (2017) used a quasi-experimental comparative mixed-methods design. Students were assigned to the control group, which used traditional observer roles; or the treatment group, in which students were assigned defined observer roles and expectations. Quantitative data were

collected using the Student Satisfaction and Self-confidence in Learning Scale (SSSCLS), used to assess satisfaction and self-confidence and the Educational Practices Questionnaire (EPQ), used to assess student engagement. In addition, demographic data were collected. Three open-ended questions were used to collect qualitative data (Howard, 2017).

Of interest for this review of the literature, the EPQ, used to measure student engagement, is a sixteen-item questionnaire that measures active learning (ten items), collaboration (two items), diverse ways of learning (two items), and high expectations (two items). The questionnaire uses a five-point Likert-type rating scale. The overall reliability evidence for the questionnaire, as reported by Howard (2017) was acceptable ($\alpha = 0.95$). In addition, the reliability evidence for the subscales was acceptable ($\alpha = 0.88$-0.93).

There were 132 baccalaureate nursing students in the final sample. Howard (2017) found a significant difference between students using defined observational roles compared to students in the traditional observer group on satisfaction ($p = 0.017$), self-confidence ($p < 0.0001$), and engagement ($p < 0.001$). There was no effect size reported, so the size of the effect of the role on each of the variables is unknown. With regards to engagement, students indicated that they were less engaged in observer roles and that collaborating with peers and patient interactions increased engagement. Students who had defined observation roles had a better opportunity to be actively involved and were better able to connect with the team, which was thought to increase their engagement. This study supports the idea that more active involvement in the activity increases student engagement. In addition, it demonstrates that the structure of the simulation activity can impact student engagement.

Fidelity and student engagement. The concept of fidelity, very broadly speaking, refers to the realism in the design of the simulation experience (Lioce et al., 2020). It is a very specific design feature used in simulation that contributes to the student's ability to suspend disbelief. There are three types of fidelity: physical, conceptual, and psychological. Physical refers to the realism in the environment that the simulation-based activity takes place and how it replicates the actual environment. Conceptual fidelity relates to the realism in the elements of the scenario, for example that the vital signs are consistent with the diagnosis. Psychological fidelity mimics contextual elements found in clinical environments, for example realistic conversations, noises associated with simulated settings, distractions, time pressure, and competing priorities. It is theorized that the three types of fidelity work together to promote student engagement in simulation (Dieckmann et al., 2007; INACSL Standards Committee, 2021c).

In one qualitative study, the researcher's findings supported the theory that realism affected student engagement in simulation experiences. Using a hermeneutic phenomenological approach, Crowley (2013) aimed to explore student nurses' experiences of learning in the simulation environment and the impact of the transfer of skills to practice. One specific research question of interest that Crowley aimed to address was to identify factors that facilitate or inhibit student engagement in the simulation experience. A purposive sample of twelve nursing students at the beginning of the second year of the nursing program were targeted for recruitment for the study. Focus group discussion, non-participation observation, and semi-structured individual interviews were used as the methods of data collection.

There were nine students in the final sample. The data analysis from the focus groups resulted in three themes: preparation for practicum, engagement, and safety. The first theme

depicted subthemes related to preparation for the practicum experience, recognizing that simulation allowed them to become familiar with tasks and skills, equipment, the environment, and the role of the nurse. Theme two, engagement, was related to how well students were able to actively participate in simulation experiences. The final theme, safety, related to students' ability to practice without fear of making mistakes or harming an actual patient (Crowley, 2013).

Theme two, student engagement, is of the most interest for the purpose of this review of the literature. There were three factors that were found to affect student engagement in simulation experiences: self-conscious under observation, realism, and learning styles. The first factor referred to some of the awkwardness and embarrassment associated with learning in simulation, especially with instructors and peers watching. The second factor that affected engagement was realism, which related to the authenticity of the environment and the situation. While students found some degree of realism, which helped with engagement, some students found it difficult to communicate with the simulation mannequin. In regard to the final factor, it was found that learning style impacted student engagement. Most of the students that identified as visual learners had the stronger connection to learning in simulation, more so than auditory and kinaesthetic learners (Crowley, 2013). The findings of this study support the belief that realism affects learner engagement in simulation. In addition, Crowley's findings align with the belief in the simulation literature related to the negative effect fears and anxieties have on student engagement (Rudolph et al., 2014).

Power et al. (2016) aimed to address the issue that students have with connecting to the mannequin. They drew from narrative pedagogy and presented students with short vignettes of the case studies that would be used in the simulation experiences. Students would watch the

vignettes prior to coming to the laboratory to participate in simulated activities. When arriving at the lab, the simulation mannequins would be dressed with the same distinctive props worn by the actors in the vignettes.

Power et al. (2016) used a qualitative approach to determine the impact of the use of the vignettes on student engagement. They used a student feedback survey and focus groups to collect the data. Nine students participated in focus groups and 143 students participated in the short answer survey, where emergent themes were derived using thematic analysis. Four themes emerged from the data: getting past the plastic, knowing what to say, connecting and caring, and embracing diversity.

The researchers identified an increase in engagement because of the vignettes. They concluded that these measures increased the students' ability to suspend disbelief and approach the mannequin in a more empathetic fashion. There were some limitations to this study. For example, engagement was not well-defined, so it is not very clear how the researchers were referring to the term, but the findings do align with the importance of the suspension of disbelief in the design of the simulation to improve student engagement. It further demonstrates that the design of the simulation activity can impact student engagement.

Another researcher who studied the impact of fidelity on student engagement also examined the effect of visual and olfactory sensory changes on engagement in simulation. In this study, Nanji et al. (2013) used the theory of realism and learning engagement, as proposed by Dieckmann et al. (2007). In this study, the researchers created a model to simulate the characteristic operating room smoke and burning odor that occurs during many procedures and examined the impact on student engagement in the simulation experience.

There were two groups of anesthesiologists that participated in the simulation, one group that had the smoke and odor and the other group participated in the same simulation with no smoke or odor. Engagement was measured by a researcher-developed survey with seven questions answered on a seven-point scale. The first three questions were intended to assess the level of training, specialty, and the simulation experience. The next three questions assessed the perception of physical, conceptual, and emotional fidelity. The final question was intended to assess whether the perceived realism enabled engagement. No evidence was presented related to the reliability or validity of the survey (Nanji et al., 2013).

There were 103 anesthesiologists that comprised the final sample. There was no significant difference found between groups in physical ($p = .73$), conceptual ($p = .34$), or emotional ($p = .12$) fidelity. No effect sizes were reported. Researchers expected to find higher levels of engagement in the group that participated with smoke and odor. There were a few potential explanations that researchers had for the unexpected findings. They believed the simulation environment used may have had a high preexisting level of fidelity. They also suggested that the sample size may not have been large enough or the survey instrument may not have been sensitive enough to detect a difference between groups (Nanji et al., 2013). This study adds uncertainty about the impact of visual and olfactory sensory changes to increase fidelity on student engagement in simulation.

In the final study that will be included in this section of the literature review, the researchers sought to explore the perception of engagement in relation to the authenticity of moulage. Moulage is the use of special effects makeup to simulate various assessment findings that act as cues to the learner and add realism to the simulation (Stokes-Parish et al., 2020). In a

randomized mixed-methods study, Stokes-Parish et al. assigned medical students to a control group with no moulage, a low authenticity group, or a high authenticity group to determine the impact of moulage on engagement.

Using the Immersion Scale Reporting Instrument (ISRI), video of the simulation was reviewed to identify engagement or disengagement. The ISRI consists of ten triggers. To use the ISRI, a rater watches the video of the simulation and when there is a situation with reduced immersion, the rater stops the video and selects a trigger for the reduced immersion. Stokes-Parish et al. (2020) interpreted immersion as engagement. In addition to the ISRI, the researchers examined the students' clinical performance during the simulation, looking at omission of treatment actions and time to treat. Finally, they used self-report measures of engagement on an instrument adapted by researchers from another survey and rated the authenticity of moulage using the Moulage Authenticity Rating Scale (MARS). No reliability or validity evidence was presented for the instruments that were used. To collect qualitative data, interviews were conducted after the simulation with questions focused on engagement and moulage.

A total of 33 medical students participated in the study. Stokes-Parish et al. (2020) found no significant difference between the groups on the ISRI score. On the self-report of engagement, in all groups, students felt engaged. There were significant differences between groups on the self-reported engagement measure. The high authenticity group rated realism significantly higher ($p = 0.01$). Students rated moulage as important in all groups and reported that the lack of moulage contributed to disengagement ($p = 0.02$). There were no effect sizes reported.

Researchers identified four themes from the interviews and included the rules of simulation, believability, consistency of presentation, and personal knowledge. The first theme was related to navigating the simulation experience. The second theme, believability, referred to students believing what they see. They expressed that a lack of reality led them to not take the scenario seriously. The third theme, consistency of presentation referred to the students' value of visual cues and how these interacted with the scenario. They reported that the combination of cues contributed to how they engaged in the simulation. The final theme, personal knowledge, referred to the level of training the student had and previous experiences with simulation. Lack of knowledge of the situation was a disengaging factor for students and a lack of authenticity in previous simulation experiences affected believability and engagement in future simulation activities (Stokes-Parish et al., 2020).

The use of moulage enhances physical fidelity, thus it is believed that it would promote suspension of disbelief in simulation. Researchers in this study predicted that by increasing the level of authenticity in the simulation, there would also be an improvement in engagement in the simulation experience (Stokes-Parish et al., 2020). There were some mixed findings in this study in that in qualitative findings, students expressed that the moulage contributed to engagement; however, quantitative findings suggested that students in all three groups reported high levels of engagement. Also, the researchers found no differences between groups on the ISRI. The researchers suggested that the sample size was small, based on calculations, and may have limited the study findings. The findings of this study add uncertainty related to the impact of moulage to improve fidelity on student engagement.

Student engagement in simulation debriefing. The two articles in this section of the review will specifically examine student engagement in debriefing. The researcher in the first study did not specifically measure student engagement; however, the findings are significant and relevant for this review of the literature. In a mixed-methods study, Waznonis (2015) aimed to obtain a description of simulation debriefing practices from faculty who taught in traditional Bachelor of Science Nursing degree programs in the United States.

Waznonis (2015) used a cross-sectional, descriptive online survey for the quantitative data collection and open-ended survey questions allowed for the qualitative data collection. Characteristics of simulation were identified from the survey. One finding of interest for this review of the literature was the challenge that faculty have with engaging students in simulation debriefing. In fact, engaging students in debriefing was the most reported faculty-related challenge in conducting debriefing in prelicensure programs (56%, n = 115/205). In addition, maintaining attention and engagement was identified as a participant-related challenge to debriefing (29%, n = 59/205).

A factor that was thought to hinder student engagement was fatigue of the instructor, who may facilitate multiple simulations in a day. Another factor that Waznonis (2015) suspected impacted student engagement was the fact that only a moderate level of facilitation in debriefing was reported by the instructors who participated in the study. A moderate level of facilitation was defined as the students having some independent discussion but requiring faculty to assist students to analyze the experience at a deeper level. Higher levels of facilitation, in which students largely debrief themselves, is thought to promote student engagement (Waznonis, 2015). Though the specific aim of the study was not to measure student engagement and the concept

was not well defined in the study, the findings suggest that student engagement in debriefing is a challenge that needs further exploration.

There was one study found in the review of the literature that more specifically examined factors that influence nursing student engagement with simulation debriefing. In a cross-sectional descriptive study, Roh and Jang (2017) surveyed third- and fourth-year Korean nursing students to identify factors that determine student engagement with simulation debriefing. Measures for the study included demographic characteristics, debriefing characteristics, learner engagement on the Debriefing Assessment for Simulation in Healthcare (DASH), the Simulation Design Scale (SDS), the Communications Skills Scale (CSS), and the Clinical-Based Stress Scale.

Roh and Jang (2017) used four open-ended questions to assess debriefing characteristics including the number of students in debriefing, debriefing time, use of video, and setting for the debriefing. Learner engagement was assessed using the DASH, which allows students to rate the debriefer on six elements. This includes how the debriefer establishes an engaging learning environment, maintains an engaging learning environment, structures debriefing in an organized way, provokes engaging discussions, identifies and explores performance gaps, and helps participants achieve good practice. The debriefer is rated on a seven-point scale. Roh and Jang reported acceptable reliability for the instrument in this study ($\alpha = 0.94$). The SDS was used to assess perceptions of objectives, information, support, problem solving, feedback, and fidelity in simulation. The SDS contains 20 items that are scored on a five-point Likert-type scale. Reliability evidence was reported and was acceptable for the instrument in this study ($\alpha = 0.95$). The CSS was used to measure communication skills on seven factors: information gathering, attentive listening, overcoming stereotype thinking, open communication, self-disclosure,

proactive communication, and perspective understanding. The CSS is a 49-item instrument scored on a five-point Likert-type scale. Reliability evidence was reported and was acceptable for the CSS in this study ($\alpha = 0.88$). Finally, the Clinical-Based Stress Scale consists of four factors: client, clinical environment, instructors and healthcare team, and students' preparation. This is a twenty-item measure with a five-point Likert-type scale. Reliability evidence was acceptable for this scale in this study ($\alpha = 0.91$).

There were 296 students in the final sample. Descriptive statistics and regression analysis were used to analyze the data. Setting, time, communication skills, satisfaction with peer discussion, student year, and use of video recording were not significant factors that influenced nursing student engagement in simulation debriefing in this study. The four factors that had significant relationships with engagement in simulation debriefing were simulation design ($\beta = 0.518$, $t = 9.542$, $p < 0.001$), confidentiality ($\beta = 0.154$, $t = 2.915$, $p = 0.004$), stress ($\beta = -0.103$, $t = -2.331$, $p = 0.020$), and number of students ($\beta = -0.145$, $t = -2.017$, $p = 0.045$). Design and confidentiality were found to contribute to engagement. Stress and too many students participating in simulation at the same time were all found to inhibit engagement. The researchers found that design was the primary factor of importance. The findings of this study can help educators to organize simulation and debriefing activities to enhance student engagement (Roh & Jang, 2017).

Summary of student engagement in simulation and debriefing. It is suggested that the structure of the simulation activity and fidelity impact student engagement in simulation and this is reflected in the standards of simulation (Dieckmann et al., 2007; INACSL, 2021d). Howard (2017) examined different structures to the simulation experience and found differences in

learner engagement between the two methods of delivery. This supports the idea that the structure of the activity does impact student engagement. Fidelity is a specific simulation design feature that is also believed to impact learner engagement in simulation. There were mixed findings in the literature regarding the impact of fidelity on learner engagement. Crowley (2013) identified that realism affected student engagement; however, there were no significant differences found between groups with the use of visual and olfactory stimuli and moulage to increase fidelity during simulation. Other factors that were identified that impacted student engagement in simulation included fears and anxieties in participating in simulation and learning styles (Crowley).

Nurse educators are challenged with engaging students in simulation debriefing (Waznonis, 2015). Simulation design has been identified as important for the simulation experience, but it also suggested that it impacts student engagement in simulation debriefing. Other factors that were found to impact student engagement in simulation debriefing are confidentiality, stress, and the number of students (Roh & Jang, 2017).

Engagement and Burnout in Nursing Education

Previous studies have demonstrated a strong, negative relationship between burnout and student engagement. This section of the review is focused on research studies that explored the relation between student engagement and academic burnout in prelicensure nursing students. There were three studies found that will be discussed in this section of the review.

Liebana-Presa et al. (2018) sought to describe nursing students' level of burnout and engagement and analyze associations between the variables. A limitation of the study is that there was no theoretical framework identified and the concepts were not well-defined. They used a

cross-sectional descriptive design to assess student burnout and engagement using the Maslasch Burnout Inventory-Students Survey (MBI-SS) and the Utrecht Work Engagement Scale (UWES), which was adapted for students.

The MBI-SS contains 15 items that assess the dimensions of exhaustion, cynicism, and academic efficacy. Liebana-Presa et al. (2018) reported fair reliabilities across the subscales (α = 0.663-0.876). The UWES is a 17-item scale with three dimensions: vigor, dedication, and absorption. Though this scale was adapted, they reported acceptable reliability for this instrument (α = 0.791-0.802) (Liebana-Presa et al., 2018).

A total of 1,009 students from four universities in Spain completed the surveys. Correlation analysis of the data found a moderate positive association between exhaustion and cynicism on the MBI-SS (r = 0.494). There was a moderate negative correlation between exhaustion, cynicism, and academic efficacy from the MBI-SS. The academic efficacy subscale had a moderate positive correlation with all three dimensions of engagement. These data suggest that greater academic efficacy predict lower scores for exhaustion and cynicism and higher engagement scores. A linear regression analysis found that the subscales vigor and dedication explained the most variability and an increase in these scores predicted higher academic efficacy (Liebana-Presa et al., 2018). The findings of this study indicate that engagement in nursing students positively influence their academic efficacy. Further, findings support the negative relationship between burnout and engagement.

Wang et al. (2021) also examined the relation between burnout and engagement in nursing students. They implemented a cross-sectional descriptive study to examine academic burnout and its relation to engagement and psychological capital in 733 Chinese nursing

students. The researchers utilized the Academic Burnout Scale (ABS), the Positive Psychological Capital Scale (PPCS), and the Academic Engagement Scale (AES).

The ABS is a three-dimensional scale (reduced personal accomplishment, inappropriate behavior, and dejection) with 20 items assessed on a 5-point Likert-type scale. Wang et al. (2021) reported adequate reliability evidence for the instrument and the subscales (α = 0.72-0.90). The PPCS contains four subscales (self-efficacy, optimism, resilience, and hope) with 26 items that are scored on a 7-point Likert-type scale. Higher scores indicate higher levels of psychological capital, which the researchers define as a positive developmental state of mind characterized by self-efficacy, optimism, resilience, and hope. Adequate reliability evidence was reported (α = 0.66-0.98) for the PPCS. Finally, the AES was used to operationalize engagement that contains three subscales (dedication, vigor, and absorption) with 17 items scored on a 7-point Likert-type scale. Adequate reliability evidence was reported (α = 0.92-0.98) for the AES (Wang et al., 2021).

Wang et al. (2021) found that almost 40% of their sample experienced some degree of academic burnout. Further, they found that academic engagement was negatively related to academic burnout (β = -0.47, $p < 0.01$) and positively related to psychological capital (β = 0.69, $p < 0.001$). The findings indicate that the dimensions of psychological capital can help students better cope with stressors and increase academic engagement which, in turn, decreases academic burnout. The findings further support the relation between engagement and burnout and reinforce the importance of taking steps to increase student engagement (Wang et al., 2021).

Finally, Rudman and Gustavsson (2012) also conducted a study that examined burnout during nursing education. This was a longitudinal study that monitored burnout in 1,702 Swedish

nursing students during higher education and one-year post graduation. In addition, the researchers examined the relation between the development of burnout to health, life, and occupational outcomes. Measures included the Oldenburg Burnout Inventory, as well as measures of student outcomes and occupational outcomes.

The Oldenburg Burnout Inventory has two core dimensions, exhaustion and disengagement, and contains 16 items. Rudman and Gustavsson (2012) reported acceptable reliabilities for the inventory (α = 0.84-0.86). On the exhaustion dimension, students reflect on items such as feeling emotionally drained or needing more time to rest. On the disengagement dimension, students reflect on how they valued their education or how they felt about course work and assignments.

To assess possible impact of burnout during higher education on student outcomes, the researchers used instruments to assess in-class learner engagement and readiness for practice. Rudman & Gustavsson (2012) used the active learning scale from the NSSE to examine in-class learner engagement. Students rated their level of occupational preparedness by responding to one item, "As a result of my nursing education I am well prepared to manage my future work as a nurse" (Rudman & Gustavsson, 2012, p. 992). To assess occupational outcomes, students completed instruments one year post graduation that assessed intention to leave the profession (Turnover Intention scale), mastery of occupational tasks (Questionnaire for Psychological and Social Factors at Work), and research utilization in everyday practice (three items from the Estabrooks' instrument). Finally, health and life outcomes were assessed the final year of education and at one year post graduation using the Major Depression Inventory and the Satisfaction with Life Scale. Rudman & Gustavsson reported adequate reliability with all

instruments that were used (NSSE $\alpha = 0.75$; Turnover Intention scale $\alpha = 0.81$; Major Depression Inventory $\alpha = 0.82$; Satisfaction with Life Scale $\alpha = 0.90$).

