# A DESCRIPTIVE PHENOMENOLOGICAL STUDY OF NURSING STUDENT EXPERIENCES OF CLINICAL DATA USE IN CLINICAL ROTATIONS

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DEDICATION

For my husband, Greg, who provides me with unending inspiration, guidance, patience, love, and support. I am truly blessed.

For my daughters Eva, Anna, and Mattye, who constantly amaze and inspire me each day. I am honored to be your mom.

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ABSTRACT

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A DESCRIPTIVE PHENOMENOLOGICAL STUDY OF NURSING STUDENT EXPERIENCES OF CLINICAL DATA USE IN CLINICAL ROTATIONS

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Clinical learning experiences are important opportunities for nursing students in that they gather and synthesize data of patients' conditions, provide appropriate nursing interventions, and evaluate patient outcomes, applying their knowledge and skills learned from the classroom in real practice. In order to ensure quality clinical learning for nursing students, it is vital to hear the voices of nursing students on how they experience clinical learning, particularly with regards to clinical data use.

This qualitative, exploratory approach was conducted, using descriptive phenomenology as the philosophical framework, through in-depth interviews with eighteen junior and senior baccalaureate nursing students at a large, public university in Texas. The interview data were analyzed according to Colaizzi's method of descriptive phenomenological data analysis. Theme 1: *Help Wanted* was revealed in descriptions of needing or wanting help with using clinical data. Theme 2: *Making Sense* included descriptions about ways that clinical data make sense and ways that clinical data assisted students in making sense in both clinical and classroom. Theme 3: *Recognizing Usefulness* emerged from descriptions of how clinical data were used or could be used.

Participant descriptions of how clinical data in clinical rotations were related to communication illuminated Theme 4: *Engaging in Communication*. Descriptions of the impact of the assigned nurse on student experiences with using clinical data in clinical rotations resulted in the emergence of Theme 5: *Nurse as Key Player*. Lastly, Theme 6: *Emotionally Charged* emerged from descriptions about emotional experiences related to experiences of clinical data use in clinical rotations. The thematic findings were reduced according to Colaizzi's method, resulting in an exhaustive statement of description, and a descriptive statement of identification of the phenomenon of interest.

The findings may be used to assist nurse educators in developing effective ways to help students use clinical data for effective clinical learning. Suggestions to achieve this aim include improved orientation for educators and nursing staff and emotional support for students. Policy development to address barriers to effective clinical learning and the development of the future nursing workforce remains an important strategy for supporting nursing students and their preparation for entry into professional nursing practice.

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# CHAPTER I

## INTRODUCTION

Clinical rotations continue to be an integral part of nursing education, particularly in baccalaureate and clinically-focused advanced nursing studies. The use of patient clinical data is an essential component of student learning in clinical settings. The two main sources for collecting clinical data include patient care activities and formal clinical trials (University of Washington, 2017). During clinical rotations, nursing students are only expected to use patient care related clinical data, which is either stored on a paper chart or electronically. While the advent of electronic health records (EHRs) in the 1990s (Institute of Medicine [IOM], 1997) has assuredly changed the landscape of patient clinical data, there is a growing awareness that nursing students face challenges in accessing patient clinical data.

The large social context of the implementation of EHRs impacts users of clinical data at all levels (Cucciniello, Lapsley, Nasi, & Pagliari, 2015), including nursing students. Nursing programs report that a shortage of quality clinical placements remains a challenge for currently enrolled nursing students as well as an impediment to increasing nursing student enrollment (National League for Nursing, 2016). Simulation is increasingly used as a form of clinical learning experiences in nursing education (Alexander et al., 2015). Consequently, effective clinical learning is no doubt becoming a moving target. In order to ensure quality clinical learning for nursing students, it is

vital to hear the voices of nursing students on how they experience clinical learning, particularly with regards to clinical data use.

