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Reflective Journaling to Decrease Anxiety Among Undergraduate Nursing Students in the Clinical Setting

Joely Tara Goodman

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REFLECTIVE JOURNALING TO DECREASE ANXIETY
AMONG UNDERGRADUATE NURSING STUDENTS
IN THE CLINICAL SETTING

A Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy

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College of Natural and Health Sciences
School of Nursing
Nursing Education

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This Dissertation by: Joely Tara Goodman

Entitled: *Reflective Journaling to Decrease Anxiety Among Undergraduate Nursing Students in the Clinical Setting*

has been approved as meeting the requirements for the Degree of Doctor of Philosophy in College of Natural and Health Sciences in School of Nursing, Program of Nursing Education.

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ABSTRACT

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Many nursing students experience anxiety in the clinical setting. Increased anxiety impairs students' ability to learn and can have a negative effect on patient safety. To promote student learning and patient safety, it is imperative that nurse educators identify and implement strategies to decrease nursing students' anxiety. The purpose of this embedded mixed methods study was to determine if reflective journals are an effective strategy to address the problem of student anxiety. Participants were randomly assigned by their clinical group to either write guided reflective journals, non-guided reflective journals, or no reflective journals during their first clinical rotation where they provided patient care. Participants in the quantitative strand of this study ($n = 20$) completed an online pre-test to measure their state and trait anxiety prior to beginning their first clinical rotation. After completing the four-week clinical rotation participants completed a post-test to measure their state anxiety. Descriptive and inferential statistics were used to analyze the quantitative data. Participants in the qualitative strand of the study participated in an interview with the researcher. Magnitude coding was used to determine the participants' perception of the impact of writing reflective journals on their anxiety. In Vivo coding was used for the first cycle of coding for the qualitative data about participant experiences with writing reflective journals. Common themes were then identified.

There was a decrease in state anxiety between pre-test and post-test data collection for all participants ($p < .05$). The decrease in state anxiety was statistically significant for participants in the guided reflective journal group ($n = 9$, $p = .006$) and the non-guided reflective journal group ($n = 6$, $p = .024$). The decrease in state anxiety was not statistically significant for participants in the control group ($n = 5$, $p = .254$).

Participants who wrote guided or non-guided reflective journals thought the journals decreased their anxiety associated with the clinical setting. Participants who did not write journals thought they would have benefitted from having a journal assignment. Four themes were identified related to experiences with writing journals for all participants who wrote reflective journals: allowed time, identified feelings, assisted with processing, and increased confidence. The findings of this study support the use of reflective journals as an intervention to decrease nursing students' anxiety associated with the clinical setting.

Key Words: anxiety, reflective journals, nursing students, clinical setting, mixed methods

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I am thankful for the students who participated in this study. Their willingness to take time out of their busy schedules allowed for a better understanding of an additional strategy that may help future nursing students decrease their anxiety associated with the clinical setting.

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CHAPTER I

INTRODUCTION

Hospitalization in the 21st century can be an expensive and dangerous experience

for patients. According to the Institute of Medicine, medical errors cost between $17

billion and $29 billion annually (Kohn, Corrigan, & Donaldson, 1999). James (2013)

reports that there are 440,000 preventable adverse events in American hospitals each

year. Many of these errors can and should be prevented by nurses, and the American

Association of Colleges of Nursing (2008) states that nurses have the greatest role of all

care providers in preventing errors and improving patient safety. According to Duhn et

al. (2012), the responsibility of preparing health care professionals to promote and guard

patient safety belongs to the schools that educate future care providers. It is essential to

educate health care professionals about the fundamentals of patient safety to decrease the

risk of errors and increase the safety of patients in an evolving health care system (World

Health Organization, 2011). The topic of providing education about patient safety is

important enough that the World Health Organization released a patient safety curriculum

guide to assist educators in the disciplines of dentistry, medicine, midwifery, nursing and

pharmacy. This curriculum guide provides information about ways educators can inform

students about the risks of health care, how to manage these risks, and the importance of

team-work and effective communication (World Health Organization, 2011).

Studies report that stress and anxiety in health care professionals have negative

results for patient safety and the quality of patient care (Burbach et al., 2016; Cheung &

Au, 2011; Pottier et al., 2013; Shipton, 2002; Steven, Magnusson, Smith, & Pearson, 2013). Anxiety is provoked with prolonged stress or multiple stressors (Lazarus & Folkman, 1984). Health care providers' stress and anxiety have been found to result in a detrimental effect on their ability to think clearly and concentrate. In particular, in situations with high cognitive load such as clinical practice, anxiety diminishes the capacity to process information for short term action and long-term learning (Khan & Zafar, 2010; Pottier et al., 2013; Shipton, 2002). When learning is inhibited, inadequate or unsafe nursing care may be provided which can result in undesirable patient outcomes. Cognitive load theory, developed by Sweller (1988), provides an explanation of how cognitive load can impact performance in the clinical setting. When an increased cognitive effort is demanded, such as in the health care environment, the individual providing care can be inhibited from recalling information previously learned (Chen, Grierson, & Norman, 2015). Anxiety contributes to an increased cognitive load, and this increased load also has negative implications for new learning to take place in the clinical setting (Darke, 1988).

Nursing students often encounter stress and anxiety in their clinical rotations. Andrew, McGuinness, Reid, and Corcoran (2009) found that 19% of nursing students report feelings of anxiety associated with their first clinical placement while an additional 3% dread the first experience of providing patient care. The first encounter of students with real patients and the adjustment to the role of a nursing student provokes anxiety for many individuals (Bowie, 2010). This anxiety in the clinical setting results from encounters with many different individuals including peers, the clinical instructor, the patient, and other health care providers (Melincavage, 2011). Nursing students report a

sense of competition among peers with some students wanting "to be the best in everything but not in a good way" (Melincavage, 2011, p. 787). Some encounters with clinical instructors provoke feelings of anxiety for students. When clinical instructors are not available because they are with other students, this creates feelings of anxiety for some students. Students also report negative encounters with instructors and other health care providers including being yelled at in front of others or feeling exposed when a student's failure is used as a learning opportunity (Melincavage, 2011).

Nurse educators are in the position to prevent or minimize patient safety issues through their teaching of students which could include ways to manage and minimize stress and anxiety (Montgomery, Killam, Mossey, & Heerschap, 2014). Few strategies have been explored in nursing education to help students minimize or manage the stress and anxiety encountered during clinical rotations. Identifying strategies that nursing students can utilize while in school and during their clinical practice is an essential step to help mitigate the negative impact of anxiety on patient care. This study will explore the use of reflective journals as a potential strategy to assist students through anxiety-provoking clinical rotations.

Background

Nursing Today

A report from the Institute of Medicine provides alarming statistics that indicate 44,000 to 98,000 people die each year in hospitals due to medical errors (Kohn et al., 1999). As health care evolves and patients are sicker, there are higher demands placed on nurses and nursing students. The more intense, complex and demanding environments ultimately impact students' learning (Mansour, 2014). It is common for nursing students

to experience an adverse event or close call in the clinical setting. According to Stevanin et al. (2015), 28.8% of nursing students experienced an adverse event in the clinical setting while an additional 15% of students experienced a close call. An adverse event is defined as unintentionally harming "the patient by an act of commission or omission" (Institute of Medicine, 2004). A close call is "an event or situation that could have resulted in an adverse event, but either by chance or through timely intervention, did not" (Institute of Medicine, 2004). A large majority of these events (84.8%) could potentially result in physical harm to the patient. These adverse events and close calls may occur as a result of inadequate performance of health care providers.

To promote the safety of patients and ensure that quality care is provided, educators of health care professionals must include instruction on patient safety in the curricula. According to the World Health Organization, "Patient safety is the absence of preventable harm to a patient during the process of health care" (2016). The Quality and Safety Education in Nursing project was developed in response to the Institute of Medicine's report and aims to promote student learning about the provision of safe health care (Cronenwett et al., 2007). The adverse events and close calls that are experienced by nursing students can be very stressful, and anxiety about harming a patient is one major source of anxiety (Shaban, Khater, & Akhu-Zahey, 2012).

Impact of Stress on Adverse Events

When health care providers encounter stress in the workplace, patient safety may be compromised and adverse events may ensue. According to Berland, Natvig, and Gundersen (2008), nurses identify work-related stress as a risk factor for patient safety. Nielsen, Pedersen, Rasmussen, Pape, and Mikkelsen (2013) report a significant

association between the occurrence of work-related stressors and involvement in an adverse event. To provide further evidence of the impact that stress has on adverse events, Brady, O'Connor, Burgermeister and Hanson (2012) found that decreased stress levels for the nursing staff resulted in a decrease of adverse events.

According to Lazarus and Folkman (1984), a person experiences stress when he or she perceives a situation as harmful or exceeding what he or she is able to do. While stress is defined as "…the nonspecific response of the body to any demand placed on it" which allows stress to be either helpful or hindering for an individual, negative stress, or distress, results in anxiety (Selye, 1973, p. 692). Anxiety can be provoked with prolonged stress or multiple stressors. Anxiety refers to a state of apprehension as a response to a perceived threat which results in a disruption of psychological functioning and can be displayed in physiological symptoms including sweating, hypertension, or tachycardia (Ratanasiripong, Park, Ratanasiripong, & Kathalae, 2015). Anxiety activates the fight-or-flight response which contributes to a positive or negative experience in the clinical setting. Even though a moderate amount of anxiety is desired because it results in optimal student performance, anxiety levels that are too high or too low decrease the students' performance (Melincavage, 2011; Moscaritolo, 2009). Students enrolled in nursing programs report higher stress than students in other health-related disciplines (Beck, Hackett, Srivastava, McKim, & Rockwell, 1997). It is important for nurse educators to be aware that nursing students report experiencing stress, and this stress can lead to a state of anxiety. When a care provider is anxious, there is an increase in adverse events in the health care setting.

Impact of Anxiety on Patient Care

The stress and anxiety that nursing students encounter in the clinical setting impairs their clinical reasoning with potential negative effects for patients (Pottier et al., 2013). Harvey, Bandiera, Nathens, and LeBlanc (2011) found that health care professionals in high stress situations took longer to respond to and record important vital signs, had an incomplete recall of the history of events during a patient encounter, and had worse scores on a checklist used to measure performance. Shipton (2002) found that high levels of anxiety can interfere with the student's ability to concentrate and think clearly. According to Houghton, Casey, Shaw, and Murphy (2013), the reality of clinical practice can cause anxiety for students and hinder their implementation of skills when working with patients.

It has been found that anxiety has a far-reaching impact on the provision of nursing care. Anxiety has a negative impact on the development of relationships with patients and other health care professionals as anxious students tend to distance themselves and refrain from building relationships with others (Karimollahi, 2012; Melincavage, 2011). Additionally, according to Khalaila (2014), anxiety decreases the students' confidence in caring for others.

Impact of Anxiety on Learning

While anxiety impacts performance in the clinical setting, it also has a significant impact on students as they are trying to learn the nursing profession. According to Palethorpe and Wilson (2011), anxiety severely impairs an individual's ability to learn. Beddoe and Murphy (2004) state, "High stress and anxiety impede concentration, memory, and problem-solving ability, which, in turn, adversely affect academic

performance and learning" (p. 305). Anxious individuals have more cognitive interference, are less effective at processing material, and are less successful at encoding information (Mueller, 1992). When students encounter anxiety, they experience cognitive deficits that can negatively impact their ability to remember material that was previously learned (Khan & Zafar, 2010).

Specific to nursing, excessive anxiety can negatively influence students' motivation to study, efficacy in the clinical setting, and willingness to become a nurse while also having a negative impact on their ability to learn (Bowie, 2010; Chen, 2010). According to Chernomas and Shapiro (2013), anxiety associated with clinical placements has a negative impact on the quality of nursing students' sleep. This disruption in sleep causes further worry for the students about their performance in the clinical setting. The first clinical experience is the most influential for nursing students, and the quality of the experience can ultimately determine whether or not a student chooses to remain in the nursing profession (Cooper, Courtney-Pratt, & Fitzgerald, 2015). If the students have a debilitating level of anxiety, they may have less satisfaction with their career choice.

Sources of and Experiences with
Anxiety in Clinical Setting

It is common for nursing students to experience anxiety in the clinical setting (Moscaritolo, 2009). The anxiety that nursing students report associated with clinical placements originates from varying sources. According to Bowie (2010), students experience anxiety as a result of the first encounter with a patient and the process of adjusting to the role of a nursing student. Nursing students report feelings of rejection from staff nurses, clinical instructors, peers, and patients (Reeve, Shumaker, Yearwood, Crowell, & Riley, 2013). The fear of making a mistake, being observed by an instructor,

and the initial experience on a unit are identified as additional sources of anxiety for nursing students (Melo, Williams & Ross, 2010). According to Sun et al. (2016), nursing students report feelings of anxiety about having the ability to meet the patients' needs in the clinical setting. These feelings of anxiety increased prior to the clinical placement, peaked during the experience, and decreased upon completing the first clinical rotation.

Strategies to Decrease Anxiety

Three categories of strategies are currently used to decrease anxiety in the clinical setting. These categories include simulation, peer-mentoring, and mindfulness interventions.

Simulation. Simulation is a teaching strategy which has been used in nursing education to decrease students' anxiety. There is not a standardized method to implement simulation as a strategy to decrease nursing students' anxiety. Dearmon et al. (2012) used a two-day simulation-based orientation for 50 nursing students prior to their first clinical rotation. In this study, the intervention group interacted with a standardized patient over the course of two consecutive eight-hour days. There was a significant decrease in the post-test state anxiety level as measured by the State-Trait Anxiety Inventory. Gore, Hunt, Parker, and Raines (2011) included 70 students who were randomly assigned to the intervention or control group. Students in the intervention group participated in a four-hour simulation and were assigned to provide total nursing care to a manikin. Students provided care for, administered medications to, and charted on the simulated patient. The State-Trait Anxiety Inventory was administered to all students prior to the actual clinical experience, and students in the simulation group had a statistically significant lower level of state anxiety than students in the control group.

While simulation has been found to have a positive impact on student anxiety, there are some negative aspects of simulation that are important to consider. The cost of simulation is often not reported in research (Zendejas, Wang, Brydges, Hamstra, & Cook, 2013), but Lapkin and Levett-Jones (2011) report that a single high-fidelity simulator can cost more than $100,000. There is also an expense to educate faculty and staff about managing and facilitating the simulation sessions, but this is difficult to measure and was not located in the literature. These costs may be prohibitive for some nursing programs to implement this strategy to decrease student anxiety. Even though some research indicates that simulation decreases anxiety, Cantrell, Meyer, and Mosack (2017) report that students feel greater stress from simulations than instructors anticipated, and students feel a moderate level of nervousness during the simulation. Shearer (2016) found that students' anxiety with simulation can be grouped into three themes. Students are anxious because they do not know what to expect and feel unprepared. Students also report their anxiety with simulation is related to performing the simulation while being watched by peers and faculty. The third theme associated with anxiety in simulations relates to students' concern about making a mistake and failing in simulation. Because simulation may be too expensive for some nursing programs and it is viewed as an additional stressor by some students, it is important for nurse educators to identify additional interventions to decrease nursing students' anxiety.

Peer mentoring. Peer mentoring is another strategy which has been used to decrease nursing student anxiety. Peer mentoring, sometimes called peer-assisted learning, refers to an organized partnership between an experienced student and a less experienced student (Walker & Verklan, 2016). The experienced student assists the less

experienced student with advancing academic and clinical knowledge. This mentorship

results in learning for the mentor and the mentee (Zentz, Kurtz, & Alverson, 2014).

There are weaknesses of some recent studies that are important to consider. Wong,

Stake-Doucet, Lombardo, Sanzone, and Tsimicalis, (2016) report "poor methodological

rigor, validity, and trustworthiness" after reviewing 11 published studies about peer

mentoring (p. 147). Several qualitative studies do not discuss a methodological approach

or bracketing their beliefs which are weaknesses of the studies (Gilmour, Kopeikin, &

Douche, 2007; Loke & Chow, 2007; Scott, 2005). Several quantitative studies lacked

randomization, which is a weakness of the study design (Demir, Demir, Bulut, & Hisar,

2014; Hunt & Ellison, 2010; Kim, Olveri, Riingen, Taylor, & Rankin, 2013; Robinson &

Niemer, 2010; Walker & Verklan, 2016).

A barrier to implementation of this strategy is the time commitment that is

necessary to train and prepare the mentors to serve in this role. Wong et al. (2016) found

variation in the education provided to mentors, but preparing the mentors is a necessary

step for this strategy to be implemented to help decrease nursing student anxiety. Walker

and Verklan (2016) implemented a two-hour training session for the peer mentors which

consisted of information about the clinical objectives and role-playing. The peer mentors

were selected based on their grade point average, clinical decision-making and

communication skills, but there is no information provided about how these

characteristics were evaluated to choose the peer mentors. It is also important to

schedule sessions to build the relationship between the mentor and mentee (Wong et al.,

2016). While there is evidence to support peer mentoring as an effective strategy to

decrease anxiety, there is variation in how this teaching strategy is implemented which

contributes to difficulty with application of the strategy. Peer mentoring can also be a time-consuming strategy because of the training and relationship-building that is necessary for the strategy to be effective. Because of these weaknesses, it is important to consider other strategies that may be able to reduce student anxiety without a large time commitment from the students.

   Mindfulness. The third category of strategies to decrease anxiety in nursing students is mindfulness. Mindfulness, "a form of mental training…that involve[s] stilling or emptying the mind" is a strategy sometimes used to reduce stress for nurses (Guillaumie, Boiral, & Champagne, 2017). Mindfulness is closely related to meditation, and practices may include deep-breathing exercises and relaxation. The specific interventions under this category vary and include techniques such as imagery, meditation, and yoga. Some interventions that are used to encourage mindfulness require the individual implementing the strategy to have additional training. For example, an individual would need to know how to use hypnosis, yoga, or guided imagery for the intervention to be executed successfully. In a recent review of the literature, Guillaumie et al. (2017) found that the number of mindfulness sessions had a large variation with some studies including five meetings, some studies having six to 10 meetings, and a smaller number of studies including a follow-up. This variation in the intervention makes it difficult to identify the most effective way to implement mindfulness for nursing students. Most interventions lasted eight weeks or more, which is a significant time commitment for students. The different interventions categorized as mindfulness have been found to decrease nursing students' anxiety, but the time commitment from students is a barrier that prohibits students from participating in the activities. The training that

would be necessary for nurse educators to implement some of the interventions is also a barrier with this strategy. Because of these barriers, nurse educators should pursue strategies that require less time from the students and that an educator could implement with little to no additional education.

   Reflective journals. One specific teaching strategy that nurse educators often use during clinical rotations is reflective journals. Studies using reflective journals have measured students' clinical performance (Taylor-Haslip, 2010) and critical thinking (Barnes, 2010), but there were no studies located that assess the potential of reflective journals as a strategy to help decrease anxiety. Reflective journals may be a viable and cost-effective way to decrease nursing students' anxiety in the clinical setting. Reflective journals do not require a large time commitment from students or faculty, and there are no additional sessions outside of class that need to be facilitated. All students admitted to nursing programs are expected to be able to write proficiently, so there are also no extra skills required to implement this strategy. Since reflective journals are often assigned during clinical rotations, it is beneficial for nurse educators to have a complete understanding of all the positive impacts of these writing assignments.

Statement of the Problem

   Even though factors related to patient safety have received increased attention in recent research, hospitalization continues to be a potentially dangerous experience for patients. Health care providers encounter work-related stress which can inhibit their ability to provide safe patient care. Many nursing students experience anxiety in the clinical setting. This anxiety generally has a negative effect on students' ability to learn. Anxiety negatively impacts student learning by making it difficult to learn new material

and to recall material previously learned. Specific to nursing, increased anxiety impairs an individual's clinical reasoning.

A lower quality of performance in the clinical setting has a negative effect for patient safety. When errors occur in health care, there are undesirable outcomes for patients and an increase in health care costs. When nursing students' learning is impacted by anxiety, patients feel the ramifications. In addition to impairing students' clinical reasoning and ability to make decisions, anxiety also inhibits the development of therapeutic relationships between student and patient. The unsafe nursing care which can result from students' feelings of anxiety also contributes to adverse events in the health care setting. The decreased safety and quality of care leads to decreased outcomes in patient health and results in increased costs for patients and the health care system (Hotstetter & Klein, 2011).

Current literature demonstrated that anxiety for nursing students can influence patient safety. If nurse educators could implement strategies to help decrease anxiety, nursing students could learn better which could result in safer patient care and better patient outcomes. While a few interventions have been identified as being effective with helping nursing students decrease their anxiety during clinical rotations, each of these interventions has barriers which inhibit the implementation of these strategies. Due to the far-reaching negative effects of anxiety during clinical rotations, it is imperative that nurse educators implement strategies to help students decrease these feelings of anxiousness. There has not been research to evaluate if a common assignment during clinical rotations, reflective journals, can decrease nursing students' anxiety. An understanding about whether or not reflective journals can decrease nursing student

anxiety would provide additional information to nurse educators about the use of these writing assignments as a strategy to decrease nursing student anxiety.

Purpose Statement

Anxiety in nursing students is a common problem which has many negative effects. When students are anxious, their learning is inhibited. In the clinical setting, students' decreased ability to learn is manifested through unsafe or incomplete patient care. Anxious nursing students are also less likely to establish therapeutic relationships with their patients. If nursing students have decreased anxiety, they will be able to learn more effectively, provide a higher quality of patient care, and prevent adverse events and close calls.

While some strategies have been found to decrease nursing students' anxiety, there are some negative aspects of these strategies. Simulation can be an expensive strategy, and students report increased anxiety from the simulation itself (Cantrell et al., 2017; Lapkin & Levett-Jones, 2011; Shearer, 2016). Peer mentoring and mindfulness are additional strategies which can decrease student anxiety, but these strategies are time-consuming to implement which serves as a barrier.

Identifying additional strategies for nurse educators to implement will increase the tools and resources available to combat the common problem of anxiety for nursing students in the clinical setting. Reflective journals related to clinical experiences are an assignment commonly used in nursing education. Taylor-Haslip (2010) provides evidence of "a correlation between the student's level of reflection and the student's performance in the clinical setting and the performance on the written exams" (p. 71). Barnes (2010) indicates that reflective journals increase students' critical thinking.

However, there is no research to evaluate if reflective journals decrease nursing students'

anxiety associated with the clinical setting. It is also not known if the journals should be

assigned with questions to guide the students' reflection, or if an open journal with

students reflecting on what they choose would have the same effect on students' anxiety

associated with the clinical setting. This study aimed to fill this gap in the literature and

contribute to nursing science by determining if reflective journals are an effective

strategy to address the problem of student anxiety.

This mixed methods study addressed the use of reflective journals to decrease

anxiety for undergraduate nursing students. An embedded design was used in which

qualitative data were embedded within a quantitative design. The quantitative data were

used to determine if reflective journals decrease anxiety for nursing students in their first

clinical rotation. The qualitative data were embedded in this design after the intervention

for the purpose of exploring students' perception of the impact of reflective journal

assignments on their anxiety.

Research Questions

The following research questions guided this study:

Q1   In the clinical setting, is there a difference in state anxiety levels, before and directly after the first clinical rotation, as measured by the State-Trait Anxiety Inventory between undergraduate nursing students who write guided reflective journals, non-guided reflective journals or no reflective journals?

Q2   How do undergraduate nursing students perceive the impact of writing reflective journals on their anxiety level related to the clinical setting?

Significance

Patients receiving health care in the United States are currently put at risk for injury due to errors by their health care providers, including student nurses. These errors may result from different causes, but there has been a link identified between increased anxiety of nursing students and impaired ability to provide safe patient care. Relationships that often develop between patients and nurses are also impaired when the nurse has feelings of anxiety. In addition to the negative effects of anxiety on patient care, anxious students also have difficulty learning. When learning is impaired by anxiety, the students can have increased challenges with recalling information and being effective while providing patient care in the clinical setting.

While there are published studies that link nursing students, anxiety and patient safety, there is a lack of research about particular interventions that may be useful to decrease students' anxiety in the clinical setting, and no research has been done to date exploring reflective journaling related to this topic. A need exists in the literature to examine the possibility of reflective journals serving to decrease nursing student anxiety through quantitative data collection about anxiety levels and to understand the best way to assign the journals by obtaining detailed views from participants through qualitative data collection. This study aimed to fill this gap in the literature by using a pre-test, post-test design with one group completing guided reflective journals, one group completing non-guided reflective journals, and a control group without journal assignments. The researcher also collected data about students' views of the assignment to develop an understanding of the best way to implement the reflective journals. Identifying another potential strategy for nurse educators to implement to decrease student anxiety will

increase the available tools to help with this problem that is common for undergraduate nursing students.