In the final sample of 1,401 nursing students, there was an increase in burnout (30 to 41%) over the years in higher education, with a significant increase in exhaustion and disengagement ($p < .001$). Rudman & Gustavsson (2012) found that burnout predicted lower levels of learner engagement and occupational preparedness in the final year. At one year post graduation, early development of burnout during higher education was related to lower mastery of occupational tasks, less research utilization in practice, and higher turnover intentions. The results of this study provide further evidence of the relation between engagement and burnout. Nurse educators need to be aware of the impact of burnout on student outcomes and work with students on ways to reduce study burnout. Of utmost concern is the effect of burnout on health and psychological well-being (Rudman & Gustavsson, 2012).

Summary of student engagement and burnout. Consistent with engagement theory, engagement in nursing education was shown to have a positive influence on student academic efficacy and reduce burnout (Liebana-Presa et al., 2018; Rudman & Gustavsson, 2012). Additionally, it had a positive influence on psychological capital and reduced burnout (Wang et al., 2021). These studies support the inverse relation between engagement and burnout and provide evidence that engagement is a key factor to reduce burnout. It is important to explore engagement and burnout further because this can help educators formulate strategies to improve engagement and reduce burnout. Additionally, establishing and clarifying the relation between these two variables can help to make linkages to other variables that already have been established in the literature.

Final Summary and Conclusions

In this chapter, the theoretical framework of social exchange was presented as a guiding theory for this study on student engagement in active learning. This framework proposed that student engagement in active learning is dependent on the value of the activity, the context of the learning, and the contribution of the instructor. In the articles that were presented in the review of the literature similar themes were found. For example, students seemed to value activities that promoted teamwork and collaboration, which promoted engagement (D'Souza et al., 2014). In addition, an influence on student engagement was identified as the design or structure of the activities, which relates to the context of the learning (D'Souza et al., 2014; Howard et al., 2017; Power et al., 2016; Roh & Jang, 2017). Finally, researchers found that the behavior of the instructor influenced student engagement in clinical education (Knight, 2016; Megel et al., 2013).

The aim of the review was to gain a better understanding of student engagement in the broad context of nursing education; engagement in clinical education, including clinical experiences, clinical post-conference, simulation experiences, and simulation debriefing; and the relation between engagement and burnout in nursing education. There were mixed findings related to levels of student engagement in active learning in nursing education. For example, Popkess & McDaniel (2011) identified that nursing students do not see themselves as engaged in student-centered and interactive learning as students in other professional majors. In a secondary analysis of data collected on the NNSE, Johnson (2015) found no improvement in active in collaborative learning in nursing education between 2003 and 2010. In two studies, however, researchers identified high levels of engagement in activities that promote active learning in

nursing education, particularly in clinical education (D'Souza et al., 2014; Hudson et al., 2019). In both studies, students revealed the higher levels of engagement through qualitative interviews. There was otherwise a lack of quantitative research on levels of student engagement in clinical education found when reviewing the literature.

The participants of eight of the studies of student engagement from the review of literature were students from the United States (Howard, 2017; Hudson et al., 2019; Johnson, 2015; Knight, 2016; Megel et al., 2013; Nanji et al., 2013; Popkess & McDaniel, 2011; Waznonis, 2015). Five of the studies of student engagement were conducted with students internationally from countries including Oman (D'Souza et al., 2014), Scotland (Crowley, 2013), Australia (Power et al., 2016; Stokes-Paris et al., 2020), and Korea (Roh & Jang, 2017). All the studies that examined the relation between engagement and burnout were conducted internationally in Sweden (Rudman & Gustavsson, 2012), Spain (Leiebana-Presa et al., 2018), and China (Wang et al., 2021). There are differences in the educational systems that could influence findings, therefore, more research is needed in the United States.

Overall, there was a significant lack of research found in the review on student engagement in clinical education including traditional clinical experiences, clinical post-conference, simulation, and simulation debriefing noted in the review. Because of this, there were many gaps that were identified. It is unknown if nursing students are or are not engaged in the learning experiences used in clinical education. Additionally, the influence of the instructor on nursing student engagement, the influence of peers on engagement, influence of various student characteristics on engagement, the effect of various design features on engagement, and outcomes of engagement were all identified as gaps. As a starting point, gaining a better

understanding of levels of student engagement, specifically in nursing clinical education, will be important to serve as a basis and offer directions for future research. The next chapter will discuss the methods that were used in this study.

CHAPTER THREE

METHODOLOGY

The purpose of this study was to examine the levels of engagement in clinical experiences, clinical post-conference, simulation, and simulation debriefing in prelicensure nursing students. In addition, the researcher aimed to explore the instructor contribution and the impact of academic burnout to student engagement in these learning experiences. Chapter Three will present the methodology that was used to conduct the study. The design, setting, sample, sample size, recruitment of participants, measurement, ethical considerations, data collection, and data analysis methods will be addressed in this chapter.

Design

A non-experimental, cross-sectional, correlational design was used to explore student engagement in clinical and simulation experiences in prelicensure nursing education. Cross-sectional designs are used by researchers to measure the study variables at one point in time and describe the variables and their distribution patterns (Hulley et al., 2013). Cross-sectional studies are relatively inexpensive, have less risk for attrition from the study, take less time, and can serve as a first step in designing a cohort or experimental study (Hulley et al., 2013; Polit & Beck, 2018). Correlations are used to examine the strength and direction of the association between the study variables (Polit & Beck, 2018).

Setting

This study was conducted at a public Midwestern university located in an urban area. The

university enrolls approximately 22,000 students annually. The prelicensure nursing program offers a traditional four-year format and an accelerated three-year format, both leading to a Bachelor of Science (BS) in nursing degree. Traditional four-year students are admitted during the second semester of the sophomore year and accelerated students are directly admitted to the program upon admission to the university. There are approximately 350 prelicensure nursing students enrolled in the program at any given time.

As part of their nursing program and relevant to the aims of the study, students participated in clinical learning experiences at a local teaching hospital. The hospital is part of a larger health system. Nursing students participating in the study were assigned to one patient to provide total care on an adult surgical unit, an adult orthopedic unit, or a medical unit in the hospital. The students then participated in the clinical post-conference in a classroom on the nursing unit at the end of the day.

Simulation experiences and simulation debriefing took place in the simulation center on the university campus. The center was newly built and opened in 2019. There are 30,000 square feet in the entire simulation center, which is used for skill demonstration and practice and various types of simulation. The center is equipped with static, low-fidelity, and high-fidelity mannequins. The simulation rooms used for this study are set up like a hospital room, with a high-fidelity mannequin in a hospital bed. In addition, there are monitors, equipment, and furniture that would be found in the actual acute care setting. There is a control booth with one-way glass for an instructor and an information technology specialist to control what is happening during the simulation experience.

Sample

The target population to which this study aimed to generalize findings is prelicensure nursing students. The subset of the population to which the researcher had access includes prelicensure nursing students attending one Midwestern university. A convenience sample of prelicensure nursing students was recruited for participation in the study. It is proposed that student engagement may vary across the students' entire course of study in the nursing program; therefore, student engagement was examined during the midpoint of participation in clinical and simulation experiences. In this particular program, the midpoint for clinical experiences occurs during the second semester of the junior year on the plan of study for both traditional and accelerated students. The midpoint for simulation experiences occurs during the beginning of the first semester of the senior year on the plan of study for both traditional and accelerated students. For this reason, nursing students in the second-semester junior and first-semester senior semester on their plan of study in the traditional or accelerated BS program were included in this study. Students who were repeating the nursing course and had already participated in the clinical experiences or simulations were excluded from the study.

Sample Size

To estimate the anticipated sample size needed for the study, a power analysis calculation was necessary. This decreases the likelihood of making a Type II error and increases the possibility of detecting a true effect (Polit & Beck, 2018). There are various ways that a power analysis can be performed to determine the sample size needed. For the purpose of this study, G* Power 3.1 (Faul et al., 2009) was used to calculate sample size because it takes into

consideration effect size. This allowed the researcher to infer that the effect would be seen in the target population when the findings were generalized from the accessible population.

To determine the effect size, the nature of the research and the statistical tests needed to be considered (Field, 2013). The research questions were focused on examining differences in engagement based on the learning experiences in which the students are participating. Therefore, studies that used the Assessing Student Perspective of Engagement in Class Tool (ASPECT, Wiggins et al., 2017) were examined to determine the effect of the learning experience on student engagement. The data supported that active learning experiences have a moderate effect on student engagement (Lunn et al., 2021, d = .6; Paulat, 2019, r = .42); therefore, a medium effect size was used to calculate the sample size for this study. The sample size for each hypothesis was estimated using a medium effect size, $\alpha = 0.05$, and power of 0.80 in the G* Power (Faul et al., 2009) software. The largest estimated sample size of 180 from the G* Power (Faul et al., 2009) analysis was obtained.

The researcher also needed to account for missing or unusable data. Based on review of studies in which researchers have used the ASPECT (Wiggins et al., 2017), missing or unusable data has not been a common occurrence. One study eliminated about 10% of surveys due to missing or unusable data. For this reason, 10% was added to the estimated sample size from the G* Power (Faul et al., 2009) analysis to account for missing or unusable data. This would require an additional 18 people to be recruited for a total of 198 participants. Because there were four different areas of clinical education that are being assessed (clinical experience, clinical post-conference, simulation experience, and simulation debriefing), the researcher targeted 50 students to assess each area for a total of 200 participants for the study.

Feasibility of Attaining the Sample Size

There were approximately eighty second semester juniors and eighty first semester seniors that could potentially participate each semester, so there were approximately 160 total students per semester. With a targeted total sample size of 200, data needed to be collected for two semesters. This allowed a total of approximately 320 students the ability to participate in order to achieve the desired sample size and power in the study.

In collecting data in two semesters, if students participated in the study in the fall semester, during the junior year, they assessed the clinical experience or clinical post-conference. When they progressed in the spring semester, the students then assessed the simulation experience or simulation debriefing, which gave them two data points in the study. The initial plan was to treat students' responses to these surveys independently. However, despite the fact that the surveys were completed in different contexts, there was concern about bias in the study results, so only the first survey that students completed were included in the final data analysis, which will be further discussed in chapter four.

Recruitment of Participants

Recruitment of the sample population began with communication between the researcher and the Director of the School of Nursing and instructors of the courses from which the students were to be recruited, to explain the purpose of the study and seek their support. Next, students were recruited by the researcher by asking for their voluntary participation in the study. The students may have been familiar with the researcher from previous courses, but the researcher was not a faculty member in any of the courses in which the students were currently enrolled. In this program, nursing students have the didactic portion of the class on Monday and are in their

clinical experiences on Tuesday through Saturday. Therefore, the researcher attended class on Monday to inform the students about the study and request their participation. During this time, students were informed of the purpose of the study and that they would be asked to take an online survey, which would take approximately 15 minutes. They were also given letters with the study information. Letters of support to the Director and course faculty, letters to students for recruitment, and a script for recruitment of participants can be found in Appendix A.

Measurement

There were several instruments that were used to operationalize the concepts of interest for the study. The researcher used a student engagement measure, which also included assessment of the instructor contribution to engagement. Additionally, the researcher used a measure to assess the instructor contribution to debriefing as well as a measure to assess student academic burnout.

Student Engagement and Instructor Contribution Measure

Student engagement was operationalized using the Assessing Student Perspective of Engagement in Class Tool (ASPECT, Wiggins et al., 2017). The ASPECT is a student self-report measure of engagement on the cognitive and affective dimensions and can be used to assess various active learning strategies. There are three subscales in the instrument, which include the value of the group activity, the personal effort invested, and the instructor contribution. It is a 16-item survey that takes 6-7 minutes to complete. Students rate each item on a 6-point Likert-type scale ranging from 1 = *strongly disagree* to 6 = *strongly agree*. Appendix B contains all of the instruments used in the study, including the ASPECT (Wiggins et al., 2017).

The ASPECT (Wiggins et al., 2017) was designed in three phases. In phase I, the researchers developed the constructs to be assessed, designed the survey items, and obtained face validity evidence for the survey items. The subscales were developed through interviews and focus groups of 25 students enrolled in an introductory biology course to identify themes of engagement. Once the themes were identified, items were developed and edited based on think-aloud and standards of survey design. Pre-testing of the initial 26 items was performed with a focus group of undergraduate biology students (n = 6) to identify confusing wording and ensure that the wording of items was clear. In addition, to provide large-scale face validity of the items, the students were asked to complete the entire survey online and explain their thinking in open-ended responses for two to three randomly assigned items.

In phase II, Wiggins et al. (2017) assessed the dimensionality and reliability evidence of the survey. First, the researchers assessed inter-item correlations of the 19 items that were remaining after face validation. This resulted in removal of one item. They then administered the survey to students in an introductory biology course (n = 425) and used exploratory factor analysis on survey responses to determine the factor structure. The evidence supported a three and a four-factor structure. In the four-factor structure, two of the items strongly cross-loaded to other factors and there was poor support for a fourth distinct construct. Because of this, two more items were removed, leaving sixteen items in the three factors. The ASPECT was administered again to a similar population (n = 760) in the same course to assess internal consistency reliability of the subscales that were identified in the exploratory factor analysis. In each case, exploratory factor analysis identified the three factors of value, effort, and instructor contribution with factor loadings above the minimum cutoff.

Psychometric evidence for each subscale in the ASPECT was reported by Wiggins et al. (2017) in a study that was conducted with undergraduate biology students (n = 760) in phase II of the measure development. The value of the group activity (VA) subscale consists of nine items and determines students' perceptions of the activity's value for learning. Internal consistency reliability evidence for the subscale is acceptable ($\alpha = 0.91$). The VA explained 30% of the variance in student engagement. The personal effort invested (PE) subscale consists of three items. In this subscale, students report the amount of effort they put into the activity. Internal consistency reliability evidence for the subscale is acceptable ($\alpha = 0.84$). The PE explained 12% of the variance in student engagement. The instructor contribution (IC) subscale includes four items. It measures the amount of effort the student perceives that the instructor puts into the activity. Internal consistency reliability evidence for the subscale is acceptable ($\alpha = 0.78$). The IC explained 13% of the variance in student engagement.

In phase III, Wiggins et al. (2017) gathered data to assess validity evidence to support the use of the measure with different types of activities and different demographic samples. The researchers compared student responses on the ASPECT after participating in a long activity working in groups to complete a worksheet to a day with a series of different shorter activities centered around a series of questions using a Classroom Response System. It was hypothesized that students would have higher engagement in the shorter activities because the instructor would provide frequent feedback. They also used demographic data to distinguish differences by grade point average, gender, first-generation status, and ethnicity to assess different demographic populations. They found that the ASPECT distinguished between activity type and ethnicity in the value that students place on different activities and the instructor contribution, but not on the

amount of effort students perceive that they put into the activity. Specifically, activity type and ethnicity predicted the value students placed on an activity and the perceived instructor contribution. In their research, they found that the ASPECT allows the researcher to reliably measure the same constructs in different activities taught by different instructors. This offers evidence that the ASPECT is suitable for use in a variety of active learning activities and populations.

Since the development of the ASPECT instrument in 2017, there were eight published studies that researchers have used it to assess student engagement in active learning. In these studies, the ASPECT was administered to a variety of populations including computer science students (Srivastava et al., 2019), management information systems students (Nicholson et al., 2019), fifth grade students (Perry, 2019), pharmacy students (Lunn et al., 2021; Manfrin, et al., 2020), biomechanics students (Knudson, 2020), new nurses transitioning to practice (Paulat, 2019), and students enrolled in a recreation programming course (Powers et al., 2020). There were a variety of active learning strategies that were assessed with the ASPECT in these studies. Not all studies reported reliability evidence of the measures, but in those that did, reliability evidence of the subscales was acceptable. Measures of internal consistency reliability for the subscales are as follows: value of the group activity ranged from $\alpha = 0.92$ to $\alpha = 0.94$; personal effort invested ranged from $\alpha = 0.87$ to $\alpha = 0.92$; and instructor contribution ranged from $\alpha = 0.92$ to $\alpha = 0.94$ (Nicholson et al., 2019; Srivastava et al., 2019). In addition, Srivastava et al. performed a confirmatory factor analysis and confirmed the findings from the Wiggins et al. (2017) study, which provides further validity evidence.

For the purpose of this study, the ASPECT (Wiggins et al., 2017) aligned with the theoretical framework and allowed the researcher to operationalize student engagement. Propositions of social exchange theory state that value, cost, and power influence behavior. Similarly, it is proposed that value, effort (cost), and the influence of the instructor (power) are key factors of student engagement. In this study, student engagement was operationalized by the subscales of the ASPECT including value of the activity (VA; value), personal effort invested (PE; cost). In the frame of social exchange, the engagement score was derived from the relation between the VA and PE subscales of the ASPECT. It was operationalized by subtracting the effort (cost) score from the value score. Additionally, the instructor contribution (IC) subscale was used to assess the instructor influence on student engagement. Using the ASPECT allowed the researcher to determine levels of student engagement in various activities, as well as assess the relations between VA, PE, and IC to test the following propositions:

- "The more valuable to a person is the result of his action, the more likely he is to perform the action" (Homans, 1974).
- The level of student engagement (relation between VA and PE) varies across different active learning experiences.
- The instructor plays an influential role in students' engagement in their learning (relation between student engagement score and IC).
- Instructor involvement in active learning experiences in prelicensure nursing education is key to facilitating student engagement in their learning (relation between student engagement score and IC).

There are several advantages to using the ASPECT. It was developed to be a rapid assessment of active learning that can be widely used across active learning strategies (Wiggins et al., 2017). In addition, there is reliability and validity evidence that supports the use of the ASPECT with various populations and in various settings. It also aligns with the theoretical framework of this study and allows the researcher to operationalize student engagement and test various propositions. There are some limitations of the ASPECT. The instrument is a self-report measure, so it is reliant on honest student report of the items. Initial reliability and validity evidence was collected using only a sample of students enrolled in an introductory biology course. Though more researchers are using the ASPECT and providing further reliability and validity evidence, additional testing with other populations and settings continues to be needed (Wiggins et al., 2017).

Instructor Contribution to Debriefing

The Debriefing Assessment for Simulation in Healthcare Student Version Short Form (DASH-SV-Short©; Simon et al., 2010) was used in this study to assess faculty contribution to student engagement specifically to simulation debriefing. The DASH-SV-Short© is a behaviorally anchored rating scale that contains six elements and students are asked to use the instrument to compare observed debriefer performance to the elements. The six elements included the following: (1) establishing an engaging learning environment, (2) maintaining an engaging context for learning, (3) structuring the debrief in an organized way, (4) provoking in-depth discussion, (5) identifying and exploring performance, and (6) helping trainees improve or sustain good performance (Simon et al., 2010). Using the DASH-SV-Short©, students rated the debriefer on a seven-point effectiveness scale on each of the elements (Brett-Fleegler et al.,

2012). Ratings of four or greater are considered acceptable (Brown et al., 2018). Appendix B, which lists all of the instruments and survey items used in the study, includes the DASH-SV-Short©.

There are three versions of the DASH©, which include a rater version (DASH-RV©), a student version (DASH-SV©), and an instructor version (DASH-IV©). Using the DASH-RV©, trained simulation instructors rate the debriefer. Using the DASH-SV©, students evaluate the techniques used by the instructor during the simulation debriefing. Finally, the DASH-IV© was designed for instructors to rate themselves (Center for Medical Simulation, 2022). Based on review of the literature, their own expert experiences, and interviews with established debriefing instructors, the developers identified best practices for effective and ineffective debriefing to create the instrument, which was designed to be used across disciplines. Once it was developed, eight simulation experts reviewed the instrument for content and usability and provided feedback in three rounds (Brett-Fleegler et al., 2012).

To provide evidence to support the reliability and validity of the DASH-RV©, Brett-Fleegler et al. (2012) conducted a study of 114 simulation instructors enrolled in a webinar training course. The instructors participating in the study rated a series of three standardized debriefing sessions using the DASH-RV©. To assess interrater reliability, intraclass correlations were calculated. Internal consistency was assessed using Cronbach α and validity was examined by comparing scores across three debriefings of different quality (poor, average, and superior). Intraclass correlation coefficients (ICC) for each element ranged from 0.57 to 0.68 and the overall ICC was 0.74 (Brett-Fleegler et al., 2012). Values between 0.5 and 0.75 indicate moderate reliability (Koo & Li, 2016). Internal consistency across the rater data set was

acceptable ($\alpha = 0.89$). Finally, differences between the mean scores of the three different standardized debriefings was statistically significant ($p < 0.001$), providing evidence that the DASH© can differentiate between the quality of debriefing (Brett-Fleegler et al., 2012). Although Brett-Fleegler et al. assessed the DASH-RV©, their study provides reliability and validity evidence to support the elements and best practices for debriefing that are reflected in the instrument.