## Focus of Inquiry

Clinical learning is an important part of nursing education because it provides an opportunity for nursing students to apply theoretical knowledge learned in a practice setting (O'Connor, 2006). Historically, nursing education in the United States has been comprised of two main categories of experiences (Billings & Halstead, 2009). The first type of learning experience is the theoretical learning component which is sometimes called didactic or classroom learning and has traditionally occurred in the classroom spaces of a nursing program or university (Benner, Sutphen, Leonard, & Day, 2010). The second type of learning experience is clinical learning or clinical nursing education; clinical learning provides opportunities to apply knowledge to practical, real-life situations (Oermann & Gaberson, 2009). Clinical learning may occur in the lab and simulation spaces of a nursing program or may occur in an external clinical rotation (Benner et al., 2010). The term "clinical rotations" is used to represent clinical nursing education experiences that do not take place in a nursing program's labs or classrooms and are described by the National Council of State Boards of Nursing (NCSBN) as "practice in an inpatient, ambulatory care, or community setting where the student provides care to patients under the guidance of an instructor or preceptor" (Alexander et al., 2015, p. 40).

Clinical learning in nursing education has long served to provide nursing students with real patient care experiences in preparation for entry to practice (NCSBN, 2005). Real patient care experiences in clinical rotations provide the medium through which students can begin to experience how nurses provide patient care and a context for the application of abstract knowledge acquired in the theoretical nursing classroom (Benner, 1982). Strictly speaking, data are defined as "discrete entities described objectively without interpretation" (American Nurses Association, 2015, p. 2). However, in this study, the term "clinical data" as used by nursing students embraces both data and information about a patient's condition and situation such as health history, assessments, vital signs, laboratory study results, diagnostic procedures, and medical treatments.

The ability to access, navigate, gather, and synthesize clinical data of a patient condition is an essential competency that should be developed through the clinical learning experience. Thus, the clinical learning environment should work as the opportunity for nursing students to develop this competency as well as apply knowledge and skills learned in the classroom for best patient care in the real nursing practice arena. The in-depth understanding of nursing student experiences of clinical data use in clinical rotations is preliminary to identifying needed improvements in both clinical rotations and preparations for clinical learning experiences and advancing clinical learning environments and teaching pedagogies in the nursing curriculum, particularly with regards to clinical data use.

## Statement of Purpose

The purpose of the study was to describe the experiences of nursing students with using clinical data in clinical rotations. The research question was "What are the experiences of nursing students with using clinical data in clinical rotations?" The specific aims of the study were (a) to describe the student nurses' perceptions of their use of clinical data in clinical rotations and (b) to describe how the students perceive their use of clinical data impacts their nursing education.

## Rationale for the Study

Nursing students use clinical data to learn how to provide safe, quality, patient-centered care and engage in clinical judgment (Tanner, 2006). In nursing, a patient's clinical data provides information needed to grasp the current situation and patient condition, which then prompts a variety of reasoning patterns that lead to using clinical judgment to make decisions (Tanner, 2006). Clinical rotations are the clinical learning experiences that provide the opportunity for students to use clinical data within a practical context (Benner, 2004a). Clinical learning experiences contribute more than the passage of time in a clinical setting; these experiences provide a body of context in which students can begin to distill their knowledge and understanding of theoretical content through the paradigm of real-life practice situations (Benner, 1982).

While clinical learning practice has been traditionally placed in clinical facilities external to nursing schools, such as acute care hospitals, nursing programs have developed laboratories for skills development and practice as well as simulation labs for

simulated clinical experiences over the last few decades. In the simulation and laboratories, the nursing faculty has full control of the environment, scenarios, available clinical data, patient responses, and scenario outcomes (Brown & Collins, 2015). This modality has served nursing education well because it ensures that learning experiences are highly focused and that students are able to meet prescribed learning objectives (Alexander et al., 2015).

The National Simulation Study (Alexander et al., 2015) provided evidence that simulated clinical experiences in labs can be as effective as clinical learning experiences in real practice. However, the findings of the National Simulation Study only support the use of simulation for up to 50% of a nursing program's clinical learning (Alexander et al., 2015). Therefore, even with the benefits of simulation-based learning, the NCSBN guidelines maintained the position that clinical rotations with real patients are an important component of nursing education (Alexander et al., 2015), and clinical data remains an important component of the development of clinical judgment (Tanner, 2006). Yet, it should be noted that, compared to a simulation-based learning experience with full control of the patient situation, the clinical learning environment in clinical rotations with real patients cannot be controlled by nursing faculty nor nursing programs. The clinical learning experiences are likely to be dependent on the context of clinical rotations.