Definition of Terms

Anxiety

A state of apprehension as a response to a perceived threat which results in a disruption of psychological functioning and can be displayed in physiological symptoms including sweating, hypertension or tachycardia (Ratanasiripong et al., 2015). Anxiety is a subjective feeling associated with being uncomfortable or nervous (Sun et al., 2016).

Guided reflective journals

One- to two-page typed paper with questions to guide the students' written response.

Non-guided reflective journals

One- to two-page typed paper without questions to guide the students' written response.

First clinical rotation

The first four-week clinical experience where nursing students provide patient care which includes some, or all, of the following skills: assessing patient, administering medications, communicating with patient and family members, and communicating with other health care professionals.

Summary

Nursing students' anxiety is associated with negative impacts on learning. When nursing students do not learn appropriately, patient care is negatively affected. The unsafe patient care that can result when students are anxious can lead to adverse events

for patients. When adverse events occur or unsafe care is provided, higher expenses and unexpected outcomes can result for patients. Results from this study might help nurse educators know if reflective journals are an effective strategy to decrease nursing student anxiety in the clinical setting. This information might help provide an additional strategy to assist nursing students in the clinical setting.

CHAPTER II

REVIEW OF LITERATURE

Overview

The purpose of this mixed methods study was to determine if reflective journals can decrease the level of anxiety for undergraduate students associated with the clinical setting and to evaluate students' perception of this writing assignment on their anxiety related to the clinical setting. To help plan this study, a critical review of the current literature relating to anxiety in the clinical setting was completed. Literature about the current state of patient safety, the impact of anxiety on learning and patient care, and data about strategies to decrease nursing student anxiety associated with the clinical setting was reviewed. The review of the literature was an ongoing process that continued through the data collection, data analysis and synthesis phases of the study.

Multiple sources were used to complete this review including dissertations, books, articles, and websites. Databases utilized in the literature review included Cumulative Index of Nursing and Allied Health Literature (CINAHL), MedLine, ProQuest and Google Scholar. Key terms for the search included patient safety, anxiety, and clinical setting. Reference lists of relevant articles were hand searched to identify additional references.

This chapter is divided into three sections. The first section discusses current evidence about patient safety and identifies the relationship between anxiety and some

factors that impact patient safety. The next section identifies the relevant findings about anxiety. This section includes studies about anxiety and patient safety, anxiety and learning, anxiety of nursing students in the clinical setting, and strategies used to decrease student anxiety. The final section describes the theoretical framework that guides the proposed study.

Part I: Patient Safety

It can be dangerous for a patient in the United States to be admitted to and cared for in the hospital. In a review to identify the number and causes of preventable adverse events in hospitals, James (2013) identified that recent statistics provide evidence that as many as 440,000 patients in the hospital die each year as a result of these events. In 2013, medical errors were the third most common cause of death in the United States with only heart disease and cancer contributing to more deaths (Makary & Daniel, 2016). The cause of preventable adverse events can be separated into the following categories: errors of commission (doing something wrong), errors of omission (failing to do the right thing), errors of communication, errors of context, and diagnostic errors (James, 2013). According to the Agency for Healthcare Research and Quality (2007), "errors of omission are more difficult to recognize than errors of commission but likely represent a larger problem."

In a study to determine the role of the circulating nurse in the operating room in identification and prevention of health care errors, an average of 11.11 incidents of errors or potential errors occurred per procedure (Yang et al., 2012). A majority of the incidents (61%) were potential errors while 39% actually occurred. However, nurses prevented 77% of the actual errors from reaching the patient while the remaining 23% were

recovered or stopped before severe harm could happen to the patient. In the end, there were no adverse patient outcomes. This information about the prevention of errors in health care supports the view that nurses are in a prime position to identify and correct errors given their vast knowledge, close relationship with patients, and role at the bedside (Yang et al., 2012). The following section provides a review of literature about patient safety. The purpose of this review is to highlight the nurse's role in promoting safe care and to identify some areas where improvements are needed.

Medication Errors

According to Cousins, Gerrett, and Warner (2012), medication errors constitute about 10% of all patient safety incidents in England and Wales. Latif, Rawat, Pustavoitau, Pronovost and Pham (2013) conducted a study to compare the causes and results of medication errors in the Intensive Care Unit (ICU) compared to errors in non-ICU settings. They compared all medication errors reported to the MEDMARX reporting system which is used to allow hospitals to track and share medication error data. In the ICU and non-ICU settings, the most common type of error was one of omission. Most errors in the ICU (44%) and non-ICU (33%) settings occurred in the administration step of the medication process. According to Latif et al. (2013), the administration phase is the final step of the medication process before the patient takes the medication, so it is less likely that errors can be identified and prevented by other health care professionals. Nurses administer most medications in the acute care setting, so they are usually the providers involved with these errors. Because staff nurses are generally responsible for administering medications in the clinical setting, they are also in a prime position to have a significant role in improving medication safety.

As Bush, Hueckel, Robinson, Seelinger, and Molloy (2015) state, a knowledgeable nurse can catch an error at the time of administration that occurred earlier in the medication process and significantly impact patient safety. Bush et al. (2015) describe an education project which is focused on medication safety for undergraduate nursing students. In this education, four asynchronous, self-paced modules were available online. These modules focus on providing information about "the context within which medication errors occur, common causes and types of medication errors, prevention strategies, and the impact of medication errors" (Bush et al., 2015, p. 170). Feedback from initial groups that used this instructional method was positive. The teaching strategy described by Bush et al. (2015) is an option that can be considered to provide structured education about patient safety for nursing students.

Anxiety has been found to influence medication safety in the clinical setting. Tabassum, Saeed, Dias, and Allana (2016) reviewed records of medication errors made by undergraduate nursing students at one private university in Pakistan. During a three-year timespan, seven medication errors were reported with 71% of these errors occurring during preparation of the medication. One environmental factor identified as provoking errors was stress due to an attendant's shouting. A limitation of this study is that there were only seven errors that could be evaluated to identify the type and associated factors.

Walsh (2008) collected information from third-semester associate degree nursing students to evaluate the relationships among anxiety, beliefs about mathematics, self-efficacy, and performance on a medication calculation test. The Mathematics Beliefs, Anxiety, and Self-Efficacy Assessment Questionnaire was developed by Walsh by modifying three existing instruments: the Mathematics Anxiety Scale, the Indiana

Mathematics Beliefs Scale, and the Mathematics Self-Efficacy Scales. Overall, students were slightly anxious about mathematics, and the anxiety was generally related to the test instead of actually completing the mathematics. Findings also revealed an inverse relationship between mathematics anxiety and confidence in completing difficult mathematics. It is important for nurse educators to be aware of the impact that anxiety related to mathematics can have on student confidence. There is also a relationship between confidence and student performance as Khalaila (2014) found that nursing students with higher anxiety scores are less confident and perceive "their ability and efficacy to care [for] patients as lower" (p. 257).

Medication errors are a common cause for adverse events in patients. Nurses are the health care providers who frequently perform these errors, and they are in the ideal position to prevent medication errors from occurring. One factor that can lead to medication errors is anxiety in the clinical setting. Anxiety related to completing drug dosage calculations is also related to less confidence for nursing students.

Complexity of Care

There is an overwhelming complexity of care involved with today's patients including advances in technology, higher acuity of patients, increase in older adults and patients with chronic illnesses, "a shortage of health care professions staff and providers, escalating need for care coordination, economic pressures on health care providers to decrease costs, and most recently, passage of the Affordable Care Act" (Ebright, 2014, p. 852). To demonstrate the increasing complexity of care, Marilyn Chow, the vice

president of patient care services at Kaiser Permanente, describes today's medical-surgical patient as the ICU patient of the 1970s (Robert Wood Johnson Foundation, 2007).

As Benner, Sutphen, Leonard, and Day (2010) describe, the development of information technology, the increase in nursing literature, and the need to utilize electronic health records while maintaining patient privacy have changed the way nurses work. Nurses need a high level of skill and knowledge to prepare medications, administer treatment regimens, and perform complicated interventions while monitoring the patient's condition and the machines and devices in use for the patient.

According to the American Organization of Nurse Executives (2005), it continues to become more difficult for nursing education to stay current due to the changes in health care that result from research and advances in technology. Students report being aware of the risks of caring for patients in the acute care setting. One student stated, "It is frustrating and scary to function in the clinical setting as an inexperienced student" (Benner et al., 2010, p. 42). Other studies have also found that nursing students report fear about harming the patient (Shaban et al., 2012; Sun et al., 2016). The increasing complexity of patient care is another factor that influences the care nurses provide and the experiences nursing students have in their clinical rotations.

Nursing Workload

Nursing workload is associated with patient safety and the cost and quality of care (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Twigg, Geelhoed, Bremner, & Duffield, 2013). In a large cross-sectional analysis of data from adult general hospitals in Pennsylvania, Aiken et al. (2002) found that each additional surgical patient assigned to a

nurse increases the patient's chance of dying by 7%. It was also determined that an

increase in patients from four to six would increase patient mortality by 14% while an

increase in patients from four to eight would increase mortality by 31% (Aiken et al.,

2002). Twigg et al. (2013) conducted a retrospective analysis to compare nursing-

sensitive outcomes of all multi-day stay patients at three hospitals over four years in

Australia before and after implementation of a staffing method that increased the number

of Nurse Hours per Patient Day. There were 1357 less nursing-sensitive outcomes

including 'surgical wound infection', 'pulmonary failure', 'ulcer, gastritis', 'upper

gastrointestinal bleed', and 'cardiac arrest', after the increase of nursing hours. There

were also 155 fewer 'failure to rescue' events which contributed to 1088 life years

gained. Twigg et al. (2013) determined that the total cost savings of increased nursing

hours was AUD$7,142,466 with the cost per life year gained at AUD$8907.

There are many factors in addition to patient care that must be considered in

workloads including patient turnover, heavy patient load, unfamiliar work, and issues

with equipment (Jennings, 2008). Nurses working in acute care have time taken away

from patient care due to other responsibilities, distractions, intrusions, and discrepancies.

Examples of these include overhead announcements, a new patient admission, and a

medication order that requires clarification (Hall et al., 2010). A study of 102 nurses to

evaluate the relationships between work stressors, individual factors such as

demographics and personal resources, and transactional factors such as coping and

nursing staffs' burnout, psychological distress, and caring behaviors demonstrates the

impact of workload on nurses' anxiety (Chana, Kennedy, & Chessell, 2015). This study

used The Hospital Anxiety and Depression Scale to measure anxiety, and there was a statistically significant correlation between increased workload and anxiety in nurses.

These studies provide evidence of the detrimental effects of increased workload for nurses. There are many variables that can impact a nurse's workload, and there is evidence that negative outcomes on the nurse's mental health can result from increased workload. It is valuable for nurse educators to be aware of the relationship between workload and anxiety because this may also be true for nursing students.

Patient Safety and Nursing Education

Nurse educators function in a vital role to prepare nurses for safe practice. Quality and Safety Education for Nurses and The Essentials of Baccalaureate Education for Professional Nursing from the American Association of Colleges of Nursing serve to guide nursing education about patient safety. The goal of Quality and Safety Education for Nurses is to prepare future nurses with the knowledge, skills, and attitudes to have a positive impact on the safety of the health care systems where they work (Cronenwett et al., 2007). The six competencies addressed by Quality and Safety Education for Nurses include the following: patient-centered care, teamwork and collaboration, evidence based practice, safety, and informatics. Each competency contains multiple objectives that are organized into knowledge, skills, and attitudes. Examples of objectives for the safety competency include the following: "describe factors that create a culture of safety" (knowledge), "demonstrate effective use of strategies to reduce risk of harm to self or others" (skills), and "value own role in preventing errors" (attitude) (Cronenwett et al., 2007, p. 128). These competencies cannot be developed by students in a single course.

Instead, they should be integrated throughout the curriculum in the classroom and clinical setting (Cronenwett et al., 2007).

Essential II from the American Association of Colleges of Nursing (2008) focuses on quality care and patient safety. Rationale for this Essential includes that "the baccalaureate graduate implements safety principles and works with others on the interprofessoinal health care team to create a safe, caring environment" (p. 13). This education can be provided by including content about and practice with communication, teamwork skills, and patient safety principles.

Quality and Safety Education for Nurses and the American Association of College of Nursing's Essentials demonstrate the importance of providing education about patient safety for future nurses. These resources provide a guiding format for nursing schools to incorporate patient safety competencies into curricula. The publication of these documents validates that patient safety is a significant topic that should be emphasized in all nursing programs.

Summary of Patient Safety

The literature reviewed about patient safety demonstrates that there are many aspects of health care where the nurse can influence the safety and quality of care. Medication errors are a common source of adverse events for patients, and heightened anxiety has been associated with increased errors. The increases in complexity of care and nursing workload impact the care that nurses provide. Students report anxiety about caring for complex patients, and increased workloads lead to greater anxiety. It is imperative that nurse educators identify and implement strategies to decrease nursing

students' anxiety. If clinicians providing patient care are able to have decreased anxiety, they will be better equipped to provide safe patient care.

<div align="center">**Part II: Anxiety**</div>

There are generally two types of anxiety that a person may experience. According to Spielberger (1972), state anxiety, which measures how one feels at the moment, refers to feelings of tension and apprehension in specific situations. State anxiety has been associated with disruptions in learning and performance (Tanaka, Takehara, & Yamauchi, 2006). Trait anxiety, or how one generally feels, refers to the predisposition of an individual to experience state anxiety in situations. This section will discuss the current literature about anxiety and patient safety, anxiety and learning, and anxiety in the clinical setting.

Anxiety and Patient Safety

As discussed in Part I of this chapter, safety of the hospitalized patient is an important topic for today's health care providers. With 440,000 preventable adverse events occurring on an annual basis in American hospitals, up to 25% of hospitalized patients are impacted by a medical error (Armstrong & Barton, 2013; James, 2013). Stress and anxiety have been associated with adverse events in the clinical setting (Brady et al., 2012; Nielsen et al., 2013). According to Levett-Jones, Pitt, Courtney-Pratt, Harbrow, and Rossiter (2015), some students have significant concerns about harming a patient in the clinical setting. Students verbalize concerns about making mistakes that might upset, hurt, or kill a patient as one student said, "I am terrified about making a mistake. I don't want to be responsible for someone being hurt" (p. 4). These fears further exacerbate the feelings of anxiety for nursing students. According to a report

from the United Kingdom's Department of Health (2009), over 80% of health care staff members believe that their state of health impacts the patient care they provide. Patient satisfaction was also higher with increased staff well-being (measured by injuries, level of stress, job satisfaction, and intention to leave the job).

The results from a study by Cheung and Au (2011) indicate the negative impact anxiety can have on clinical performance. Thirty undergraduate nursing students in Hong Kong viewed an anxiety provoking video clip about the Severe Acute Respiratory Syndrome (SARS) epidemic and a video clip of an orientation video at a clinical placement site to provoke calm feelings. Students went through the anxious-mood induction and calm-mood induction in a random order. The students were also taught a new clinical skill of removing a stitch and were asked to perform the stitch removal after viewing each mood induction. There was a 6% increase in errors with removing the stitch after viewing the anxious-mood induction video. With students' completion of a skill negatively influenced by anxiety, there could be ramifications for the safety of patient care. Limitations of this study include the small sample size and the issue of anxiety being measured in a simulated situation instead of a real clinical setting.

Anxiety can also have a negative impact on the relationships that nursing students develop with their patients. According to Karimollahi (2012), students identified anxiety as a reason for being hesitant to develop a relationship with their patient in the clinical setting. One student said, "I was nervous about starting a relationship. In the first days, I tried to leave without contact and asking questions" (Karimollahi, 2012, p. 741). As students' anxiety decreased, they spent more time with the patients and participated in

conversations. The findings from this study provide evidence of the influence anxiety can have on forming connections with patients.

Anxiety and Learning

Studies have found that state anxiety is related to poor academic performance (Khan & Zafar, 2010; Tanaka et al., 2006). When students were asked to give a five-minute presentation about themselves, students with more self-reported state anxiety had lower evaluation scores from the audience (Tanaka et al., 2006). Anxiety also negatively affects performance when learning a second language (Khan & Zafar, 2010). Khan and Zafar (2010) measured anxiety, using a visual analog measure of state anxiety, while 100 students were learning a foreign language. A video camera was used to induce anxiety during an exercise where the participants learned 20 pairs of Hindi-English nouns. There was a significant change in anxiety levels with introduction of the camera, and student performance was significantly reduced after recent arousal of anxiety. This study demonstrates the negative implications of anxiety on learning.

According to Owens, Stevenson, Hadwin and Norgate (2014), the working memory capacity of adolescents influences performance on cognitive tests. Participants with low working memory and high trait anxiety had decreased scores on the cognitive tests. In comparison, participants with high working memory and high trait anxiety had increased scores on the cognitive tests. This study serves to demonstrate that strategies to increase the availability of working memory, such as schema, may have a positive impact on the cognitive performance of students.

Specifically related to education of health care providers, increased state anxiety has been associated with decreased working memory capacity and impaired academic

performance for health science graduate students (Hubbard, 2015). When the health science students reported higher anxiety, there was a significant decrease in their grade in a course that tested students' ability to complete clinical techniques and procedures. The course evaluated skills such as communication, physical assessment, diagnosis, and interpretation of results. Decreased students' performance in the practical course directly applies to the ability to perform in the clinical setting.

While the negative effects of anxiety are well-documented, it is also important to consider the positive aspects of stress to have a complete understanding of the concept. A study by McKay, Buen, Bohan, and Maye (2010) aimed to determine the relationship between stress and the performance of student nurse anesthetists during a simulation. The results of this study indicate that "low performers have increased stress and perform poorly, whereas high performers have increased stress and perform superbly" (p. 301). This suggests that stress, to some degree, enables students to perform better in the clinical setting. Gibbons, Dempster, and Moutray (2008) also indicate that individuals need to experience a certain amount of stress to perform at their highest capacity. This optimal level of stress that promotes increased performance is called eustress.

Hutchinson and Goodin (2013) discuss how the presence of anxiety in nursing students can contribute to a caring relationship between the student and faculty member. When nursing students express anxiety in the clinical setting, nursing faculty have the opportunity to capitalize on it and provide instruction to the student. The nursing faculty member and student can have a conversation about what contributed to the student's anxiety, and the faculty member can suggest interventions to minimize the negative feelings. When the faculty member assists the student in working through the anxiety, he

or she models caring and promotes this attribute for the nursing students. As the student sees the faculty display caring, this can have positive effects as the student goes forth to interact with patients.

Anxiety in the Clinical Setting

It is common for nursing students to express anxiety and stress about clinical rotations. In a study of 418 students, Andrew et al. (2009) found that 19% report feelings of anxiety associated with the first clinical placement. Nolan and Ryan (2008) conducted a study with 23 participants and found that 48% of nursing students in a psychiatric nursing program in Ireland experienced severe stress in the clinical setting with an additional 22% experiencing mild stress. Anxiety in the clinical setting is also associated with students' future plans in nursing. Happell, Platania-Phung, Harris, and Bradshaw (2014) conducted a study to understand how the attitudes of nursing students relate to their intentions to seek employment in mental health. Self-reported anxiety by 116 undergraduate nursing students in Australia was found to be the most influential factor on whether a student considers a career in mental health nursing.

Sources of anxiety. Nursing students' anxiety in the clinical setting has been found to originate from many sources. These feelings can result from interactions with staff nurses, physicians, the clinical instructor, and peers (Melincavage, 2011). One student states, "I am concerned with almost everything to do with clinical placement…it all worries me" (Levett-Jones et al., 2015). In a study of 262 students, 26% viewed the clinical instructor as a threat (Pagana, 1988). Nursing students feel threatened and anxious when the clinical instructor is present, watching every movement of the student and drilling the student with questions. However, other studies report students

experience anxiety when they are left alone and unable to find the instructor (Melincavage, 2011). Melincavage (2011) also reports that students feel exposed by instructors and staff nurses when mistakes are discussed in front of others.

Students report feeling anxious about the clinical setting because the expectations are unclear (Ganzer & Zauderer, 2013; Pagana, 1988; Sun et al., 2016). Another source of anxiety is concern about providing incorrect information to patients (Sharif & Masoumi, 2005). Pagana (1988) and Sun et al. (2016) also found that students are anxious about causing harm to the patient by making an error. Students report feeling inadequate when in the clinical setting, and anxious feelings result for students when they are asked to do something they have not previously learned (Chesser-Smyth, 2005; Melincavage, 2011; Pagana, 1988). Feelings of anxiety are often associated with the first clinical placement (Beck, 1993; Chesser-Smyth, 2005; Neill et al., 1998; Payne, 2016; Sharif & Masoumi, 2005; Sun et al., 2016). According to Beck (1993) and Neill et al. (1998), students feel abandoned during the first clinical placement and are unsure who to turn to for support.

Beck (1993) conducted a phenomenological study to examine the experiences of nursing students in their first clinical placement. Eighteen undergraduate students were asked to think back to their first day of clinical and describe this experience in writing including all thoughts, perceptions, and feelings they could recall. The researcher used Colaizzi's (1978) seven-step phenomenological method to analyze the data. The following six themes were identified: pervading anxiety, envisioning self as incompetent, feeling abandoned, encountering reality shock, doubting choices, and uplifting consequences. Statements such as "On my first morning I had diarrhea from the

nervousness I felt. I felt totally stupid." and "I wondered why I was left alone with a real patient." illustrate these themes (Beck, 1993, p. 493). A limitation of this study is that the data were collected at the end of the semester. The students may have distorted recollection, or they may have forgotten relevant experiences during the timespan of the semester.

Using a similar method of data collection, Payne (2016) conducted a qualitative study to describe experiences of undergraduate nursing students when they first provide patient care in the clinical setting. The researcher collected data from 120 participants through written responses to a single statement: "Tell me about your first patient care experience" (Payne, 2016, p. 253). Responses ranged from short and brief statements to full page, in-depth descriptions. The researcher identified emerging codes and organized them through conceptual mapping according to major themes. The three main themes were: anticipation, processing ~ working through, and awareness. Each theme also had sub-themes such as nervousness, fear, anxiety, instructor actions, and affirmation. Statements such as "I could hardly sleep" and "My first clinical experience was kind of scary and a little nerve racking" illustrate the theme of anticipation (Payne, 2016, p. 253). The theme of processing ~ working through is evident through statements including "as the day went on I came through and it was easy" and "I went crying to my instructor, who graciously lent a hand and we got through it together" (Payne, 2016, p. 254). Some students identified actions from the instructor and nurse that were not helpful such as "My instructor was not very organized with our group…" and "The nurse I was shadowing was not so pleasant and yelled at me…" (Payne, 2016, p. 254). The final theme of awareness refers to the increase in the students' understanding of their role

development. This is evident through statements such as "But the clinical experience has boosted my confidence and helped me gain more knowledge that I need to be a good nurse" and "Overall, my clinical experience confirmed that nursing is exactly what I'm supposed to be doing with my life" (Payne, 2016, p. 255). A limitation of this study is that the participants had completed a different number of semesters of didactic and clinical courses. The clinical experiences also varied from primary health care centers to long term care facilities and outpatient settings.

Neill et al. (1998) used observation and focus groups for 75 sophomore nursing students to examine the experiences in their first clinical assignment. The researchers conducted focus groups during the post-conference time of a clinical experience. The team of investigators developed and discussed questions to gather descriptions of clinical experiences, but these questions are not stated in the article. The authors used three interrelated processes to analyze the data. The processes included the following: thematic analysis, scrutiny of examples, and a search for paradigm cases. Five themes emerged from the process of data analysis. 'What am I doing here?' is illustrated through the statement of "I was hanging out by the door because I didn't know what else to do" (Neill et al., 1998, p. 18). 'How do I learn here?' is a theme identified through statements such as "It can be a frustrating experience because there is a huge gap between what we know and what we don't know" (Neill et al, 1998, p. 18). 'Who are the mentors?' is a third theme which is evident through the participants relying heavily on the individuals they identified as mentors. These mentors included instructors, staff nurses, and nursing assistants. The fourth theme of 'Where can I connect?' is revealed through the students seeking support and connection from a variety of groups including peers, patients and

families. Statements such as "I was so thankful that I had my fellow student with me…I don't know what I'd done if I'd been by myself" illustrate this theme (Neill et al., 1998, p. 19). The final theme of 'Did I do it well?' relates to the students' desire for feedback. A limitation of this study is that the focus groups were led by five different graduate students. While the author states that the focus group questions were rehearsed by the five individuals, there is no discussion about any follow-up questions that were asked during the focus groups. The author also states the graduate students observed the students in the clinical setting to obtain an etic perspective of the participants' issues mentioned in the focus groups, but there is no other discussion of these observations.