Initial reliability evidence of the DASH-SV© was reported by Dreifuerst (2009) and was acceptable ($\alpha = 0.82$). There were eleven studies that were found in the literature that were conducted since this time in which researchers have used the DASH-SV©. It has been used to evaluate simulation debriefing in multiple healthcare disciplines including nursing, medicine, and athletic training, as well as in interprofessional simulation. Only three researchers reported reliability evidence ($\alpha = 0.91$ to 0.95), which was acceptable in these studies (Brown et al., 2018; Roh & Jang, 2017; Rueda-Medina et al., 2021).

For the purpose of this study, the DASH-SV-Short© allowed the researcher to operationalize the instructor contribution to student engagement in simulation debriefing. Using the DASH-SV-Short©, the following propositions were tested:

- The instructor plays an influential role in students' engagement in their learning.
- Instructor involvement in active learning experiences in prelicensure nursing education is key to facilitating student engagement in their learning.

These propositions were tested by examining the relation between the student engagement score and the debriefer rating on the DASH-SV-Short©.

There were several advantages to using the DASH-SV-Short© for this study. It is a quick assessment of debriefer performance and can be completed in less than three minutes, though it is not as diagnostic as the longer student form (Center for Medical Simulation, 2022). There is reliability and validity evidence to support the use of the DASH-SV-Short© with various disciplines in healthcare simulation; however, there continues to be a need for further psychometric testing, especially given the various versions of the instrument. One other limitation of the DASH-SV-Short© noted is that it relies on accurate student rating of the performance of the debriefer.

Academic Burnout Measure

The Oldenburg Burnout Inventory (OLBI; Demerouti & Bakker, 2008) was originally designed to operationalize burnout in the workplace. It was developed to address theoretical and psychometric issues with other burnout measures (Reis et al., 2015), specifically the Maslach Burnout Inventory (MBI; Maslach et al., 2016). One issue identified with the MBI is that it has two subscales (emotional exhaustion and cynicism) with negatively worded items and a third subscale (personal accomplishment) with positively worded items (Demerouti & Bakker, 2008; Reis). Additionally, findings suggest that personal accomplishment may be an antecedent or consequence of burnout instead of a core symptom of burnout (Taris et al., 2005).

The OLBI has a two-factor structure with subscales of exhaustion and disengagement. The measure consists of sixteen positively and negatively worded items. There are eight items that evaluate exhaustion and eight items to assess disengagement (Demerouti & Bakker, 2008). To operationalize academic burnout for this study, an adapted student version, the OLBI-S (Reis et al., 2015), was used. To complete the OLBI-S, students were asked to respond to the items on

a scale that ranged from 1 (*strongly agree*) to 4 (*strongly disagree*). Appendix B includes the OLBI-S (Reis et al., 2015).

In a study to assess the psychometric properties of the OLBI-S, Reis et al. (2015) tested the OLBI across different groups (employees versus students) and across different countries (Greece versus Germany). The researchers used the English version of the OLBI and adapted it for academic burnout then translated it to a Greek and German version for students. In comparison of German employees (OLBI) and students (OLBI-S), their model achieved full metric invariance. This indicates that German employees and students interpreted the scale the same way, which supports that the phenomenon is similar between these two groups and provides validity evidence for the measure. Similarly, evidence from the model indicated that Greek and German students interpreted the OLBI-S items in the same way. Reis et al. reported acceptable reliability evidence for both the exhaustion ($\alpha = 0.87$) and disengagement ($\alpha = 0.81$) subscales for the OLBI. They also reported acceptable reliability evidence for the exhaustion and disengagement scores for OLBI-S in Greek ($\omega = 0.98$, $\omega = 0.97$ respectively) and German ($\omega = 0.98$, $\omega = 0.99$ respectively).

Researchers have widely used the OLBI-S or some form of the OLBI to assess academic burnout. In a search of multiple databases including Cumulative Index of Nursing and Allied Health Literature (CINAHL), Educational Resources Information Center (ERIC), and Google Scholar, there were several student populations which the OLBI was used to assess academic burnout including general post-secondary education, medicine, dentistry, nursing, pharmacy, physical therapy, law, and education. There were also many different countries represented in the literature that academic burnout was assessed using the OLBI and thus it has been translated into

many different languages. These countries include Germany, Greece, Brazil, Portugal, Nigeria, Cameroon, Slovenia, Kathmandu, Malaysia, United Kingdom, India, Pakistan, Sri Lanka, United States, Canada, Indonesia, Croatia, Nepal, Morocco, China, Russia, Iran, India, Kenya, and Georgia.

There were 42 studies that were reviewed based on article abstracts to obtain further psychometric data. There were several versions of the OLBI that were used in these studies, so the focus was to find psychometric evidence that supported the OLBI-S as cited by Reis et al. (2015). There were seven studies found in review of the literature that researchers reported adequate reliability for the OLBI-S ($\alpha = 0.81$; Nandon et al., 2020) and for the subscales of exhaustion ($\alpha = 0.76$-0.87) and for disengagement ($\alpha = 0.73$-0.83; Babenko & Mosewich, 2017; Ezenwaji et al., 2019; Ezeudu et al., 2020; Igbokwe et al., 2019; Ogbueghu et al., 2019; Timms et al., 2018).

The OLBI-S is a short and quick assessment of academic burnout. It is a self-report instrument, so it does rely on honest and accurate report by the student. There is adequate reliability and validity evidence that supports the use of the OLBI-S to assess academic burnout. It allowed the researcher to operationalize academic burnout in this study to test the following proposition:

- The level of academic burnout influences student engagement in clinical education learning experiences.

This proposition was tested by examining the relation between the level of academic burnout and the student engagement score.

Ethical Considerations

Prior to implementation of the study, the researcher sought approval from the Institutional Review Board (IRB) at the data collection site and Loyola University Chicago. The IRB discusses and makes judgments about the acceptability of projects, making sure that: risks to subjects are minimized; risk and benefit of the study is considered; selection of subjects is equitable; informed consent is documented; safety of subjects is ensured; and privacy and confidentiality of data are maintained when appropriate (Steneck, 2007). The IRB at the data collection site required approval only from the IRB at Loyola University Chicago. A letter of support from the program director for the School of Nursing at the data collection site was obtained and the study protocol was submitted to and approved by the IRB at Loyola University Chicago. The letter of support from the program director and IRB approval can be found in Appendix C.

Informed consent for participation in the study was obtained. Participation was voluntary. The consent was presented to the participant in Qualtrics® prior to beginning the survey (Appendix B). Students may have perceived threat to their course grade by not participating in the study; however, they were informed that choosing to participate or not participate in the study would not affect their course grade or their standing within the school of nursing or the university. In order to further reduce this threat, consent was obtained by the researcher, who is not faculty in the course and will not teach any of the courses the students will take in the future. In addition, students were assured that their choice to participate or not participate in the study would not be shared with the course faculty. There was no potential benefit to the student by participating in this study; however, the findings of the study will potentially impact the

education of future nursing students. In addition, the findings may support the need for future studies to optimize clinical education in nursing.

To protect human subjects, privacy, anonymity, and confidentiality of the data obtained in the study were addressed. Privacy and anonymity of the subjects was maintained in several ways. No participant names were collected in the survey. The "anonymize response" feature was used in the Qualtrics® software, which was used to collect survey data. This disables the ability to track respondents by location. All data were kept secure and access to the data was only available to the team involved in analysis, including the researcher, the advisors for the study, and the statistician. All data were stored digitally and are protected with username and password.

Data Collection

Data were collected and organized using Qualtrics® software by the researcher. Nursing students are assigned to clinical groups of eight to ten students by the School of Nursing as part of their educational program. The researcher used these clinical groups to organize the distribution of the survey to the nursing students. Based on their clinical group assignment, half of the second semester junior nursing students in a medical-surgical, adult health nursing course completed the survey related to their clinical experience and the other half completed the survey related to the clinical post-conference activities. Similarly, half of the first semester senior nursing students were given the survey related to their simulation experience and the other half completed the simulation debriefing survey.

Students were able to access the survey by scanning a QR code that was given to them immediately following the activity that they were assessing, so that their experience was fresh in their mind. The researcher attended each of the activities that were being assessed to distribute

the QR code to the students, which allowed them to consent to the study and access the survey. This was done to ensure that the surveys were distributed at the appropriate time and that the students were completing the correct survey.

The survey administered to the clinical group was determined by the students' assigned clinical day. To implement the data collection, the researcher administered the clinical experience and simulation experience surveys on Tuesdays and Thursdays and surveys on the clinical post-conference and simulation debriefing were administered on Wednesdays and Fridays. If there were clinical groups scheduled on Saturday, the survey given was determined by the number of students participating on the other days. For example, if there were fewer students completing the clinical experience survey, then students participating on Saturday were given that survey. The data collection process is illustrated in Table 1 in Appendix D.

The survey included demographic data of the participants in the study to describe the sample characteristics. Characteristics that were assessed included age, gender, and ethnicity. Students then completed the ASPECT and the OLBI-S. Students assessing the simulation debriefing also completed the DASH-SV©. The ASPECT surveys were similar for each group but reflected differences in the activities with changes in the verbiage based on the experience that the student was assessing. For example, if a student was assessing engagement in the clinical experience, the wording of the survey was changed to make it clear to the student that this is what they are evaluating. All surveys can be found in Appendix B.

Data Analysis

Data from the surveys were exported from the Qualtrics® software and imported into the Statistical Program for the Social Sciences Version 27.0 (SPSS; IBM Corp., n.d.) predictive

analytics software by the researcher. The researcher and statistician worked together to ensure accuracy of the data values. To edit and clean the data, the researcher and statistician queried the database for missing values and outliers. Surveys with missing data points in the demographic portion of the survey were included in the final sample. Surveys with missing items from higher priority outcome variables, such as items from the ASPECT, the DASH-SV-Short©, and the OLBI-S, were examined individually to determine how to handle these cases.

As mentioned, the junior students who had completed a survey over their clinical experience or clinical post-conference in the fall semester progressed to the senior level in the spring and completed a survey over their simulation experience or the simulation debriefing. There was no way to match these surveys, since no identifiable data were collected, so these surveys were eliminated to reduce bias and avoid violation of the assumption of independence.

Demographic data were collected and analyzed to describe the sample and descriptive statistics were used to assess each of the subscales. Specific analysis plan for each research question is detailed below. The nominal alpha level of 0.05 was used for all tests. Assumptions were evaluated and Cronbach's alpha coefficients were used to assess the internal consistency reliability of the instruments before the hypotheses were tested. Results from the analyses are discussed in Chapter Four.

Research Question 1: What are the differences in student engagement between traditional clinical experiences and simulation experiences in prelicensure baccalaureate nursing students?

H_0: There will be no significant differences in students' perceived engagement between traditional clinical experiences and simulation experiences.

H_1: There will be significant differences in students' perceived engagement between traditional clinical experiences and simulation experiences.

Analysis of variance (ANOVA) was used to test mean differences among the four different learning experiences that were assessed in the study (Polit & Beck, 2018). To address this research question, post-hoc tests from the one-way ANOVA were used to compare the engagement score from the ASPECT in traditional clinical experiences and simulation experiences. In addition, a comparison of effect sizes was performed. The measure of effect size allowed the researcher to determine how much the activity in which the student participated affected their perceived level of engagement.

Research Question 2: What are the differences in student engagement between clinical post-conference experiences and simulation debriefing experiences in prelicensure baccalaureate nursing students?

H_0: There will be no significant differences in students' perceived engagement between clinical post-conference and simulation debriefing.

H_1: There will be significant differences in students' perceived engagement between clinical post-conference and simulation debriefing.

As in research question one, one-way ANOVA was used to test mean differences among the four different learning experiences (Polit & Beck, 2018). To address this research question, post-hoc tests from the one-way ANOVA were used to compare the engagement score from the ASPECT in clinical post-conference and simulation debriefing. In addition, a comparison of effect sizes was performed.

Research Question 3: What is the instructor's contribution to student engagement during traditional clinical experiences and simulation experiences?

H_0: There will be no significant relation between students' perceived engagement and the instructor contribution to student engagement.

H_1: There will be a significant and positive relation between students' perceived engagement and the instructor contribution to student engagement.

Spearman's rank correlation was used to analyze the relation between the student engagement score and the instructor contribution subscale on the ASPECT in clinical experiences and simulation experiences. Additionally, a one-way ANOVA model that included the interaction between the instructor contribution on the ASPECT and the student engagement score was analyzed to see if there was a difference in the instructor contribution to student engagement across the different learning experiences.

Research Question 4: What is the instructor's contribution to student engagement during clinical post-conferences and simulation debriefing?

H_0: There will be no significant relation between students' perceived engagement and the instructor contribution to student engagement.

H_1: There will be a significant and positive relation between students' perceived engagement and the instructor contribution to student engagement.

Spearman's rank correlation was used to analyze the relation between the student engagement score and the instructor contribution subscale on the ASPECT in clinical post-conference and simulation debriefing. A Spearman's rank correlation was also used to analyze the relation between the student engagement score and the rating on the DASH-SV-SHORT© in

simulation debriefing. A one-way ANOVA model that included the interaction between the instructor contribution on the ASPECT and the student engagement score was analyzed to see if there was a difference in the instructor contribution to student engagement across the different learning experiences. It was proposed that in having power over the students, the instructor would influence student engagement.

Research Question 5: What is the influence of academic burnout on prelicensure baccalaureate nursing student engagement in clinical education?

H_0: There will be no significant relation between academic burnout and student engagement in clinical education.

H_1: There will be a significant and negative relation between academic burnout and student engagement in clinical education.

In the frame of social exchange, if students were experiencing academic burnout, it was believed that their reserves would be depleted prior to entering the learning experience and influence the value and effort that they put into the learning experience. To test this hypothesis, a Spearman's rank correlation was used to evaluate the relation between student engagement and academic burnout level.

Summary

This chapter outlines the study design and the methods that were used to test the hypotheses. The study was designed to support the aims and the research questions, as well as protect the participants in the study. Chapter Four will present the results of the data analysis.

CHAPTER FOUR

RESULTS

This chapter will present the data analysis and the findings of the study. Statistics to describe the sample will be provided and the research questions will be addressed. The purpose of this study was to examine differences in nursing student engagement in clinical education learning experiences and the influence of academic burnout on engagement.

The Learning Experiences

In the 'live' clinical experience, groups of students were individually assigned to provide direct care to one patient on an inpatient adult medical/surgical unit. They spent approximately one hour preparing to provide care by reviewing the patient's medical record, and reviewing diagnoses, medications, and physician orders. They then provided care to the patient for approximately six hours. During the clinical experience, faculty indirectly supervised students and the students worked with nursing staff on the unit. If students had issues or questions as they were providing care, they could seek out the nursing staff or their instructor for guidance. There were certain procedures that students had to rely on their instructor to carry out, such as administering medications. After providing care, the students met as a group in the classroom on the hospital unit for the clinical post-conference, which lasted approximately one hour. There was one of four different faculty members that supervised students during the clinical experience and facilitated the discussion in the clinical post-conference.

In the simulation setting, the scenario for the simulation experience was part of the program's clinical curriculum and was built around a patient experiencing a gastrointestinal bleed. The INACSL (2021d, 2021a, 2021b) *Healthcare Standards of Best Practice* were used to develop and implement the simulation experience and debriefing. Prior to the simulation experience, students were assigned to a group of three to four students who worked together to provide care to the 'patient,' which was a high-fidelity simulator. Additionally, students were assigned a role (team leader, assessment nurse, medication nurse, or education nurse) and had preparation materials related to the care of the 'patient.' Students discussed their plan of care with their group prior to entering the simulation room. Next, students actively participated in the care of the 'patient' in the scenario, which lasted about forty minutes. During the simulation, the instructor was the voice of the patient from the control booth while a lab technician controlled the settings on the mannequin. After participating in the simulation, students debriefed with the faculty facilitator in a classroom that was adjacent to the simulation room. Debriefing lasted about twenty minutes. There was one of four different faculty members that facilitated the simulation experience and the simulation debriefing.

Data Collection and Organization

As described in Chapter 3, data were collected by the researcher after students participated in each of the activities. Data were collected for two semesters (Fall 2021 and Spring 2022) in order to reach the total target sample size of two hundred, with a minimum of fifty students per group (clinical experience, clinical post-conference, simulation experience, and simulation debriefing groups).

Once collection was completed, data from each of the surveys were extracted from Qualtrics® software by the researcher and imported into the SPSS Version 27.0 (IBM Corp., n.d.) predictive analytics software. The researcher ensured accuracy of the data by checking the values to ensure that they fell within the range of the scales. Additionally, negatively worded items on the OLBI-S were reverse scored for accurate data analysis. The data were then merged into one dataset for analysis. There was a total of 268 surveys in the merged dataset.

Next, the researcher examined the data set for missing datapoints. It was determined that no survey would be eliminated due to missing demographic data. For the surveys with missing datapoints on items for the outcome variables, the amount of missing data was small, so the researcher closely examined each case. There was a total of eight surveys with missing data. Four of these surveys had only one missing item on one of the subscales. Two surveys had one missing item on two different subscales. One survey had two missing items on the same subscale and one survey had five items missing. Based on this information, it was determined that the two with multiple missing data points on the same subscale would be deleted, bringing the total number of surveys to 266. The six surveys with one data point missing from one subscale were determined to be missing at random and kept in the analysis. Regression imputation method was utilized to replace missing data, since the amount of missing data was less than 5% of cases (Allison, 2001). The estimates for missing cases were derived from a regression model estimating the variable from items on the questionnaire using the cases that were not missing to build the model.

After organizing the data and meeting with the statistician, there was concern about the fact that students who had completed a survey over the clinical experience or clinical post-

conference in the fall as a junior nursing student progressed to the senior level and completed a survey related to their simulation experience or simulation debriefing. Because of the concern of bias in the results and violation of the assumption of independence, only the first observation per participant was included in the data analysis. The final sample of 212 surveys was used for data analysis. There were 71 students in the clinical experience group, 66 students in the clinical post-conference group, 40 students in the simulation group, and 35 students in the simulation debriefing group. Because surveys from the simulation and simulation debriefing group were eliminated, there was concern about the power of the results of the study. To address this, post-hoc power was assessed in SPSS (IBM Corp., n.d.) and will be discussed in the data analysis.

Descriptive Statistics

Of the 212 participants, age was reported by 188 with the majority being18-20 (N = 32), 21 (N = 100), or 22 (N = 45) years old. The mean age for the sample was 21.36 years. Only eleven students reported being 23 or older, with a maximum age of 30 in the sample. All participants reported gender and ethnicity. Of the 212 participants, 87.7% (N = 186) were female and only 12.3% (N = 26) were male. Caucasian was the most frequently reported ethnicity (N = 191, 90.1%), followed by African American (N = 12, 5.7%,). Less reported ethnicities included Asian/Pacific Islander (N = 4, 1.9%), Hispanic (N =2, 0.9%), and Middle Eastern (N = 1, 0.5%). Two students reported their ethnicity as “other,” writing in “Hispanic and African American” and “Biracial.” Table 1 includes the results of the sample characteristics. Additionally, descriptive statistics of the study variables are presented in Table 2, which will be discussed further in the subsequent sections.

Table 1. Demographics of Sample

Variable	N (Percent)	Mean (SD)
Age		21.36 (0.96)
18-20	32 (15.1%)	
21	100 (47.2%)	
22	45 (21.2%)	
23	6 (2.8%)	
24	2 (0.9%)	
25-30	3 (1.4%)	
Gender		
Male	26 (12.3%)	
Female	186 (87.7%)	
Ethnicity		
Caucasian	191 (90.1%)	
African American	12 (5.7%)	
Asian/Pacific Islander	4 (1.9%)	
Hispanic	2 (0.9%)	
Middle Eastern	1 (0.5%)	
Other	2 (0.9%)	

Table 2. Summary of Study Variables

Subscale	# of items	Calculated Range	N	Mean Score (SD)	Range
Value (V)	9	0 – 6			
Clinical Exp			71	5.01 (0.71)	1 – 6
Clinical PC			66	5.29 (0.58)	3.89 – 6
Sim Exp			40	4.89 (0.78)	.89 – 6
Debriefing			35	5.30 (0.94)	1 – 6
Effort (E)	3	0 – 6			
Clinical Exp			71	5.13 (0.76)	1 – 6
Clinical PC			66	5.09 (0.76)	3.33 – 6
Sim Exp			40	5.69 (0.42)	4.67 – 6
Debriefing			35	5.34 (0.91)	1 – 6
Student Engagement	V - E	0 - ±5			
Clinical Exp			71	-0.12 (0.46)	-1.44 – 1.11
Clinical PC			66	0.20 (0.66)	-1.44 – 2.33
Sim Exp			40	-0.80 (0.69)	-4.11 – 0.67
Debriefing			35	-0.04 (0.38)	-0.89 – 0.67

Instructor Contribution	4	0 – 6			
Clinical Exp			71	5.54 (0.73)	1 – 6
Clinical PC			66	5.66 (0.49)	4 – 6
Sim Exp			40	5.59 (0.56)	3.25 – 6
Debriefing			35	5.44 (0.96)	1 – 6
DASH-SV-Short©	6	0 – 42	35	38.37 (4.72)	21 – 42
Burnout	16	2 – 8	212	5.16 (0.76)	2.50 – 7.38
Disengagement	8	1 – 4	212	2.22 (0.46)	1 – 3.38
Exhaustion	8	1 – 4	212	2.93 (0.44)	1.13 – 4

Student Engagement

In the frame of social exchange, the value and effort subscales on the ASPECT were used to operationalize student engagement. The value subscale has nine items scored on a six-point scale. In order to calculate the student engagement score, the value had to be scaled and was divided by the number of items (nine), for a maximum score of six. Higher scores indicated that the student rated the value of the learning experience high. The effort subscale has three items scored on a six-point scale. The effort score was also divided by the number of items (three) to scale it for calculation of the engagement score, for a maximum score of six. Higher scores on the effort subscale indicated that students were putting in higher levels of effort into the learning experience that they were assessing.