Historically, students used clinical data gathered from readily available paper-based charts to learn patient care and engage with the process of developing clinical judgment (Tippen, 2014). In many clinical rotations, the experience of using clinical data

gathered from paper-based charts has changed as the patient documentation system is transitioned from paper-based charts to electronic health records. The Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009 and financial incentives from the Centers for Medicaid and Medicare Services have produced rapid, mandatory implementation of electronic health records (EHRs) (United States Congress Committee on Ways and Means [USCCWM], 2009; United States Department of Health and Human Services [USDHHS], 2014). The HITECH Act (USCCWM, 2009) resulted in the transition from paper-based charts to EHR systems for many of the clinical facilities that host nursing students for clinical rotations.

Nursing student experiences of using clinical data have been impacted due to the adoption of EHRs. Students have recognized the benefits of EHRs as having a potential for improved availability of clinical data and increased quality of patient records (Baillie, Chadwick, Mann, & Brooke-Read, 2012, 2013; Brooke-Read, Baillie, Mann, & Chadwick, 2012). Students have also recognized the advantages of safety features such as barcode computerized provider order entry and clinical decision support systems that are integrated into EHR systems (Whitt, Eden, Merrill, & Hughes, 2017). Yet, concerns from nursing students have included inconsistent access to patient data and difficulties in navigating EHR systems (Baillie et al., 2012, 2013; Brooke-Read et al., 2012). Facilities have imposed restrictions on student use of clinical data due to ethical concerns regarding the protection of patient information (Baillie et al., 2012; Mahon, Nickitas, & Nokes, 2010). Additionally, faculty have described concerns about clinical learning relative to

inconsistencies in nursing student experiences of clinical data (Brooks & Erickson, 2012).

Various stakeholders in nursing education such as the American Association of Colleges of Nursing (AACN), the Quality and Safety Education for Nurses (QSEN) project, and the NCSBN have issued position statements or regulations addressing nursing student experiences with using clinical data. Essential IV of the AACN (2008) Essentials of Baccalaureate Education for Professional Nursing Practice stated that "baccalaureate graduates ethically manage data, information, knowledge, and technology to communicate effectively; provide safe and effective patient care; and use research and clinical evidence to inform practice decisions" (p. 19). The QSEN project identified informatics competencies for prelicensure nursing students and included knowledge, skills, and attitudes relative to electronic documentation systems (Cronenwett et al., 2007). Nursing students must develop competencies relative to clinical data use with the goals of minimizing errors, promoting high-level decision-making, communicating effectively, and managing information (Cronenwett et al., 2007).

In response to the transition to EHRs, the existing research has focused on student experiences with EHRs rather than the phenomenon of nursing student experiences of clinical data use in clinical rotations. Clinical data use is an important part of effective clinical learning, but existing literature does not address the role of clinical data use in effective clinical learning. Types of clinical rotations and the effective of a variety of settings has also been explored in the literature. The existing literature includes studies

with a variety of approaches, including observational, mixed methods, and exploratory designs. A common limitation explicated in the existing research was the relatively short amount of time that students spend in any one clinical setting, which may have limited the participants' abilities to feel comfortable enough in any one environment to give accurate responses. Phenomenology was not commonly used in existing research, and the existing literature does not address the student experiences of clinical data use from a quantitative, qualitative, or mixed-methods approach. Existing research focuses on a variety of aspects relative to clinical learning, but the literature does not address the phenomenon of nursing student experiences of clinical data use in clinical rotations. This phenomenological study will help to fill the gap in the literature by providing insight into nursing student experiences of clinical data use in clinical rotations.

## Researcher's Relationship to the Topic and Assumptions

Qualitative research is a research approach that allows for the use of many different kind of data collection and data analysis; this type of approach also allows for a variety of philosophical and theoretical frameworks (Guest, Namey, & Mitchell, 2013). Through a dichotomous lens, qualitative research is a subjective approach that juxtaposes the quantitative research approach (Guest et al., 2013). In qualitative inquiry, the researcher is the research instrument, is motivated by some type of relationship with the topic, and becomes involved with participants and the findings during data collection and analysis (Patton, 2015). Therefore, it is important for the qualitative researcher to engage

in reflection on both the relationship to the research topic and any existing assumptions prior to conducting a research study (Patton, 2015).