A phenomenological study by Chesser-Smyth (2005) utilized in-depth interviews from 10 undergraduate nursing students in Ireland to understand the experiences of nursing students in their first clinical placement. Three participants entered nursing school directly from high school, two had different careers prior to choosing nursing, and five participants had one to three years of experience in health care. There is no information provided about the questions asked during the interviews. The author used Colaizzi's (1978) framework for data analysis. The five themes identified from the 10 participants were self-awareness, confidence, anxiety, facilitation, and professional issues. There were also 17 sub-themes identified from the data analysis. Negative feelings lasted approximately two weeks and were evident in comments such as "I just thought, I'm just totally inadequate like and thinking what am I doing here" and "I felt anxious if I was asked to do something that I hadn't learnt in college" (Chesser-Smyth, 2005, p. 323-324). A warm welcome from the staff positively influenced the students' self-esteem. The participants with previous health care experience reported higher

confidence through comments such as "I was working in a nursing home during the summer, so care of the elderly was perfect for me" (Chesser-Smyth, 2005, p. 323). Students with no previous experience in health care described higher levels of anxiety than those who had worked in health care. While the author states that interviews took place over four months, no information is provided about when data collection occurred in relation to the first clinical placement, and that is a limitation of this study.

Student experiences with anxiety. The only recent study exploring student nurses' experiences of anxiety was conducted in Taiwan (Sun et al., 2016). Fifteen nursing students in Taiwan who experienced physiological and psychological reactions of anxiety such as tension, restlessness, and lack of appetite participated in the study. The specific interview questions are not reported in the article, but they "included the students' overall experience, anxiety reactions experienced, daily difficulties, and coping mechanisms" (Sun et al., 2016, p. 22). The researchers used Colaizzi's seven-step method to analyze the data.

Three themes relating to the experiences of anxiety were identified, and they include the following: anxiety around the first clinical, three phases of anxiety reactions, and coping behaviors. There are five sub-themes that resulted from the theme of anxiety with the first clinical practicum. Self-doubt, worry and fear is one sub-theme that surfaced due to student comments about being anxious because of the uncertainty of what to expect in the clinical setting. This is evident in statements such as "About one week before clinical practicum I became an insomniac. I was wondering if I'd know the right thing to do during the practicum" (Sun et al., 2016, p. 23). A second sub-theme is that students reported difficulty with the learning process and were nervous about harming the

patient. One student said, "I feared that I might carry out the procedure wrongly and cause the patient's condition to deteriorate" (Sun et al., 2016, p. 23). Other sub-themes included worry about hampering therapeutic relationships that were already established with patients, anxiety that a patients' illness progression could not be predicted, and anxiety about interactions with the instructor.

Sun et al. (2016) found that there are three phases of anxiety. Students' anxiety increased before the practicum, escalated during the experience, and diminished after the clinical assignment. All students reported feelings of anxiety including poor sleep, headaches, and restlessness, approximately one week prior to the clinical experience. Students' anxiety increased during the rotation, and they reported more physiological symptoms and decreased concentration. The final phase of students' experiences with anxiety during the clinical rotation is that the anxiety diminished at the conclusion. One student said, "The lack of sleep, the hand tremors, and stomach pain were basically not happening after completing the practicum. . . I can now focus my mind to concentrate, so my ability to learn has improved" (p. 24).

There were four sub-themes of coping behaviors identified which included self-reflection to prepare for clinical, finding ways to release emotions, distraction from anxiety, and facing their difficulties head-on. One way to release emotions was described by a student as: "I discussed my anxiety with my cousin who is a nurse and I felt less anxious and thought 'I can do this'" (Sun et al., 2016, p. 24). One limitation of this study is that participants had to experience physiological and psychological reactions around their anxiety, so data about students with anxiety that did not provoke these reactions was excluded. The article also states that the researcher had three informal interviews with

the participants to build a rapport, but there is no information provided about what was discussed during these informal interviews.

Anxiety across a
Nursing Program

Wedgeworth (2016) conducted a cross-sectional analysis to examine the type, timing, and severity of anxiety that undergraduate nursing students experience. This study is unique from other research about nursing students' anxiety because it served to provide a picture about the level of anxiety at different points in the program including pre-nursing, early nursing and late nursing courses. There were 119 total participants in the study who completed the State-Trait Anxiety Inventory. Study participants also ranked the main source of their anxiety as academic, clinical, or personal. A power analysis indicated 30 participants per group of students would yield a power of .96 with a large effect size of .40. There were 43 pre-nursing students, 43 early nursing students, and 33 late nursing students, so the sample sizes were adequate.

Pre-nursing and early nursing students reported the highest state anxiety and trait anxiety. Pre-nursing students had a mean score of 49.58 for state anxiety while early nursing students had a mean score of 51.17 and late nursing students had a mean score of 37.12. Pre-nursing students had a mean score of 45.83 for trait anxiety while early nursing students had a mean score of 48.81 and late nursing had a mean score of 35.79. All three groups of students identified academics as the main source of anxiety. This study is valuable because of the information it provides about the source of anxiety and the level of anxiety present at different points in a traditional nursing program.

Strategies to Decrease Anxiety

It is essential for nurse educators to consider interventions that might be implemented to help nursing students decrease these feelings of anxiousness. There are a few interventions that have been studied and found to be effective in nursing education. The interventions discussed in the literature to decrease nursing students' anxiety can be organized into the following categories: simulation, peer-mentoring, and mindfulness. An additional teaching strategy often used in nursing education but not studied related to student anxiety, reflective journaling, is also introduced.

Simulation. Many studies have been conducted to evaluate the impact of simulation on nursing students' anxiety in the clinical setting. There is evidence to indicate that simulation is effective at decreasing nursing students' anxiety prior to their clinical experience (Dearmon et al., 2012; Gore et al., 2011; Khalailia, 2014; Szpak & Kameg, 2013). Simulation has been used as a tool to decrease anxiety prior to clinical experiences in a variety of settings including pediatrics (Megel et al., 2012), psychiatric (Szpak & Kameg, 2013), medical-surgical (Khalalia, 2014) and obstetrics (Hollenbach, 2016).

In a study by Dearmon et al. (2012), 50 nursing students participated in two full days of orientation using standardized patients prior to their first clinical experience. One day consisted of students interviewing and assessing their standardized patient while the second day simulated the beginning of a clinical day including bed making, administering medications, and assisting patients with hygiene. Students completed the trait portion of the State-Trait Anxiety Inventory (STAI) prior to the simulation and the state portion of

the STAI before and after the simulation experience. The state anxiety levels were significantly lower after the simulation than before the simulation.

Szpak and Kameg (2013) evaluated students' anxiety levels using the STAI before and after participating in a simulation exercise. Two alternating scenarios were used, including a depressed patient with suicidal ideations and an anxious patient with alcohol abuse. A two-hour lecture on therapeutic communication was provided prior to the simulations, and students were expected to implement strategies learned in this lecture. Students completed both forms of the STAI to measure state and trait anxiety before and after the simulation intervention. Students' mean state anxiety score prior to the simulation indicated they were "somewhat" anxious while the mean score after the simulation indicated a level of anxiety between "not at all" and "somewhat" anxious. There was no significant difference in the scores related to the students' trait anxiety.

Despite the evidence that simulation can decrease students' anxiety, there is limited research about the duration of this effect. In fact, Hollenbach (2016) found that even though a simulation workshop decreased students' anxiety levels, these levels were unchanged or even higher than the initial assessment one week later immediately prior to the initial clinical experience. Students in this study participated in four obstetric simulations. Students completed the trait portion of the STAI prior to the simulation experience and the state portion of the STAI three times: before the simulations, after the simulations, and before the first clinical experience. For one cohort of study participants, the anxiety levels before the first clinical were mostly unchanged compared to the levels before the simulation while a second cohort of participants had higher anxiety levels before the clinical compared to levels before the simulation.

Peer mentoring. Peer mentoring, or peer-assisted learning, is an intervention that is frequently implemented in nursing education with many benefits. One social benefit that results from peer mentoring is decreased anxiety for nursing students (Wong et al., 2016). In a study by Walker and Verklan (2016), the STAI was used to determine differences in anxiety levels for students who participated in peer-mentoring as compared to students who did not participate in this intervention. In the intervention group, senior nursing students were paired with new nursing students for three weeks. The Clinical Experience Assessment Form was used to measure anxiety specific to nursing situations. The peer mentor group had significantly lower anxiety levels than the control group.

In another study evaluating peer mentoring, senior students worked with students in the fundamentals course in the virtual learning center and the clinical setting (Zentz et al., 2014). Data obtained through open-ended responses indicated that sophomore students had decreased anxiety after working with senior students. Nearly 80% of sophomore students indicated that they agreed or strongly agreed that they had reduced anxiety after working with senior students.

Mindfulness. In a review by Guillaumie et al. (2017), mindfulness was found to assist nurses with reaching an inner state of calmness, facilitate communication with patients, and decrease anxiety. Quantitative and qualitative studies provide support for the use of mindfulness to decrease anxiety, improve students' well-being, and improve performance in the clinical setting (Guillaumie et al., 2017).

Schwarze (2011) found that a six-week intervention with mindfulness-based cognitive therapy techniques including 11 meditation exercises such as the students scanning their bodies to bring an increased awareness to specific areas, a nine-minute

breathing meditation, and a five-minute hearing exercise. While there were only five

participants in this study, four of the participants did have decreased stress levels

throughout and at the end of the six sessions. In a study to evaluate the effect of an

intervention that included meditation and humor, O'Brien (2013) found a significant

decrease in anxiety for nursing students related to the clinical setting in those students

who were in the control group. These studies indicate that mindfulness exercises have

been shown to have a positive influence on nursing students' anxiety levels.

      Reflective journaling. A teaching strategy that is often used in nursing education

but has not been studied related to its impact on student anxiety is reflective journaling.

Reflection is defined as "the purposeful contemplation of thoughts, feelings, and

happenings that pertain to…experiences" (Kennison & Misselwitz, 2002, p. 239).

Reflective practice can serve as a companion when students are developing their practice.

The descriptive level of reflection is completed when the practitioner reflects-on-action

(Freshwater, 2008). The descriptive level of reflection can be achieved through reflective

journals, and this reflection helps the practitioner become conscious. By inviting students

to take the time to reflect on their experiences, the learners can be intentional when

considering an experience and processing the feelings that are associated with this

experience (Armstrong & Sherwood, 2012).

      Journals related to the clinical experiences are often used to facilitate and guide

the students' reflective thinking (Hendrix, O'Malley, Sullivan, & Carmon, 2012).

According to Barnes (2010), reflective journaling can help students concentrate on their

feelings and may produce a modified outlook. Students should focus on their thoughts

and feelings around their experience and consider the meaning of these feelings (Hendrix

et al., 2012).   In a review of reflective journaling, Epp (2008) states that the process of reflection allows nursing students to have a better self-understanding which can have a positive impact on their values and ultimately result in better patient care.

Taylor-Haslip (2010) suggests that assigning a guided journal with clear instructions is beneficial in keeping students engaged in their clinical work. Thirty guided journals were evaluated for the student's level of reflection based on criteria operationally defined by Hatton and Smith (1995). Taylor-Haslip reports a correlation between a higher level of reflective writing and an increase in clinical performance. Also, there was a correlation between the level of reflective writing and increase in exam grades. This article supports that benefits of reflective writing are far-reaching.

Barnes (2010) indicates that reflective journals can result in three positive outcomes for nursing students. These outcomes include the following: ability to process information, an increase in confidence, and a growth in insightfulness. As students reflect on personal experiences, they can consider alternative ways to approach the situations. This thoughtful process can promote critical thinking. Some students also report that writing in a journal resulted in increased confidence when communicating with patients. Keeping a journal encourages students to be insightful as they recognize personal strengths and areas for improvement.

There are some recommendations about how reflective journaling should be utilized in nursing education. Dunlap (2006) provides recommendations that can be organized into four categories: "constructing journal questions that work, scheduling journal writing activities, reinforcing the value of journaling, and supporting students' journaling" (p. 22). Guided questions assist students with focusing their responses, and

the questions should be written to help capture the changes of interest. According to

Hendrix et al. (2012), the guided questions provide direction for the students that results

in a deeper understanding. Dunlap (2006) also suggests testing these guided questions

with a focus group prior to using in a class to ensure students will understand the

questions. If journal assignments will be made throughout a semester-long course,

Dunlap (2006) found that students can experience burnout from weekly journals, so

assignments every two or three weeks should be considered. If the journaling will be

over a few weeks, weekly assignments can be acceptable without the students

experiencing burnout. To reinforce the value of reflective journaling, instructors should

provide an explanation of the value of the journals. Allowing students to complete their

journals in their own space serves to support the journaling process. An instructor can

consider sending journal questions via email and allowing students a certain amount of

time to submit their responses.

In a study, Hendrix et al. (2012) found that nursing students prefer confidentiality

with their journals instead of sharing them in an open online discussion area where peers

can view their responses. Students also prefer feedback on their journals as opposed to

the instructor checking for completeness of the assignment. Instead of an open format or

complete structure, students indicate a preference for semi-structure. When instructors

assigned a weekly time commitment of 45 minutes and then decreased that to 15 minutes,

student satisfaction increased by 54% with the reduced time commitment.

Summary of Articles
about Anxiety

The literature about anxiety in the clinical setting provides evidence that these

feelings are problematic for undergraduate nursing students. As Nolan and Ryan (2008)

found, anxiety affects a large percentage of nursing students. This anxiety originates from many sources in the clinical setting and has a negative impact on clinical performance. These feelings of anxiousness also impact the areas of nursing that individuals are interested in pursuing after completion of their educational program, psychiatric mental health nursing in particular.

Studies located in recent literature provide evidence that nursing students frequently encounter anxiety in the clinical setting. These studies also demonstrate that anxiety can have a negative impact on students' ability to learn and their performance. When nursing students do not correctly learn material or are unable to adequately perform, there can be negative results for the patient. Several strategies have been implemented and shown to be successful at decreasing anxiety in nursing students. However, it is important for nurse educators to continue to consider and evaluate additional strategies that are effective in promoting the best student learning and patient care. One teaching strategy that is often used in nursing education but that has not been considered for its potential effectiveness at decreasing student anxiety is reflective journaling.

Gaps in the Literature

Anxiety is a common problem for nursing students that can have negative influences on student learning and patient care. Several strategies including simulation, peer-mentoring, and mindfulness interventions have been studied and shown to be effective at decreasing student anxiety. There are negative aspects of each of these strategies that limit their use to decrease nursing students' anxiety. Reflective journals are often assigned by nurse educators when undergraduate nursing students are in their

clinical rotations. Studies have demonstrated that reflective journals have positive impacts on clinical performance and critical thinking. However, there is a dearth of research about the potential of reflective journals to decrease anxiety in undergraduate nursing students related to the clinical setting.

Part III: Theoretical Framework

Cognitive load theory (CLT), used as a framework for this study, provides an explanation of the different types of cognitive load and how cognitive load impacts memory and learning. Part of the complex environment of clinical practice is the amount of information and the rapid changes that nursing students must deal with in order to provide safe care. According to Sweller (1988), some learning environments require greater cognitive effort which requires the student's working memory to use more resources. Cognitive load theory defines learning as the build-up of knowledge and movement of this information to the long-term memory (Sweller, van Merrienboer, & Paas, 1998). Working memory, which is responsible for processing information, has a limited amount of space (Josephsen, 2015). According to Miller (1956), working memory can hold about seven items of information at a time. When students are expected to process, as opposed to just retain, the information in their memory, the working memory capacity plummets to being able to deal with only two to three items of information at once (Sweller et al., 1998). Information that is needed and that the brain is able to process transfers to long-term memory.

The long-term memory, which has unlimited capacity, stores knowledge that can be retrieved when needed. Long-term memory uses schema to organize information. Novice learners, which includes nursing students, may not have the necessary schema

developed to help with the high cognitive load involved when learning new information. The lack of schema can result in cognitive overload and a disruption in working memory (Sweller, 1988).

Cognitive load theory, developed by Sweller (1988), describes three types of cognitive load which include the following: intrinsic, extraneous, and germane. These cognitive loads affect the ability to use working memory during the learning process. Intrinsic cognitive load is affected by the level of student engagement with the material being learned. More complex content increases the intrinsic load and has a greater demand on working memory. The clinical environment generally has a large number of interacting elements which contribute to a high intrinsic load (Fraser et al., 2012). This type of cognitive load typically cannot be changed by the instructor.

Extraneous cognitive load is affected by how the content is presented to students. When students are engaged in activities that are not related to the goal of the learning experience, they are required to divide their attention among several sources (Josephsen, 2015). When students' attention is divided, they can encounter an excessive extraneous load. The instructor can impact extraneous cognitive load through teaching strategies. For example, students in the clinical environment may encounter an increase in their extraneous load if they are presented information that is irrelevant to their learning and are not able to focus their attention on the clinical situation.

Germane cognitive load is required for learning to occur. It is associated with teaching strategies that help students develop schema, patterns and chunks of information that are easier for students to move from the working memory into the long-term

memory. When students begin forming schema, they develop expertise through constructing more complex schemas (van Merrienboer & Sweller, 2010).

According to Kaylor (2014), proponents of CLT believe that there is an interference with learning when greater cognitive effort is needed. Negative emotions, such as anxiety, are associated with a high cognitive load that hinders learning (Darke, 1988; Fraser et al., 2012). Sorg and Whitney (1992) provide evidence that anxiety levels can have significant effects on the available capacity of an individual's working memory. Eysenck, Derkashan, Sanots, and Calvo (2007) argue that students with high anxiety focus attention on irrelevant tasks, such as worrying, which decreases the available working memory. The decrease in working memory inhibits the student's ability to learn. Additionally, if the cognitive load exceeds the capacity of working memory, the performance of tasks that depend on working memory will be negatively impacted (Chen et al., 2015).

Anxious individuals have been found to focus attention on reducing their anxiety instead of accomplishing the goal in front of them (Eysenck et al., 2007). When attention is pulled from learning and redirected at reducing anxiety, there is a further negative impact on the learning process. If nursing students are unable to learn new information, they are unable to perform adequately and provide safe patient care. If students are anxious in the clinical setting, their attention is pulled away from providing high-quality, safe patient care because they are focused on their feelings of anxiety. According to Fraser et al. (2012), heightened emotions resulted in a higher cognitive load for medical students involved in a simulation. This higher cognitive load was associated with reduced clinical performance measured by identification of a cardiac murmur.

This theory was appropriate to use as the framework for this study because it helps explain the learning process. The concepts of the cognitive load theory are applicable when teaching complex material, such as that required in health professions including nursing (van Merrienboer & Sweller, 2010). When students are learning or trying to apply difficult content in the clinical setting, the cognitive overload they may encounter inhibits their ability to process the information and store the material in their long-term memory for retrieval at a later time.

Other evidence supports the view that students with high anxiety devote attention to irrelevant tasks, which consumes a portion of the working memory. When the working memory is consumed with irrelevant tasks, students' ability to process information is disrupted (Darke, 1988). Higher levels of anxiety leading to decreased availability of working memory and impaired performance has also been demonstrated by Ashcraft and Kirk (2001) with students performing mathematical calculations. According to Sorg and Whitney (1992), working memory is also decreased for individuals with high trait anxiety who encounter a situational stressor. While these studies (Ashcraft & Kirk, 2001; Darke, 1988; Sorg & Whitney, 1992) did not have nursing students as the research participants, they provide valuable information that indicates less working memory is available when students are learning in an anxious state of mind.

Cognitive load theory has been used to inform studies in nursing education about the teaching of physical assessment skills, simulation and pharmacology (Hessler & Henderson, 2013; Josephsen, 2015; Kaylor, 2014). Hessler and Henderson (2013) applied this theory to teach nursing students how to complete a physical assessment of the pulmonary, cardiac, and neurological systems. The learning of this type of skill

directly translates to clinical performance. According to Hessler and Henderson (2013), the type of critical thinking associated with learning a psychomotor skill and connecting the elements of the assessment with disease states requires significant effort which may decrease the ability of the working memory. The purpose of this study was to compare student satisfaction and knowledge acquisition and retention between an interactive, computerized case study and a hand-written, non-interactive format. In this study of 99 students, the participants showed a preference for an interactive case study over a non-interactive case study. There was no statistically significant difference between groups in the perceived cognitive load of students. Cognitive load was measured with a subjective rating scale, which may not have captured the true mental effort of students.

It was found that students who completed the interactive case studies did perceive the format as more helpful for learning, easy to complete, and more helpful for integrating the information than students who completed the hand-written case studies. According to Hessler and Henderson (2013), "the interactivity of the case study did decrease mental effort simply through ease of completion" (p. 8). If the learning of skills, such as physical assessment, is negatively impacted by a high cognitive load, student performance in the clinical setting is also impaired because the student has not been able to thoroughly learn the content. If students are unable to perform adequately in the clinical setting, this has undesired effects on the care that is provided for patients. Nursing students learn complex material in the classroom and skills in the lab which must be applied in the clinical setting to care for patients. Cognitive load theory provides some explanation of how the learning of this content can be affected.

In an integrative review of literature about cognitive load theory in nursing simulation, Josephsen (2015) reports that critical thinking and learning are inhibited in situations that have a high cognitive load and overload students' working memory. While there is not very much literature about CLT specific to nursing simulation, this review demonstrates the connection of cognitive load theory to nursing education. Simulation experiences, much like clinical experiences, include several elements that increase all types of cognitive load. For example, simulation experiences typically consist of multiple items that demand the student's attention and ability to identify pertinence of information to the situation. The actual clinical environment also has similar demands of the nursing student. Because of the factors encountered in patient care, students must develop or select an appropriate schema to assist with problem solving in the clinical setting.

Kaylor (2014) discusses the use of cognitive load theory as a framework to develop four instructional strategies to reduce the amount of extraneous load when teaching pharmacology to undergraduate nursing students. The strategies included: "(a) opening review activities, (b) providing students with lecture notes, (c) a "Top Five" approach to learning new drugs, and (d) deciphering "Need to Knows" from "Nice to Knows" (p. 109). Qualitative feedback from the students indicates that they liked the strategies. Students reported being able to actively listen in class, and the instructor found that students took a more active role in their learning. This study provides support of the use of cognitive load theory in nursing education, where the intrinsic load is generally high given the nature of the material that is taught. A significant limitation of this study is that there is a lack of information about the methods used for data collection,

and it is unclear how many students participated. This study also did not collect information about whether or not the strategies had any impact on student learning.

In the clinical setting, nursing students encounter a difficult learning environment and are expected to recall and use a lot of information to safely care for patients. Students are also expected to learn and add to their knowledge when in the clinical setting. It has been found that if individuals have feelings of anxiety, they focus their attention on reducing this anxiety. When anxiety is high for nursing students, their cognitive load is increased which has been shown to have a negative result on clinical performance. With attention being pulled away from learning and providing safe patient care, there are negative results that can ensue for patients. Higher levels of anxiety have been linked to impaired performance when completing skills such as mathematical calculations and performing physical assessments of patients. Cognitive load theory provides an explanation of what influences cognitive load and how an increased demand on the cognitive load disrupts the available space in the working memory.

Summary

There are many factors that influence patient safety, and the health care provider's anxiety has been shown to have an effect. While there is research about some strategies that have been found effective in decreasing student anxiety, there is a lack of research about a teaching strategy often used in nursing education. Reflective journals are often assigned to students, but their potential as a strategy to decrease student anxiety has not been evaluated. This study aimed to fill this gap in the literature by determining if reflective journals can decease nursing student anxiety associated with the clinical setting. The study also aimed to provide information about how this strategy might best

be implemented to be most effective to decrease student anxiety. A decrease in anxiety

will enhance students' learning and clinical performance while simultaneously reducing

the negative impact on patient safety.