Social exchange theory states that reward – cost = behavior; therefore, student engagement score was calculated by subtracting the effort score from the value score (value – effort = engagement). A positive engagement score indicates positive student engagement in the learning experience, as a positive relation in social exchange occurs when the value (reward) exceeds the cost (effort). Positive engagement scores range from zero to five, with the higher score interpreted as higher engagement. On the other hand, a negative engagement score

indicates negative engagement, with a range from negative five to zero. The more negative the score, the more disengaged the student is in the learning experience. The value and effort subscales were found to have acceptable reliability evidence (value, $\alpha = 0.940$; effort, $\alpha = 0.872$).

On the value subscale, students rated simulation debriefing the highest (M = 5.30, SD = 0.94) followed by the clinical post-conference (M = 5.29, SD = 0.58), clinical experience (M = 5.01, SD = 0.71), and simulation experience (M = 4.89, SD = 0.78), respectively. On the effort subscale, students rated the simulation experience the highest (M = 5.69, SD = 0.42) followed by debriefing (M = 5.34, SD = 0.91), clinical experience (M = 5.13, SD = 0.76), and clinical post-conference (M = 5.09, SD = 0.76), respectively. When the student engagement score was calculated from value and effort, students had positive engagement in the clinical post-conference (M = 0.20, SD = 0.66) only. Mean scores for all other learning experiences were negative (simulation experience, M = -0.80, SD = 0.69; clinical experience, M = -0.12, SD = 0.46; simulation debriefing, M = -0.04, SD = 0.38).

Instructor Contribution

The instructor contribution to the learning experiences was operationalized using the instructor contribution subscale from the ASPECT. Additionally, the DASH-SV-Short© was used to assess the instructor contribution to simulation debriefing specifically. The instructor contribution subscale contains four items scored on a six-point scale. To be consistent with the value and effort subscales, the scale was divided by the number of items, for a maximum total score of six. The DASH-SV-Short© has six elements rated on a seven-point scale, with a maximum total score of 42. On both scales, the higher the score, the more the instructor

contributes to the learning experience. Reliability evidence for both the instructor contribution subscale (α = 0.921) and the DASH-SV-Short© (α = 0.924) were acceptable.

The mean scores on the instructor contribution subscale to all learning experiences were high and very similar. Thus, the students perceived that the instructor contributed highly to the learning experience. Instructor contribution to clinical post-conference was the highest (M = 5.66, SD = 0.49) followed by clinical experience (M = 5.54, SD = 0.73), simulation experience (M = 5.59, SD = 0.56), and simulation debriefing (M = 5.44, SD = 0.96), respectively. The mean score of the instructor contribution to simulation debriefing from the DASH- SV-Short© was also high (M = 37.98, SD = 4.72).

Burnout

The disengagement and exhaustion subscales of the OLBI-S were used to operationalize academic burnout. Each subscale has a total of eight items, four which are negatively worded and four which are positively worded. It is scored on a four-point scale, where one is *strongly agree* and 4 is *strongly disagree*. To calculate the score on each subscale, the negatively worded items were reverse coded, and the items on the disengagement and exhaustion subscales were summed and divided by eight to arrive at a score between one and four (Peterson et al., 2008; Reis et al., 2015). In the current study, reliability evidence for disengagement (α = 0.724), exhaustion (α = 0.800), and the overall OLBI-S scale (α = 0.820) were adequate.

Disengagement and exhaustion subscales were initially examined separately because they are separate factors of burnout (Peterson et al., 2008). Peterson et al. (2008) designated a cutoff score ≧ 2.1 as disengaged and ≧ 2.25 as exhausted, with a higher score interpreted as a higher level of disengagement or exhaustion. These cutoff scores were established by corresponding

burnout as diagnosed by a physician (Shaufeli et al., 2001). Mean disengagement score from the sample was 2.23 and exhaustion score was 2.93, both above the cutoff established by Peterson et al. (2008). Both high disengagement and high exhaustion scores suggest that nursing students that participated in the current study were experiencing academic burnout (M = 5.16, SD = 0.76).

Data Analysis of Study Research Questions

After descriptive statistics were assessed, analysis was completed to address each of the research questions. Prior to analysis, assumptions for each of the statistical tests were assessed and assumption violations wereaddressed. Results of the analysis will be discussed.

Analysis of Research Questions 1 and 2

Research Question 1: What are the differences in student engagement between traditional clinical experiences and simulation experiences in prelicensure baccalaureate nursing students?

H_0: There will be no significant differences in students' perceived engagement between traditional clinical experiences and simulation experiences.

H_1: There will be significant differences in students' perceived engagement between traditional clinical experiences and simulation experiences.

Research Question 2: What are the differences in student engagement between clinical post-conference experiences and simulation debriefing experiences in prelicensure baccalaureate nursing students?

H_0: There will be no significant differences in students' perceived engagement between clinical post-conference and simulation debriefing.

H_1: There will be significant differences in students' perceived engagement between clinical post-conference and simulation debriefing.

For the first two research questions, one-way ANOVA was used to compare mean student engagement scores between the clinical experience and simulation experience and between the clinical post-conference and simulation debriefing. Before running the one-way ANOVA, assumptions of independence, normality of the data within groups, and homogeneity of variance were evaluated.

Since only one observation was used per participant, the assumption of independence was met. Analysis of normality of the student engagement score for each of the groups was evaluated using the skewness and kurtosis and the Shapiro-Wilk test. Skewness and kurtosis for the clinical experience group (-0.07, 0.38 respectively) and simulation debriefing (-0.36, -0.05 respectively) were in acceptable ranges. The skewness and kurtosis for clinical post-conference group (0.59, 1.25 respectively) and simulation experience group (-2.745, 13.537 respectively) both indicated a non-normal distribution of the data. The Shapiro-Wilk test for normality were congruent with these findings with the clinical experience group ($p = 0.234$) and the simulation debriefing group ($p = 0.378$) both indicating normally distributed data and the clinical post-conference group ($p = 0.03$) and the simulation experience group ($p < 0.01$) both indicating non-normally distributed data. The Levene's test was used to assess the assumption of homogeneity of variances. The test indicated that there was a violation of this assumption ($p = 0.028$).

There was less concern about the violation of normality affecting significance testing because the sample size was large, with greater than thirty participants per group (Field, 2013). Therefore, the researcher proceeded with the one-way ANOVA. Because the assumption of

homogeneity of variances was violated and the group sizes were unequal, the Games-Howell post-hoc test was interpreted (Field, 2013).

When comparing group means, there was a significant difference found between groups [$F(3,208) = 26.20$, $p < 0.001$]. To address the research questions, the researcher was focused on comparison of the clinical experience to the simulation experience and comparison of the clinical post-conference to simulation debriefing. For research question one, Games-Howell post-hoc test revealed that there was a significant difference between the clinical experience group and the simulation experience group ($p < 0.001$). Therefore, the null hypothesis was rejected, and the alternative was supported for research question one. In both the clinical experience ($M = -0.12$, $SD = 0.46$) and the simulation experience ($M = -0.80$, $SD = 0.69$), students had negative engagement scores, but students were significantly less engaged in the simulation experience than in the clinical experience.

For research question two, in comparison of the clinical post-conference and the simulation debriefing, there was not a significant difference found between these two groups ($p = 0.10$). There was a failure to reject the null hypothesis for research question two. Although the difference was not significant, students reported positive engagement in the clinical post-conference ($M = 0.20$, $SD = 0.66$), but engagement in the simulation debriefing was negative ($M = -0.04$, $SD = 0.38$).

Analysis of effect size was performed to examine the effect of the learning experience on engagement. Based on Cohen's (1988) benchmarks, effect size was large ($\eta^2 = 0.274$), indicating that the learning experience in which the student participated had a large effect on their

engagement. Finally, post-hoc power analysis was assessed ($\eta^2 = 0.274$, $\alpha = 0.05$), which indicated that power for the statistical analysis was adequate (observed power = 1.00).

Table 3. Results of the One-Way ANOVA

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Between Groups	25.284	3	8.428	26.200	< .001	0.274
Within Groups	66.909	208	.322			
Total	92.194	211				

Table 4. Post-Hoc Comparison

Group Comparison:	Mean Difference	Std. Error	Sig.	Lower Bound	Upper Bound
Clinical Experience to Simulation Experience	.67950*	.12253	< .001	.3556	1.0034
Clinical Post-Conference to Simulation Debriefing	.23824	.10344	.104	-.0321	.5086

Analysis of Research Questions 3 and 4

Research Question 3: What is the instructor's contribution to student engagement during traditional clinical experiences and simulation experiences?

H_0: There will be no significant relation between students' perceived engagement and the instructor contribution to student engagement.

H_1: There will be a significant and positive relation between students' perceived engagement and the instructor contribution to student engagement.

Research Question 4: What is the instructor's contribution to student engagement during clinical post-conferences and simulation debriefing?

H_0: There will be no significant relation between students' perceived engagement and the instructor contribution to student engagement.

H_1: There will be a significant and positive relation between students' perceived engagement and the instructor contribution to student engagement.

For research questions three and four, correlation was used to analyze the relation between the student engagement score and the instructor contribution subscale on the ASPECT between the different learning experiences. Additionally, the relation between the student engagement score in debriefing and the DASH-SV-Short© was assessed. Before running the analyses, assumptions of correlation were evaluated including independence, linearity, normality of the data with no significant outliers, and homoscedasticity.

The assumption of independence was met, with only one observation per participant. Linearity was assessed using a scatterplot that examined the relation between student engagement and the instructor contribution from the ASPECT and the DASH- SV-Short©. The scatterplot with the engagement score and the instructor contribution from the ASPECT revealed a linear pattern. The scatterplot with the student engagement score and the instructor contribution from the DASH- SV-Short© did not reveal a linear pattern. The assumption of linearity was violated.

Normality of the student engagement variable was discussed with research questions one and two. The skewness and kurtosis of the instructor contribution from the ASPECT by group indicated a violation of normality in the data for the clinical experience (-3.72, 20.99 respectively), the clinical post-conference (-1.45, 1.53 respectively), the simulation experience

(-2.02, 6.10 respectively), and the simulation debriefing (-3.20, 13.36 respectively). The Shapiro-Wilk statistic for all groups also indicated non-normally distributed data ($p < .001$). For the instructor contribution from the DASH- SV-Short©, skewness (-1.75), kurtosis (3.99), and Shapiro-Wilk ($p < .001$) all indicated non-normally distributed data. There were only two cases of outliers in the data, so this was not considered to be a concern.

Homoscedasticity was evaluated by looking at a scatterplot of residuals versus predicted values for student engagement and the instructor contribution from the ASPECT. The scatterplot revealed no cone-shaped pattern in the distribution and the points were similar distance from the line. Additionally, a scatterplot of residuals versus predicted values was evaluated for the student engagement score and the instructor contribution from the DASH- SV-Short©. There was no cone-shaped pattern in distribution with these variables, either. Therefore, it was determined that the homoscedasticity assumption was met for the analysis of the correlation.

With violation of the assumptions of linearity and normality, it was determined that a Spearman's rank correlation would be used to examine the relation between student engagement score and the instructor contribution from the ASPECT and the DASH- SV-Short© by group. For the clinical experience ($r = -0.08$, $p = 0.485$), clinical post-conference ($r = 0.13$, $p = 0.319$), and simulation debriefing ($r = 0.14$, $p = 0.436$) there was no significant relation between the instructor contribution from the ASPECT and student engagement. There was a small positive significant correlation between student engagement and the instructor contribution from the DASH- SV-Short© ($r = 0.38$, $p = 0.025$). Additionally, for the simulation experience, there was a small positive significant correlation between student engagement and the instructor contribution

from the ASPECT (r = 0.38, p = 0.017). Results of the Spearman's rank correlation can be found in Table 5.

To explore these research questions further, a one-way ANOVA model that examined the interaction between the instructor contribution from the ASEPCT and student engagement score was analyzed. This model was assessed to determine if there was a difference in the instructor contribution on student engagement across the learning experiences. Findings from this ANOVA model indicated that there were no significant differences in the instructor contribution to student engagement across the learning experiences (F = 2.009, p = 0.114).

Table 5. Spearman's rho Correlation of Engagement to Instructor Contribution

	Instructor Contribution (ASPECT)	Instructor Contribution (DASH)
Student Engagement	0.17	
Clinical Experience	-0.08	
Clinical Post-Conf	0.13	
Sim Experience	0.38*	
Sim Debriefing	0.14	0.38*
Instructor Contribution (ASPECT)	----------	0.74**
Instructor Contribution (DASH)	----------	----------

** Correlation is significant at the 0.01 level. * Correlation is significant at the 0.05 level.

Analysis of Research Question 5

Research Question 5: What is the influence of academic burnout on prelicensure baccalaureate nursing student engagement in clinical education?

H_0: There will be no significant relation between academic burnout and student engagement in clinical education.

H_1: There will be a significant and negative relation between academic burnout and student engagement in clinical education.

On average, students in the study were experiencing academic burnout, with a high level of exhaustion and disengagement in their studies. Because of this, it was hypothesized that this would influence their engagement in clinical education learning experiences. To test this hypothesis, a correlation was performed to assess the relation between student engagement and burnout. Before running the analyses, assumptions for correlation were evaluated including independence, linearity, normality of the data with no outliers, and homoscedasticity.

The assumption of independence was met, with only one observation per participant. Linearity was assessed using a scatterplot that examined the relation between the student engagement score and the academic burnout score from the OLBI-S. The scatterplot revealed a linear pattern; thus, the assumption of linearity was met.

Normality of the student engagement data was discussed with research questions one and two and these data were found to be non-normally distributed. The academic burnout data indicated normal distribution. Skewness (-0.027) and kurtosis (0.213) were between negative one and one. Additionally, Shapiro-Wilk test of normality had non-significant results ($p > 0.551$), which indicated that the data were normally distributed. There was only one outlier found in the burnout data, so this was not a significant concern.

Homoscedasticity was evaluated by looking at a scatterplot of residuals versus predicted values for student engagement and the academic burnout score from the OLBI-S. The scatterplot revealed no cone-shaped pattern in the distribution and the points were similar distance from the line. Therefore, it was determined that the homoscedasticity assumption was met for the analysis of the correlation.

Because the engagement data were non-normally distributed, a Spearman's rank correlation was used to examine the relation between student engagement in clinical education learning experiences and academic burnout. There was a weak negative correlation (ρ = -0.004) but no significant relation found between these two variables (p = 0.952) and there was a failure to reject the null hypothesis. To explore these data further, the relations between the student engagement and academic burnout variables were assessed by group. There were no significant correlations found between student engagement in any of the learning experiences assessed and academic burnout. Table 6 contains the results of the correlations.

Table 6. Spearman's rho Correlation of Engagement to Academic Burnout

	Academic Burnout Spearman's rho (significance)
Student Engagement	-0.004 (p = 0.952)
Clinical Experience	-0.167 (p = 0.163)
Clinical Post-Conf	-0.010 (p = 0.937)
Sim Experience	-0.202 (p = 0.212)
Sim Debriefing	0.027 (p = 0.877)

** Correlation is significant at the 0.01 level. * Correlation is significant at the 0.05 level.

Summary

Chapter Four presented the statistical analysis of the data, including descriptive statistics and hypothesis testing. Additionally, data were presented that addressed each of the research questions. Chapter Five will provide further discussion and insight into the results of the analysis as well as implications for nursing education and areas of future research.

CHAPTER FIVE

DISCUSSION

The current study was relevant to gain a better understanding of nursing student engagement in clinical education that will provide guidance to nurse educators for improvement of nursing education. This chapter will discuss and provide explanation for key findings and how they relate to previous findings in the literature. Additionally, study limitations, nursing implications, and directions for further study will be addressed.

Sample Characteristics

Most of the students that participated in the study were traditional students, ages 18-22 (N = 177, 94%) and there was not a large representation of non-traditional, older students. This is similar to enrollment in schools of nursing, with 75.8% of nursing students being under the age of 25 (NLN, 2020d). Looking at the gender demographic, 186 (87.7%) respondents were female and only 26 (12.3%) of participants were male. This was expected and is similar to the enrollment in prelicensure programs, which is predominantly female. A National League for Nursing (NLN, 2020b) survey of nursing schools found that 87% of nursing students were female and 13% were male. The sample was not very racially diverse with 191 (90.1%) of participants being White/Caucasian and only 21 (9.1%) of participants reporting a race other than White/Caucasian (African American, Asian/Pacific Islander, Hispanic, Middle Eastern, or other). According to a survey of schools of nursing, minorities make up 30.9% of students in

prelicensure programs (NLN, 2020c). In the current study, minorities were underrepresented compared to the population.

Although these sample characteristics were mostly expected, based on the enrollment in schools of nursing, they make it challenging for nurse educators to gain an understanding of the learning experiences of students who are in the minority, including non-traditional students, males, and racially diverse individuals. These students may have unique experiences and needs that are not easily explored because they are represented by such a small sample. Wiggins et al. (2017) suggest that social factors, such as being the only member of a certain demographic, may negatively impact student learning experiences.

Student Engagement

Based on findings from the literature, it was expected that students would have high levels of engagement in clinical education (D'Souza et al., 2014; Hudson et al., 2019). Findings from the current study suggest that students do highly value the learning experiences used in clinical education and are putting forth high levels of effort into these experiences. In the frame of social exchange, engagement in learning occurs when students' value of a learning experience outweighs the effort that they put into the learning experience. In this frame, findings from the current study suggested that students were only positively engaged in the clinical post-conference and were negatively engaged in the other learning experiences used in nursing clinical education. The specific learning experiences used in clinical education were explored closely with consideration of the value and effort and how this factored into the engagement score. To address the research questions, the clinical experience was compared to the simulation experience and the clinical post-conference was compared to the simulation debriefing.

Clinical Experience and Simulation Experience

Engagement scores in the clinical experience (M = -0.12, SD = 0.46) and simulation experience (M = -0.80, SD = 0.69) were both negative, with students in simulation experiences being significantly less engaged ($p < .001$). The differences can be explained by the fact that in simulation experiences, students have to expend more effort in relation to the amount that they value the activity compared to clinical experiences. Students valued the 'real life' clinical experience (M = 5.01, SD = 0.71) more than the simulation experience (M = 4.89, SD = 0.78). The biggest impact on differences in the student engagement score, however, was attributed to the fact that students rated their effort higher in the simulation experience (M = 5.69, SD = 0.42) compared to the clinical experience (M = 5.13, SD = 0.76).

Though it is uncertain if traditional clinical models adequately prepare nursing students (Jayasekara et al., 2018; Leighton et al., 2021), findings from the current study indicate that students do value clinical experiences. Students also valued simulation experiences. Findings from the literature indicate that the value that students put on simulation experiences varies widely based on learner attributes, such as how the individual student perceives making mistakes and their willingness to role-play and connect with other members of their group (Lesa et al., 2021). Some of these factors likely contributed to the lower value score in simulation experiences compared to clinical experiences.

There are several factors that likely contributed to the higher effort scores in the simulation experience. Researchers have found that simulation experiences are more concentrated, higher cognitive level activities than clinical experiences (Sullivan et al., 2019). In simulation-based learning experiences, students may also have to expend more effort because

they must be more self-reliant in making decisions as a nurse would, instead of relying on their instructor or following the nurse (Miles, 2018). There are also several factors in simulation experiences that cause learners to have increased cognitive load including fidelity, time pressure, dual-tasking, interruptions, task complexity, distractions, and a mismatch of the learning to the learner ability (Rogers & Franklin, 2021). Cognitive load refers to the capacity of the working memory (Kuldas et al., 2015) and it is suggested that an increase in cognitive load can negatively impact learning outcomes (Fraser et al., 2015; Josephsen, 2015). It is proposed that many of the factors identified that increase cognitive load may also increase effort in simulation experiences. Working to improve some of these factors may improve student engagement scores in simulation experiences.