As a professional nursing educator, I have worked closely with students in clinical rotations in a variety of clinical settings as they learn to think about a patient's clinical data with the goal of learning to provide quality, individualized patient care. My initial interest in the topic was driven by observations of inconsistency between institutions regarding how students accessed the clinical data needed to provide patient care. Upon reflection, I soon realized that the question of EHR access and the changes that the HITECH Act of 2009 may have brought to clinical learning experiences are only a small facet of the real topic of interest. My motivation was to find ways to improve student learning in clinical learning experiences, and I realized that student experiences with using the clinical data is the real focus of my interest. As an educator, I conducted this study with the purpose of learning how the student experiences clinical data use so that I, and other educators, can explore ways to improve student learning in the clinical environment with the ultimate purpose of improving their readiness to enter the workforce as nursing professionals.

The following assumptions were clarified at the beginning of the study:

1. Each participant would have experienced the phenomenon of interest.
2. Having experienced the phenomenon of interest, each participant would be an expert on the nursing student experience of clinical data use in clinical rotations.

3. Participants would have been willing to share their experiences with the researcher and give an accurate description of their experiences.
4. As the researcher, I would strive to participate in ongoing bracketing of my own knowledge, beliefs, and experience with the phenomenon of interest, but I also acknowledged that my own knowledge, expectations, and assumptions may have contributed to the findings of the study.

## Philosophical Framework

The philosophical framework of phenomenology was used to guide the research, and this philosophical perspective was important at every phase of the study (Bevan, 2014). Before selecting a philosophical framework, the researcher must determine their own beliefs about the world and how knowledge is developed and select a philosophical framework that is in line with personal beliefs about ontology and epistemology (Creswell, 2013). The philosophical framework must guide the researcher at every step of the study as the researcher must ensure that the study is in line with the philosophical foundations (Sloan & Bowe, 2014). In phenomenological studies, consistency with the philosophical framework is critical for the establishment of validity (Colaizzi, 1978). Phenomenology as a philosophical framework provides a unique foundation for this study of nursing student experiences with clinical data in clinical rotations. Because experiences with clinical data in clinical rotations are a subjective experience unique to each individual nursing student, it makes sense that the students themselves are the

experts who descriptions of these experiences will contribute to an articulation of the phenomenon.

Phenomenology is more than a philosophical framework; it also serves as a qualitative approach (Creswell, 2013), a research methodology (Creswell, 2013), an analytical perspective used for the social sciences of sociology and psychology (Schutz, (1930/1967), and a paradigm to guide inquiry (Patton, 2015). Phenomenology developed as part of the naturalist movement in the nineteenth century as a reaction to the view that scientific empiricism, devoid of human experience or perspective, is the best way to develop knowledge (Spiegelberg, 1971). The word "phenomenon" originated in the Greek term *phaenesthai*, which means "to flare up, to show oneself, to appear" (Moustakas, 1994, p. 26). Phenomenology concerns itself with the nature and meaning of human experience (Scruton, 1995). A phenomenon is what emerges in a person's consciousness, and the German philosopher and founder of the school of phenomenology, Edmund Husserl, asserted that a return to self and "inner evidence" was a way to generate knowledge (Moustakas, 1994, p. 26). Phenomenology is the study of experience as perceived each individual within the context of the world (Sokolowski, 2000).

Through the phenomenological approach, human experiences are a valid means by which to develop knowledge about the world (Sokolowski, 2000). The phenomenological tenet of intentionality means that consciousness is directed towards an outward object and cannot exist apart from this outward object; similarly, an object is

only perceived through consciousness and does not exist without intentionality (Husserl, 1913/1982). This philosophical assumption allows for first person experiences, as consciousness interacting with the object, to represent the phenomenon of interest (Sokolowski, 2000).

Although phenomenology was previously mentioned in the writings of philosophers such as Emmanuel Kant, Johann Gottlieb Ficht, and G.W.F. Hegel, Edmund Husserl created the foundations of a phenomenological movement to describe real and transcendental human experiences through his writings (Moustakas, 1994). Husserl asserted that a singular knowledge could be revealed through the conscious attention of human beings as they experienced the world, and valued the descriptions of individuals as a valid means to develop knowledge about a phenomenon (Sokolowski, 2000). Husserl (1913/1982) also asserted that it was crucial for the researcher to view the participant experience with a fresh perspective that is uncluttered by previous knowledge, experience, or understanding. This return "to things themselves" allows descriptions of human experience to be studied without judgment or interpretation (Husserl, 1913/1982).