CHAPTER III

METHODOLOGY

The purpose of this mixed methods study was to evaluate if reflective journals can decrease anxiety for undergraduate nursing students in their first clinical rotation and to explore students' perception of the impact of reflective journal assignments on their anxiety. The following research questions guided this study:

Q1   In the clinical setting, is there a difference in state anxiety levels, before and directly after the first clinical rotation, as measured by the State-Trait Anxiety Inventory between undergraduate nursing students who write guided reflective journals, non-guided reflective journals or no reflective journals?

Q2   How do undergraduate nursing students perceive the impact of writing reflective journals on their anxiety level related to the clinical setting?

Study Design

The research design for this study was an embedded mixed methods design. Mixed methods research is valuable because it draws from the strengths and minimizes the weaknesses of using a single method for the research study (Johnson & Onwuegbuzie, 2004). Using both quantitative and qualitative methods of data collection leads to an enhancement and clarification of results from one method with the results from the other (Greene, Caracelli, & Graham, 1989). This contributed to a more complete understanding of the impact of reflective journals on nursing students' anxiety. A mixed methods research design allowed for the collection of more varied and in-depth data and led to increased rigor through the interpretation of quantitative and qualitative

data. This mixed methods approach enhanced the integrity of the findings (Bryman,

2006). Mixed methods research allows the researcher to explore an intervention and

consider refinement of the intervention to have the most benefit for the future.

Embedded Mixed Methods Design

There are several mixed methods designs that can be utilized when conducting

research (Creswell & Plano Clark, 2011). To capture the most complete understanding of

the use of reflective journals to decrease nursing student anxiety, the researcher collected

both quantitative and qualitative data in the study because a single form of data is

insufficient to understand the impact of the intervention and how it can best be

implemented. With the embedded design, the researcher collects and analyzes

"quantitative and qualitative data within a traditional quantitative research design or

qualitative research design" (Creswell & Plano Clark, 2011, p. 90). One data set can

serve a supportive role to answer a secondary research question. The purpose for

including the secondary type of data is connected to but distinctive from the primary

purpose of the study. The researcher should consider the embedded design when there

are "different questions that require different types of data" (Creswell & Plano Clark,

2011, p. 91).

In the embedded research design for this study, the quantitative and qualitative

strands interacted with the qualitative strand being embedded in the quantitative design.

With the embedded mixed methods design, emphasis is given to one type of data

collection over another depending on the main purpose of the study. In this study, the

quantitative strand had priority while the qualitative strand was used in a secondary role.

The data collected in the quantitative strand of the study served to determine if reflective

journals decrease nursing students' anxiety, which is the primary interest of this study. The data collected in the qualitative strand supplemented the quantitative findings. The qualitative data contributed to a more complete understanding of the students' perception of the reflective journals and how the intervention might be implemented to achieve the desired result of decreasing anxiety. In this study, the timing of the quantitative and qualitative strands was sequential. The quantitative strand was implemented first, followed by the qualitative strand. Collecting qualitative data after the students completed their first clinical rotation and wrote the reflective journals allowed the researcher to gather feedback that can be used to understand the most effective way to structure the reflective journal assignments.

In this study, a survey to measure nursing student anxiety was administered prior to the first clinical rotation and again at the conclusion of the first clinical rotation. Demographic characteristics including age, gender, ethnicity, and previous experience in health care were collected to describe the participants. Shortly after the collection of quantitative data, the researcher conducted personal interviews with research participants to gather deeper information about nursing students' experiences with using reflective journals.

**Sampling and Recruitment
of Participants**

Setting. The study took place at a college of nursing in a private university located in Midwest United States. This site was selected because the potential participants fit the inclusion criteria, and the researcher had access to them. To be included this study, research participants had to be 19 years of age or older and participate in the first clinical rotation where they provide patient care. Research

participants also needed to be able to read and speak English. This nursing school has

approximately 110 students in each traditional, or non-accelerated, program cohort and

approximately 55 students in each accelerated program cohort. The majority of the

students in the traditional program are Caucasian females in their early 20s; however,

there are some males, older students, and individuals who identify as non-Caucasian.

The accelerated nursing program typically has more males, older students, and

individuals of different ethnicities. The accelerated nursing program at this university is

a three-semester program that lasts 12 months. Students in the accelerated program must

have a previous bachelor's degree and successfully complete pre-requisites before

enrolling in the nursing courses. Students from both programs were invited to participate

in the study.

    This university offers the nursing program on a larger urban campus and on a

smaller rural campus. The researcher works on the smaller campus, and participants for

this study were recruited from the larger campus. Because the researcher was not in

direct contact with the potential participants and does not serve as their clinical instructor,

the pressure students may have felt to participate in the study was diminished.

    Nursing students in the traditional program begin clinical rotations during the first

semester of their junior year, and nursing students in the accelerated program begin

clinical rotations during their first semester. Clinical rotations in the first semester for

students in the traditional program include clinical integration (focuses on

communication skills with individuals in an outpatient setting), obstetrics, medical

surgical 1, and school health. Clinical rotations in the first semester for students in the

accelerated program include obstetrics, medical surgical 1, and school health. Nursing

students provide direct patient care in the obstetrics and medical surgical 1 clinical rotations. Students rotate through these clinical areas during the semester.

Students were assigned to clinical groups by their instructors, who were not involved with the planning of this study or the collection of data. There were 13 clinical groups of traditional students and six clinical groups of accelerated students during the semester this study was conducted. The researcher randomly assigned these 19 clinical groups to either guided reflective journals (7), non-guided reflective journals (6), or no reflective journals (6) using Research Randomizer (Urbaniak & Plous, 2017). The clinical instructors agreed to employ any of these assignments to their groups. All students completed the assignment as part of their coursework. Their participation in the study was to allow the data from their pre- and post-tests to be analyzed and included in the results. Some nursing students may volunteer or be employed in positions in which they interact with patients prior to the scheduled clinical experiences, which may impact their anxiety in the clinical rotations. Information about the participants' previous experience of providing care to others was collected during this study. This covariate was considered during data analysis to evaluate if previous experience in health care impacted the students' anxiety level.

There were 156 individuals eligible to participate in the study. An email with a link to complete the online surveys for quantitative data collection was sent to these 156 students. There were 42 participants who completed the pre-test and 54 participants who completed the post-test. Participants who did not complete both the pre-test and post-test were excluded from the study. There were 20 individuals who completed the pre-test and

post-test for this study. The participants' age varied from 19-30 years, with a mean of 22.3 years.

Quantitative strand. A non-probability, convenience sampling process was utilized for the quantitative strand of this study. Students in the first semester of the accelerated nursing program and the first semester of the junior year of the traditional nursing program were introduced to the study by the researcher during the first week of the course in which they begin clinical rotations during the fall semester. The researcher sent a video announcement through the learning management system in the care management courses in which potential research participants were enrolled. The purpose of this connection was for the researcher to establish a relationship with the potential research participants and explain the study (Appendix A). The researcher was not an instructor in these courses and had no interaction with the potential research participants.

Adequate statistical power contributes to determining that true relationships that are present. A power analysis was completed to assess the risk of Type II errors. According to Polit and Beck (2012), 53 participants per group would be required for ANOVA situations in a three-group study assuming $\alpha = .05$, power $= .80$, with a medium effect size of .50. The population at the beginning of the study was 111 students for the traditional program and 48 students for the accelerated program so power could have been possible with sufficient participation.

Qualitative strand. For the qualitative strand of this study, purposeful random sampling was used to include students who had experienced their first clinical rotation. Purposeful sampling means that the researcher selects participants because they understand and can discuss the phenomenon of interest (Creswell, 2013). With

purposeful random sampling, participants were then randomly selected, which adds

credibility to the study (Bloomberg & Volpe, 2016). The researcher sent an email to all

156 students eligible for this study after the second week of the first clinical rotation to

recruit participants (Appendix A). Due to an initial low response rate after all potential

participants were emailed the invitation to participate in the interview, a faculty member

in the care management course for the accelerated nursing students and the care

management course for the traditional nursing students read a script to invite students to

participate in the qualitative strand of the study (Appendix A).

    The researcher anticipated that five to six participants would be needed from each

group of students. Five participants from the guided reflective journal group volunteered

to participate in an interview. Six participants from the non-guided reflective journal

group volunteered to participate in an interview. Ten participants from the control group

that did not write reflective journals volunteered to participate in an interview. Using

Research Randomizer (Urbaniak & Plous, 2017), the researcher randomly selected five

research participants from each group willing to share their experiences in an interview

and contacted them to schedule an interview. A separate informed consent was

completed prior to the interview (Appendix B).

<div align="center">**Instrumentation**</div>

State-Trait Anxiety Inventory

    State and trait anxiety were operationalized with the State-Trait Anxiety

Inventory (STAI), an instrument that measures adult anxiety. The STAI was developed

by Spielberger, Gorsuch, Lushene, Vagg, and Jacobs (1983) and has been used in many

studies involving college students and adults, which is the same age group as the

potential participants for this study. The STAI contains two 20-item self-report subscales

to measure state and trait anxiety. According to the manual for the STAI (Spielberger,

2015), individuals need approximately 10 minutes to complete both subscales and six

minutes to complete one of the subscales.

The State Anxiety Scale (S-Anxiety) measures how individuals feel in that

moment by using items that assess "subjective feelings of apprehension, tension,

nervousness, worry, and activation/arousal of the autonomic nervous system" (Julian,

2011, p. S467). The instructions for the state anxiety tool can be individualized to narrow

the participant to a particular timeframe. For this study, the participants were informed to

answer the questions based on the clinical rotation they were getting ready to start for the

first data collection and the clinical rotation they just completed for the second data

collection (Appendix C). The S-Anxiety scale was administered prior to the Trait

Anxiety Scale (T-Anxiety) to maintain reliability of both instruments. The researcher

paid for the right to administer this instrument to the research participants.

The S-Anxiety contains 20 statements used to measure the intensity of feelings.

The statements use a four-point Likert scale ranging from (1) not at all to (4) very much

so. Sample items include: "I am tense; I am worried; I feel calm; I feel secure"

(Spielberger, 2015). Hultquist (2014) reports the internal consistency for the state

anxiety scale for college aged students measured by Cronbach's alpha as .91 (males) and

.93 (females).

Trait anxiety, a broad, stable description of disposition, was measured with the

STAI T-Anxiety Scale. The Trait Anxiety Scale (T-Anxiety) measures "aspects of

"anxiety proneness," including general states of calmness, confidence, and security"

(Julian, 2011, p. S467). This scale consists of 20 statements about how the individual generally feels. The participants responded to the statements using a four-point Likert scale ranging from (1) almost never to (4) almost always. Sample items include: "I worry too much over something that really doesn't matter" and "I am content; I am a steady person" (Speilberger, 2015). Spielberger (2015) reports the test-retest reliability coefficient for the T-Anxiety scale as .86 for college males and .76 for college females. The median reliability coefficient for college students was .765. The median alpha coefficient was .90. Internal consistency correlations are greater than .30 for all items on the scale. The content validity of the T-Anxiety scale is strengthened by a recent study by Warning (2011) that found optimistic students had lower trait anxiety scores.

Each item on the STAI is weighted by the participant on a score from one to four. A score of four indicates high anxiety for 10 S-Anxiety items and 11 T-anxiety items while a score of four for the other 10 S-Anxiety items and nine T-anxiety items indicates anxiety is absent. For the anxiety-absent items, the scoring weights are reverse-coded for analysis, "i.e., responses marked 1, 2, 3, or 4 are scores 4, 3, 2, or 1, respectively" (Spielberger, 2015, p. 12). On the S-Anxiety scale, items 1, 2, 5, 8, 10, 11, 15, 16, 19, and 20 have reversed scoring weights. On the T-Anxiety scale, items 21, 23, 26, 27, 30, 33, 34, 36, and 39 have reversed scoring weights. The weighted scores for the 20 items that are on each scale are added to obtain total scores for the S-Anxiety and T-Anxiety scales with possible scores ranging from 20 to 80.

In this study, participants completed the State Anxiety Scale as a pre-test and post-test. Because the Trait Anxiety Scale measures an individual's stable disposition, participants only completed this scale once during the initial quantitative data collection.

Demographics

Demographic information of the participants was collected when participants completed the initial data collection (Appendix D). Key characteristics including program of enrollment (traditional or accelerated), age (years), ethnicity, gender, previous experience in health care, and previous experience with writing reflective journals were collected to describe the sample participants included in the study.

<div align="center">

Procedure

</div>

Prior to distributing the STAI and demographics form to research participants, the researcher pilot tested these forms with a group of three students who were near the end of their nursing program and did not meet the inclusion criteria for this study. The researcher verified that there were no glitches with the electronic method of data collection. The researcher also conducted mock interviews with these students to check the process for qualitative data collection. This allowed the researcher to assess the effectiveness and clarity of the interview questions and probing questions.

During the first week of the semester, the researcher scheduled a 30-minute informational session to explain the study to the clinical instructors involved with the first clinical rotation where students provide patient care. Seven clinical instructors attended this session. Two instructors were not able to attend the session, so the researcher had a private meeting with the individuals. The purpose of this session was to explain the study, inform the instructors if their clinical groups had been randomly assigned to the guided reflective journal intervention, non-guided reflective journal intervention, or no reflective journal control group, provide the scripts the clinical instructors should read at clinical orientation, and answer any questions about the study. During this session the

researcher provided appropriate instruction for the clinical instructors about how the students should complete their reflective journals. If a clinical group was appointed to no journal assignments, the researcher educated the clinical instructor to leave out information about reflective journal assignments when orienting students to the clinical rotation.

Quantitative Data Collection

The quantitative strand utilized an experimental, pre-test, post-test design. This strand of the mixed methods study served to examine the effect of guided reflective journal assignments, non-guided reflective journal assignments, and no journal assignments on the anxiety levels of undergraduate nursing students associated with the first clinical rotation. Two self-report instruments were used to collect data for the research questions in the quantitative strand of this mixed methods study. These instruments provided data to measure the quantitative variables of the level of anxiety in the clinical setting and to describe the demographics of the research participants.

Students beginning their maternal child rotation had internet access during their orientation, and these students were sent the link to the survey in an email prior to beginning the first clinical rotation where they provide direct patient care. Students were allowed 10 minutes during clinical orientation to complete the survey if they wished to participate in the study. All students had access to their email during the orientation. If they wished to participate, they could click on the survey link. If they did not wish to participate, they could click on the "not survey" link. This allowed others to not know who was or was not completing the survey and participating in the study.

The groups of students beginning their medical surgical clinical rotation did not have internet access during their orientation. Due to this, these students were sent the email link and asked to complete the survey prior to the first clinical day if they were willing to participate in the study.

Informed consent was obtained at the time that participants completed the instruments (Appendix E). Steps were taken to maintain confidentiality for the participants. The researcher maintained the electronic copies of the forms on a password-protected computer maintained by the university where the researcher is a faculty member. When completing the STAI pre-test, the research participants created a unique identifier that allowed the researcher to compare individual's pre-test and post-test scores on the survey. The purpose of this unique identifier was to prevent anyone else who might see the form from identifying the participant, which maintained confidentiality. The research participants were asked to write the number of their birth month (1=January, 2=February, 3=March, 4=April, 5=May, 6=June, 7=July, 8=August, 9=September, 10=October, 11=November, 12=December), the second letter of their last name, and the last digit of their Social Security Number.

The orientation to the clinical rotations was scheduled and conducted by the clinical instructor, and it was held within one week of the students beginning the clinical rotation. During clinical orientation, groups assigned to the guided reflective journal assignments received instructions about how to complete their journals (Appendix F). The researcher used parts of Gibbs' reflective cycle (1988) to develop the prompts and questions for the guided reflective journal assignment. This cycle encourages individuals to use steps to reflect on an experience. The cycle includes the following six phases:

description, feelings, evaluation, analysis, conclusion, and action plan. For the first

phase, students were asked to "describe an experience in the clinical setting where" they

felt anxious. For the second phase, students explored the feelings they had during the

clinical rotation by responding to questions such as, "Try to describe the feelings you had

during this experience" and "Did your feelings affect your actions?" During the

evaluation phase, the students identified "what was good or bad about this experience?"

During the analysis phase, the students were asked, "Why do you think you had these

feelings?" In the conclusion, students considered the question of, "Was there anything

you could have discussed with a peer or instructor?" The final phase of Gibbs' reflective

cycle allowed the student to suggest a plan if a similar event happens again by responding

to the question, "If you experience feelings of anxiety in the future related to the clinical

rotation, what will you do?" (Appendix F).

     Gibbs' reflective cycle is applicable for nurses because it can be adapted to the

different situations that health care professionals encounter in the clinical setting

(Wilding, 2008). Wilding (2008) suggests that this reflective cycle is a good model for

first-year student nurses, making it appropriate to use in this study. O'Connor (2008)

provides reflection on two critical incidents as a nurse in the neonatal intensive care unit

using Gibbs' reflective cycle. This article demonstrates that this particular reflective

practice can be used for health care professionals to reflect on troubling encounters. The

University of South Wales (2013) developed a list of questions for students to use during

the reflective cycle, and some questions from this list were modified for use in this study

(Appendix F). The research participants in the non-guided reflective journal received

instructions about how to complete their journals (Appendix F) which included for them

to write a one-to-page reflection about any feelings they have related to their clinical experience.

Research participants in the two groups who wrote journals were assigned to write their first journal prior to their first clinical day, a second journal after week two of their first clinical rotation, and a third journal after the fourth and final week of their first clinical rotation. Research participants in the group with no reflective journals did not have any journals assigned during the first clinical rotation, and journal assignments were not mentioned during the clinical orientation. The students in the control group had an alternate assignment to equate the workload for students in the clinical groups (Appendix G).

Research participants submitted their assignments with other weekly clinical assignments through a submission link in BlueLine, the name for the Canvas learning management system used at this university. The researcher checked the week 1, week 2, and week 4 submission links to verify that all journal assignments were completed and submitted by the participants. If any journal assignments were not completed, the results from that research participant would have been excluded from the study results. To promote openness and honesty from the research participants, the researcher notified the participants that their journal responses would be kept confidential. The researcher read the journal submissions to verify that the students completed the journals as instructed and graded the journals for effort of reflection using a rubric (Appendix H). The researcher also conducted a simple content analysis of the journals submitted by the students who participated in the study. The purpose of this content analysis was to

determine if students mentioned anxiety, or similar feelings, when they were not prompted to write about these particular feelings.

For the post-test collection of quantitative data, the researcher sent an email to all research participants three days after completing the first clinical rotation and again five days after completing the clinical rotation with a link to complete the state anxiety subscale of the STAI. Instructions were included with this survey to inform the participants that they should respond to the statements based on the way they felt after completing the first clinical rotation where they provided patient care (Appendix C).

Qualitative Data Collection

Interviews were used in this study to collect information to answer the research question in the qualitative strand. The interviews were held at a mutually agreeable time. The interviews lasted approximately 20 minutes. Depending on the time of day and day of the week of the interview, the researcher was either in a private room on campus or in a private office in the researcher's home. The individuals participating in the interview were able to choose their location as long as they had an internet connection so the web-based program needed to conduct the interview via distance, WebEx, could be accessed. The researcher encouraged the participant to choose a quiet location that was free of distractions. The participant signed, scanned, and emailed a signed copy of the consent form to participate in the interview (Appendix B). The researcher also recorded the participants providing verbal consent to participate in the study. The research participants were notified that they could decline to answer any questions and could withdraw from the study at any time without penalty or loss of benefits.

The interviews were conducted through WebEx, a web-based video conferencing system. The audio of the interviews was recorded using Panopto, a software company often used for lecture recording in online environments. An mp3 audio recorder was also used as a backup. The semi-structured interview consisted of open-ended questions that were generated in advance (Appendix I). The researcher piloted these questions with nursing students who were near the end of their program and not eligible to participate in the proposed study. This served to ensure that nursing students understood the questions. The students in the pilot test did not report difficulty with understanding any of the questions. If there had been difficulty, the researcher would have modified the questions prior to performing interviews with the research participants. The interview was guided by the developed questions, but the interviewer asked additional questions based on the participants' responses (Chan, Fung, & Chien, 2013). The aim of the interview was to allow the participants to speak openly about their experiences during the first clinical rotation, and where applicable, to speak about their experiences with writing reflective journals during the first clinical rotation (Silverman, 2013). The researcher utilized probes to enrich the participants' responses to the interview questions. Elaboration probes such as "Can you share more detail?" were used when the researcher wanted the respondent to continue talking about the subject while clarification probes such as "Can you tell me more about that?" were used if statements were ambiguous (Patton, 2015).

The data were transcribed by a professional transcription service, and the data were verified against the audio files for accuracy by the researcher. The researcher utilized member checking by sending the study findings to participants and asking for feedback. The 11 participants who responded agreed with the findings and had nothing

further to add. Participants in the interviews were given a $25 Starbucks gift card to thank them for their participation.

Data Analysis

In this study, the quantitative and qualitative data were analyzed separately using appropriate techniques for each type of data. Onwuegbuzie and Teddlie (2003) discuss the stages of data analysis in a mixed methods research study. In a mixed methods embedded design study where the data is collected sequentially, the quantitative and qualitative data are analyzed separately (Creswell & Plano Clark, 2011). This provides an opportunity to explore the research questions separately, while interpreting the overall impact of reflective journaling on anxiety in nursing students during their first clinical rotation.

Quantitative

The IBM SPSS Statistics v 25 was utilized for the data analysis procedures of the quantitative data. The primary researcher was responsible for the data entry and statistical analysis after data collection. Prior to analyzing the quantitative data, there is a pre-analysis phase. At this time, the researcher coded the nominal and ordinal data so it could be input to IBM SPSS Statistics v 25. These data were coded and placed directly into the database followed by the researcher verifying all entries were correct by double entering the data (Polit & Beck, 2012). The researcher then completed a consistency check to confirm that data for each participant was compatible, such as the age of participant and the program in which he or she is enrolled.

Missing Data. If participants omitted one or two items on the STAI, Speilberger (2015) states a prorated score "can be obtained by the following procedure: determine

mean weighted score for the scale items to which the individual responded; multiply this value by 20; and round the product to the next higher whole number" (p. 83). If participants omitted three or more items, the researcher would have discarded these participants' results. There was no missing data from the 20 participants who completed the pre-test and post-test.

Research Question #1: *In the clinical setting, is there a difference in state anxiety levels, before and directly after the first clinical rotation, as measured by the State-Trait Anxiety Inventory between undergraduate nursing students who write guided reflective journals, non-guided reflective journals or no reflective journals?*

The State-Trait Anxiety Inventory provided data about the nursing students' anxiety levels. To answer this research question, the level of anxiety for each individual was computed by summing their responses on the 20 items for each subscale (after reverse scoring the identified items). Mean scores for the pre-test and post-test state anxiety were calculated for each group (guided reflective journals, non-guided reflective journals, no reflective journals). The ANOVA test was used to compare mean differences for the pre-test and post-test scores on the S-Anxiety Scale between the three groups. Paired sample *t*-tests were run to compare pre-test and post scores on the S-Anxiety Scale for all participants collectively and for each intervention group.

The rubric used to grade the effort of reflection in the journal assignments (Appendix H) was used to determine consistency of the intervention in the study. A mean reflection score for the three journal assignments for each participant was calculated. A correlation was run to determine if there was a relationship between the reflection score and participants' difference in pre-test and post-test state anxiety scores.

The researcher was the only individual using the rubric to assign grades to the effort of reflection which promoted consistent use of the rubric. The researcher also completed a simple content analysis with the written reflective journals to determine if students write about feelings of anxiety when they are not prompted to do so. The researcher evaluated the journals for words such as "anxious, nervous, stressed, afraid" and determined if the students consider feelings of anxiety when reflecting on their first clinical rotation.