Clinical Post-Conference and Simulation Debriefing

The findings of the current study indicated that students had positive engagement in clinical post-conference (M = 0.20, SD = 0.66). This is because they have to put less effort into the clinical post-conference (M = 5.09, SD = 0.76), but they also value (M = 5.29, SD = 0.58) this learning experience. There has been question related to the relevance and value of the clinical post-conference (Vezeau, 2016) and it has not been well explored in the literature. The current study offers some insight into the value students place on the clinical post-conference.

There were several factors found in the review of the literature that indicated that students may be more engaged in simulation debriefing compared to the clinical post-conference. Findings suggested that student involvement was low in clinical post-conference, students were tired after the clinical day, and discussion was focused on lower-level recall of information compared to the simulation debriefing (Hsu, 2007; Megel et al., 2013; Sullivan et al., 2019;

Vezeau, 2016). Despite these factors, the current study found that, in the frame of social exchange, the clinical post-conference was the only learning experience assessed that had positive engagement. This suggests that there is relevance to the learning experience for students.

Though not a significant difference, student engagement scores in clinical post-conference (M = 0.20, SD = 0.66) were higher than in simulation debriefing (M = -0.04, SD = 0.38). Students valued the debriefing (M = 5.30, SD = 0.94) slightly more than the clinical post-conference, but they also had to put more effort (M = 5.34, SD = 0.91) into the learning experience. Findings from the literature support that students value having a voice in simulation debriefing (Stephen et al., 2020). Waznonis (2015) found that engaging students in simulation debriefing was identified by faculty as a challenge. Similarly, findings from the current study indicated that there are changes needed in simulation debriefing to improve student engagement.

Instructor Contribution

In the traditional clinical experience, students rely on the guidance of the nursing staff and their instructor to provide safe and accurate patient care and in some instances are just observing (Miles, 2018). In the simulation experience, students are more self-reliant, actively performing in the role of the nurse (Miles, 2018) and the instructor facilitates learning through guided experiences. In clinical post-conference and debriefing, instructors give students feedback and facilitate discussion and reflection. Because of the nature of the learning experiences, it was expected that the instructor contribution would be high. As expected, students in the current study rated the instructor contribution high in each of the learning experiences that were assessed on the ASPECT (M = 5.44 – 5.66) and students rated the instructor highly in simulation debriefing on the DASH-SV-Short© (M = 37.95, SD = 4.72).

It was hypothesized, in the frame of social exchange, that by having power over students, the instructor would influence student behavior of engagement. However, there was no significant relation between the instructor contribution and the student engagement score on the ASPECT for the clinical experience ($r = -0.08$, $p = 0.485$), clinical post-conference ($r = 0.125$, $p = 0.319$), or simulation debriefing ($r = 0.14$, $p = 0.436$). There was only a small positive relation between student engagement and the instructor contribution in the simulation experience from the ASPECT ($r = 0.38$, $p = 0.017$) and to simulation debriefing on the DASH- SV-Short© ($r = 0.38$, $p = 0.025$).

These nonexistent or small relations are likely due to the fact that in each learning experience, the engagement score was low, but the instructor contribution score was high. So, although the students perceived that the instructor was highly contributing, this did not strongly relate to their engagement in the learning experience. The high ratings that students gave on the instructor contribution scale revealed that students recognize how much nurse faculty contribute to the different learning experiences used in clinical education. Nurse educators not only have common faculty responsibilities, such as classroom teaching and advising, they are also responsible for maintaining clinical expertise to teach students in clinical settings (AACN, 2005).

Academic Burnout

Nursing students that participated in the current study were overall academically disengaged ($M = 2.19$, $SD = 0.46$) and exhausted ($M = 2.91$, $SD = 0.44$), and therefore were experiencing academic burnout ($M = 5.16$, $SD = 0.76$). When assessing engagement specifically in the learning experiences used in nursing clinical education, students were minimally engaged or mildly disengaged. There was no significant correlation found between academic burnout and

the students' engagement in the learning experiences that were assessed in this study. This is likely due to the fact that students were more engaged in the learning experiences than was expected for their level of academic burnout. In the frame of social exchange, academic burnout was expected to influence the value and effort that students put into clinical education learning experiences, and thus influence their engagement, so these findings were unexpected.

Researchers have found that as nursing students progress in their program that they have higher levels of burnout (Ayaz-Alkaya et al., 2018; Rudman & Gustavsson, 2012) but also have higher levels of personal accomplishment, which could offset the burnout that they experience (Deary et al., 2003; Michalec et al., 2013). Additionally, it has been suggested that caring for others and gaining a better understanding of their role in clinical experiences may serve as protective features from academic burnout for nursing students (Michalec et al., 2013). Despite these protective features, the nursing students in this study were still experiencing academic burnout.

Symptoms of academic burnout take time to diminish and will likely persist as students transition into the workplace (Reis et al., 2015). The problem of burnout, depression, and other mental disorders among health professionals has reached a crisis level (Dzau et al., 2018). Addressing burnout before students enter the workforce may help to reduce burnout in practicing nurses (Wei et al., 2021).

Study Limitations

The sampling procedure that was used, which lead to elimination of the some of the surveys and an unequal number of participants in the groups in the final sample, was likely the greatest limitation of this study. The study would have been strengthened if identifiable data

would have been collected and scores could have been matched to allowed for control of variables that may have affected the results. Despite the elimination of surveys, post-hoc power analysis from SPSS (IBM Corp., n.d.) indicated that the sample size was adequate for the analysis. Additionally, the convenience sample, though adequately representative of the nursing student population by age and gender, was lacking in racial or ethnic diversity in comparison to the nursing student population. A more diverse student sample may reveal different results.

Another limitation was that the activities that students participated in during the clinical experiences and clinical post-conference were variable and these specific activities were not assessed in any way in this study. The simulation experience and simulation debriefing are more standardized, but the variability in the clinical experience and clinical post-conference may have affected how students rated the value and effort, which may have affected the engagement score and the findings.

In this study, student engagement in the learning experiences used in clinical education was only examined at one point in time, which presents another limitation. Student engagement in clinical education may vary over time and over the course of study. Finally, the use of self-report surveys used in the study was a limitation of the study, as it can pose a threat to the internal validity. Responses to the surveys relied on honest and accurate responses to the items by the students. These study limitations should be considered when interpreting the findings.

Implications for Nursing

This study was conducted to gain a better understanding of nursing student engagement in clinical education. Understanding student engagement is important because it is linked to positive learning outcomes (Fuller et al., 2018; Popkess & McDaniel, 2011; Reschly &

Christenson, 2012) and can help educators to identify problem areas in learning experiences, so that strategies for improvement can be developed (Wiggins et al., 2017). Maximizing student engagement in clinical education will help to improve learning outcomes and better prepare nursing students for practice.

Student Engagement

A key finding from the study was that nursing students were only positively engaged in the clinical post-conference and were negatively engaged in clinical experiences, simulation experiences, and simulation debriefing. Additionally, the simulation experience was significantly less engaging than clinical experiences for nursing students. Overall, students valued the learning experiences, so the engagement scores were mainly attributed to the high level of effort that students put into the learning experiences compared to the amount of value they placed on the activity. This was especially true in the simulation learning experience.

The cognitive effort that a student is willing to expend is determined by the perceived value of the task as well as the probability that they will perform well on the task. Some amount of cognitive effort is important for learning. Learners can and will exert cognitive effort, based on the payoff or reward. Cognitive effort can be optimized through instructional design. For example, by matching the difficulty level of a learning task to the level of expertise of the learner. Unchallenging tasks do not require learners to exert cognitive effort and learners will become uninterested in the task. On the other hand, for low expertise learners, tasks that are too challenging become complicated and frustrating (Kuldas et al., 2014).

In clinical experiences, it can be challenging to match the learning experience to the level of the learner because the experience the students get are variable. However, in a clinical

experience, if a student feels as though the task is above their level, they can ask for help from a nurse or their instructor. In simulation experiences, the environment is more controlled, and the tasks can be better fit to the expertise of the learner, but students are on their own or working with peers performing in the role of the nurse (Miles, 2018), which is beyond their level of expertise and may require more cognitive effort on their part. For nurse educators, this means considering the level of the learner when designing learning experiences for students and being willing to help students work through tasks that might be too challenging.

Instructor Contribution

Another finding from the study that has implications for nursing education was that nursing instructors' contribution to the learning experiences used in clinical education was high. Although this did not correlate with student engagement, it speaks to the contribution that nursing instructors make to teaching students in the learning experiences that were assessed.

When thinking about the instructor contribution in the frame of social exchange, a reward for the instructor is that the students are engaged in the learning experience and are growing into their professional role. A cost to the clinical instructor is the large amount of effort that they put into teaching nursing students. If the cost for the instructor (effort) outweighs the reward (student engagement), instructor engagement or satisfaction may diminish over time.

Clinical nursing instructors have a heavy workload, overseeing groups of eight to ten nursing students, providing each student with the level of instruction and support they need while making sure that the student is providing safe and accurate care to the patient, either real or simulated. Despite this heavy workload, students perceived that the instructor highly contributed to their learning experiences. Workload is one factor that has been identified as a contributing

factor to the nursing shortage and attrition in nursing education (AACN, 2005). Academic administrators need to acknowledge the complexity of the nurse faculty role and take measures to improve their workload to retain them as effective educators.

Burnout

The final important finding that will be discussed has implications for both nursing education and nursing practice. Though burnout was not found to predict student engagement, it was found that nursing students are experiencing academic burnout, with high levels of disengagement and exhaustion. Burnout increases over the course of study (Ayaz-Alkaya et al., 2018; Rudman & Gustavsson, 2012) and, though close to the end of their program, these students had one to two semesters of prelicensure education left and were already experiencing a high level of academic burnout.

It is suggested that academic burnout takes time to subside and will carry over into the workplace (Reis et al., 2015). Robins et al. (2018) found that burnout was higher in the academic setting and predicted work exhaustion and cynicism. Therefore, early intervention to reduce burnout in the academic setting will help students as they progress through their program of study and will also help prevent burnout as they transition into the workforce (Robins et al., 2018, Wei et al., 2021). Preventing burnout in professional nurses is important because findings indicate that of nurses who left employment in 2018, 31.5% left due to burnout (Shah et al., 2020).

There are certain students who are at higher risk for burnout. Personal factors, demographics, as well as psychological well-being influence student burnout (Wei et al., 2021). For example, students with financial or family concerns, early childhood adverse experiences, or

poor self-esteem are all at higher risk for burnout (Wei et al., 2021). Nurse educators need to be mindful of these factors and the prevalence of academic burnout in order to help reduce the incidence. There are no specific guidelines for implementing interventions for burnout but there are some recommendations, such as increasing support to students by faculty, mentoring programs, student resilience building, and stress reduction activities (Robins et al., 2018; Wei et al., 2021). Moving forward, it is going to be vital for nurse educators to have a heightened awareness of the impact of academic burnout and explore the effectiveness of various interventions that may reduce academic burnout.

Implications for Future Research

Based on the findings of this study, there are several different areas for future research related to student engagement that were identified. In the frame of social exchange theory, the key to engagement is the balance of value and effort. With the lowest engagement score, the simulation experience was identified as a priority area for future research. Of the learning experiences assessed, students reported the lowest value score and that they put in the highest level of effort in the simulation experience. The high level of effort may be tangential to student engagement in their learning experience.

Optimizing student engagement in simulation experiences may be achieved through changes in the simulation design to reduce cognitive effort. Students may be feeling unsure or anxious going into the simulation experience. Are these emotions impacting the value and effort they put on the learning experience? In clinical experiences, students had significantly higher engagement than in the simulation experience. In the clinical experience, students can ask for help from the nurse or their instructor if they are feeling unsure. Would adding a design feature

that gives students similar assistance in the simulation experience improve their engagement? For example, would offering students participating in the simulation experience a “lifeline” so that they can ask a question if they are feeling overwhelmed or unsure improve their engagement? If students know they have this resource in simulation experiences, the value of the learning may increase in that the student may feel it is more feasible to be successful. It may additionally reduce their effort by making them feel like they have help if they need it. Future research should examine how various design features, such as the “lifeline,” impact the relation of the value and effort with a goal to produce an engagement score that is at an optimal level.

Neither the instructor contribution nor burnout were found to have a relation with student engagement in the learning experiences that were assessed but there are likely factors that do influence engagement. One factor that may influence student engagement and should be explored further is the complexity of a learning experience for the level of the student. The specific tasks or activities that students were expected to complete in the learning experiences were not explored in this study. As noted, activities in which students participate during the learning experiences, particularly in the clinical post-conference and the clinical experience, are variable. The activities or tasks may have been too easy for students or too hard. If the learning tasks were too easy and the student did not have to put in too much effort, did they value the learning experience as much? On the other hand, if a task was too hard, maybe they valued the task, but did they have to put in too much effort? It is suggested that throwing off the balance of value and effort by having tasks that are too easy or too hard would yield a lower engagement score. This leads to the question of how leveling the tasks or activities used in the learning experiences to the learner influence student engagement?

Another factor that could influence student engagement in clinical education are social factors such as age, gender, race, or group dynamic (Lesa et al., 2021; Wiggins et al., 2017). A sense of belonging is important. The mix of the group or being the only member of a certain demographic may influence the student experience and affect their engagement (Wiggins et al., 2017). Lesa et al. (2021) suggested that the peer group dynamic influences the value that students put on simulation experiences. By influencing the value, the group dynamic, in turn, may impact student engagement. Social exchange theory proposes that within the group there are those who can offer rewards to others, conformers, and nonconformers (Homans, 1974). There is collaboration between conformers; however, there may be competition in the group, which can produce some hostility between members of the group and influence behavior (Homans, 1974). This further supports exploration of the group dynamic on student engagement.

Finally, individual factors such as interest in the learning experience or topic of study may be associated with student engagement. It was suggested that higher levels of personal accomplishment, caring for others, and gaining a better understanding of the future role may serve as protection from burnout in nursing students (Deary et al., 2003; Michalec et al., 2013). In the current study, students were still experiencing burnout; however, they were engaging in clinical education at a level higher than expected in relation to their level of burnout. Although these factors did not protect students from burnout, perhaps they keep students engaged to some degree in their learning experiences. Further exploration of these various influences can help nurse educators better understand ways to improve student engagement and learning.

In this study, student engagement was explored at one point in time in only one type of clinical experience and one simulation experience. Though students spend a large portion of their

clinical time caring for adult patients in the acute care setting, as was assessed in this study, there are several different types of clinical experiences that are used in the nursing curriculum. For example, students care for patients with different demographics, such as pediatrics and obstetrics and in different settings such as long-term care and community settings. Future research should explore student engagement in clinical education over the course of study as well as in different settings to assess the different learning experiences that are used to identify areas in need of improvement.

Conclusion

Clinical education is an important part of the learning that takes place in nursing education with the aim of bridging the gap between theory and practice and better preparing students for their professional role. Students often are not prepared for this transition, so continuing to evaluate and improve teaching methods is a priority. Gaining a better understanding of student engagement is important because it allows educators to evaluate the strategies being used and it is linked to key learning outcomes (Wiggins et al., 2017).

In the frame of social exchange theory, balancing the value with the effort that students put into learning experiences is the key to optimizing their engagement. Students should be putting some amount of effort into their learning experiences but if they are putting in too much effort, this tips the balance and influences their engagement in learning. This study contributes scientific evidence about the level of student engagement in nursing clinical education as well as the level of nursing student burnout. The findings indicated that nursing students are not engaged in their clinical education learning experiences and thus there are needed improvements. Nurse

educators must work to optimize these learning experiences, as they are a critical part of the preparation of nurses for practice.

APPENDIX A

LETTERS SEEKING SUPPORT AND FOR RECRUITMENT OF PARTICIPANTS

Letter of Support sent to the Director of the School of Nursing

Dear Director:

I am writing to obtain your support for a research study that I plan to implement to inform the engagement of nursing students in clinical education. Specifically, I aim to examine student engagement in the clinical experience, clinical post-conference, simulation experience, and simulation debriefing. I have submitted my proposal to the Institutional Review Board (IRB) here at the University, as well as at Loyola University Chicago and the study has been approved. With your approval, I will contact the faculty for the courses to seek their support for the study, as well. To implement the study, I will be asking the nursing students in (course name) and (course name) to complete a short 10-to-15-minute survey about their clinical experience, clinical post-conference, simulation experience, or simulation debriefing. If you would like to see my proposal or have further questions, please reach out to me directly. I greatly appreciate your consideration in this matter.

Sincerely,

Karrie E. Osborne, MS, RN

Letter of Support sent to Course Faculty

Dear Faculty Member:

I am writing to obtain your support for a research study that I plan to implement to inform the engagement of nursing students in clinical education. Specifically, I aim to examine student engagement in the clinical experience, clinical post-conference, simulation experience, and simulation debriefing. I have submitted my proposal to the Institutional Review Board (IRB) here at the University, as well as at Loyola University Chicago and the study has been approved. I have also consulted with the Director of the School of Nursing and have gained her support. To implement the study, I will be asking the nursing students in your course to complete a short 10-to-15-minute survey about their clinical experience, clinical post-conference, simulation experience, or simulation debriefing. I would like to attend your class on Monday to inform the students of the study and then I will come to distribute the surveys during your clinical rotations that week. If you would like to see my proposal or have further questions, please reach out to me directly. I greatly appreciate your consideration in this matter.

Sincerely,

Karrie E. Osborne, MS, RN

Script for Recruitment of Participants

My name is Karrie Osborne. I am a Registered Nurse and a nurse educator. I am also a PhD student at Loyola University Chicago and the Director of Clinical Simulation here at the University. I am collecting data for the completion of my dissertation at Loyola University Chicago. My aim is to inform student engagement in nursing clinical education. I will be examining student engagement in the clinical experience, clinical post-conference, simulation experience, and simulation debriefing. I wanted to inform you that I will be at your (clinical activity) this week to administer a survey to assess your engagement. The survey will only take 10-to-15-minutes of your time. Your participation in the survey is voluntary and you will have an opportunity to decline participation before you begin the survey. Your participation in the study does not affect your coursework in any way and the data is deidentified, so no one will know your responses or if you even participate. I greatly appreciate your instructors' willingness to allow me the opportunity to administer the survey and thank you all for your consideration of participation in the study.

Letter to First Semester Junior Students for Recruitment

Dear Nursing Student:

My name is Karrie Osborne. I am a Registered Nurse and a nurse educator. I am also a PhD student at Loyola University Chicago and the Director of Clinical Simulation here at the University. I am collecting data for a research study for the completion of my dissertation at Loyola University Chicago. Findings from this study will help to inform best education practices that can be used in designing clinical experiences for nursing students to optimize learning and improve learning outcomes. I will be examining student engagement in the clinical experience, clinical post-conference, simulation experience, and simulation debriefing. The study has been approved by the Institutional Review Board (IRB) at Loyola University Chicago.

I want to inform you that I will be at your clinical rotation this week to administer a survey to assess your engagement. The survey will only take approximately 15-minutes of your time and you will complete the survey online during your clinical time. Your participation in the survey is voluntary and you will have an opportunity to decline participation before you begin the survey if you wish to do so. Your participation in the study does not affect your coursework in any way: You will not be penalized if you don't participate, and you will not receive extra credit if you do participate. The data are deidentified, so if you choose to participate, no one will know your responses or if you even participate. I greatly appreciate your instructors' willingness to allow me the opportunity to administer the survey and thank you all for your consideration of participation in the study.

Sincerely,

Karrie Osborne, MS, RN

Director of Clinical Simulation

Email: kecope@bsu.edu

Letter to Second Semester Senior Students for Recruitment

Dear Nursing Student:

My name is Karrie Osborne. I am a Registered Nurse and a nurse educator. I am also a PhD student at Loyola University Chicago and the Director of Clinical Simulation here at the University. I am collecting data for a research study for the completion of my dissertation at Loyola University Chicago. Findings from this study will help to inform best education practices that can be used in designing clinical experiences for nursing students to optimize learning and improve learning outcomes. I will be examining student engagement in the clinical experience, clinical post-conference, simulation experience, and simulation debriefing. The study has been approved by the Institutional Review Board (IRB) at Loyola University Chicago.