A philosophical assumption of phenomenology is that it is possible for a researcher to engage in bracketing and return "to things themselves" by striving to achieve the natural attitude of the person who experienced the phenomenon (Husserl, 1913/1982). A second philosophical assumption of phenomenology is that consciousness only exists if it is intentionally directed towards an object, and an object only exists as the object of the consciousness of intentionality (Husserl, 1913/1982). Husserl's

phenomenology is focused on descriptions of first person experiences, as consciousness intentionally interacting with the object, to represent the phenomenon of interest (1913/1982). Without intentionality, there is no object, there is no consciousness, and there is no experience (Giorgi, 2009). A third philosophical assumption of phenomenology is that it is possible to reduce different descriptions of human experience to an essential understanding of the phenomenon (Sadala & Adorno, 2002). This philosophical lens supports the assumption that nursing students themselves are the experts on nursing student experiences with using clinical data in clinical rotations. Therefore, phenomenology serves as both a philosophy and a qualitative research methodology in which individual experiences are studied (Creswell, 2013).

Phenomenology as a methodology requires that the researcher align the methods of data collection, analysis, and reporting of findings with phenomenological assumptions (Matua, 2015). The exploration of a human phenomenon also requires the suspension of all preconceived judgments in order to allow the phenomenon to emerge (Husserl, 1913/1982). The researcher engaged in ongoing bracketing of preconceived knowledge, expectations, assumptions, and expected findings to allow the phenomenon to emerge from the analytical process. Specific to this study, the researcher bracketed out knowledge and assumptions about previous instructional experiences with using clinical data in clinical rotations for every step of the research study. The researcher also bracketed the assumption that clinical data is an important component of clinical learning and the premise that clinical data is required for clinical judgment.

Descriptive phenomenology engages with subjective, human experience as a valid means to develop knowledge; yet it is through a reduction of the unaltered descriptions of these experiences that an objective description of the phenomenon emerges (Spiegelberg, 1971). The belief that it is possible to reach a singular, fundamental, and descriptive presentation of a phenomenon is a defining tenet of the descriptive phenomenological approach. Descriptive phenomenology is in a unique paradigm that embraces both subjective, experiential data and positivist approaches to developing knowledge.

## Significance for Nursing

### Nursing Education

It is important to determine if nursing students have effective clinical learning experiences. This research will provide insight into nursing student perspectives on clinical learning experiences relative to the use of clinical data in clinical rotations. Because students must use patient care related clinical data during clinical learning and in the process of developing clinical judgment, the research holds great significance for nurse educators to learn how students experience the phenomenon. The research findings may provide insight into whether nursing students perceive their clinical learning experiences as effective. The findings may also suggest how nursing students perceive how the use of clinical data in clinical rotations is connected with their overall nursing education. Nurse educators may use these findings to determine how to support students in using clinical data in clinical rotations as part of the clinical learning experience. The findings of this study may also provide insight into the effectiveness of various clinical

education models such as the academic-clinical partnership approach and traditional clinical education.

**Nursing Practice**

Nurses are not only the largest of the health care profession groups, but also engage with patients in direct interaction and care more than any other health care team member (Benner et al., 2010). Nursing professionals are in high demand; the United States Department of Labor (2015) projected a 16% increase in available position between 2014 and 2024. This high level of demand is due to a variety of factors that include an aging population in and the pending retirement of Baby Boomers from the nursing workforce (Buerhaus, Skinner, Auerbach, & Staiger, 2017). New graduate nurses enter a workplace that is increasingly complex, variable, and changing at a rapid pace (Benner et al., 2010). Because of the heavy demands on nursing, new graduate nurses not only need to be prepared to engage in safe practice in an increasingly complex environment, but also must be ready to continue to learn as they adjust to the professional role (Benner et al., 2010).

It is important for the nursing profession that new graduate nurses have engaged in effective clinical learning. Using clinical data in real, ever-changing and complex situations will allow nursing students to enter nursing practice with a foundation of experience and context on which to draw. Benner (2004b) described this level of expertise as Advanced Beginner and describes a nurse with this level of proficiency, often a new graduate nurse, as “one who has coped with enough real situations to note (or

to have them pointed out by a mentor) the recurrent meaningful situational components" (p. 403). Findings from this study may help with the development of strategies to help students learn to use clinical data in clinical rotations, thereby promoting effective clinical learning for nursing students.

**Significance for Society/Policy**

Society holds a great stake in the preparedness of professional nurses and the quality of patient care. The existing and projected demand for professional nurses requires that new graduate nurses enter nursing practice prepared to provide safe patient care and able to learn quickly to adapt in the professional practice environment (Benner et al., 2010). The IOM (2011) asserted that nurses must move from a task-oriented definition of competency to an understanding that 21st century competence includes increased clinical judgment skills that may be applied in a variety of diverse and complex settings.