Qualitative

Research Question #2: *How do undergraduate nursing students perceive the impact of writing reflective journals on their anxiety level related to the clinical setting?*

The transcribed data were analyzed using criteria discussed by Saldana (2016). The data were split, as opposed to lumping, because splitting the data contributes to a more careful examination while lumping the data could cause a superficial analysis. The researcher used magnitude coding to analyze a portion of the data about participants' perception of the impact of writing journals on their anxiety. This allowed the researcher to "quantitize" how much the reflective journals impacted the participants' anxiety (Saldana, 2016). The researcher used In Vivo coding for the first cycle coding of the data about participants' experiences with writing journals to give priority to the voice of the participant. After developing a general impression through repeated readings of the transcriptions, the researcher wrote codes in the margins of the transcriptions. The researcher then entered these codes on a word document. The researcher identified themes from these codes after repeated readings and reviews of the codes. The researcher first read and analyzed the transcribed data from the interviews with the participants who wrote guided reflective journals. The researcher then read and analyzed

the transcribed data from the interviews with the participants who wrote non-guided reflective journals. Upon performing these analyses, common themes were present related to experiences with writing reflective journal assignments for individuals regardless of the format of the journal they were assigned. Due to the finding of common themes, the qualitative results were combined for participants who wrote guided and non-guided reflective journals for a portion of the analysis.

Saturation occurs when new information or themes are no longer obtained from the interviews (Guest, Bunce, & Johnson, 2006). If saturation had not been reached after conducting interviews with five participants from each group, additional interviews would have been scheduled.

Research Validity and Trustworthiness

The quality of mixed methods research can be evaluated by using the standards of quantitative and qualitative methods. There are also additional aspects that should be considered pertaining to the threats to reliability and validity that may be present in mixed methods research. The following section describes how the threats in the study were minimized.

Quantitative

Internal validity. Internal validity refers to whether the independent variable is responsible for the outcome. To improve rigor, it is essential to control threats to validity. The most effective strategy to control for the effects of individual characteristics of the participants is to implement randomization (Polit & Beck, 2012). The purpose is to create comparable groups and decrease the risk of unknown confounding variables. In

this study, research participants were randomly assigned by clinical groups to guided reflective journals, non-guided reflective journals, or no reflective journals.

Using a homogenous sample by including nursing students from only one nursing program helps control for confounding characteristics that may otherwise impact the findings of the study such as differences in the curriculum including number of credit hours, time spent in the clinical setting, and orientation methods (Polit & Beck, 2012). However, demographic characteristics such as age, gender, ethnicity, program of enrollment, and previous experience in health care cannot be controlled. Previous health care experience was evaluated for its potential contribution to the results by comparing pre-test S-Anxiety scores for participants with more than one year of previous health care experience and participants with less than one year or no previous experience.

If tools have internal consistency, this demonstrates that the tool measures the attribute of interest (Polit & Beck, 2012). Reliability for the STAI was assessed with Cronbach's alpha. This is "an index of internal consistency to estimate the extent to which" the items on an instrument "are reliably measuring the critical attribute" (Polit & Beck, 2012, p. 333). A Cronbach's alpha was determined each time the research participants completed the survey to determine the internal consistency. Cronbach alphas of 0.899, 0.939, and 0.940 were obtained for the pre-test S-Anxiety, post-test S-Anxiety, and T-Anxiety respectively.

Maturation refers to processes that occur in participants' lives that may impact the dependent variable (Polit & Beck, 2012). In this study, research participants may have encountered different experiences in the clinical setting that resulted in increased anxiety.

Research participants may have also utilized different strategies to help decrease their personal anxiety.

Another threat to internal validity of the study is testing because the participants completed the STAI during the pre-test and the post-test. When research participants are exposed to the same survey, it is possible that they will recall their answers from the first time they completed it and answer accordingly on the post-test (Polit & Beck, 2012). To control for this, a short statement was added to the beginning of the survey that reminded the participant of what timeframe to consider when answering questions (Appendix C). Also, because of the pre-test, post-test design, it was possible that some research participants would not complete the survey for the post-test. This mortality is common in this type of study design; however, the four weeks between data collection should have resulted in lower attrition rates than seen in studies where there was a longer time between the surveys (Polit & Beck, 2012).

The Hawthorne effect may impact the validity of this study if participants respond in a certain manner because of their participation in the study (Polit & Beck, 2012). This was minimized by reinforcing the idea that all responses on the surveys need to be truthful and are confidential. A common threat to construct validity is the researcher's influence through communication about desired responses. This threat was minimized in this study because the researcher did not interact with the participants during or between pre-test and post-test data collection.

External validity. External validity, the extent to which the results of a study would be similar regardless of variations of people or settings and thus can be generalized to them, is another important consideration when designing studies. In this study, using

research participants from one university limits the generalizability of the results.
However, information about demographic characteristics was collected which could be
used to compare the research participants to other undergraduate nursing students in
different areas of the United States.

Qualitative

Trustworthiness in qualitative research provides a means to assure the reader that
the study is significant and valuable. It is necessary to prove that the researcher's
conclusions make sense (Merriam, 2009). This is achieved by verifying that the research
findings are credible, dependable, and transferable (Bloomberg & Volpe, 2016). This
section describes how trustworthiness of the qualitative strand of this study was
enhanced.

Credibility. Credibility, or internal validity, refers to whether the researcher's
interpretation of the participants' perceptions aligns with what the participants think and
feel (Merriam, 2009). In this study, credibility of the findings was enhanced through a
few tactics. One way to ensure credibility is to encourage honesty from the research
participants. Students were informed that accurate data is necessary to make the results
of the study meaningful. To prevent participants from being dishonest, the researcher
notified the participants that they could withdraw from the study at any time without
penalty. Research participants were also encouraged to respond honestly and were
assured that there were no right or wrong answers to the interview questions. Purposeful
random sampling was an additional strategy to increase the credibility of the qualitative
results (Palinkas et al., 2015).

Member checks are considered by some to be the most effective way to increase a study's credibility (Shenton, 2004). Member checking is best when the research participants can review the themes and patterns identified from the interviews (Carlson, 2010). Member checks were completed in this study by allowing and encouraging research participants to verify that the themes identified by the researcher reflect their impressions of the journal assignment.

A final way that credibility was enhanced in this study is through an examination of existing literature. The researcher returned to the literature discussed in chapter II to identify if the findings of this study were congruent with previous studies (Shenton, 2004).

Dependability. In experimental research, reliability is based on the assumption that similar results will be found if a study is replicated, and efforts are made to create tools that consistently measure the variables. In qualitative research, it is not expected that the exact same findings will be obtained from each person because human behavior is not static and people have different experiences (Merriam, 2009). Dependability, or reliability, of a qualitative study is achieved by reporting in detail the processes used to collect and analyze the data (Bloomberg & Volpe, 2016). A study is considered dependable if the reported findings are consistent with the data collected during the research process. An audit trail, which provides explanations of how the data were collected and analyzed, was used in this study to enhance the dependability.

Transferability. It is not expected that findings from a qualitative study can be generalizable to all other settings, but the transferability of a study refers to the extent to which the findings could be applied in different situations (Merriam, 2009). The most

common way to enhance the transferability of a study is to use rich, "thick description" of the setting and the findings of a study (Merriam, 2009). The purposes of thick description are to capture the thoughts and feelings of the research participants, lead to thick interpretation, and result in thick meaning of the research findings (Ponterotto, 2006). This "thick description" allows the reader of the research findings to develop a realistic picture and determine if the findings apply to their situations (Bloomberg & Volpe, 2016). "Thick description" of the sample includes fully describing the research participants to allow the reader to visualize the sample (Ponterotto, 2006). It is also important to provide a detailed description of the setting and procedures including location, length, and recording procedures for the interviews. Long quotes in the results present the voice of the participants and allow the reader to visualize the interactions between the participant and interviewer. To enhance the transferability of this study, "thick description" of the setting, procedure and results were provided.

Bracketing. Because the researcher in a qualitative study is the instrument for data collection and analysis, preconceptions about the phenomenon can influence the gathering, interpretation, and presentation of data (Tufford & Newman, 2010). The process of bracketing is used to diminish the potential negative effects of unacknowledged preconceptions and serves to increase the rigor of the study. Bracketing allows the researcher to identify and set aside assumptions, biases, and previous experiences with the phenomenon of interest (Tufford & Newman, 2010). There is a lack of consensus about when bracketing should occur in the research process. Glaser (1992) states that it is important for researchers to consider bracketing at the start of a research endeavor. However, Rolls and Relf (2006) state that bracketing should begin when the

research project is first thought about and continue throughout the research. Ultimately, it is important that the researcher recognizes initial preconceptions about the phenomenon prior to conducting the research and monitors these preconceptions throughout the research process (Chan et al., 2013; Tufford & Newman, 2010).

Starting a reflective journal at the beginning of the research process may allow for "the surfacing of previously hidden memories or unconscious preconceptions" (Tufford & Newman, 2010, p. 89). The researcher should use this journal to write thoughts, feelings, and perceptions about the phenomenon (Chan et al., 2013). According to Wall, Glenn, Mitchinson, and Poole (2004), bracketing is "more of a psychological orientation towards oneself rather than an observable set of procedures to be adopted by the researcher" (p. 22). Prior to an interview, the researcher should set aside time to recognize the preconceived beliefs that will require bracketing (Wall et al., 2004). Visual imagery can be used to put aside the issues that are identified as needing to be bracketed. The researcher for this study began a journal prior to data collection and continued to reflect and write in the journal during the data collection and analysis. In this journal, the researcher wrote about personal experiences related to her first inpatient clinical rotation and feelings associated with this experience. In addition, the researcher journaled about her perceptions of the analysis of the findings throughout that phase of this study.

Ethical Considerations

The researcher has obtained a letter of support and access to students from the undergraduate program chair at the university where the potential research participants are enrolled as students (Appendix J). This study was reviewed for approval by the Institutional Review Boards (IRBs) at both the University of Northern Colorado (UNC),

where the researcher is a graduate student, and the university where the research participants are students (Appendix K). Prior to collecting data, each participant was asked to read the informed consent document. Research participants could click on one link to complete the survey if they were willing to have their responses included in the results of this study. Students could click on a separate link to complete the survey if they did not want their responses included in the results of the study. Consent was implied for the quantitative strand of this study if the students completed the survey through the link which stated their responses would be included in the study. Participants signed an informed consent document prior to the interview. While the students invited to participate in this study did need to complete the journal assignments as part of the course, they were informed that their participation in the study was voluntary and they could withdraw at any time without penalty.

Confidentiality

De-identified surveys were kept by the student researcher on a password-protected computer maintained by the university where the researcher is a faculty member. Only the student researcher had access to this data. The surveys will be kept for three years before being destroyed. Signed consent forms were sent to the research advisor to be stored in a locked cabinet in a separate place from any data or papers from this study. The consent forms will be kept for three years. At that time, the consent forms will be destroyed.

Due to the nature of conducting interviews, it was not possible for the research participants to be anonymous to the researcher but students were not known to each other unless they disclosed this information. Each interview participant was asked to choose a

pseudonym, and this pseudonym is used in dissemination of the results. The mp3 files with the recorded audio of the interviews were downloaded and saved to a password protected computer maintained by the university where the researcher is a faculty member. The data were transcribed by a professional transcription service, and the data were verified against the audio files for accuracy by the researcher. The backup audio files were then deleted from the recorder. Any data in paper form, including the printed transcriptions, were stored in a locked file cabinet in the researcher's office at the university. Data will be stored for three years or until the results from the study are published. At that time, the data will be shredded.

Risks of Participation

All research studies pose some minimal risk to the participants. These risks must be acknowledged, and steps should be taken to minimize the risks. It is possible that the information collected through the surveys about anxiety and the questions asked in the interview would cause the participant to recall negative or stressful feelings. If a participant would have had a strong negative reaction during the interview, the researcher would have referred the participant to the on-campus counseling center to talk with a professional counselor.

The formal benefit to completing the STAI prior to and at the conclusion of the first clinical rotation is that all participants who completed the instrument at both times of data collection were entered in a drawing. Three research participants were randomly selected to receive a $25 Amazon gift card. The formal benefit to participating in the interview is a $25 Starbucks gift card that was provided for each participant. There were also informal benefits for the research participants, such as the opportunity to contribute

to nursing science. The participant can provide information that would help nurse educators know if reflective journal assignments are effective in helping students with anxious feelings. It is also possible that the process of reflecting on personal experiences would allow the participant to identify strategies to implement in the future related to anxious feelings.

Limitations

There are limitations to any study design that the researcher needs to consider and attempt to decrease the impact of the limitation. One limitation is that research participants completed the same instrument for the pre-test and post-test. The previous exposure to the instrument may have influenced the participants' responses. This limitation was decreased by providing instructions to the participants completing the State Anxiety Scale to respond to the statements based on a certain point in time. It is also possible that the Hawthorne effect had an impact on the way participants responded to the statements. Only the experiences of the students who volunteered to participate in the interviews are included in the qualitative results. Students who did not volunteer to participate may have had very relevant experiences that are not included in the results of this study. Another limitation is that students who participated in the interviews were recalling experiences from a few weeks earlier. It is possible that their memories were inaccurate, or the participants may have left out details on purpose or accidently. To promote honesty, participants were assured that their responses would remain confidential.

The students invited to participate in this study were enrolled in different types of nursing programs. While the clinical rotations for the students in the traditional and

accelerated nursing programs are similar, the students enrolled in the accelerated nursing program have a slightly different curriculum. It is possible that the students will experience differences related to anxiety because of the differences in curriculum. The research participants also had different clinical instructors, and this may impact the anxiety nursing students encounter related to the clinical rotation. In the 19 clinical groups, all students in each group will be assigned to the same intervention group for the study which will help control for this limitation. The participants in the study are from one university which may limit the external validity of the findings. The demographics provide a description of the sample in the study which is used to contribute to an understanding about whether or not the sample is similar to the population of undergraduate nursing students.

<div align="center">**Summary**</div>

Undergraduate nursing students often encounter anxiety in the clinical setting. Identifying research-based strategies that are effective in reducing anxiety is important for nursing education. This study used a mixed methods approach to develop a deeper understanding of the impact of reflective journals on nursing students' anxiety in the clinical setting. The researcher collected information about levels of anxiety associated with the clinical setting before and after the first clinical rotation. Students were asked to participate in an interview to provide more in-depth information about their experiences of writing a reflective journal. Data were analyzed to answer the research questions for this study. Ultimately, having an understanding about the potential impact of reflective journals on nursing students' anxiety associated with the clinical setting will help nurse

educators provide strategies that can impact students' experiences and potentially

improve patient safety.

CHAPTER IV

RESULTS

The purpose of this study was to determine if reflective journals can decrease the level of anxiety for undergraduate nursing students associated with the clinical setting and to evaluate students' perception of the impact of reflective journals assignments on their anxiety. The following research questions guided this study:

Q1 In the clinical setting, is there a difference in state anxiety levels, before and directly after the first clinical rotation, as measured by the State-Trait Anxiety Inventory between undergraduate nursing students who write guided reflective journals, non-guided reflective journals or no reflective journals?

Q2 How do undergraduate nursing students perceive the impact of writing reflective journals on their anxiety level related to the clinical setting?

Characteristics of the Sample

The invitation to participate in this study was sent to 156 students. Forty-five students invited to participate in the study were enrolled in the accelerated nursing program while the remaining 111 students were enrolled in the traditional nursing program. Students in the accelerated nursing program were informed of the study four weeks after beginning the program. At this point, the students in the accelerated nursing program had successfully completed their nursing assessment course, and they were getting ready to begin their clinical rotations. Students in the traditional nursing program were informed of the study after the second week of their third year in the program. At this point, the students in the traditional nursing program had successfully completed all pre-requisite courses and their nursing assessment and pathophysiology courses. The 156

students were divided into 19 clinical groups by instructors not involved in this study.

Six clinical groups consisted of students in the accelerated nursing program while the

remaining 13 clinical groups consisted of students in the traditional nursing program.

The researcher randomly assigned clinical groups to either guided reflective journals (7),

non-guided reflective journals (6), or no reflective journals (6) using Research

Randomizer (Urbanik & Plous, 2017). The researcher emailed the invitation to

participate and link to complete the pre-test to eligible students two days before

beginning their medical-surgical clinical rotation or one day before their obstetric clinical

rotation orientation. Due to a lack of internet access during clinical orientation, students

beginning their medical-surgical clinical rotation were asked to complete the pre-test on

their own time prior to being in the clinical setting. Students beginning their obstetric

clinical rotation were provided 10 minutes during their clinical orientation to complete

the pre-test if they were interested in participating in the study. There were 42

participants who completed the pre-test and 54 participants who completed the post-test.

Twenty participants (approximately 13% participation from the accessible population)

completed the pre-test and post-test surveys for this study. The data from these 20

participants are included in the quantitative strand of results of this mixed methods study.

Of the 20 students who completed the pre-test and post-test for this study, nine

(45%) were in the guided journal group, 6 (30%) were in the non-guided journal group,

and 5 (25%) were in the control group with no journals. For this sample, the mean age

was 22.3 years ($SD = 2.90$). Eighteen participants (90%) were female while two

participants (10%) were male. There were 12 participants (60%) who self-identified as

Caucasian, one participant (5%) who identified as Hispanic, 2 participants (10%) who

identified as Asian, 4 participants (20%) who identified as being multi-racial, and one

participant (5%) who preferred not to answer. Ten participants (50%) were enrolled in

the accelerated nursing program while ten participants (50%) were enrolled in the

traditional nursing program. Twelve of the 20 participants (60%) reported having

previous experience in the health care field prior to their first clinical rotation with seven

participants (35%) reporting less than one year of experience and five participants (25%)

reporting between one and five years of experience. Fourteen participants (70%)

reported previous experience with writing reflective journals. This included eight

participants (89%) from the guided reflective journal group, six participants (100%) from

the non-guided reflective journal group, and zero participants from the control group.

Fourteen participants (70%) were in the obstetric clinical rotation during this study while

six participants (30%) were in the medical-surgical clinical rotation. Table 1 provides an

overall demographic description of the participants in the quantitative strand of this

study.

Table 1

Demographic Data of Research Participants for Quantitative Strand

Intervention group	Number of participants *N*					
Guided	9					
Non-guided	6					
No journal	5					
Total	20					

Intervention group	Age	Years *M* *(SD)*				
Guided		22.22 *(2.44)*				
Non-guided		20.00 *(.63)*				
No journal		25.20 *(3.03)*				

Intervention group	Gender	Female	Male			
Guided		*n* = 9 (100%)				
Non-guided		*n* = 5 (83.3%)	*n* = 1 (16.7%)			
No journal		*n* = 4 (80.0%)	*n* = 1 (20.0%)			

Intervention group	Race	Caucasian	Asian	Hispanic	Multi-racial	Prefer not to answer
Guided		*n* = 6 (66.7%)		*n* = 1 (11.1%)	*n* = 1 (11.1%)	*n* = 1 (11.1%)
Non-guided		*n* = 4 (66.7%)			*n* = 2 (33.3%)	
No journal		*n* = 2 (40.0%)	*n* = 2 (40.0%)		*n* = 1 (20.0%)	

Intervention group	Program of study	Accelerated	Traditional			
Guided		*n* = 5 (55.6%)	*n* = 4 (44.4%)			
Non-guided			*n* = 6 (100.0%)			
No journal		*n* = 5 (100.0%)				(continued)

Table 1, continued

Intervention group	Previous experience in health care	None	Less than 1 year	1-5 years	
Guided		$n = 4$ (44.4%)	$n = 4$ (44.4%)	$n = 1$ (11.1%)	
Non-guided		$n = 2$ (33.3%)	$n = 2$ (33.3%)	$n = 2$ (33.3%)	
No journal		$n = 2$ (40.0%)	$n = 1$ (20.0%)	$n = 2$ (40.0%)	
Intervention group	Previous experience with journaling	Yes	No		
Guided		$n = 8$ (88.9%)	$n = 1$ (11.1%)		
Non-guided		$n = 6$ (100.0%)			
No journal			$n = 5$ (100.0%)		

The researcher aimed to conduct an ANOVA test to determine if there was a significant difference in the age of participants between the groups. Distribution of ages was not normal for all groups, as assessed by visual inspection of a Q-Q plot. Because the data were not normally distributed, this assumption for the ANOVA test was violated. The nonparametric Kruskal-Wallis test, which does not assume normal distribution of data, was conducted. The distribution of ages was statistically significant between groups $H(2) = 10.197$, $p = .006$. Pairwise comparisons were performed with a Bonferroni correction for multiple comparisons. Adjusted p-values are presented. This post hoc analysis revealed a statistically significant difference in the age of participants between the non-guided journal group and the control group ($p = .004$), but not between the non-guided journal group and guided journal group ($p = .163$) or the guided journal group and the control group ($p = .309$).

Fifteen participants, five from each intervention group, participated in an interview with the researcher. Data from these interviews are included are in the qualitative strand of results of this mixed methods study. All individuals who participated in an interview were female. Nine interview participants were enrolled in the traditional nursing program while six were enrolled in the accelerated nursing program. Data from these 15 participants are included in the qualitative strand of results of this mixed methods study.

Reliability Measurements

Reliability testing was performed on the study test results. A Cronbach's alpha coefficient was calculated for the STAI State Anxiety Scale pre-test and post-test. A Cronbach's alpha coefficient was also calculated for the STAI Trait Anxiety Scale.

State-Trait Anxiety Inventory
State Anxiety Scale

In this study, Cronbach's alpha provided a measure of the extent to which the items on the S-Anxiety Scale provided consistent information with regard to participants' level of anxiety prior to the clinical rotation and again at the end of the clinical rotation. Cronbach's alpha for the pre-test was 0.899. Cronbach's alpha for the post-test was 0.939. This is consistent with internal consistency reliability reported by a previous study for college aged males (0.91) and college aged females (0.93) (Hultquist, 2014).

State-Trait Anxiety Inventory
Trait Anxiety Scale

In this study, Cronbach's alpha provided a measure of the extent to which the items on the T-Anxiety Scale provided consistent information with regard to participants' general feelings related to anxiety. Cronbach's alpha for the T-Anxiety Scale was 0.940.

This is consistent with internal consistency reliability reported in the STAI manual for college aged males (0.90) and college aged females (0.91) (Spielberger, 2015).

Quantitative Data Analysis and Results

The researcher entered the quantitative data into SPSS v 25, and double-checked the accuracy of data entered into the software. All entries were reviewed for completeness prior to analyzing the data. The study utilized an alpha level of 0.05 to determine significance for the statistical testing of data.

To answer the research question for the quantitative strand of this mixed methods study, the researcher compared mean differences for the pre-test and post-test scores on the S-Anxiety Scale between the three groups of participants who wrote guided reflective journals, non-guided reflective journals, and no reflective journals. The mean difference between pre-test and post-test scores for participants who wrote guided reflective journals was 11.56 ($SD = 9.44$). The mean difference between pre-test and post-test scores for participants in the non-guided reflective journal group was 14.5 ($SD = 10.80$). The mean difference in pre-test and post-test scores for participants in the control group was 4.6 ($SD = 7.73$). A one-way ANOVA was conducted to determine if the difference in state anxiety scores from the beginning of the clinical to the end of the clinical rotation was different for groups with different written reflective journal assignments. There were no outliers, as assessed by boxplot. The Shapiro-Wilk test is recommended to assess normal distribution of data when the sample size is less than 50 (Laerd Statistics, 2017). Data were normally distributed for each group, as assessed by Shapiro-Wilk's test ($p > .05$). There was homogeneity of variances, as assessed by Levene's test of homogeneity of variances ($p = .531$). While there was a difference in the mean scores according to

intervention group, the differences between these groups was not statistically significant, $F(2, 17) = 1.547$, $p = .241$.

Pre-test and Post-test for
All Participants

The mean pre-test scores on the S-Anxiety Scale for all participants in the study was 45.25 ($SD = 9.59$). The mean post-test score on the S-Anxiety Scale for all participants in the study was 34.4 ($SD = 9.84$). A paired sample t-test was run to compare pre-test and post-test scores for all participants. There were no outliers in the data, as assessed by inspection of a boxplot. The differences between the pre-test and post-test state anxiety were normally distributed, as assessed by Shapiro-Wilk's test ($p = .148$). Due to the small n, a Wilcoxon signed-rank test, a nonparametric statistical test that does not need data to be normally distributed, was also calculated. For the t-test, there was a statistically significant difference between the pre-test state anxiety and post-test state anxiety scores for all participants $t(19) = 4.826$, $p < .05$, $d = 1.08$. A Wilcoxon signed-rank test determined that there was a statistically significant median decrease of 8.5 points on the state anxiety scale, $z = -3.644$, $p < .05$.