I want to inform you that I will be at your simulation activity this week to administer a survey to assess your engagement. The survey will only take approximately 15-minutes of your time and you will complete the survey online during your clinical time. Your participation in the survey is voluntary and you will have an opportunity to decline participation before you begin the survey if you wish to do so. Your participation in the study does not affect your coursework in any way: You will not be penalized if you don't participate, and you will not receive extra credit if you do participate. The data are deidentified, so if you choose to participate, no one will know your responses or if you even participate. I greatly appreciate your instructors' willingness to allow me the opportunity to administer the survey and thank you all for your consideration of participation in the study.

Sincerely,

Karrie Osborne, MS, RN

Director of Clinical Simulation

Email: kecope@bsu.edu

APPENDIX B

INSTRUMENTS AND SURVEYS

Assessing Student Perspective of Engagement in Class Tool (ASPECT, Wiggins et al., 2017)

	Survey item
VA1[b]	Explaining the material to my group improved my understanding of it.
VA2	Having the material explained to me by my group members improved my understanding of the material.
VA3	Group discussion during the [topic] activity contributed to my understanding of the course material.
VA4	I had fun during today's [topic] group activity.
VA5	Overall, the other members of my group made valuable contributions during the [topic] activity.
VA6	I would prefer to take a class that includes this [topic] activity over one that does not include today's group activity.
VA7	I am confident in my understanding of the material presented during today's [topic] activity.
VA8	The [topic] activity increased my understanding of the course material.
VA9	The [topic] activity stimulated my interest in the course material.
PE1	I made a valuable contribution to my group today.
PE2	I was focused during today's [topic] activity.
PE3	I worked hard during today's [topic] activity.
IC1	The instructor's enthusiasm made me more interested in the [topic] activity.
IC2	The instructor put a good deal of effort into my learning for today's class.
IC3	The instructor seemed prepared for the [topic] activity.
IC4	The instructor and TAs were available to answer questions during the group activity.

The Oldenburg Burnout Inventory-S (OLBI-S, Reis, 2015)

1. I always find new and interesting aspects in my studies.
2. It happens more and more often that I talk about my studies in a negative way.
3. Lately, I tend to think less about my academic tasks and do them almost mechanically.
4. I find my studies to be a positive challenge.
5. Over time, one can become disconnected from this type of study.
6. Sometimes I feel sickened by my studies.
7. This is the only field of study that I can imagine myself doing.
8. I feel more and more engaged in my studies.
9. There are days when I feel tired before I arrive in class or start studying.
10. After a class or after studying, I tend to need more time than in the past in order to relax and feel better.
11. I can tolerate the pressure of my studies very well.
12. While studying, I often feel emotionally drained.
13. After a class or after studying, I have enough energy for my leisure activities.
14. After a class or after studying, I usually feel worn out and weary.
15. I can usually manage my study-related workload well.
16. When I study, I usually feel energized.

Debriefing Assessment for Simulation in Healthcare (DASH-SV-Short©, Simon et al., 2010)

Debriefing Assessment for Simulation in Healthcare (DASH) Student Version©

Directions: Please summarize your impression of the introduction and debriefing in this simulation-based exercise. Use the following scale to rate each of six "Elements." Each Element comprises specific instructor behaviors, described below. If a listed behavior is impossible to assess (e.g., how the instructor(s) handled upset people if no one got upset), don't let that influence your evaluation. The instructor(s) may do some things well and some things not so well within each Element. Do your best to rate the ***overall effectiveness* for the whole Element** guided by your observation of the individual behaviors that define it.

Rating Scale

Rating	1	2	3	4	5	6	7
Descriptor	**Extremely Ineffective / Detrimental**	Consistently Ineffective / Very Poor	Mostly Ineffective / Poor	Somewhat Effective / Average	Mostly Effective / Good	Consistently Effective / Very Good	**Extremely Effective / Outstanding**

Element 1 assesses the introduction at the beginning of a simulation-based exercise.

Skip this element if you did not participate in the introduction.
If there was no introduction and you felt one was needed to orient you, your rating should reflect this.

Element 1 **The instructor set the stage for an engaging learning experience.**	**Overall Rating Element 1** _____

- The instructor introduced him/herself, described the simulation environment, what would be expected during the activity, and introduced the learning objectives.
- The instructor explained the strengths and weaknesses of the simulation and what I could do to get the most out of simulated clinical experiences.
- The instructor attended to logistical details as necessary such as toilet location, food availability, schedule.
- The instructor made me feel stimulated to share my thoughts and questions about the upcoming simulation and debriefing and reassured me that I wouldn't be shamed or humiliated in the process.

Elements 2 through 6 assess a debriefing.

Element 2 **The instructor maintained an engaging context for learning.**	**Overall Rating Element 2** _____

- The instructor clarified the purpose of the debriefing, what was expected of me, and the instructor's role in the debriefing.
- The instructor acknowledged concerns about realism and helped me learn even though the case(s) were simulated.
- I felt that the instructor respected participants.
- The focus was on learning and not on making people feel bad about making mistakes.
- Participants could share thoughts and emotions without fear of being shamed or humiliated.

(Continued to next page)

Element 3 **The instructor structured the debriefing in an organized way.**	**Overall Rating Element 3** _____

- The conversation progressed logically rather than jumping around from point to point.
- Near the beginning of the debriefing, I was encouraged to share my genuine reactions to the case(s) and the instructor seemed to take my remarks seriously.
- In the middle, the instructor helped me analyze actions and thought processes as we reviewed the case(s).
- At the end of the debriefing, there was a summary phase where the instructor helped tie observations together and relate the case(s) to ways I can improve my future clinical practice.

Element 4 **The instructor provoked in-depth discussions that led me to reflect on my performance.**	**Overall Rating Element 4** _____

- The instructor used concrete examples—not just abstract or generalized comments—to get me to think about my performance.
- The instructor's point of view was clear; I didn't have to guess what the instructor was thinking.
- The instructor listened and made people feel heard by trying to include everyone, paraphrasing, and using non verbal actions like eye contact and nodding, etc.
- The instructor used video or recorded data to support analysis and learning.
- If someone got upset during the debriefing, the instructor was respectful and constructive in trying to help them deal with it.

Element 5 **The instructor identified what I did well or poorly – and why.**	**Overall Rating Element 5** _____

- I received concrete feedback on my performance or that of my team based on the instructor's honest and accurate view.
- The instructor helped explore what I was thinking or trying to accomplish at key moments.

Element 6 **The instructor helped me see how to improve or how to sustain good performance**	**Overall Rating Element 6** _____

- The instructor helped me learn how to improve weak areas or how to repeat good performance.
- The instructor was knowledgeable and used that knowledge to help me see how to perform well in the future.
- The instructor made sure we covered important topics.

Consent Statement for Each Qualtrics® Survey

Welcome to the research study!

I am interested in understanding student engagement in clinical and simulation experiences as well as burnout in nursing education. Please read the instructions with each set of questions and answer accordingly. Be assured that your responses will be kept completely confidential.

The survey should take you about 15 minutes to complete. Your participation in this research is voluntary. You have the right to withdraw at any point during the study, for any reason, and without any prejudice. Choosing to participate or not to participate will have no impact on your standing within the School of Nursing or the University. This study was approved by the Institutional Review Board at Loyola University Chicago (LU#215215).

If you would like to contact the Principal Investigator in the study to discuss this research, please e-mail Karrie Osborne, MS, RN at kecope@bsu.edu.

By clicking the button below, you acknowledge that your participation in the study is voluntary, you are 18 years of age, and that you are aware that you may choose to terminate your participation in the study at any time and for any reason.

Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

I consent to participate in the study.

I do not consent and I do not wish to participate.

I am repeating this course and am not eligible to participate in the study.

*The term “clinical” was changed to “clinical post-conference,” “simulation,” or “simulation debriefing” to reflect the experience that the student was assessing.

Demographic Data for Each Qualtrics® Survey

Age:

What is your gender?

- Male
- Female
- Other/Non-binary

Ethnicity (select all that apply):

- Caucasian
- African American
- Hispanic
- Asian or Pacific Islander
- Middle Eastern
- Other

If you selected "Other" above, please state your ethnicity.

<< >>

Qualtrics® Survey for Students Participating in Clinical Experiences

Thinking about your clinical experience today, please rate your agreement with each statement on a 0-6 scale from strongly disagree to strongly agree.
"Group" refers to all the members of your clinical group, including instructors.
"Clinical activity" refers to your clinical experiences for the day.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
Explaining the material to my group improved my understanding of it.	O	O	O	O	O	O
Having the material explained to me by group members improved my understanding of the material.	O	O	O	O	O	O
Group discussion during the clinical activity contributed to my understanding of the course material.	O	O	O	O	O	O
I had fun today during today's clinical group activity	O	O	O	O	O	O
Overall, the other members of my group made valuable contributions during the clinical activity.	O	O	O	O	O	O
I would prefer to take a class that includes this clinical activity over one that does not include today's clinical group activity.	O	O	O	O	O	O
I am confident in my understanding of the material presented during today's clinical activity.	O	O	O	O	O	O
The clinical activity increased my understanding of course material.	O	O	O	O	O	O
The clinical activity stimulated my interest in the course material.	O	O	O	O	O	O

<< >>

(Continued to the next page)

Thinking about your clinical experience today, please rate your agreement with each statement on a 0-6 scale from strongly disagree to strongly agree.
"Group" refers to all the members of your clinical group, including instructors.
"Clinical activity" refers to your clinical experiences for the day.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
I made a valuable contribution to my group today.	O	O	O	O	O	O
I was focused during today's clinical activity.	O	O	O	O	O	O
I worked hard during today's clinical activity.	O	O	O	O	O	O

<< >>

Thinking about your clinical experience today, please rate your agreement with each statement on a 0-6 scale from strongly disagree to strongly agree.
"Clinical activity" refers to your clinical experiences for the day.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
The instructor's enthusiasm made me more interested in the clinical activity.	O	O	O	O	O	O
The instructor put a good deal of effort into my learning for today's class.	O	O	O	O	O	O
The instructor seemed prepared for the clinical activity.	O	O	O	O	O	O
The instructor was available to answer questions during the group activity.	O	O	O	O	O	O

<< >>

Thinking about your experiences and feelings in your current program of study, please rate your agreement with each statement on a 0-4 scale from strongly agree to strongly disagree.

	Strongly Agree	Agree	Disagree	Strongly Disagree
I always find new and interesting aspects in my studies.	○	○	○	○
It happens more and more often that I talk about my studies in a negative way.	○	○	○	○
Lately, I tend to think less about my academic tasks and do them almost mechanically.	○	○	○	○
I find my studies to be a positive challenge.	○	○	○	○
Over time, one can become disconnected from this type of study.	○	○	○	○
Sometimes I feel sickened by my studies.	○	○	○	○
This is the only field of study that I can imagine myself doing.	○	○	○	○
I feel more and more engaged in my studies.	○	○	○	○
There are days when I feel tired before I arrive in class or start studying.	○	○	○	○
After a class or after studying, I tend to need more time than in the past in order to relax and feel better.	○	○	○	○
I can tolerate the pressure of my studies very well.	○	○	○	○
While studying, I often feel emotionally drained.	○	○	○	○
After a class or after studying, I have enough energy for my leisure activities.	○	○	○	○
After a class or after studying, I usually feel worn out and weary.	○	○	○	○
I can usually manage my study-related workload well.	○	○	○	○
When I study, I usually feel energized.	○	○	○	○

<< >>

Qualtrics® Survey for Students Participating in Clinical Post-Conference

Thinking about your clinical post-conference today, please rate your agreement with each statement on a 0-6 scale from strongly disagree to strongly agree.
"Group" refers to all the members of your clinical group, including instructors.
"Clinical post-conference activity" refers to all activities during post-conference.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
Explaining the material to my group improved my understanding of it.	O	O	O	O	O	O
Having the material explained to me by group members improved my understanding of the material.	O	O	O	O	O	O
Group discussion during the clinical post-conference activity contributed to my understanding of the course material.	O	O	O	O	O	O
I had fun today during today's clinical post-conference group activity	O	O	O	O	O	O
Overall, the other members of my group made valuable contributions during the clinical post-conference activity.	O	O	O	O	O	O
I would prefer to take a class that includes this clinical post-conference activity over one that does not include today's group activity.	O	O	O	O	O	O
I am confident in my understanding of the material presented during today's clinical post-conference activity.	O	O	O	O	O	O
The clinical post-conference activity increased my understanding of course material.	O	O	O	O	O	O
The clinical post-conference activity stimulated my interest in the course material.	O	O	O	O	O	O

<< >>

(Continued to the Next Page)

Thinking about your clinical post-conference today, please rate your agreement with each statement on a 0-6 scale from strongly disagree to strongly agree.
"Group" refers to all the members of your clinical group, including instructors.
"Clinical post-conference activity" refers to all activities during post-conference.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
I made a valuable contribution to my group today.	O	O	O	O	O	O
I was focused during today's clinical post-conference activity.	O	O	O	O	O	O
I worked hard during today's clinical post-conference activity.	O	O	O	O	O	O

<< >>

Thinking about your clinical post-conference today, please rate your agreement with each statement on a 0-6 scale from strongly disagree to strongly agree.
"Clinical post-conference activity" refers to all activities during post-conference.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
The instructor's enthusiasm made me more interested in the clinical post-conference activity.	O	O	O	O	O	O
The instructor put a good deal of effort into my learning for today's class.	O	O	O	O	O	O
The instructor seemed prepared for the clinical post-conference activity.	O	O	O	O	O	O
The instructor was available to answer questions during the group activity.	O	O	O	O	O	O

<< >>

(Continued to the Next Page)

Thinking about your experiences and feelings in your current program of study, please rate your agreement with each statement on a 0-4 scale from strongly agree to strongly disagree.

	Strongly Agree	Agree	Disagree	Strongly Disagree
I always find new and interesting aspects in my studies.	○	○	○	○
It happens more and more often that I talk about my studies in a negative way.	○	○	○	○
Lately, I tend to think less about my academic tasks and do them almost mechanically.	○	○	○	○
I find my studies to be a positive challenge.	○	○	○	○
Over time, one can become disconnected from this type of study.	○	○	○	○
Sometimes I feel sickened by my studies.	○	○	○	○
This is the only field of study that I can imagine myself doing.	○	○	○	○
I feel more and more engaged in my studies.	○	○	○	○
There are days when I feel tired before I arrive in class or start studying.	○	○	○	○
After a class or after studying, I tend to need more time than in the past in order to relax and feel better.	○	○	○	○
I can tolerate the pressure of my studies very well.	○	○	○	○
While studying, I often feel emotionally drained.	○	○	○	○
After a class or after studying, I have enough energy for my leisure activities.	○	○	○	○
After a class or after studying, I usually feel worn out and weary.	○	○	○	○
I can usually manage my study-related workload well.	○	○	○	○
When I study, I usually feel energized.	○	○	○	○

<< >>

Qualtrics® Survey for Students Participating in Simulation Experiences

Thinking about your simulation experience today, please rate your agreement with each statement on a 0-6 scale from strongly disagree to strongly agree.
"Group" refers to all the members of your clinical group, including instructors.
"Simulation activity" refers to your preparation and participation in the simulation scenario.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
Explaining the material to my group improved my understanding of it.	O	O	O	O	O	O
Having the material explained to me by group members improved my understanding of the material.	O	O	O	O	O	O
Group discussion during the simulation activity contributed to my understanding of the course material.	O	O	O	O	O	O
I had fun today during today's simulation group activity	O	O	O	O	O	O
Overall, the other members of my group made valuable contributions during the simulation activity.	O	O	O	O	O	O
I would prefer to take a class that includes this simulation activity over one that does not include today's group activity.	O	O	O	O	O	O
I am confident in my understanding of the material presented during today's simulation activity.	O	O	O	O	O	O
The simulation activity increased my understanding of course material.	O	O	O	O	O	O
The simulation activity stimulated my interest in the course material.	O	O	O	O	O	O

<< >>

(Continued to the next page.)

Thinking about your simulation experience today, please rate your agreement with each statement on a 0-6 scale from strongly disagree to strongly agree.
"Group" refers to all the members of your clinical group, including instructors.
"Simulation activity" refers to your preparation and participation in the simulation scenario.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
I made a valuable contribution to my group today.	O	O	O	O	O	O
I was focused during today's simulation activity.	O	O	O	O	O	O
I worked hard during today's simulation activity.	O	O	O	O	O	O

<< >>

Thinking about your simulation experience today, please rate your agreement with each statement on a 0-6 scale from strongly disagree to strongly agree.
"Simulation activity" refers to your preparation and participation in the simulation scenario.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
The instructor's enthusiasm made me more interested in the simulation activity.	O	O	O	O	O	O
The instructor put a good deal of effort into my learning for today's class.	O	O	O	O	O	O
The instructor seemed prepared for the simulation activity.	O	O	O	O	O	O
The instructor was available to answer questions during the group activity.	O	O	O	O	O	O

<< >>

(Continued to the next page)

Thinking about your experiences and feelings in your current program of study, please rate your agreement with each statement on a 0-4 scale from strongly agree to strongly disagree.

	Strongly Agree	Agree	Disagree	Strongly Disagree
I always find new and interesting aspects in my studies.	○	○	○	○
It happens more and more often that I talk about my studies in a negative way.	○	○	○	○
Lately, I tend to think less about my academic tasks and do them almost mechanically.	○	○	○	○
I find my studies to be a positive challenge.	○	○	○	○
Over time, one can become disconnected from this type of study.	○	○	○	○
Sometimes I feel sickened by my studies.	○	○	○	○
This is the only field of study that I can imagine myself doing.	○	○	○	○
I feel more and more engaged in my studies.	○	○	○	○
There are days when I feel tired before I arrive in class or start studying.	○	○	○	○
After a class or after studying, I tend to need more time than in the past in order to relax and feel better.	○	○	○	○
I can tolerate the pressure of my studies very well.	○	○	○	○
While studying, I often feel emotionally drained.	○	○	○	○
After a class or after studying, I have enough energy for my leisure activities.	○	○	○	○
After a class or after studying, I usually feel worn out and weary.	○	○	○	○
I can usually manage my study-related workload well.	○	○	○	○
When I study, I usually feel energized.	○	○	○	○

<< >>

Qualtrics® Survey for Students Participating in Simulation Debriefing

Thinking about your simulation debriefing today, please rate your agreement with each statement on a 0-6 scale from strongly disagree to strongly agree.
"Group" refers to all the members of your clinical group, including instructors.
"Simulation debriefing activity" refers to discussion and activities occurring after participating in the simulation.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
Explaining the material to my group improved my understanding of it.	O	O	O	O	O	O
Having the material explained to me by group members improved my understanding of the material.	O	O	O	O	O	O
Group discussion during the simulation debriefing activity contributed to my understanding of the course material.	O	O	O	O	O	O
I had fun today during today's simulation debriefing group activity	O	O	O	O	O	O
Overall, the other members of my group made valuable contributions during the simulation debriefing activity.	O	O	O	O	O	O
I would prefer to take a class that includes this simulation debriefing activity over one that does not include today's group activity.	O	O	O	O	O	O
I am confident in my understanding of the material presented during today's simulation debriefing activity.	O	O	O	O	O	O
The simulation debriefing activity increased my understanding of course material.	O	O	O	O	O	O
The simulation debriefing activity stimulated my interest in the course material.	O	O	O	O	O	O

<< >>

(Continued to the next page)

Thinking about your simulation debriefing today, please rate your agreement with each statement on a 0-6 scale from strongly disagree to strongly agree.
"Group" refers to all the members of your clinical group, including instructors.
"Simulation debriefing activity" refers to discussion and activities occurring after participating in the simulation.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
I made a valuable contribution to my group today.	O	O	O	O	O	O
I was focused during today's simulation debriefing activity.	O	O	O	O	O	O
I worked hard during today's simulation debriefing activity.	O	O	O	O	O	O

<< >>

Thinking about your simulation debriefing today, please rate your agreement with each statement on a 0-6 scale from strongly disagree to strongly agree.
"Simulation debriefing activity" refers to discussion and activities occurring after participating in the simulation.

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
The instructor's enthusiasm made me more interested in the simulation debriefing activity.	O	O	O	O	O	O
The instructor put a good deal of effort into my learning for today's class.	O	O	O	O	O	O
The instructor seemed prepared for the simulation debriefing activity.	O	O	O	O	O	O
The instructor was available to answer questions during the group activity.	O	O	O	O	O	O

<< >>

(Continued to the next page)

Please summarize your impression of the introduction and debriefing in this simulation-based exercise. Use the scale to rate each of six "Elements." Each Element comprises specific instructor behaviors, described below. If a listed behavior is impossible to assess (e.g., how the instructor(s) handled upset people if no one got upset), don't let that influence your evaluation. The instructor(s) may do some things well and some things not so well within each Element. Do your best to rate the overall effectiveness for the whole Element guided by your observation of the individual behaviors that define it.