Pre-test and Post-test for Each
Intervention Group

Paired sample t-tests were run to compare pre-test and post-test scores on the S-Anxiety Scale for each intervention group. Of the nine participants who wrote guided reflective journals, eight participants had a decrease in their state anxiety score from pre-test to post-test while one participant had an increase of one point on the S-Anxiety Scale. For the group that wrote guided reflective journals, there were no outliers in the data, as assessed by inspection of a boxplot. The differences between the pre-test and post-test

state anxiety were normally distributed, as assessed by Shapiro-Wilk's test ($p = .700$).

Due to the small n, a Wilcoxon signed-rank test, a nonparametric statistical test that does

not need data to be normally distributed, was also calculated. For the t-test, there was a

statistically significant difference between the pre-test state anxiety and post-test state

anxiety scores for participants in the guided journal group, $t(8) = 3.674$, $p = .006$,

$d = 1.22$. A Wilcoxon signed-rank test determined that there was a statistically

significant median decrease of nine points on the state anxiety scale, $z = -2.547$, $p = .011$.

Of the six participants who wrote non-guided reflective journals, all six had a

decrease in their scores on the S-Anxiety Scale from pre-test to post-test. There were no

outliers in the data, as assessed by inspection of a boxplot. The differences between the

pre-test and post-test state anxiety were normally distributed, as assessed by Shapiro-

Wilk's test ($p = .058$). Due to the small n, a Wilcoxon signed-rank test, a nonparametric

statistical test that does not need data to be normally distributed, was also calculated. For

the t-test, there was a statistically significant difference between the pre-test state anxiety

and post-test state anxiety scores for participants in the non-guided journal group, $t(5) =$

3.184, $p = .024$, $d = 1.30$. A Wilcoxon signed-rank test determined that there was a

statistically significant median decrease of 10.5 points on the state anxiety scale, $z = -$

2.207, $p = .027$.

Of the five participants who did not write reflective journals, there were three who

had a decrease in their state anxiety from pre-test to post-test, one who had an increase of

four points on the S-Anxiety Scale, and one who did not have any change. There were no

outliers in the data, as assessed by inspection of a boxplot. The differences between the

pre-test and post-test state anxiety were normally distributed, as assessed by Shapiro-

Wilk's test ($p = .868$). Due to the small n, a Wilcoxon signed-rank test, a nonparametric

statistical test that does not need data to be normally distributed, was also calculated. For

the t-test, there was not a statistically significant difference between pre-test state anxiety

and post-test state anxiety scores for participants in the control group, $t(4) = 1.332$,

$p = .254$, $d = .59$. A Wilcoxon signed-rank test determined that there was not a

statistically significant change in median of scores on the state anxiety scale from pre-test

to post-test, $z = -1.095$, $p = .273$.

Trait Anxiety

The mean score on the T-Anxiety Scale for all participants was 39.20

($SD = 11.01$). The mean score on the T-Anxiety Scale for participants in the guided

reflective journal group was 39.78 ($SD = 13.41$). The mean score on the T-Anxiety Scale

for participants in the non-guided reflective journal group was 34.00 ($SD = 5.66$).

Participants in the control group had a mean score of 44.40 ($SD = 10.06$). A one-way

ANOVA was conducted to determine if there was a difference in mean scores on the

Trait Anxiety Scale between the intervention groups. According to the Shapiro-Wilk's

test, data were normally distributed for each group ($p > .05$). Based on visual inspection

of the Q-Q plots, data were not normally distributed. Because of the difference of

findings between methods to assess normal distribution of data, the nonparametric

Kruskal-Wallis test was also conducted. There was homogeneity of variances, as

assessed by Levene's test ($p = .262$). Based on visual inspection of a boxplot, there were

two outliers in the guided reflective journal group. After reviewing the surveys of these

two participants, there was no evident reason to remove this data. An ANOVA test was

run, and the difference between the scores on the Trait Anxiety Scale between groups

was not statistically significant $F(2, 17) = 1.274$, $p = .305$. For the Kruskal-Wallis test, there was no statistically significant difference in mean scores on the T-Anxiety Scale between groups $H(2) = 1.797$, $p = .407$. A Spearman correlation was conducted to evaluate if there was a relationship between participant's trait anxiety and pre-test state anxiety. There was a positive correlation between trait anxiety and pre-test state anxiety, $r_s = .656$, $p = .003$. Table 2 provides information about the pre-test and post-test State Anxiety scores and Trait Anxiety scores for all participants and according to intervention group.

Table 2

Pre-Test and Post-Test State Anxiety Scores and Trait Anxiety Scores

	N	Trait Anxiety M (SD)	Pre-test State Anxiety M (SD)	Post-test State Anxiety M (SD)	Difference between Pre-test and Post-test State Anxiety M (SD)
All participants	20	39.20 (11.01)	45.25 (9.59)	34.4 (9.84)	10.7* (9.77) p < .05
Guided	9	39.78 (13.41)	47.56 (9.04)	36.00 (8.69)	11.56* (9.44) p = .006
Non-Guided	6	34.00 (5.66)	43.17 (11.14)	28.17 (4.12)	14.50* (10.80) p = .024
No Journal	5	44.40 (10.06)	43.60 (9.81)	39.00 (14.05)	4.6 (7.73) p = .254

Note. *p < 05 for paired samples *t*-test of pre-test and post-test state anxiety

Additional Analyses

The researcher performed additional statistical analyses to further describe statistical results for this study. While the independent *t*-test is the parametric test used to

compare the means of two independent groups on a continuous dependent variable, this test requires fairly equal sample sizes. To compare pre-test state anxiety scores for participants beginning their medical surgical ($n = 6$) and obstetric ($n = 14$) clinical rotations, Welch's *t*-test was used because it accounts for difference in sample size by weighting the variance of the samples (Field, 2013; Kohr & Games, 1974). Prior to analysis, no violation of independence or normality was indicated, and no outliers were identified. The mean pre-test score for participants beginning their medical surgical clinical rotation was 50.17 ($SD = 8.54$). The mean pre-test score for participants beginning their obstetric clinical rotation was 43.14 ($SD = 9.51$). There was a slightly higher pre-test state anxiety score for participants beginning their medical surgical clinical rotation, but the difference was not significant $F(1,18) = 2.421$, $p = .133$.

The researcher compared pre-test state anxiety scores for participants with more than one year of previous health care experience ($n = 5$) and those with less than one year or no previous health care experience ($n = 15$). Prior to analysis, no violation of independence or normality was indicated, and no outliers were identified. While an independent *t*-test is the statistical test that would typically be conducted, Welch's *t*-test was run because of the difference in sample sizes. The fifteen participants with less than one year or no previous health care experience had a mean score of 48.33 ($SD = 8.52$) while the five participants with more than one year of experience had a mean score of 36.00 ($SD = 6.32$). There was a statistically significant difference in mean pre-test state anxiety score between participants with more than one year of previous health care experience and those with less than one year or no previous health care experience, $F(1,18) = 8.721$, $p = .007$.

The researcher read the reflective journals submitted by the 15 participants who wrote guided or non-guided journals and completed the pre-test and post-test surveys. A grading rubric (Appendix H) was used to evaluate the effort of reflection. A correlation was run to analyze if the reflection score on reflective journals was related to participants' difference in state anxiety scores. Kendall's tau, a non-parametric test was run because of the small *n* and because a more accurate generalization can be determined from this correlation than other non-parametric tests available (Field, 2013). There was no significant relationship between the participants' reflection score and difference in state anxiety, $r = .139$, $p = .503$. The mean reflection score for participants in the guided reflective journal group was 1.51 ($SD = .23$). The mean reflection score for participants in the non-guided reflective journal group was 1.55 ($SD = .20$).

The researcher conduced a simple content analysis to determine if participants wrote about anxiety without being prompted to do so. The researcher looked for words such as anxiety, nervous, fear, and apprehensive as these words refer to similar feelings of anxiousness. All 15 participants in the guided and non-guided reflective journal groups mentioned being overwhelmed, unable to sleep, nervous, restless, or apprehensive in at least one journal submission. Some participants in the non-guided reflective journal mentioned feelings related to anxiety in the first journal submission while others mentioned these feelings in the first and second journals.

Qualitative Data Analysis and Results

After the researcher conducted interviews with selected participants, a professional transcription service transcribed the interviews. The researcher verified the accuracy of the transcriptions by listening to the recordings while reading the

transcriptions. All interview participants selected a pseudonym, and these pseudonyms were used in the reporting of the results of this study.

In this study, findings about the impact of writing journals on participants' anxiety and thoughts about the format of the journal assignment are discussed. In addition to findings about the participants' perception of reflective journals on anxiety and their thoughts about the journal format, four identified themes described the participants' impressions of writing reflective journals. The detailed descriptions of each theme and participant quotations are described in this chapter to present the results of the qualitative strand of this study.

Perceived Impact on Anxiety

During the interview, the researcher asked the participants what impact, if any, they felt that writing the reflective journals had on their anxiety. If the participants indicated they felt the journal assignment did impact their anxiety, the researcher inquired if the impact was slight, moderate, or significant.

All five participants in the guided reflective journal group felt that writing reflective journals impacted their anxiety. Of those five, three participants thought writing had a slight to moderate impact while two participants thought writing the reflective journals had a moderate impact on anxiety. Kimberly discussed the freeing feeling she had from writing the journals when she said, "I'm writing about it on this paper and it's out of me now." Brittany discussed that writing the journals helped decrease her anxiety each week:

> I had also kind of determined things that made me anxious from the first one [journal] and why I had them [anxieties], so going into the second week, it was a little bit easier and I was less nervous. Even the third week, I was even less nervous.

Jae commented "the journal made me feel less anxious…it helped to decrease anxieties I had about not doing enough." Grace felt "writing down and acknowledging what my anxieties were helped…it allowed me to assess and reassess myself throughout the weeks." Allie shared how "realizing that I am competent…make me less nervous for the next time."

Of the three participants in the non-guided reflective journal who felt that writing reflective journals impacted their anxiety, one participant thought writing had a slight impact, one thought it had a slight to moderate impact, and one thought it had a moderate impact.

Molly discussed, "I think that the reflective journals had a very positive impact on me related to anxiety and just, I think, in general, I found it to be a very positive tool." She also shared, "I was probably able to decrease my anxiety in future rotations because I was able to recall those experiences and how I handled them in the past." Hope mentioned, "I think it helped me put it on paper…[writing] allowed me to really recognize that you can have a little anxiety." Michelle stated, "It definitely lowered my anxiety." There were two interview participants from the non-guided reflective journal group who did not feel that writing the journals necessarily impacted their anxiety. One participant discussed how the journals helped her with "working through whatever I had felt during the day" (Meredith).

The researcher also interviewed five participants who were not assigned reflective journals during their first clinical rotation. One purpose of this interview was to determine if these participants felt like they would have benefitted from writing journals. All five participants thought they would have seen benefits from writing reflective

journals. Danne said, "I wish we would have had one, especially since that was our first rotation. I think I would have seen a lot of growth." Amanda commented, "Having a reflective journal might have been nice because it would have been more, your thoughts and your feelings." These five participants could see value in reflecting on experiences. Casey shared, "I think that it's worthwhile to reflect on what you're doing while you're doing it and afterward so you can see the value." Renee also mentioned the value of reflecting when she said, "I think reflecting is super important…I don't really sit down to reflect on my own which, I guess, I could benefit from." Robin elaborated on the potential value of reflective journals,

> I do think that they're helpful. If you have something to reflect, I think it's really helpful to look back and try to remember either good things or bad things, especially trying to think of good things that you've done. Because I feel that sometimes you forget about those with all the rush and stuff, just small moments where you made someone happy or were able to help someone do something that they might not have otherwise been able to do.

Format of Journals

During the interview, the researcher asked the participants about their opinion of the format of the journal as some journals were guided with specific prompts and others were non-guided for an open reflection. The researcher also obtained information from the participants who did not write reflective journals about which format they would prefer for an assignment. The participants' opinion of the format and what they prefer varied.

Jae wrote guided reflective journals and said, "I feel like the prompts were good because they guided you in the right direction and where to aim your reflection…I do enjoy having prompts more than just open reflection." Brittany also wrote guided reflective journals and shared,

>I think it allowed you to give a lot of details about your feelings in the moment and reflecting on why you had them…the structured format was better for me because then I actually truly learned something out of it and that could benefit me in the future…if it would have been just an open format, I would have not probably thought back on why I was feeling those. I would have talked about the anxious time or how my clinical went, and I don't think I would have truly reflected.

Other participants in the guided reflective journal group shared similar thoughts. Grace said, "If I have a prompt, it's much easier for me to go from there…It gave me a theme to focus on." Allie thought some prompts are "nice because it brought out points that you haven't thought of before."

However, Allie struggled with feeling forced to write to answer the prompts and mentioned it would be beneficial to "have some prompting questions that you could include. Not necessarily answer these questions but like, 'think about x, y and z in your reflection.'"

Participants who wrote non-guided reflective journals also shared their opinions about the format of the reflective journal. Meredith commented, "I really liked it [journal] open because then it gave me the opportunity to talk about anything that I wanted to." However, she also mentioned that "there are a few people who are like 'This is too open, what I am I supposed to talk about?'" Meredith also mentioned it may be helpful to have "examples of prompts that you could pull into it." Molly liked the open format of the non-guided journal "because it really allows the student to take it wherever they want…having that open format allowed them and makes them feel like it's okay to talk about really, whatever you want to talk about." Molly went on to say,

>It's difficult because we go through so much very structured, this is what you need to write about, these are the three things in the rubric…so, sometimes, I think it is hard when it is an open format like that because in my mind sometimes

I was kind of like what are they looking for…so I can understand how for some students that might have posed a difficulty for them.

Michelle also liked the open format and said, "I was able to write about anything I wanted to write about…by being so open, I was able to talk about the things I actually wanted to talk about." Julie shared a similar experience, "I liked the open…journal format. I don't have to put anything in an exact order. It's just whatever comes to mind…I think it's more genuine that way."

The researcher asked all five participants who did not write reflective journals about which format of reflective journal they would prefer. Of these five participants, four individuals thought they would prefer prompts while Danne said, "It depends on the weeks that they fall" because sometimes the questions might not relate to clinical experiences that week. Amanda said, "I think having the option of a prompt would be really good in case if you didn't have something on top of your mind. It could just get your brain triggered." Renee also mentioned, "I think it's kind of hard to think of what to reflect on and maybe, just having options would probably be helpful. They can kind of spearhead where you're going to go with your reflection." Robin shared a similar thought by saying, "I think a prompt would've been good…you know what you're supposed to be reflecting on more." By the time of the interview, Robin had written a journal assignment for a different clinical rotation and shared, "That was an open reflection and I felt like it was just more difficult because…I didn't really know what they wanted from it, and that made it a little more difficult."

Impression of Writing Journals

Theme 1: allowed time. The first theme of "allowed time" refers to participants indicating that being assigned reflective journals allowed them to take the time to reflect

on their experiences in the clinical setting. Participants from both the guided reflective

journal group and non-guided reflective journal group commented about how the journal

assignments allowed them to take the time to reflect on their experiences in the clinical

setting. Participants who wrote guided reflective journals appreciated taking the time to

consider the experiences they had in the clinical setting. As Jae shared, "It was really

good to be able to have that time to truly think back on it [experiences] and not just go

through the clinical and then move on." By taking this time to think through and write a

guided reflection on experiences, participants reported the opportunity to think back on

their clinical day and identify areas that went well, didn't go well, and how they might

improve on those areas for future clinical experiences. As Brittany stated, "I actually

took time to think about how I was feeling, why I was feeling that way, and maybe how I

can improve for the next time."

Participants in the non-guided reflective journal group also appreciated the

opportunity to reflect. Michelle commented that a benefit she received from writing

journals was "having time to actually write out what I felt." Other individuals

appreciated the time to reflect and wrote about anxiety without having those prompts as

Molly discussed,

> It was great to be able to really take time to think about, 'what were my feelings about today? Why was I feeling anxious? Why did I have that nervousness? What helped that? What caused that anxiety to come about?'

Through taking time to reflect and write the journals, participants in the non-

guided reflective journal group commented about the opportunity to dive deeper into the

care they provided for a patient and being able to reminisce about how they helped the

patients they cared for. Hope stated,

The reflections…allowed me to actually sit back and really reminisce on the patients that I took care of and really was able to just see what problems they had and how I was able to help them…it allowed me the chance to stop and think and dive deeper into why I was caring for the person.

Theme 2: identified feelings. Participants who wrote reflective journal assignments were able to identify many feelings during the writing process. By recognizing triggers for feelings of anxiety, participants in the guided reflective journal group were also able to consider how they would act differently in the future when faced with the same triggers for these feelings of anxiety. Brittany discussed,

I was thinking about reasons why I get anxious, and then some of them are actually things that maybe I don't need to be anxious about, and for the future, I can kind of like talk myself down and think like, 'Oh, this is something you don't need to be anxious about.'

Grace had a similar experience and shared, "writing them [journals] for four weeks straight really helped me identify what my triggers are and what are good personal coping techniques I use." Individuals who wrote reflective journals also reported being able to identify areas of growth and their accomplishments during the clinical day. Grace shared the experience of "it was nice to see my progress and constantly reassess what I need to keep working on."

Participants in the non-guided reflective journal group also described the writing process as helpful in being able to identify feelings in the clinical setting. Meredith discussed,

Until I went to write the reflection journal, I didn't realize how much…I was actually impacted by it [clinical experience]…At the end of the day of when you went to write those, it was nice to know how you were actually feeling during the day.

Julie also discussed identifying feelings and considering how this might impact future actions: "It [reflective journals] did help me realize things. Just recognizing…what did

me make me worried…knowing how you would possibly react in that situation, should it occur again, and know how to control your feelings." Michelle also commented, "it made me identify either areas of weakness or strengths."

Some participants who wrote non-guided reflective journals also discussed how the process of writing allowed them to identify their growth in the clinical rotation and how that could benefit them in the future. Molly shared, "there was a lot of learning, a lot of growing that was occurring. It was really nice to have an outlet to express that." Julie discussed the value of writing her reflections:

> I know what I learned, but putting it down in writing form, I'm able to explain it more and go into depth of how the specific actions or concepts could benefit me in future rotations and in my career as a nursing student.

Theme 3: assisted with processing. Writing journals provided participants with the opportunity to process what they experienced during the clinical day. Participants who wrote guided reflective journals shared about being able to make connections through writing the journals. Brittany shared the impact of writing journals on processing her feelings when she said, "they helped me to actually critically think back on what was going on and how I was feeling." Allie also discussed,

> Writing these reflective journals, it really helped me process what we worked through that day and then caring for those patients with issues that I've never been exposed to…it was very beneficial and allowed me to process and…really solidified that connection.

As participants reflected on their experiences and formulated their thoughts, they were able to make connections related to what they learned in the clinical setting which increased their comprehension. Allie shared about this, "they're [reflective journals] super beneficial because they've allowed me to process how did I really do that day with that patient."

Writing about experiences in the clinical setting lifted a burden for participants.

Kimberly discussed, "reflecting on things has always been like, write things on paper and

it's out there and it definitely lifts that burden that I had on my shoulders." The writing

assignments also allowed participants to justify their feelings. Allie specifically

commented on how the prompts for the guided reflective journals assisted with her

feelings of anxiety when she stated,

> They justify feelings of anxiety for me. It made it seem like it was something that
> was okay to have. By asking about it and having you work through it, it let you
> know that it's normal to be nervous for this and this is how you work through it in
> a healthy manner. It kind of gave you a process to think through things that
> weren't as familiar.

Similarly, participants in the non-guided reflective journal group commented

about processing and making connections through the writing process. Meredith shared,

"being able to write the reflection journals…definitely helped me process that [what

happens in clinical] a bit more. And I think I found that I was realizing things and

making connections that I originally wasn't without writing the journal." Michelle also

shared that she was able "to connect things" by writing reflective journals. Hope shared

her experience of processing feelings through writing journals when she said

> Being able to write about my experience…helped me think through the day. I
> was able to be like, 'Okay. Well, maybe I'm going to look at this scenario a little
> differently next time or provide this type of care different next week.'

In addition, Michelle identified that "the reflective journal is a way to come back

to center and go into the next week with my slate clean." This manner of processing

enabled the participants to be more attentive and prevented the clinical experiences from

being lost and gone at the end of the clinical day. Molly also discussed this theme of

processing:

I think having the reflection is a really nice way to be able to go back and think, 'Well, no I don't want to push what happened out of my mind', think about what were some of those tough moments that I had or what were some of my strengths. That way it wasn't just like the clinical day happened and then nothing more comes out of it. So, I think it really was beneficial to have that time to remember what happened to the day as a whole because that is not just like those experiences are lost and gone somewhere.

Theme 4: increased confidence. Writing reflective journals allowed participants to recognize areas of competence. The evidence that participants had developed skills to use in the real world instilled self-confidence. Participants were able to carry these feelings of confidence forward into future experiences in the clinical setting.

Participants in the guided reflective journal group shared about the influence of the prompts for the guided reflective journal on feelings of confidence. When faced with experiences in the clinical setting that conjured up similar feelings of anxiety, participants reported being able to recall previous encounters with anxiety and the successful ways of dealing with these feelings of anxiety. As Brittany discussed, "I recognize what the triggers were and then I calmed myself…It was knowing that I had triggers but then remembering I'd overcome those triggers previously, so I'll be able to overcome them again." By knowing they had overcome these feelings before, the participants had the confidence that they could overcome these feelings again. Allie shared,

Reflecting on it [clinical experience], realizing that I am competent and that everything was okay, they make me less nervous for the next time that I have to give a different type of treatment that I've never given before. It just re-instilled your own confidence because you realize, 'okay, I was scared. I did it. It was fine. I did a good job, and I can do this moving forward.'

Kimberly also mentioned how journals contributed to increased confidence in future clinical experiences when she said, "it [writing reflective journals] gave me a lot more confidence because it's almost like my own personal evidence that I developed

more skills and I'm able to do this in the real world." Grace identified the opportunity to carry these feelings of confidence forward, "Thinking and reflecting upon that confidence…and what I wrote about helped me follow it through and carry that attitude through."

A participant in the non-guided reflective journal also identified increased confidence as a result of writing journals when she shared "I remember through that reflective journal that happened yesterday, and so now I have that knowledge that I can apply moving forward" (Molly). Michelle shared a similar impact of writing journals as she said, "Identifying those weaknesses and having something being able to write that out and how I'm going to work on it. This definitely made me more confident going week to week."

Additional Findings

There were two additional areas that emerged during the analysis of the qualitative data about what the participants liked the least about writing reflective journals. A brief summary of these areas is provided here, and these areas will be further considered during the discussion of the findings of this research study.

Another assignment. When asked to discuss what they liked the least about writing the reflective journals, some participants commented on the issue of the journals being another assignment they had to complete in addition to other assignments. Participants who wrote guided reflective journals shared feelings of having difficulty with completing the assignment due to lack of time. Kimberly and Grace also felt that the journals were "just another thing to do" (Kimberly). Brittany didn't like "being able to fit it into my schedule." Participants who wrote non-guided reflective journals had

similar experiences. Meredith stated that she disliked "that they were due when they were due because it always felt like they were due right before a test." Hope commented that the journals were "just another thing to do…on top of the paperwork."

Forced to write. The other area that emerged related to what to the participants liked the least about writing the reflective journals was being forced to write. Some research participants who wrote guided reflective journals expressed difficulty with addressing the prompts for the assignment. Jae felt, "sometimes they [journals] could get to be a little repetitive with the prompts." Allie also commented, "sometimes they almost felt forced…it forced something that wasn't there. Out of a really small feeling or small interaction that in reality wasn't a big deal to you, you had to make it a bigger deal."

A participant in the non-guided journal group also encountered a challenge with having meaningful experiences to reflect on. "I know one week I didn't just have too much to write about…I was just journaling for things to find" (Michelle).

Summary

This chapter presented the characteristics of the sample, study results, statistical analyses of the quantitative data, and themes that emerged during analysis of the qualitative data. Twenty participants completed the pre-test and post-test. The mean scores for state anxiety, as measured by the State Anxiety Scale, decreased for all participants from pre-test to post-test. There was a statistically significant median decrease between pre-test and post-test state anxiety for participants in the guided reflective journal and non-guided reflective journal groups. There was not a significant difference between pre-test and post-test state anxiety for participants in the control group without reflective journal assignments.

Fifteen participants, five from each intervention group, completed an interview with the researcher to share their perception of and experiences with writing reflective journals. Overall, participants from both writing groups thought the reflective journals had an impact on decreasing their anxiety associated with clinical setting. Participants who did not write reflective journals saw value in reflection and thought they would have benefitted from having a journal assignment. Participants' opinion about whether the journal should be guided or non-guided varied.

Four themes were identified related to experiences with writing journals for all participant who wrote reflective journals: allowed time, identified feelings, assisted with processing, and increased confidence. Participants from both writing groups also discussed that writing journals felt like another assignment they needed to complete in addition to their other clinical paperwork. In addition, participants from both writing groups commented on sometimes feeling forced to write to complete the assignment even when they did not feel like they had much to write about.

CHAPTER V

DISCUSSION

The anxiety that is common for undergraduate nursing students to experience when they are in their clinical rotations has the potential to impede their learning (Khan & Zafar, 2010; Palethorpe & Wilson, 2011). If nursing students do not properly learn, this can result in unsafe patient care (Harvey et al., 2011; Pottier et al., 2013). When patient care is unsafe or adverse events occur as a result of unsafe care, higher expenses and unexpected outcomes can impact patients (Hotstetter & Kein, 2011). Because of these potential complications, it is necessary for nurse educators to identify and implement strategies that can reduce nursing students' anxiety.

A few strategies, including simulation, peer-mentoring, and mindfulness have been evaluated for their potential to decrease nursing student anxiety associated with the clinical setting. While some evidence indicates that simulation decreases anxiety, Cantrell et al. (2017) found that students report stress associated with being involved in simulations. The duration of any decreased anxiety students may obtain from participating in a simulation is unknown (Hollenbach, 2016). Peer-mentoring and mindfulness have also been found to lower student anxiety; however, these strategies can be difficult to implement due to the time the students need to spend on these techniques (Wong et al., 2016). Reflective journals are often assigned to nursing students to enhance their reflective practice (Blake, 2005). Research indicates that journals can increase students' performance and critical thinking in the clinical setting, but there has been no

research to evaluate if reflective journals can decrease nursing students' anxiety (Barnes, 2010; Taylor-Haslip, 2010).

The purpose of this study was to determine if reflective journals can decrease the level of anxiety for undergraduate nursing students associated with the clinical setting and to evaluate students' perception of this writing assignment on their anxiety related to the clinical setting.

Methodology Review

This study utilized an embedded mixed methods design. A total of 156 eligible participants were randomly assigned by clinical group to write guided reflective journals, non-guided reflective journals, or no reflective journals during their first clinical rotation where they provided direct patient care. A pre-test, post-test design was used to evaluate the dependent variable of state anxiety. Twenty participants completed the pre-test prior to beginning their first clinical rotation and the post-test four weeks later, after completing this rotation. The participants in the quantitative strand of the study also completed a demographic survey and an instrument to measure their trait anxiety. For the qualitative strand of this study, the researcher conducted interviews with 15 participants, five from each intervention group, to collect information about their perception of the impact of writing journals on anxiety and their experience with writing reflective journals. The researcher used descriptive and inferential statistics to analyze the quantitative data. The researcher also identified themes from the qualitative data.

Participants

Twenty participants who completed their first clinical rotation where they provided direct care for patients participated in the quantitative strand of this study. Ten

participants were enrolled in a traditional nursing program while the remaining 10 were

enrolled in an accelerated nursing program. Most of the participants were females in

their early to mid-twenties. While the majority (60%) self-identified as Caucasian, other

participants identified as Hispanic, Asian, and multi-racial. Thus, the sample in the

quantitative strand of the study was homogenous in gender and age, but diverse in

ethnicity. It is not possible to determine whether the demographics of this sample had

any influence on the results of study, but this sample was more diverse related to

ethnicity and type of nursing program when compared to other studies that evaluated the

impact an intervention could have on nursing students' anxiety related to their first

clinical placement (Dearmon et al., 2012; Walker & Verklan, 2016). While the ethnicity

of participants in these previous studies was not mentioned, there was no diversity related

to the type of nursing program in which the participants were enrolled. Other studies in

the literature about anxiety across a nursing program (Wedgeworth, 2016) and the impact

of simulation on nursing students' anxiety (Szpak & Kameg, 2013) had a large majority

of participants who identified as Caucasian, and this study consisted of a more ethnically

diverse sample.

Most of the participants (60%) in this study had some previous experience in

health care. This varied from working in a paid position in a hospital, nursing home,

home health or as a paramedic, to providing care for a family member. Participants with

more than one year of previous experience in health care had a statistically significant

lower score for pre-test state anxiety than participants with less than one year or no

previous health care experience. In a study about anxiety across a nursing program,

Wedgeworth (2016) found that students in the late part of their nursing program had

lower state anxiety than students in the early part of their nursing program. Dearmon et al. (2012) reported a lower baseline state anxiety level for nursing students with previous experience working in health care than those students without previous experience. The finding of this study of lower anxiety in students with previous experience supports the idea that anxiety may decrease as individuals gain more experience with providing patient care.

Discussion of the Results

Interpretation of the Findings

The small sample size in the quantitative strand of this study results in a lack of power, which contributes to difficulty with determining the true statistical effect of writing reflective journals on nursing students' anxiety associated with the clinical setting. The findings of the quantitative strand of the study demonstrated a decrease in state anxiety at the end of the first clinical rotation for all participants, regardless of the intervention group. However, the difference in means for state anxiety from pre-test to post-test was not significant between intervention groups. There was a statistically significant difference in state anxiety from pre-test to post-test within two of the three groups. The decrease in state anxiety from pre-test to post-test was statistically significant for participants in the guided reflective journal group ($p = .006$) and the non-guided reflective journal group ($p = .024$). The decrease in state anxiety scores from pre-test to post-test for participants in the control group was not statistically significant ($p = .254$).

The significant decrease in state anxiety for participants who wrote journals, whether guided or non-guided, indicates that reflective journals may be an effective

assignment to increase the reduction in nursing students' anxiety. The findings from the qualitative strand of this study support the use of reflective journals for nursing students. While an article from 1997 (Patton et al.) states that a student commented that writing journals helped to reduce her stress associated with a clinical experience, no recent or further evidence was located to demonstrate if writing journals can impact nursing students' anxiety. The findings of this study provide some evidence to support the use of reflective journals as an effective strategy.

The decrease in state anxiety scores for participants in all intervention groups indicates that anxiety decreases for nursing students as they go through a clinical rotation. The finding of this study of decreased state anxiety with more experience in the health care setting is similar to a previous study by Wedgeworth (2016) that evaluated anxiety across a nursing program. Wedgeworth (2016) found that nursing students had significantly lower state anxiety towards the end of their nursing program than at the beginning. A participant in a study about nursing students' perceptions of how their work as nursing assistants impacted their nursing education (Harvey, 2016) commented that she was better able to handle the stress associated with nursing school because of her experience of working as a nursing assistant. The findings of this study and previous research suggest that previous experience in health care can decrease anxiety and be helpful for nursing students when they are enrolled in an undergraduate nursing program.

There was a statistically significant difference in the age of participants in the group assigned to write non-guided reflective journals and the control group. The participants in the non-guided reflective journal group were younger than the participants who did not write journals. It is unknown if this difference in age could have impacted

the results of this study. All participants in the control group were enrolled in the accelerated nursing program. While there is limited evidence that compares stress and anxiety for students enrolled in traditional and accelerated nursing programs, Youssef and Goodrich (1996) found that students enrolled in an accelerated nursing program had higher stress levels than students enrolled in a traditional nursing program. Conversely, Wolf, Stidham, and Ross (2015) report that stress levels did not differ between students enrolled in accelerated and traditional nursing programs.

Other quantitative studies have demonstrated that there are further benefits to writing reflective journals in addition to decreasing anxiety. Fritson (2008) found an increase in self-efficacy of adult learners who wrote journals about cognitive-behavioral strategies or about any topic from the week in a psychology course. According to Taylor-Haslip (2010), there is a correlation between the student's level of reflection when writing a guided journal and the student's performance on written exams and in the clinical setting. There is limited quantitative research on the value of journaling, and Blake (2005) calls for additional evidence to demonstrate the benefits of assigning reflective journals. The findings of the quantitative strand of this study provide evidence for nurse educators of an additional benefit of decreased anxiety for nursing students who write reflective journals.

The findings of the qualitative strand of the study identified several benefits that nursing students perceive they obtain from writing reflective journals. Overall, participants did indicate a benefit of decreased anxiety from writing reflective journals, regardless of whether the journal was guided or non-guided. Participants who did not write journals believe they would have received benefits from writing reflective journals.

Participants who wrote guided reflective journals liked having prompts to guide their writing. In general, participants who wrote non-guided reflective journals liked the open format. However, there were some comments from the participants about having difficulty with writing because the format was too open. Most of the participants who did not write journals felt they would prefer prompts to guide their writing process. The discussion of results is focused on the two areas of interest for this study: 1) the impact of writing reflective journals on nursing students' anxiety and 2) nursing students' experiences with writing reflective journals.

Impact of Writing Reflective
Journals on Anxiety

For this study, anxiety was defined as a state of apprehension as a response to a perceived threat which results in a disruption of psychological functioning (Ratanasiripong et al., 2015). Anxiety is a subjective feeling associated with being uncomfortable or nervous (Sun et al., 2016). The STAI (Spielberger et al., 1983), a well-validated measure of state and trait anxiety was used to quantify participants' anxiety. Due to the small sample of this study, it is difficult to develop a definite impression about the impact of reflective journals on nursing students' anxiety. Nevertheless, this study adds to the body of literature identifying strategies which may be implemented by nurse educators to decrease the anxiety of nursing students (Dearmon et al., 2012; Gore et al. 2011; Guillaumie et al., 2017; Walker & Verklan, 2016; Wong et al., 2016; Zentz et al., 2014). While studies have been done to determine the impact of writing reflective journals on students' critical thinking (Barnes, 2010) and clinical performance (Taylor-Haslip, 2010), there have been no studies located that evaluated the impact of writing journals on students' anxiety. The findings of this study help fill that gap in the literature.

Of the 15 participants who participated in an intervention of writing reflective

journals, 14 participants had a decrease in their state anxiety scores from pre-test to post-

test. The mean pre-test state anxiety score for participants in this study was 45.25 (*SD* =

9.59). These findings are similar to other studies in the literature that measured state

anxiety using the STAI prior to an initial clinical rotation (Dearmon et al., 2012;

Hollenbach, 2016; Walker & Verklan, 2016). The mean post-test state anxiety score for

participants who wrote guided reflective journals was 36.00 (*SD* = 8.69); the difference

from pre-test to post-test for those who wrote guided journals was 11.56 (*SD* = 9.44).

The mean post-test state anxiety score for participants who wrote non-guided reflective

journals was 28.17 (*SD* = 4.12); the difference from pre-test to post-test for those who

wrote non-guided journals was 14.50 (*SD* = 10.80). Dearmon et al. (2012) reported a

mean difference of 9.53 *(SD* = 10.95) in scores on the STAI after students went through a

simulation-based orientation. Walker and Verklan (2016) reported a change from 43.12

(*SD* = 8.67) to 33.12 (*SD* = 8.67) on the STAI for students who had peer mentoring as an

intervention to reduce anxiety. The difference in scores for the participants who wrote

guided reflective journals for this study was similar to previous findings in the literature

for individuals exposed to an intervention to decrease anxiety. However, the difference

in scores for individuals who wrote non-guided reflective journals was larger than

findings reported in other studies.

It is also important and relevant to consider the nursing students' perception of

whether or not writing reflective journals decreased their anxiety associated with the

clinical setting. Of the 10 interview participants who wrote reflective journals during

their first clinical rotation, eight participants indicated that writing journals decreased

their anxiety. All five participants who wrote guided reflective journals felt that the journals helped decrease anxiety while three participants who wrote non-guided reflective journals felt that the journals helped decrease anxiety. The participants believed the impact of writing journals varied from slight to moderate. Other studies located in the literature about interventions to decrease nursing student anxiety did not report findings about the participants' perception of the effectiveness of the intervention.

The Cognitive Load Theory (Sweller, 1988) provides explanation about how increased cognitive load can negatively impact the amount of working memory available for an individual to use to learn new information. Studies have found that increased anxiety is associated with a higher cognitive load (Eyscenck et al., 2007; Fraser et al., 2012; Sorg & Whitney, 1992). By identifying interventions that decrease nursing students' anxiety in the clinical setting, educators will be able to promote student learning.

Experiences with Writing
Reflective Journals

Results from the qualitative strand of this study indicate that nursing students saw value in and reported benefits of journaling whether there were structured questions to respond to in the journal or if the format was an open reflection on their experiences in the clinical setting. This finding is supported by a literature review which found nursing students describe positive aspects of journaling regardless of the format (Craft, 2005).

Theme one: allowed time. Theme one was characterized by the appreciation of the research participants who wrote reflective journals to take the time to think back on their experiences in the clinical setting. Participants expressed that being required to write a journal allowed them to have time to reflect on their feelings instead of just

forgetting about the clinical day once it was over. While some participants identified an inconvenience with needing to complete an additional assignment along with their other clinical paperwork, participants also appreciated being assigned to take the time to reflect on the experiences they had during their clinical day.

This finding of students appreciating the time to reflect on their experiences is not a finding that was found in other literature about reflective journaling. However, it is beneficial for nurse educators to know that assigning the students to write one or two pages for each reflective journal allowed enough space to reflect on experiences, but the length was not too demanding of the students' time and attention. Nurse educators need to consider the weekly assignments that students are asked to complete and ensure that assignments meant to help reduce anxiety, such as reflective journals, are manageable along with the other assignments.

Theme two: identified feelings. Theme two was characterized by participants being able to identify feelings from the clinical experience as they wrote their journals. Participants identified the ability to identify triggers for anxious feelings. By identifying these triggers, participants reported being able to recognize these feelings in the future and have better control over their anxiety. Participants who wrote journal assignments also reported being able to detect areas of growth and where they should focus for improvement in future clinical experiences. This finding is consistent with a previous study which found that nursing students who wrote journals during their clinical rotation identified that the assignments assisted with identifying personal strengths and weaknesses (Ruthman et al., 2004).

The finding of participants being able to identify feelings in the clinical setting is similar to the findings of Barnes (2010). Barnes (2010) found that students can consider alternate ways to approach situations when they reflect on personal experiences. This previous study also found that the writing process allowed students to recognize personal strengths and areas for improvement, which aligns with the findings of the current study.

Theme three: assisted with processing. Theme three was characterized by participants being able to process their experiences during the clinical day. By processing these experiences, participants were also able to make connections that they did not make prior to writing the journal. These connections increased the participants' comprehension of what they experienced during the clinical day. Van Horn and Freed (2008) report nursing students made connections between material learned in class and experiences in the clinical setting when writing reflective journals with guiding questions. A literature review also indicated that journaling allowed students to discover connections and gain insight into practice through the reflective process (Blake, 2005).

Participants also shared that writing reflective journals lifted a burden and helped wipe the slate clean for the next week. These findings coincide with the framework for this study, the Cognitive Load Theory. If the process of writing journals enables nursing students to process their feelings and experiences from the clinical day, the students will be better able to focus on providing safe and high-quality care for their assigned patients.

Theme four: increased confidence. Theme four was characterized by participants indicating that reflective journaling allowed for the recognition of areas of competence. By identifying areas of competence, participants reported an increase in

self-confidence. This confidence was a feeling that participants reported carrying forward into future clinical experiences.

As Eysenck et al. (2007) stated with regards to the Cognitive Load Theory, students with increased anxiety also worry more. With increased confidence, this amount of worrying could be diminished which would also increase the available working memory and enhance student learning. Barnes (2010) found that reflective journaling increased student confidence when communicating with patients. Participants in this study did not specifically identify an increase when communicating with patients, but they indicated an overall increase in confidence.

Recommendations for Nurse Educators

The results of this study suggest that guided and non-guided reflective journals were effective in decreasing nursing student anxiety. Even though many participants commented about the inconvenience of having an additional assignment to complete, the written journals were not seen as a burden for most of the participants in this study. Interview participants shared many positive aspects of writing reflective journals, and individuals without journal assignments indicated they see the value in reflection. The finding of this study of no correlation between participants' decrease in their anxiety and their effort of reflection on the written assignments suggests the process of reflecting is beneficial, even if the individual does not display a high effort of reflection in the written exercises. Given the known detrimental effects of anxiety on nursing student learning and performance in the clinical setting, it is recommended that nurse educators consider assigning reflective journals to nursing students during their clinical rotations.

Reflective journals do not have any expense associated with their implementation. There is also no additional equipment that is needed for nursing students to write reflective journals. These characteristics contribute to the ease and feasibility of assigning reflective journals during clinical rotations.

The differing opinions of the participants related to the format of the journal being guided or non-guided is important to consider for future implementation of this intervention. A recommendation is to have some guiding prompts available for students to consider but not require each prompt to be answered in the journal assignment. This would allow for some triggers for individuals that prefer having more direction while also leaving the format open to allow creativity for individuals who have that preference.

It is also recommended that the educator discuss the reflective journal assignments with the students when the students first encounter this assignment. The educator should provide rationale for the assignments to help students see value in writing the journal. During this discussion, the educator should also provide information about any specific expectations of the reflective journal. Providing information about the expectations would address student concerns about being unsure of what the faculty member is looking for in the written work.

Limitations of the Study

While all studies have certain limitations, it is important and relevant to identify potential limitations to this study. One limitation to the study was the small sample size. While the clinical assignments of writing journals or the alternate assignment if in the control group were required for participants to complete, participation in the study was voluntary. A larger incentive for students to enroll in the study may have increased

participation. It may have also been beneficial to have a way for all potential participants to have internet access during their clinical orientation and provide the students time to complete the pre-test during this orientation. In this study, only students beginning their obstetric clinical rotation had access to the internet during the orientation and were provided time to complete the pre-test. Potential research participants beginning their medical-surgical clinical rotation were asked to complete the pre-test on their own time prior to their first day of clinical. There were more participants from the students beginning their obstetric clinical rotation, and providing time during orientation to complete the pre-test may have contributed to this.

Another potential limitation might have been including only students from the larger campus of a private college in Midwest United States. Nursing students enrolled in associate degree programs, on the smaller rural campus of the nursing program used in this study, or from a different part of the country may have provided different results.

While age and previous health care experience were found to be potential covariates in this study, it is recommended that further statistical analysis be conducted with this data. It would be possible to control for the influence these covariates have on the dependent variable of state anxiety by using the analysis of covariance test. By controlling for these covariates, it would be possible to determine if there was a difference in state anxiety among groups while controlling for age and previous experience in health care.

There were 22 nursing students who only completed the pre-test and 34 students who only completed the post-test. The reasons why these participants did not complete both the pre-test and the post-test are unknown. The timing of when the electronic

surveys were sent may have been inconvenient, and participants may have decided to not complete the surveys due to other academic demands. This may have been overcome by using paper copies of the surveys and allowing time in class for individuals interested in participating in the survey to complete the instruments. It would have also been helpful if participants indicated which assignment they had (guided journal, non-guided journal, or alternate assignment) on the post-test. This would have allowed the researcher to sort the 34 post-tests into the appropriate group. While the difference in pre-test and post-test state anxiety score would not have been able to be determined, having the post-test data would have provided more information to be analyzed in this study. Another strategy that may have increased participation would have been to ask the clinical instructors to remind students about the opportunity to participate in this study.

<div align="center">**Suggestions for Future Research**</div>

Findings from this study indicate that reflective journal assignments can help decrease nursing study anxiety associated with the first clinical rotation. It would be helpful to have a study conducted with more participants from different nursing programs to evaluate if this effect is similar with a larger more diverse sample. In this study, anxiety was measured directly before and after the first clinical rotation where students provided direct patient care. A longitudinal study that measured nursing students' anxiety throughout the entire first semester or first year with the intervention groups in effect for that duration would provide additional information about the impact of writing reflective journals on anxiety. It would also be beneficial to conduct a study to evaluate if reflective journal assignments could have any impact on nursing students' experiences with or knowledge about patient safety. There are validated tools available, such as The

Health Care Professionals Patient Safety Assessment Curriculum Survey (Chenot, 2007), that could be used to collect information about nursing students' knowledge, skills, and attitudes related to patient safety after implementation of a reflective journal assignment that has guiding prompts related to patient safety. This would provide valuable information about another potential benefit of these writing assignments.

Conclusion

There were two aims identified for this mixed methods study to develop a deeper understanding of a potential intervention to decrease nursing students' anxiety associated with the clinical setting. The first aim was to determine if writing guided or non-guided reflective journals decreased anxiety for nursing students when compared to anxiety for nursing students who did not write reflective journals. The second aim was to examine nursing students' perception of writing reflective journals on their anxiety related to the clinical setting.

Twenty participants completed the pre-test and post-test to measure state anxiety. There was a statistically significant decrease in mean scores for state anxiety for all participants between the two points of data collection. Upon evaluation of each intervention group, the fifteen participants who wrote guided or non-guided journals had a statistically significant decrease in state anxiety from pre-test to post-test while the five participants who did not write journals did not have a statistically significant change in state anxiety.

Fifteen participants described their perceived actual or potential impact of writing reflective journals on their anxiety level and their experiences with writing journals, if applicable. Participants indicated that writing journals helped decrease their anxiety

associated with the clinical setting, or they thought they would benefit from writing journals if they had the opportunity to have this assignment. Four themes emerged related to nursing students' experience with writing reflective journals: allowed time, identified feelings, assisted with processing, and increased confidence. There was not a conclusive finding about whether reflective journals should be guided or non-guided as participants' opinion about this varied.

Ultimately, an intervention aimed at decreasing anxiety could be considered effective if quantitative data supports this or if individuals perceive this impact. The quantitative and qualitative results of this study suggest that writing reflective journals, whether guided or non-guided, can help decrease nursing students' anxiety associated with the clinical setting. There are additional benefits to writing reflective journals that were revealed through analysis of the qualitative data. As nursing education continues, more evidence will be needed to guide interventions that can decrease nursing students' anxiety associated with the clinical setting. Future research, as suggested in this study, will contribute additional information about the viability of reflective journals as a strategy to decrease anxiety.

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APPENDIX A

RECRUITMENT MATERIALS

Script for video announcement to potential research participants to introduce self and study:

Hi. My name is Joely Goodman, and I am a member of the Creighton faculty on the Hastings campus. I am working on my doctoral studies at the University of Northern Colorado and am currently conducting my dissertation research project.

I hope you will consider participating in this study. You will be taking a short survey that will ask you questions about your anxiety before and after your first clinical rotation. The survey should only take approximately 10 minutes to complete. I will send the survey in an electronic form. You can complete the pre-test during your clinical orientation, and you can complete the post-test when you finish the rotation. If you complete the pre-test and post-test, you can be entered in a drawing for a $25 gift card to Amazon.

As an additional part of the study, you will be invited to participate in an interview with me. The interview would last approximately 30 minutes. If you participate in the interview, you will receive a $15 gift card to Starbucks. I will send an email with more information about this after the second week of your first clinical rotation where you provide direct patient care.

Please feel free to email me at joelygoodman@creighton.edu with any questions.

Script for course instructor to read to students prior to pre-test data collection

You are invited to participate in a dissertation research project being conducted by a faculty member on the Hastings campus as part of her doctoral studies at the University of Northern Colorado.

She is collecting information about students' levels of anxiety associated with the clinical setting and exploring ways to decrease this anxiety.

At this time, you are asked to complete the State-Trait Anxiety Inventory and a demographics form. These forms should take approximately 10 minutes to complete. There are two surveys you will complete at this time that have different directions. Please be certain to read the directions carefully. It is important that you answer all questions on the surveys. If you choose to participate in this study, you will be asked to complete the State Anxiety Inventory again after completing your first clinical rotation.

You are also invited to participate in a personal interview with the researcher. The researcher will send an email at a later date to inform you of this opportunity.

Email to recruit interview participants

Hello,

Due to other correspondence, you are aware that I am currently conducting my dissertation research project as part of my doctoral studies at the University of Northern Colorado.

I hope you will consider participating in an interview that will last approximately 30 minutes to share your experiences with the reflective journal assignments. The interview will be recorded for later transcription and analysis. The interview will be conducted with WebEx, an online program, and you can choose your location at the time of the interview.

You will want to make sure you have a private, quiet location during the interview. We can schedule the interview at a time that is convenient for you. In order to participate in the interview, you need to have completed the State-Trait Anxiety Inventory prior to and at the conclusion of your first clinical rotation, been assigned to the guided reflective journal or non-guided reflective journal group, and consented to this data being included in this study. If you participate in this interview, you will receive a $15 gift card to Starbucks as a token of my appreciation.