Element 1: The instructor set the stage for an engaging learning experience.
· The instructor introduced him/herself, described the simulation environment, what would be expected during the activity, and introduced the learning objectives.
· The instructor explained the strengths and weaknesses of the simulation and what I could do to get the most out of simulated clinical experiences.
· The instructor attended to logistical details as necessary such as toilet location, food availability, schedule.
· The instructor made me feel stimulated to share my thoughts and questions about the upcoming simulation and debriefing and reassured me that I wouldn't be shamed or humiliated in the process.

	Extremely Ineffective/Detrimental	Consistently Ineffective/Very Poor	Mostly Ineffective/Poor	Somewhat Effective/Average	Mostly Effective/Good	Consistently Effective/Very Good	Extremely Effective/Outstanding
Element 1 Rating: The instructor set the stage for an engaging learning experience.	○	○	○	○	○	○	○

Element 2: The instructor maintained an engaging context for learning.
· The instructor clarified the purpose of the debriefing, what was expected of me, and the instructor's role in the debriefing.
· The instructor acknowledged concerns about realism and helped me learn even though the case(s) were simulated.
· I felt that the instructor respected participants.
· The focus was on learning and not on making people feel bad about making mistakes.
· Participants could share thoughts and emotions without fear of being shamed or humiliated.

	Extremely Ineffective/Detrimental	Consistently Ineffective/Very Poor	Mostly Ineffective/Poor	Somewhat Effective/Average	Mostly Effective/Good	Consistently Effective/Very Good	Extremely Effective/Outstanding
Element 2 Rating: The instructor maintained an engaging context for learning.	○	○	○	○	○	○	○

Element 3: The instructor structured the debriefing in an organized way.
· The conversation progressed logically rather than jumping around from point to point. · Near the beginning of the debriefing, I was encouraged to share my genuine reactions to the case(s) and the instructor seemed to take my remarks seriously.
· In the middle, the instructor helped me analyze actions and thought processes as we reviewed the case(s).
· At the end of the debriefing, there was a summary phase where the instructor helped tie observations together and relate the case(s) to ways I can improve my future clinical practice.

	Extremely Ineffective/Detrimental	Consistently Ineffective/Very Poor	Mostly Ineffective/Poor	Somewhat Effective/Average	Mostly Effective/Good	Consistently Effective/Very Good	Extremely Effective/Outstanding
Element 3 Rating: The instructor structured debriefing in an organized way.	○	○	○	○	○	○	○

(Continued to the next page)

Element 4: The instructor provoked in-depth discussions that led me to reflect on my performance.
· The instructor used concrete examples—not just abstract or generalized comments—to get me to think about my performance.
· The instructor's point of view was clear; I didn't have to guess what the instructor was thinking.
· The instructor listened and made people feel heard by trying to include everyone, paraphrasing, and using non verbal actions like eye contact and nodding, etc. · The instructor used video or recorded data to support analysis and learning.
· If someone got upset during the debriefing, the instructor was respectful and constructive in trying to help them deal with it

	Extremely Ineffective/Detrimental	Consistently Ineffective/Very Poor	Mostly Ineffective/Poor	Somewhat Effective/Average	Mostly Effective/Good	Consistently Effective/Very Good	Extremely Effective/Outstanding
Element 4 Rating: The instructor provoked in-depth discussions that led me to reflect on my performance.	○	○	○	○	○	○	○

Element 5: The instructor identified what I did well or poorly – and why.
· I received concrete feedback on my performance or that of my team based on the instructor's honest and accurate view.
· The instructor helped explore what I was thinking or trying to accomplish at key moments.

	Extremely Ineffective/Detrimental	Consistently Ineffective/Very Poor	Mostly Ineffective/Poor	Somewhat Effective/Average	Mostly Effective/Good	Consistently Effective/Very Good	Extremely Effective/Outstanding
Element 5 Rating: The instructor identified what I did well or poorly – and why.	○	○	○	○	○	○	○

Element 6: The instructor helped me see how to improve or how to sustain good performance.
· The instructor helped me learn how to improve weak areas or how to repeat good performance.
· The instructor was knowledgeable and used that knowledge to help me see how to perform well in the future.
· The instructor made sure we covered important topics.

	Extremely Ineffective/Detrimental	Consistently Ineffective/Very Poor	Mostly Ineffective/Poor	Somewhat Effective/Average	Mostly Effective/Good	Consistently Effective/Very Good	Extremely Effective/Outstanding
Element 6 Rating: The instructor helped me see how to improve or how to sustain good performance.	○	○	○	○	○	○	○

<< >>

(Continued to the next page)

Thinking about your experiences and feelings in your current program of study, please rate your agreement with each statement on a 0-4 scale from strongly agree to strongly disagree.

	Strongly Agree	Agree	Disagree	Strongly Disagree
I always find new and interesting aspects in my studies.	○	○	○	○
It happens more and more often that I talk about my studies in a negative way.	○	○	○	○
Lately, I tend to think less about my academic tasks and do them almost mechanically.	○	○	○	○
I find my studies to be a positive challenge.	○	○	○	○
Over time, one can become disconnected from this type of study.	○	○	○	○
Sometimes I feel sickened by my studies.	○	○	○	○
This is the only field of study that I can imagine myself doing.	○	○	○	○
I feel more and more engaged in my studies.	○	○	○	○
There are days when I feel tired before I arrive in class or start studying.	○	○	○	○
After a class or after studying, I tend to need more time than in the past in order to relax and feel better.	○	○	○	○
I can tolerate the pressure of my studies very well.	○	○	○	○
While studying, I often feel emotionally drained.	○	○	○	○
After a class or after studying, I have enough energy for my leisure activities.	○	○	○	○
After a class or after studying, I usually feel worn out and weary.	○	○	○	○
I can usually manage my study-related workload well.	○	○	○	○
When I study, I usually feel energized.	○	○	○	○

<< >>

APPENDIX C

LETTERS OF SUPPORT AND APPROVAL

Letter of Support from the Program Director to the IRB

August 24, 2021

Institutional Review Board (IRB)
Health and Science Campus
2160 South First Avenue
Maywood, IL 60153

Dear IRB Committee:

This is a letter of support endorsing the research proposal titled "Student Engagement in Clinical and Simulation Experiences in Prelicensure Nursing Education" to be conducted during the Fall Semester 2021 and Spring Semester 2022 at Ball State University School of Nursing by Karrie Osborne for her dissertation. This letter provides approval for the research study to recruit School of Nursing participants from third semester nursing students in NUR 340 Adult Health 2 and fourth semester nursing students in NUR 402 Adult Health 3.

If you have questions, please contact me by email.

Sincerely,

Linda L. Siktberg

Linda L. Siktberg, PhD, RN, ANEF
Professor and Director, School of Nursing
765-285-8718
lsiktber@bsu.edu

IRB Approval Letter

LOYOLA UNIVERSITY CHICAGO
Health Sciences Division
Institutional Review Board for the Protection of Human Subjects
2160 South First Avenue
Maywood, IL 60153

09/14/2021

NOTICE OF IRB EXEMPTION OF A RESEARCH PROJECT

Investigator	**Kostovich, Carol**
LU Number	**215215**
Title	**Student Engagement in Clinical and Simulation Experiences in Pre-licensure Nursing Education**
Date of Review	**09/03/2021**
Reason	**45CFR46.102(e)(1) Category Not Human Subject Resrch**
Comments	**This project consists of activities that do not meet the definition of human subject research according to the 45 CFR 46.102(l). Research means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge. Activities which meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program which is considered research for other purposes. 1. This is a project being conducted at Ball State University and will be implemented as a partial fulfillment of requirements for a PhD at Loyola University Chicago Marcella Niehoff School of Nursing. 2. Should you wish to make modifications that involve changing the type, nature, source (etc.) of the data/materials specified in the current proposal, you MUST request such changes in advance from the Loyola IRB, as this may change the categorization of the proposed research. 3. LUMC is not engaged in this project.**

This project has been determined to be EXEMPT from IRB review.
There are no reporting requirements associated with this project.

The Full Board will review this determination on 09/15/2021.
If the Board disagrees with this action, you will be notified by 09/22/2021.

Cynthia C. Tom, MA, CIP
Director, Human Research Protection Program
Loyola University Chicago Health Sciences Campus

APPENDIX D

DATA COLLECTION POINTS

Activity	Junior Students	Senior Students
Clinical Experience	Tuesday/Thursday clinical groups	
Clinical Post-conference	Wednesday/Friday clinical groups	
Simulation Experience		Tuesday/Thursday clinical groups
Simulation Debriefing		Wednesday/Friday clinical groups

The researcher administered the survey on the clinical experience and simulation experience on Tuesdays and Thursdays and surveys on the clinical post-conference and simulation debriefing on Wednesdays and Fridays.

REFERENCE LIST

Aebersold, M. (2018). Simulation-based learning: No longer a novelty in undergraduate education. *The Online Journal of Issues in Nursing, 23*(2).

Agency for Healthcare Research and Quality (AHRQ). (2019). *Debriefing for clinical learning*. https://psnet.ahrq.gov/primer/debriefing-clinical-learning

Allison, P. D. (2001). *Missing data*. Sage publications.

American Association of Colleges of Nursing (AACN). (2005). *Faculty shortages in baccalaureate and graduate nursing programs: Scope of the problem and strategies for expanding the supply.* https://www.aacnnursing.org/Portals/42/News/White-Papers/facultyshortage-2005.pdf

American Association of Colleges of Nursing (AACN). (2009). *The essentials of baccalaureate education for professional nursing practice: Faculty toolkit.* https://tinyurl.com/5f2phfv6

American Association of Colleges of Nursing (AACN). (2019a). *AACN's vision for academic nursing.* https://www.aacnnursing.org/News-Information/Position-Statements-White-Papers/Vision-for-Nursing-Education

American Association of Colleges of Nursing (AACN). (2019b). *Fact sheet: The impact of education on nursing practice*. https://www.aacnnursing.org/Portals/42/News/Factsheets/Education-Impact-Fact-Sheet.pdf

American Association of Colleges of Nursing (AACN). (2021). *The essentials: Core competencies for professional nursing education.* https://tinyurl.com/3yaccmnj

Andrew, O. C., & Sofian, S. (2012). Individual and work outcomes of employee engagement. *Procedia-Social and Behavioral Sciences, 40*, 498–508.

Astin, A. W. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Development, 24*, 297–308.

Ayaz-Alkaya, S. , Yaman-Sozbir, S., & Bayrak-Kahraman, B. (2018). The effect of nursing internship program on burnout and professional commitment. *Nursing Education Today, 68*, 19–22.

Babenko, O., & Mosewich, A. (2017). In sport and now in medical school: Examining students' well-being and motivations for learning. *International Journal of Medical Education*, *8*, 336–342.

Benner, P., Sutphen, M., Leonard, V., & Day, L. (2010). *Educating nurses: A call for radical transformation.* San Francisco, CA: Jossey-Bass.

Blau, P. M. (1986). *Exchange and power in social life* (2nd edition). Transaction Publishers.

Bradley, C. S., Johnson, B. K. Dreifuerst, K. T., Conde, S. K., & Curry-Lourenco, K. (2019). Regulation of simulation use in united states prelicensure nursing programs. *Clinical Simulation in Nursing, 33,* 17–25.

Brett-Fleegler, M., Rudolph, J., Eppich, W., Monateaux, M., Fleegler, E., Cheng, A., & Simon, R. (2012). Debriefing assessment for simulation in healthcare. *Journal of the Society for Simulation in Healthcare, 7*(5), 288–294.

Breymier, T. L., Rutherford-Hemming, T., Horsley, T. L., Atz, T., Smith, L. G., Badowski, D., & Connor, K. (2015). Substitution of clinical experience with simulation in prelicensure nursing programs: A national survey in the United States. *Clinical Simulation in Nursing, 11*(11), 472–478.

Brown, D. K., Wong, A. H., & Ahmed, R. A. (2018). Evaluation of simulation debriefing methods with interprofessional learning. *Journal of Interprofessional Care, 32*(6), 779–781.

Bryson, C., & Hand, L. (2007). The role of engagement in inspiring teaching and learning. *Innovations in Education and Teaching International, 44*(4), 349–362.

Bureau of Labor Statistics. (2020). *Occupational employment and wage statistics.* https://www.bls.gov/oes/current/oes291141.htm

Callaco, C. M. (2017). Increasing student engagement in higher education. *Journal of Higher Education Theory and Practice, 17*(4), 40–47.

Cant, R. P., & Cooper, S. J. (2017). Use of simulation-based learning in undergraduate nurse education: An umbrella systematic review. *Nurse Education Today, 49,* 63–71.

Canton, J. B., Pelletier, S. R., & Shields, H. M. (2018). Asking what do residents value most: A recent overview of internal medicine residents' learning preferences. *Advances in Medical Education and Practice, 9*, 509–518.

Carini, R. M., Kuh, G. D., & Klein, S. P. (2006). Student engagement and student learning: Testing the linkages. *Research in Higher Education, 47*(1), 1–32.

Center for Educational Innovation. (2021). *Active learning.* University of Minnesota. https://cei.umn.edu/active-learning

Center for Medical Simulation. (2022). *Debriefing assessment for simulation in healthcare (DASH©)*. https://harvardmedsim.org/debriefing-assessment-for-simulation-in-healthcare-dash

Chapman, E. (2003). Alternative approaches to assessing student engagement rates. *Practical Assessment, Research, and Evaluation, 8*(13). https://tinyurl.com/2srupvrb

Chi, M. T. H., & Wylie, R. (2014). The ICAP framework: Linking cognitive engagement to active learning outcomes. *Educational Psychologist, 49*(4), 219–243.

Chickering, A. W., & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *American Association of Higher Education Bulletin, 3*(7), 3–7.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Routledge Academic.

Cook, K. S., & Rice, E. (2006). Social exchange theory. In J. Delamater (Ed.), *Handbook of sociology and social research* (pp. 53–76). Springer.

Crowley, M. A. (2013). *A longitudinal study exploring student nurses' perceptions of the impact of a simulated clinical environment on their clinical learning experience and transfer of learning* (Publication No. U618855) [Doctoral dissertation, Edinburgh Napier University]. ProQuest Dissertations Publishing.

Deary, I. J., Watson, R., & Hogston, R. (2003). A longitudinal cohort study of burnout and attrition in nursing students. *Journal of Advanced Nursing, 43*(1), 71–81.

Demerouti, E., & Bakker, A. B. (2008). The Oldenburg Burnout Inventory: A good alternative to measure burnout and engagement. In J. Halbesleben (Ed.), *Handbook of stress and burnout in health care* (pp. 65–78). Nova Science Publishers.

Dieckmann, P., Gaba, D., & Rall, M. (2007). Deepening the theoretical foundations of patient simulation as social practice. *Simulation in Healthcare, 2*(3), 183–193.

Doolen, J., Mariani, B., Atz, T., Horsley, T. L., O'Rourke, J., McAfee, K., & Cross, C. L. (2016). High-fidelity simulation in undergraduate nursing education: A review of simulation reviews. *Clinical Simulation in Nursing, 12*(7), 290–302.

Dreifuerst, K. T. (2009). The essentials of debriefing in simulation learning: A concept analysis. *Nursing Education Perspectives, 30*(2), 109–114.

D'Souza, M. S., Isac, C., Venkatesaperumal, R., Nairy, K. S., & Amirtharaj, A. (2014). Exploring nursing student engagement in the learning environment for improved learning outcomes. *Clinical Nursing Studies, 2*(1), 1–16.

Dweck, C. S. (1986). Motivational processes affecting learning. *American Journal of Psychology, 41*, 1040–1048.

Dzau, V. J., Kirch, D. G., & Nasca, T. J. (2018). To care is human—Collectively confronting the clinician-burnout crisis. *The New England Journal of Medicine, 378*(4), 312–314.

Eccles J. S., Adler, T. F., Futterman, R., Goff, S. B., Kaczala, C. M., Meece, J. L., & Midgley, C. (1983). Expectancies, values, and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motivation* (pp. 75–146). San Francisco, CA: W. H. Freeman.

Eccles, J. S. (2005). Subjective task value and the Eccles et al. model of achievement-related choices. In A.J. Elliot & C.S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 105–121). The Guilford Press.

Emerson, R. M. (1976). Social exchange theory. *Annual Review of Sociology, 2*, 335–362.

Ezenwaji, I. O., Eseadi, C., Ugwoke, S. C., Vita-Agundu, U. C., Edikpa, E., Okeke, F. C., Nwafor, B. N., Ozioko, A. N., Ebinyasi, J. O., Nwabuko, L. O., Njoku, L. G., & Agu, M. A. (2019). A group-focused rational emotive behavior coaching for management of academic burnout among undergraduate students: Implications for school administrators. *Medicine*, *98*(30), e16352. https://doi.org/gj85t6

Ezeudu, F. O., Attah, F. O., Onah, A. E., Nwangwu, T. L., & Nnadi, E. M. (2020). Intervention for burnout among postgraduate chemistry education students. *Journal of International Medical Research*, *48*(1), 0300060519866279.

Field, A. (2013). *Discovering statistics: Using IBM SPSS statistics* (4th ed.). Sage Publications.

Finn, J. D., & Zimmer, K. S. (2012). Student engagement: What is it? Why does it matter? In S.L. Christenson, A.L. Reschly, & C. Wylie, *Handbook of research on student engagement* (pp. 3–20). Springer Science.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*, 1149–1160.

Fraser, K. L., Ayres, P., & Sweller, J. Cognitive load theory for the design of medical simulations. *Simulation in Healthcare, 10*(5), 295–307.

Fredricks, J. A. (2011). Engagement in school and out-of-school contexts: A multidimensional view of engagement. *Theory Into Practice, 50*(4), 327–335.

Fuller, K. A., Karunaratne, N.S., Naidu, S., Exintaris, B., Short, J.L., Wolcott, M.D., Singleton, S., & White, P.J. (2018). Development of a self-report instrument for measuring in-class student engagement reveals that pretending to engage is a significant unrecognized problem. *PLOS One,* 1–22.

Ghasemi, M. R., Moonaghi, H. K., & Heydari, A. (2020). Strategies for sustaining and enhancing nursing students' engagement in academic and clinical settings: A narrative review. *Korean Journal of Medical Education, 32*(2), 103–117.

Harvey, G. (2015). Connecting theory to practice: Using guided questions to standardized clinical postconference. *Journal of Nursing Education, 54*(11), 655–658.

Hatzenbuhler, N. J., & Klein, J. E. (2019). Educational preparation for clinical practice: Reflections of newly graduated RNs. *Nurse Educator, 44*(2), 93–97.

Hayden, J. K., Smiley, R. A., Alexander, M., Kardong-Edgren, S., & Jeffries, P. R. (2014). The NCSBN national simulation study: A longitudinal, randomized, controlled study replacing clinical hours with simulation in prelicensure nursing education. *Journal of Nursing Regulation, 5*(2), 1–66.

Healey, W. E. (2008). Physical therapist student approaches to learning during clinical education experiences: A qualitative study. *Journal of Physical Therapy Education, 22*(1), 49–58.

Hidi, S., & Renninger, K. A. (2006). The four-phase model of interest development. *Educational Psychology, 41*, 111–127.

Homans, G. C. (1958). Social behavior as exchange. *American Journal of Sociology, 63*(6), 597–606.

Homans, G. C. (1974). *Social behavior: Its elementary forms.* (Rev. ed.). Harcourt.

Howard, S. (2017). *Comparison of satisfaction, self-confidence, and engagement of baccalaureate nursing students using defined observational roles and expectations versus traditional assignments in high fidelity simulation and debriefing.* (Publication No. 10624882) [Doctoral dissertation, William Carey University]. ProQuest Dissertations Publishing.

Hsu, L. L. (2007). Conducting clinical post-conference in clinical teaching: A qualitative study. *Journal of Clinical Nursing, 16,* 1525–1533.

Hudson, K., He, Z., & Carrasco, R. (2019). Nursing student engagement: Researching the journey and its potential impact on transitions to practice. *Preventative Medicine and Community Health, 2*, 1–6.

Hulleman, C. S., Durik, A. M., Schweigert, S. B., & Harackiewicz, J. M. (2008). Task values, achievement goals, and interest: A integrative analysis. *Journal of Educational Psychology, 100*, 398–416.

Hulley, S. B., Cummings, S. R., & Newman, T. B. (2013). Designing cross-sectional and cohort studies. In S.B. Hulley, S.R. Cummings, W.S. Browner, D.G. Grady, & T.B. Newman (Eds.), *Designing clinical research* (4th ed.) (pp. 85–96). Lippincott Williams & Wilkins.