From all students who are willing to participate in the interview, I will randomly select the number of students I think I need. To have your name entered in this pool, please reply to me by email (joelygoodman@creighton.edu) or call me on my phone (402-460-0643).

Sincerely,

Joely Goodman, MSN, RN

Email to participants at end of clinical rotation:

Now that you have completed your first clinical rotation where you provided direct patient care, I am sending you the link to complete the post-test about your level of anxiety. This survey should take approximately five minutes to complete. Please complete this survey within three days. When you complete the survey, please read the directions carefully and respond to all of the items.

You are welcome to contact me with any questions.

Sincerely,

Joely Goodman MSN, RN

Script for instructor to read after initial low response to interview participation:

Joely Goodman is continuing to recruit participants for her dissertation research. If you are willing to participate in an interview that will last approximately 30 minutes, please contact her at joelygoodman@creighton.edu. You will receive a $25 gift card as a token of appreciation for participating in the research project.

APPENDIX B

INFORMED CONSENT FOR INTERVIEW

UNIVERSITY of
NORTHERN COLORADO

CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH

Project Title: Reflective Journaling to Decrease Anxiety among Undergraduate Nursing Students in the Clinical Setting

Researcher: Joely T. Goodman, MSN, RN   School of Nursing
Phone: (402) 460-0643   email: joelygoodman@creighton.edu

Research advisor: Melissa Henry, PhD, FNP-C   School of Nursing
Phone: (970) 351-1735   email: Melissa.Henry@unco.edu

INTRODUCTION

You are invited to participate in a study being conducted by Joely Goodman, a student in the School of Nursing at the University of Northern Colorado. This research project aims to develop a deeper understanding of the use of reflective journals as a possible strategy to decrease anxiety associated with the clinical setting for undergraduate nursing students.

Study Purpose and Procedures

You must be a junior in the traditional nursing program or in the first semester of the accelerated nursing program to participate in this study. You also need to have completed your first clinical rotation where you provide patient care. Your grade in this course will not be impacted in any way whether you choose to participate or to not participate in this study.

You are invited to participate in an interview through a web-based conference system with the researcher via WebEx. The interview is expected to last 30 minutes, and it will be recorded for transcription and analysis. Confidentiality will be maintained with the dissemination of the study results as you will only be identified by your chosen pseudonym. Sample questions to be asked in the interview include, "What were your experiences with writing reflective journals during your first clinical rotation" and "What is your opinion of the format of the assignment". Results will be shared with you, and you will have the opportunity to provide feedback.

Page 1 of 4_____
(participant's initials here)

	Creighton UNIVERSITY	
Full Accreditation	Approved:	October 26, 2017
	Study number:	1111950-3

Benefits of Participating in the Study

The benefit to participating in the study includes the opportunity to contribute to nursing science. You may also provide information that helps nurse educators design and implement strategies in the future to allow for more positive clinical experiences for students.

Risks of Participating in the Study

No more risk than is encountered in everyday life is expected. It is possible that the questions asked in the interview will cause you to recall negative or stressful feelings. If you have a strong negative reaction, you should contact the counseling services available through Creighton University. You can reach them by calling (402) 28-2735.

Confidentiality

I will do everything I can to keep your records confidential. However, it cannot be guaranteed. The list of people who may look at your research records are:

- The investigator and her research advisor
- The Creighton University Institutional Review Board (IRB) and other internal departments that provide support and oversight at Creighton University

Consent forms will be destroyed after three years or after the study is completed. Data will be destroyed after three years or at the completion of the project. I plan to share my results with my research committee, present them at a conference, and publish them in a scientific journal. However, I will always keep your name or other identifying information private. Audio recordings from the interview will be stored on a password-protected computer to ensure confidentiality of the data. The audio files will be deleted after the interviews are transcribed and verified. The transcriptions will be stored on a password-protected computer for the research project, and they will be destroyed at the completion of the project. If you choose to withdraw from the study after participating in an interview, any audio file or transcribed data will be deleted.

Compensation for Participation

All individuals who participate in an interview will receive a $25 Starbucks gift card.

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had the opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future reference. If you have any concerns about your selection or treatment as a research participant, please contact the Office of Sponsored Programs, 25 Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910. You may also contact the Institutional Review Board of Creighton University at (402) 280-2126.

Page 2 of 4_____ (participant's initials here)

	Creighton UNIVERSITY	
Full Accreditation	Approved:	October 26, 2017
	Study number:	1111950-3

You are free to refuse to participate in this research project or to withdraw your consent and discontinue participation in the project at any time without penalty or loss of benefits to which you are otherwise entitled, or any effect on your medical care.

My signature below indicates that all my questions have been answered. I agree to participate in the project as described above.

_____

Printed Name of Subject

_____   _____

Signature of Subject   Date Signed

The Creighton University Institutional Review Board (IRB) offers you an opportunity (anonymously if you so choose) to discuss problems, concerns, and questions; obtain information; or offer input about this project with an IRB administrator who is not associated with this particular research project. You may call or write to the Institutional Review Board at (402) 280-2126; address the letter to the Institutional Review Board, Creighton University, 2500 California Plaza, Omaha, NE 68178 or by email at irb@creighton.edu.

A copy of this form has been given to me.   _____ Subject's Initials

For the Research Investigator—I have discussed with this subject (and, if required, the subject's guardian) the procedure(s) described above and the risks involved; I believe he/she understands the contents of the consent document and is competent to give legally effective and informed consent.

_____   _____

Signature of Responsible Investigator   Date Signed

Page 3 of 4_____
(participant's initials here)

	Creighton UNIVERSITY	
Full Accreditation	Approved:	October 26, 2017
	Study number:	1111950-3

Bill of Rights for Research Participants

As a participant in a research study, you have the right:

1. To have enough time to decide whether or not to be in the research study, and to make that decision without any pressure from the people who are conducting the research.

2. To refuse to be in the study at all, or to stop participating at any time after you begin the study.

3. To be told what the study is trying to find out, what will happen to you, and what you will be asked to do if you are in the study.

4. To be told about the reasonably foreseeable risks of being in the study.

5. To be told about the possible benefits of being in the study.

6. To be told whether there are any costs associated with being in the study and whether you will be compensated for participating in the study.

7. To be told who will have access to information collected about you and how your confidentiality will be protected.

8. To be told whom to contact with questions about the research, about research-related injury, and about your rights as a research subject.

9. If the study involves treatment or therapy:

    a. To be told about the other non-research treatment choices you have.

    b. To be told where treatment is available should you have a research-related injury, and who will pay for research-related treatment.

Creighton UNIVERSITY	
Approved:	October 26, 2017
Study number:	1111950-3

APPENDIX C

DATA COLLECTION SURVEYS

Pre-Test Data Collection

Directions:

A number of statements which people have used to describe themselves are given below. Read each statement and select the appropriate response to describe how you feel about starting your first clinical rotation where you will provide patient care. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

1= Not at all   2= Somewhat   3= Moderately so   4=Very much so

  1. I feel calm **1 2 3 4**
  2. I feel secure **1 2 3 4**
  3. I am tense **1 2 3 4**
  4. I feel strained.. **1 2 3 4**
  5. I feel at ease **1 2 3 4**
  6. I feel upset **1 2 3 4**
  7. I am presently worrying over possible misfortunes **1 2 3 4**
  8. I feel satisfied **1 2 3 4**
  9. I feel frightened **1 2 3 4**
10. I feel comfortable **1 2 3 4**
11. I feel self-confident **1 2 3 4**
12. I feel nervous... **1 2 3 4**
13. I am jittery **1 2 3 4**
14. I feel indecisive **1 2 3 4**
15. I am relaxed... **1 2 3 4**
16. I feel content **1 2 3 4**
17. I am worried **1 2 3 4**
18. I feel confused **1 2 3 4**
19. I feel steady **1 2 3 4**
20. I feel pleasant **1 2 3 4**

Directions:
A number of statements which people have used to describe themselves are given below.
Read each statement and then select the appropriate response to indicate how you
generally feel.

1=Almost never   2= Sometimes   3= Often   4=Almost always

21. I feel pleasant **1 2 3 4**
22. I feel nervous and restless **1 2 3 4**
23. I feel satisfied with myself **1 2 3 4**
24. I wish I could be as happy as others seem to be... **1 2 3 4**
25. I feel like a failure **1 2 3 4**
26. I feel rested **1 2 3 4**
27. I am "calm, cool, and collected" **1 2 3 4**
28. I feel that difficulties are piling up so that I cannot overcome them **1 2 3 4**
29. I worry too much over something that really doesn't matter **1 2 3 4**
30. I am happy.. **1 2 3 4**
31. I have disturbing thoughts **1 2 3 4**
32. I lack self-confidence **1 2 3 4**
33. I feel secure **1 2 3 4**
34. I make decisions easily **1 2 3 4**
35. I feel inadequate **1 2 3 4**
36. I am content.. **1 2 3 4**
37. Some unimportant thought runs through my mind and bothers me **1 2 3 4**
38. I take disappointments so keenly that I can't put them out of my mind **1 2 3 4**
39. I am a steady person **1 2 3 4**
40. I get in a state of tension or turmoil as I think over my recent concerns and interests **1 2 3 4**

Post-Test Data Collection

The following three questions will allow the researcher to match your pre-test results with your post-test results for comparison and protect your confidentiality.

Birth month (1=January, 2=February…12=December)

_____

What is the second letter of your last name?

_____

What is the last digit of your Social Security Number?

_____

Directions:

A number of statements which people have used to describe themselves are given below. Read each statement and select the appropriate response to describe how you felt at the conclusion of your first clinical rotation where you provided patient care. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

1= Not at all   2= Somewhat   3= Moderately so   4=Very much so

1. I feel calm **1 2 3 4**
2. I feel secure **1 2 3 4**
3. I am tense **1 2 3 4**
4. I feel strained... **1 2 3 4**
5. I feel at ease **1 2 3 4**
6. I feel upset **1 2 3 4**
7. I am presently worrying over possible misfortunes **1 2 3 4**
8. I feel satisfied **1 2 3 4**
9. I feel frightened **1 2 3 4**
10. I feel comfortable **1 2 3 4**
11. I feel self-confident **1 2 3 4**
12. I feel nervous.. **1 2 3 4**
13. I am jittery **1 2 3 4**
14. I feel indecisive **1 2 3 4**
15. I am relaxed.. **1 2 3 4**
16. I feel content **1 2 3 4**
17. I am worried **1 2 3 4**
18. I feel confused **1 2 3 4**
19. I feel steady **1 2 3 4**
20. I feel pleasant... **1 2 3 4**

APPENDIX D

DEMOGRAPHIC FORM

Name: _____

The following three questions will allow the researcher to match your pre-test results with your post-test results for comparison and protect your confidentiality.

Birth month (1=January, 2=February…12=December)

_____

What is the second letter of your last name?

_____

What is the last digit of your Social Security Number?

_____

What is your age?

_____

What is your gender?

_____ Male

_____ Female

What is your ethnicity?

_____ Caucasian

_____ Black/African American

_____ Asian American

_____ Hispanic

_____ Two or more races

_____ Prefer not to answer

In which program are you enrolled?

_____Accelerated

_____Traditional

Prior to your first inpatient clinical experience this semester, did you have previous experience of working with others in the role of a health care provider?

_____Yes _____ No

If so, how much experience do you have?

_____ <1 year

_____ 1 year – 5 years

_____ 6 years – 10 years

_____ 11 years – 15 years

_____> 15 years

What type of experience have you had? (please select all that apply)

_____Providing care for a family member

_____Working in a paid position

_____ Providing care in a hospital

_____ Providing care in a nursing home

_____ Providing care in an assisted living facility

_____ Other: Please describe

Have you had previous experience with writing reflective journals as a course assignment?

_____ Yes

_____ No

APPENDIX E

INFORMED CONSENT FOR DATA COLLECTION SURVEYS

CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH

Project Title: Reflective Journaling to Decrease Anxiety among Undergraduate Nursing Students in the Clinical Setting

Researcher: Joely T. Goodman, MSN, RN   School of Nursing
Phone: (402) 460-0643   email: joelygoodman@creighton.edu

Research advisor: Melissa Henry, PhD, FNP-C   School of Nursing
Phone: (970) 351-1735   email: Melissa.Henry@unco.edu

You are invited to participate in a study being conducted by Joely Goodman, a student in the School of Nursing at the University of Northern Colorado. This research project aims to develop a deeper understanding of anxiety associated with the clinical setting for undergraduate nursing students.

I plan to share my results with my research committee, present them at a conference, and publish them in a scientific journal.

You must be a junior in the traditional nursing program or in the first semester of the accelerated nursing program to participate in this study. You will be asked to complete one instrument as a pre-test and post-test to collect quantitative data and provide demographic information. Example items of this survey include: "I feel calm", "I am worried", and "I am a steady person". The pre-test should take approximately 10 minutes to complete while the post-test should take approximately six minutes to complete.

At the conclusion of your first clinical rotation, you are also invited to participate in an interview with the researcher. The interview is expected to last 30 minutes, and it will be recorded for transcription and analysis. The data will be stored on password-protected devices for the duration of the research project, and it will be destroyed after three years or at the completion of the project. The researcher will send an email after the second week of your clinical rotation with further information about the interview.

It is possible that the questions asked on the instrument or in the interview will cause you to recall negative or stressful feelings. If you have a strong negative reaction during the focus group, I will refer to you an appropriate professional counselor. The benefits to participating in the study include the opportunity to contribute to nursing science and the possibility of receiving a monetary reward. If you complete the instrument for the pre-

test and the post-test, you will be entered in a drawing to receive a $25 gift card. Three participants will be randomly selected to receive a $25 Amazon gift card. All individuals who participate in an interview will receive a $15 Starbucks gift card.

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read above and having had an opportunity to ask any questions, please complete the questionnaire if you would like to participate in this research. **By completing the questionnaire, you give your permission to be included in this study as a participant.** You may keep this form for future reference. If you have any concerns about your selection or treatment as a research participant, please contact the Office of Sponsored Programs, 25 Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910.

APPENDIX F

INSTRUCTIONS FOR REFLECTIVE JOURNALS

Questions for guided journal assignment before first week of the first clinical rotation: (Answer in one-to-two pages)

1. How do you feel about starting your first clinical rotation?

2. Why do you think you feel this way?

3. Describe any feelings of anxiety you have about starting your first clinical rotation.

4. What coping strategies do you typically use when you experience anxiety?

5. Have you used any strategies to decrease your anxiety before beginning your clinical rotation?

Questions for guided journal assignment after second week of the first clinical rotation: (Answer in one-to-two pages)

1. Describe an experience you have had in the clinical setting where you have felt anxious.

2. Try to describe the feelings you had during this experience.

3. Did your feelings affect your actions?

4. What was good or bad about this experience?

5. Why do you think you had these feelings?

6. Was there anything you could have discussed with a peer or instructor?

7. If you experience feelings of anxiety in the future related to the clinical rotation, what will you do?

Questions for guided journal assignment after the fourth and final week of the first clinical rotation: (Answer in one-to-two pages)

1. Describe an experience you have had in the clinical setting where you have felt anxious.

2. Try to describe the feelings you had during this experience.

3. Did your feelings affect your actions?

4. What was good or bad about this experience?

5. Why do you think you had these feelings?

6. Was there anything you could have discussed with a peer or instructor?

7. If you experience feelings of anxiety in the future related to the clinical rotation, what will you do?

Instructions for non-guided reflective journal assignments:

Please reflect on any feelings you have about your first clinical rotation. (Write one-to-

two pages)

APPENDIX G

INSTRUCTIONS FOR CONTROL GROUP ASSIGNMENT

Identify one intervention you provided for your patient. Propose an alternate intervention for that same problem. What are some advantages and disadvantages of each intervention? What approach would you use next time for that patient? (Respond in 1 page).

APPENDIX H

RUBRIC FOR EFFORT OF REFLECTION

2 = in depth analysis and insightful critical thinking - extra stretch-	1.5 = critical thinking obvious - looks pretty good	1 = average -— moderate critical thinking - needs a little reworking	0.5 = minimal critical thinking - not there yet	0= no critical thinking - minimal critical thinking - not there yet

APPENDIX I

INTERVIEW GUIDE

Thank you for agreeing to participate in this interview. The purpose of this interview is to collect information about your experiences with writing reflective journals during your clinical rotation. After reading the informed consent document, are you willing to participate in this study? Please note that you are able to withdraw from this study at any time or decline to answer any questions without penalty or loss of benefits.

What would you like to choose as a pseudonym to be used in the dissemination of the results from this research?

I want you to think back to your written reflective journal assignments during your first clinical rotation.

What were your experiences with writing reflective journals during your first clinical rotation?

What benefits do you feel you received from writing reflective journals during your clinical rotation?

What did you think about the frequency of the writing assignments?

Can you describe any difficulties or barriers you encountered with the writing assignment?

What is your opinion of the format of the writing assignment? (Guided or non-guided)

Can you describe any situations you encountered during your clinical rotation that may have provoked any feelings of anxiety?

Can you discuss the impact reflective journals had (if any) on feelings of anxiety?

> If it decreased the participant's anxiety, I would ask the following question:

Would you say the reflective journals had a slight effect on your anxiety, a moderate effect, or a significant effect?

Can you describe any strategies you used (besides writing the journals) to decrease your anxiety?

What did you like the most about the reflective journal assignments?

What did you like the least about the reflective journal assignments?

Is there anything you would change about the format of the type of journal you were assigned?

Is there anything we haven't talked about that you would like to add?

Probes:

> What did you mean by 'XXX'?
>
> Can you give me an example?
>
> How did that happen?
>
> When did that happen?
>
> Would you elaborate on that?
>
> That's helpful. Can you share more detail?

APPENDIX J

LETTER OF SUPPORT

Creighton
UNIVERSITY

College of Nursing

July 17, 2017

Melissa Henry, PhD, FNP-C
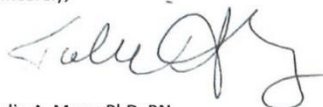Research Advisor, University of Northern Colorado

Dear Dr. Henry,

As you know, Joely Goodman is a full-time faculty member at Creighton University College of Nursing. The purpose of this letter is to express our support for her doctoral research study and to document that she will have access to nursing students enrolled in our nursing program as potential participants for her study. Specifically, Ms. Goodman plans to do a mixed methods study involving administering the State-Trait Anxiety Inventory and perform qualitative interviews with students to assess their perception of a reflective journal assignment.

We also understand that the University of Northern Colorado's IRB will review her study, as well as the Creighton University IRB.

If I can be of further assistance, please contact me.

Sincerely,

Julie A. Manz, PhD, RN
Associate Professor
Undergraduate Program Chair
Creighton University College of Nursing
2500 California Plaza
Omaha, NE 68178
jmanz@creighton.edu

T 402.280.2000 | F 402.280.2045
Dr. C.C. and Mabel L. Criss Health Sciences Complex II
780265 California Plaza Omaha, NE 68178-0265

nursing.creighton.edu

APPENDIX K

INSTITUTIONAL REVIEW BOARD APPROVAL LETTERS

UNIVERSITY OF
NORTHERN COLORADO

Institutional Review Board

DATE: August 29, 2017

TO: Joely Goodman, MSN
FROM: University of Northern Colorado (UNCO) IRB

PROJECT TITLE: [1106616-3] Reflective Journaling to Decrease Anxiety among Undergraduate
                   Nursing Students in the Clinical Setting
SUBMISSION TYPE: Amendment/Modification

ACTION: APPROVAL/VERIFICATION OF EXEMPT STATUS
DECISION DATE: August 29, 2017
EXPIRATION DATE: August 7, 2021

Thank you for your submission of Amendment/Modification materials for this project. The University of
Northern Colorado (UNCO) IRB approves this project and verifies its status as EXEMPT according to
federal IRB regulations.

**Thank you for the clear and thorough amendments and modifications to your exempt IRB
application. These materials are verified/approved and it is expected that these will be the
protocols and documents used in participant recruitment and data collection.**

**The documentation of approval from the Creighton University IRB is much appreciated as a part of
this IRB application file at UNC.**

**Best wishes with this interesting and relevant research. Please do not hesitate to contact me with
any IRB-related questions or concerns.**

Sincerely,

Dr. Megan Stellino, UNC IRB Co-Chair

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Sherry May at 970-351-1910 or Sherry.May@unco.edu. Please
include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of
Northern Colorado (UNCO) IRB's records.

Creighton
U N I V E R S I T Y

DATE: August 25, 2017

TO: Joely Goodman
FROM: Creighton University IRB-02 Social Behavioral

PROJECT TITLE: [1111950-2] Reflective Journaling to Decrease Anxiety among Undergraduate
                   Nursing Students in the Clinical Setting
SUBMISSION TYPE: Response/Follow-Up

ACTION: APPROVED

EFFECTIVE DATE: August 25, 2017
EXPIRATION DATE: August 22, 2018
TYPE OF REVIEW: Expedited Review

Thank you for your submission of Response/Follow-Up materials for this project. The following items
were reviewed in this submission:

- Amendment/Modification - 105.6 Application for Response to IRB Requests.doc (UPDATED:
  08/25/2017)

- Consent Form - Appendix B Informed Consent-Survey Introduction Modified.docx (UPDATED:
  08/25/2017)

The completed training, clarifications as outlined in the application and the changes to the Participant
Information Letter satisfy the concerns of the Board as expressed in their letter to you dated August 23,
2017. Therefore the Creighton University IRB-02 Social Behavioral has APPROVED your submission.
This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have
been minimized. All research must be conducted in accordance with this approved submission. This
submission has received Expedited Review based on applicable federal regulations.

The consent documentation has been waived as, per 45 CFR 46.117, this research presents no more
than minimal risk of harm to subjects and involves no procedures for which written consent is normally
required outside of the research context.

Continued approval is conditional upon your compliance with the following requirements:

1. Compliance with all federal and state laws pertaining to this research and with the Creighton
   University IRB policies and procedures as found on the IRB web site.

2. Problems must be reported using the Reporting Form for Reportable New Information. Problems
   requiring report can be found in the IRB Policy 134 "Reportable New Information".

3. All protocol amendments and changes to approved research must be submitted to the IRB and
   not be implemented until approved by the IRB, except where necessary to eliminate apparent
   immediate hazards to the study subjects. Please use the Request for Modification for Approved
   Research form when submitting any change to the protocol.

4. Advertisements, letters, internet postings, any other media for subject recruitment, and information given to subjects for use in this study require approval before posting or distribution. Please use the Request for Review of Supplemental Documents form when requesting review for supplemental documents.

5. This project has been determined to be a minimal risk project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the Reporting Form for Continuing Review/Project Termination for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of August 22, 2018. If you complete this project within the year, you are required to close the study and submit a final report before the expiration date.

6. Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact Brooke Fitzpatrick at (402) 280-3208 or bfitzpatrick@creighton.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Creighton University IRB-02 Social Behavioral's records.

Social Behavioral Institutional Review Board

2500 California Plaza • Omaha, Nebraska 68178
phone: 402.280.2126 • fax: 402.280.4766 • email:
irb@creighton.edu

DATE:	October 26, 2017
TO:	Joely Goodman
FROM:	Creighton University IRB-02 Social Behavioral
PROJECT TITLE:	[1111950-3] Reflective Journaling to Decrease Anxiety among Undergraduate Nursing Students in the Clinical Setting
SUBMISSION TYPE:	Amendment/Modification
ACTION:	APPROVED
EFFECTIVE DATE:	October 26, 2017
TYPE OF REVIEW:	Expedited Review

Thank you for your submission of New Project materials for this project. The following items were reviewed in this submission:

- Amendment/Modification - GoodmanCUAddendum.docx (UPDATED: 10/11/2017)
- Proposal - Goodman Dissertation Proposal Final Edited.docx (UPDATED: 10/11/2017)

The contents of this Amendment/Modification and the submission of the new consent form does not appear to adversely affect the risk/benefit ratio of this study or the process of obtaining consent. Therefore, the Amendment/Modification and the consent is approved for use at this site. The consent is stamp dated October 26, 2017. Please use only copies of this stamp dated document when enrolling participants in this study. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

If you have any questions, please contact Brooke Fitzpatrick at (402) 280-3208 or bfitzpatrick@creighton.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Creighton University IRB-02 Social Behavioral's records.

Generated on IRBNet