IBM Corp. (n.d.). *IBM SPSS Statistics for Windows* (Version 27.0) [Computer Software]. https://www.ibm.com/support/pages/node/3006603

Igbokwe, U. L., Nwokenna, E. N., Eseadi, C., Ogbonna, C. S., Nnadi, E. M., Ololo, K. O., Enyoghasim, O. M., Otu, O. A., Uma, K. E., Onuora, T. N., Onwube, O., & Ogbuagu, A. R. (2019). Intervention for burnout among English education undergraduates: implications for curriculum innovation. *Medicine*, *98*(26), e16219.

INACSL Standards Committee, Decker, S., Alinier, G., Crawford, S.B., Gordon, R.M., & Wilson, C. (2021a). Healthcare simulation standards of best practice the debriefing process. *Clinical Simulation in Nursing, 58*, 27–32.

INACSL Standards Committee, McDermott, D.S., Ludlow, J., Horsley, E. & Meakim, C. (2021b). Healthcare simulation standards of best practice prebriefing: Preparation and briefing. *Clinical Simulation in Nursing, 58,* 9–13.

INACSL Standards Committee, Molloy, M., Holt, J., Charnetski, M., & Rossler, K. (2021c). Healthcare simulation standards of best practice simulation glossary. *Clinical Simulation in Nursing, 58*, 57–65.

INACSL Standards Committee, Watts, P.I., McDermott, D.S., Alinier, G., Charnetski, M., & Nawathe, P.A. (2021d). Healthcare simulation standards of best practice simulation design. *Clinical Simulation in Nursing, 58,* 14–21.

Ironside, P. M., & McNelis, A. M. (2010). Clinical education in prelicensure nursing programs: Findings from a national survey. *Nursing Education Perspectives, 31*(4), 264–265.

Ironside, P. M., McNelis, A. M., & Ebright, P. (2014). Clinical education in nursing: Rethinking learning in practice settings. *Nursing Outlook, 62,* 185–191.

Jayasekara, R., Smith, C., Hall, C., Rankin, E., Smith, M., Visvanathan, V., & Friebe, T. (2018). The effectiveness of clinical education models for undergraduate nursing programs: A systematic review. *Nurse Education in Practice, 29*, 116–126.

Jeffries, P., Rogers, B., & Adamson, K., (2015). NLN Jeffries simulation theory: Brief narrative description. *Nursing Education Perspectives, 36*(5), 292–293.

Johnson, K.Z. (2015). *Student engagement in nursing school: A secondary analysis of the national survey of student engagement* (Publication No. 3707176) [Doctoral dissertation, University of Kansas]. ProQuest Dissertations Publishing.

Josephsen, J. (2015). Cognitive load theory and nursing simulation: An integrative review. *Clinical Simulation in Nursing, 11*, 259–267.

Kahu, E. R. (2013). Framing student engagement in higher education. *Studies in Higher Education, 38*(5), 758–773.

Kavanagh, J. M., & Szweda, C. A crisis in competency: The strategic and ethical imperative to assessing new graduate nurses' clinical reasoning. *Nursing Education Perspectives, 38*(2), 57–62.

Knight, A. W. (2016). *A self-determination theory-based analysis of the effects of clinical instructor behavior on student clinical engagement.* (Publication No. 10143102) [Doctoral dissertation, The University of Iowa]. ProQuest Dissertations Publishing.

Knudson, D. (2020). A tale of two instructional experiences: Student engagement in active learning and emergency remote learning of biomechanics. *Sports Biomechanics*. https://doi.org/10.1080/14763141.2020.1810306

Koo, T. K., & Li, M. Y. (2016). A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *Journal of Chiropractic Medicine, 15*(2), 155–163.

Kostovich, C. T., O'Rourke, J., & Stephen. L-A. (2020). Establishing psychological safety in simulation: Faculty perceptions. *Nurse Education Today, 91*. https://doi.org/gkzt5c

Kuldas, S., Ismail, H. N., & Hashim, S. (2014). Greater cognitive effort for better learning: Tailoring an instructional design for learners with different levels of knowledge and motivation. *Psychologica Belgica, 54*(4), 350–373.

Kuh, G. D. (2001). Assessing what really matters in student learning: Inside the national survey of student engagement. *Change, 33*(3), 10–66.

Kuh, G. D. (2003). What we're learning about student engagement from NSSE: Benchmarks for effective educational practices. *Change, 35*(2), 24–32.

Kuh, G. D. (2008). *High-impact educational practices: What they are, who has access to them, and why they matter.* Washington, DC: Association of American Colleges and Universities.

Kuh, G. D. (2009). The national survey of student engagement: Conceptual and empirical foundations. *New Directions for Institutional Research, 141*, 5–20.

Leighton, K., Kardong-Edgren, S., McNelis, A.M., Foisy-Doll, C., & Sullo, E. (2021). Traditional clinical outcomes in nursing education: An empty review. *Journal of Nursing Education, 60*(3), 136–142.

Lesa, R., Daniel, B., & Hardland, T. (2021). Learning with simulation: The experience of nursing students. *Clinical Simulation in Nursing, 56*, 57–65.

Letizia, M., & Jennrich, J., 1998. Development and testing of the Clinical Post Conference Learning Environment Survey. *Journal of Professional Nursing 14*(4), 206–213.

Liebana-Presa, C., Fernandez-Martinez, M. E., Vazquez-Casares, A. M., Lopez-Alonso, A. I., & Rodriguez-Borrego, M. A. (2018). Burnout and engagement among university nursing students. *Enfermeria Global, 50*, 142–152.

Lioce, L., Lopreiato, J., Downing, D., Chang, T. P., Robertson, J. M., Anderson, M., Diaz, D. A., Spain, A. E., & the Terminology and Concepts Working Group. (2020). *Healthcare simulation dictionary*, *2nd edition.* Agency for Healthcare Research and Quality. https://www.ahrq.gov/patient-safety/resources/simulation/terms.html

Lunn, A. M., Cogan, L. S., & Manfrin, A. (2021). Evaluation of students' performance and engagement using post-laboratory integrated assessments within a pharmacy course in the United Kingdom: A pilot cohort cross-over study. *Currents in Pharmacy Teaching and Learning.* http://dx.doi.org/10.1016/j.cptl.2021.01.010

Mahatmya, M., Lohman, B. J., Matjasko, J. L., & Farb, A. F. (2012). Engagement across developmental periods. In S.L. Christenson, A.L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 3-20). Springer Science.

Manfrin, A., Wadiwala, S., & Apampa, B. (2020). Students and faculty perception of active learning: A case study. *Student Engagement in Higher Education Journal, 3*(1), 213–230.

Maroco, J., Assuncao, H., Harju-Luukkainen, H., Lin, S-W., Sit, P-S., Cheung, K-c., Maloa, B., Illic, I.S., Smith, T .J., & Campos, J. A. D. B. (2020). Predictors of academic efficacy and dropout intention in university students: Can engagement suppress burnout? *PLoS One, 15*(10), 1–26.

Maslach, C., Jackson, S. E., & Leiter, M. P. (2016). *Maslach burnout inventory manual* (4th ed.). Mind Garden.

Maslach, C., & Leiter, M. P. (1997). *The truth about burnout: How organizations cause personal stress and what to do about it.* Jossey-Bass.

Mazerolle, S. M., Bowman, T. G., & Benes, S. S. (2014). Defining the engaging learning experience from the athletic training student perspective. *Athletic Training Education Journal, 9*(4), 182–189.

Megel, M. E., Nelson, A.E., Black, J., Vogel, J., & Uphoff, M. (2013). A comparison of student and faculty perceptions of clinical post-conference learning environment. *Nurse Education Today, 33*(5), 525–529.

Michalec, B., Diefenbeck, C., & Mahoney, M. (2013). The calm before the storm? Burnout and compassion fatigue among nursing students. *Nurse Education Today, 33*, 314–320.

Miles, D. 2018. Simulation learning and transfer in undergraduate nursing education: A grounded theory study. *Journal of Nursing Education, 57*(6), 347–353.

Nandon. L., Oksanan, B., Chazan, D. & Daniels, L.M. (2020). Burning out before they start? An achievement goal theory perspective on medical and education students. *Social Psychology of Education, 23*, 1055–1071.

Nanji, K. C., Baca, K., & Raemer, D. B. (2013). The effect of an olfactory and visual cue on realism and engagement in a health care simulation experience. *Simulation in Healthcare, 8*(3), 143–147.

National League for Nursing (NLN). (2020a). NLN research priorities 2020-2023. http://www.nln.org/docs/default-source/Research-Grants/nln-research-priorities-in-nursing-education.pdf?sfvrsn=0

National League for Nursing (NLN). (2020b). Percentage of enrolled students in prelicensure RN programs by gender, 2020. https://www.nln.org/docs/default-source/uploadedfiles/research-statistics/percentage-of-enrolled-students-in-prelicensure-rn-programs-by-gender-2020.pdf?sfvrsn=ec41a10d_0

National League for Nursing (NLN). (2020c). Percentage of minorities in basic RN programs by race-ethnicity, 2020. https://www.nln.org/docs/default-source/uploadedfiles/research-statistics/percentage-of-minorities-in-basic-rn-programs-by-race-ethnicity-2020.pdf?sfvrsn=1241a10d_0

National League for Nursing (NLN). (2020d). Proportion of student enrollment by age and program type, 2020. https://www.nln.org/docs/default-source/uploadedfiles/research-statistics/proportion-of-student-enrollment-by-age-and-program-type-2020.pdf?sfvrsn=6e41a10d_0

National Survey of Student Engagement (NSSE). (n.d.). *NSSE's conceptual framework.* https://nsse.indiana.edu/nsse/about-nsse/conceptual-framework/index.html

Nicholson, D., Nicholson, J., Shen, Y., & Song, P. (2019). *Understanding student engagement and learning outcomes: The role of learning styles.* Proceedings of the 2019 AIS SIGED International Conference on Information Systems Education and Research. https://aisel.aisnet.org/cgi/viewcontent.cgi?article=1010&context=siged2019

Ogbueghu, S. N., Aroh, P. N., Igwe, R. A., Dauda, J. E., Yahaya, J., Nwefuru, B. C., Eneogu, N. D., & Okeke, F. C. (2019). Gender differences in academic burnout among economics education students. *Global Journal of Health Science, 11*(14), 52–57.

Padgett, J., Cristancho, S., Lingard, L., Cherry, R., & Haji, F. (2018). Engagement: What is it good for? The role of learner engagement in healthcare simulation contexts. *Advances in Health Sciences Education,* 1–16.

Paulat, J. *Impact of an active learning strategy on learner engagement in a transition to practice program* [DNP Project, American Sentinel University]. Sigma Repository. https://sigma.nursingrepository.org/handle/10755/20001

Pearson, D. J., & Lucas, B. J. (2012). Engagement and opportunity in clinical learning: Findings from a case study in primary care. *Medical Teacher, 33*(12), e670–e677.

Perry, A. F. (2019). *A study of student engagement and self-perception during 1:1 technology-dependent instruction and technology-free instruction.* [Doctoral Dissertation, Carson-Newman University]. https://tinyurl.com/5d67nabe

Peterson, U., Demerouti, E., Bergstrom, G., & Asber, M. (2008). Work characteristics and sickness absence in burnout and nonburnout groups: A study of Swedish health care workers. *International Journal of Stress Management, 15*(2), 153–172.

Pianta, R. C., Hamre, B. K., & Allen, J. P. (2012). Teacher-student relationships and engagement: Conceptualizing, measuring, and improving the capacity of classroom

interactions. In S.L. Christenson, A.L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 3–20). Springer Science.

Polit, D. F., & Beck, C. T. (2018). *Essentials of nursing research: Appraising evidence for nursing practice* (9th ed.). Wolters Kluwer.

Pauly-O'Neill, S., & Cooper, E. E. (2013). Addressing gaps in quality and safety education during pre-licensure clinical rotations. *Journal of Nursing Education & Practice, 3*(11), 65–70.

Popkess, A. M., & McDaniel, A. (2011). Are nursing students engaged in learning? A secondary analysis of data from the national survey of student engagement. *Nursing Education Perspectives, 32*(2), 89–94.

Power, T., Virdun, C., White, H., White, H., Hayes, C., Parker, N., Kelly, M., Disler, R., & Cottle, A. (2016). Plastic with personality: Increasing student engagement with manikins. *Nursing Education Today, 38*, 126–131.

Powers, S. L., Barcelona, R. J., Trauntvein, N. E., & McLaughlin, S. (2020). The role of classroom design in facilitating student engagement in recreation and leisure education. *A Journal of Leisure Studies and Recreation Education*. https://doi.org/gnfw4f

Reis, D., Xanthopoulou, D., & Tsaousis, I. (2015). Measuring job and academic burnout with the Oldenburg Burnout Inventory (OLBI): Factorial invariance across samples and countries. *Burnout Research, 2*, 8–18.

Reschly A. L., & Christenson S. L. (2012). Jingle, jangle, and conceptual fuzziness: Evolution and future directions of the engagement construct. In S.L. Christenson, A.L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 3–20). Springer Science.

Robins, T. G., Roberst, R. M., & Sarris, A. (2018). The role of burnout in predicting future burnout: Exploring the transition from university to the workplace. *Higher Education Research & Development, 37*(1), 115–130.

Rogers, B. A., & Franklin, A. E. (2021). Cognitive load experienced by nurses in simulation-based learning experiences: An integrative review. *Nurse Education Today, 99*, 1–13.

Roh, Y. S., & Jang, K. I. (2017). Survey of factors influencing learner engagement with simulation debriefing among nursing students. *Nursing Health Science, 19*, 485–491.

Rueda-Medina, B., Schmidt-RioValle, J., Gonzalez-Jimenez, E., Fernandez-Aparicio, A., Aguilar-Ferrandiz, M., & Correa-Rodriguez, M. (2021). Peer debriefing versus

instructor-led debriefing for nursing simulation. *Journal of Nursing Education, 60*(2), 90–95.

Rudolph, J. W., Raemer, D. B., & Simon, R. (2014). Establishing a safe container for learning in simulation: The role of presimulation briefing. *Simulation in Healthcare, 9*(6), 339–349.

Rudman, A., & Gustavsson, J.P. (2012). Burnout during nursing education predicts lower occupational preparedness and future clinical performance: A longitudinal study. *International Journal of Nursing Studies, 49*, 988–1001.

Schaufeli, W. B., Martinez, I. M., Pinto, A. M., Salanova, M., & Bakker, A. B. (2002). Burnout and engagement in university students. *Journal of Cross-Cultural Psychology, 3*(5), 464–481.

Schaufeli, W.B. (2006). The balance of give and take: Toward a social exchange model of burnout. *Revue International de Psychologie Sociale, 19*(1), 75–119.

Shah, M. K., Gandrokota, N., & Cimiotti, J. P. (2021). Prevalence of and factors associated with nurse burnout in the US. *JAMA Network Open, 4*(2). https://doi.org/fvj3

Simon R, Raemer D. B., & Rudolph J. W. (2010). *Debriefing assessment for simulation in healthcare (DASH)© – Student version, short form.* Center for Medical Simulation. https://harvardmedsim.org/wp-content/uploads/2017/01/DASH.SV.Short.2010.Final.pdf

Skinner, E. A., & Pitzer, J. R. (2012). Developmental dynamics of student engagement, coping, and everyday resilience. In S.L. Christenson, A.L. Reschly, & C. Wylie (Eds.), *Handbook of research on student engagement* (pp. 21–44). Springer Science.

Society for Simulation in Healthcare. (n.d.). *About simulation.* https://www.ssih.org/About-SSH/About-Simulation

Srivastava, S., Smith, M. L., Ghimire, A., & Goa, S. (2019). *Accessing the integration of parallel and distributed computing in early computer science curriculum using unplugged activities.* IEEE/ACM Workshop on Education for High-Performance Computing, Denver, CO. https://tinyurl.com/39455w7n

Steneck, N. H. (2007). *ORI introduction to the responsible conduct of research.* Rockville, MD: U.S. Department of Health and Human Services. https://ori.hhs.gov/ori-introduction-responsible-conduct-research

Stephen, L-A., Kostovich, C., & O'Rourke, J. (2020). Psychological safety in simulation: Prelicensure nursing students' perceptions*. Clinical Simulation in Nursing, 47*, 25–31.

Stokes-Parish, J. B., Duvivier, R., & Jolly, B. (2020). How does moulage contribute to medical students' perceived engagement in simulation? A mixed-methods pilot study. *Advances in Simulation, 5*(23), 1–12.

Sullivan, N., Swoboda, S. M., Breymier, T., Lucas, L., Sarasnick, J., Rutherford-Hemming, T., Budhathoki, C., & Kardong-Edgren, S. (2019). Emerging evidence toward a 2:1 clinical to simulation ratio: A study comparing the traditional clinical and simulation settings. *Clinical Simulation in Nursing, 30,* 34–41.

Svinicki, M. D. (2004). *Learning and motivation in the postsecondary classroom.* Anker Publishing.

Tanner, C. A. (2010). From mother duck to mother lode: Clinical education for deep learning. *Journal of Nursing Education, 49*, 3–4.

Taris, T. W., Le Blanc, P. M., Schaufeli, W. B., & Schreurs, P. J. G. (2005). Are there causal relationships between the dimensions of the Maslach Burnout Inventory? A review and two longitudinal tests. *Work and Stress, 19*(3), 238–255.

Timms, C., Fishman, T., Godineau, A., Granger, J., & Sibanda, T. (2018). Psychological engagement of university students: Learning communities and family relationships. *Journal of Applied Research in Higher Education, 10*(3), 243–255. https://doi.org/10.1108/JARHE-09-2017-0107

Trowler, V. (2010). *Student engagement literature review.* The Higher Education Academy. https://www.heacademy.ac.uk/system/files/StudentEngagementLiteratureReview_1.pdf

Umbach, P. D., & Wawrzynski, M. R. (2005). Faculty do matter: The role of college faculty in student learning and engagement. *Research in Higher Education, 46*(2), 153–184.

Vezeau, T. M. (2016). In defense of clinical conferences in clinical nursing education. *Nurse Education in Practice, 16*, 269–273

Walton, J., Chute, E., & Ball, L. (2013). Negotiating the role of the professional nurse: The pedagogy of simulation: A grounded theory study. *Journal of Professional Nursing, 27*(5), 299–310.

Wang, J., Bu, L., Li, Y, Song, J., & Li, N. (2021). Mediating effect of academic engagement between psychological capital and academic burnout among nursing students during the COVID-19 pandemic: A cross-sectional study. *Nurse Education Today, 102*, 1–6.

Waznonis, A. R. (2015). Simulation debriefing practices in traditional baccalaureate nursing programs: National survey results, *Clinical Simulation in Nursing, 11*, 110–119.

Wei, H., Dorn, A., Hutto, H., Webb Corbett, R., Haberstroh, A., & Larson, K. (2021). Impacts of nursing student burnout on psychological well-being and academic achievement. *Journal of Nursing Education, 60*(7), 369–376.

Wiggins, B. L., Eddy, S. L., Wener-Flingner, L., Freisem, K., Grunspan, D. Z., Theobald, E. J., Timbrook, J., & Crowe, A. J. (2017). ASPECT: A survey to assess student perspective of engagement in an active-learning classroom. *Life Sciences Education, 16*(32), 1–13.

Yockey, J., & Henry, M. (2019). Simulation anxiety across the curriculum. *Clinical Simulation in Nursing, 29*, 2937.

VITA

Dr. Osborne graduated with a BS in nursing from Ball State University, Muncie, Indiana in 2001. After graduation, she practiced in various critical care and adult acute care units as a Registered Nurse at Indiana University Health Ball Memorial Hospital, Muncie, Indiana. She maintains her nursing license and continues to practice on an as needed basis in the acute care setting.

Dr. Osborne earned her MS with a focus in nursing education in 2012, also from Ball State University. Her full-time nurse faculty career began after graduation in 2013 at Ball State University. She taught various undergraduate nursing courses across the curriculum and engaged in various leadership positions in the School of Nursing. In 2017, she became the Director of the Nursing Simulation and Information Technology Center. In this role, she oversaw day-to-day operations of the simulation center and worked with faculty and staff to improve the simulation experiences for student learning. In 2019, she transitioned to the role of Director of Clinical Simulation for the College of Health. In this role, she works with faculty to develop and implement simulation activities for healthcare students. She continues teaching nursing courses and is passionate about adequately preparing students for the transition to practice.

Over the years, Dr. Osborne has been engaged in various scholarly activities. She has publications and has presented at conferences on topics related to family-centered care, career development, and interprofessional education. This current study will be foundational for future scholarship.