The preparation of nursing students for entry into practice is ultimately a nursing workforce concern. Effective clinical learning is a requirement in order for students to develop the competencies needed to enter the nursing workforce and provide safe, high quality patient care. Therefore, the findings of this study have implications for policy regarding nursing workforce development. Resources are required in order to prepare new graduate nurses to enter the workforce as the nursing shortage escalates (NLN, 2017). The findings from this research will help to determine priorities in the development of policies that will support nursing students in their educational process, as

well as provide support for clinical facilities and nursing programs in providing opportunities for effective clinical learning.

This study may help to provide additional information to support the preparedness of new nursing graduates to be able to enter the workforce with a higher level of competence and increased readiness for trustworthy practice in the professional arena. This study will provide data to support future policy changes for legislative or accreditation bodies regarding clinical nursing education with the goal of improving the clinical learning experience to support increased readiness to enter the 21st century nursing profession.

## Summary

This chapter introduced the focus of inquiry, which is the phenomenon of nursing student experiences of clinical data in clinical rotations. It is clear that clinical data is important for the process of learning to engage in clinical judgment, and it is clear that clinical rotations provide an important, real-life opportunity for students to use clinical data during clinical learning. However, nursing student experiences of clinical data use in clinical rotations is not represented in the literature.

In order to begin to develop understanding about nursing student experiences with clinical data use in clinical rotations, phenomenology was used as both a philosophical framework and a methodology. The phenomenon of nursing student experiences of clinical data use in clinical rotations was explored by interviewing nursing students who experienced the phenomenon with the goal of generating descriptions of the

phenomenon. Through phenomenological reduction of the descriptions, a concise description of the phenomenon emerged. Knowledge gained from this study will assist in developing an understanding about the phenomenon so that stakeholders can determine if this critical component of clinical learning supports the needs of the future nursing workforce.

# CHAPTER II

# REVIEW OF LITERATURE

This chapter presents a review of existing literature that is relevant to the study and is focused on the components of the phenomenon of interest. The review presents literature on effective clinical learning, an expanded discussion of clinical data, along with a discussion of the existing literature on clinical rotations. This literature review also presents existing literature that addresses nursing students' experiences with electronic records. This section of the literature review is important because it discusses how clinical data may be stored and accessed in clinical rotations; the existing literature on student experiences with EHRs also played a significant role in the process of clarifying the phenomenon of interest.

## Clinical Learning

Clinical learning experiences provide opportunities for nursing students to apply and transfer knowledge to real-life, practical situations (Oermann & Gaberson, 2009). Gaberson and Oermann (2010) asserted that the focus of the nursing student should be on learning to provide care rather than the performance of skills or the ability to function as a nurse. Clinical rotations provide opportunities for clinical learning, but each student experiences clinical learning in a different way based on their own background, knowledge, skills, and attitudes (Gaberson & Oermann, 2010). Andrew (2013)

underscored the importance of clinical learning as having a significant impact on professional identity in nursing and lifelong professional development.

Existing literature addresses aspects of the clinical learning experience, with a particular emphasis on evaluation of the clinical learning environment. The Clinical Learning Environment Inventory was developed to assess nursing students' perceptions of the clinical learning environment (Chan, 2002). The tool includes subscales that address a variety of variables such as individualization, innovation, satisfaction, and personalization (Chan, 2002). The student experience in how clinical learning is perceived was recognize as a crucial component of the learning process in the development of this tool (Chan, 2002). Gurková et al. (2016) used the Inventory to conduct a descriptive study that explored how nursing students experience clinical learning and clinical placements. Students identified clinical supervision and the frequency and duration of clinical rotations as having the most significant impact on their perception of the clinical learning environments (Gurkova et al., 2016). Similarly, Dadgaran, Shirazi, Mohammadi, and Ravari (2016) completed qualitative analysis of questionnaires and semi-structured interviews administered to nursing students as part of a research project aimed at developing a tool to measure clinical learning. Numerous concepts emerged as components of clinical learning and included aspects such as the influence of the nurse, social and organizational factors, and mastery of prerequisite course materials (Dadgaran et al., 2016).

Research on clinical learning was conducted to explore perspectives on clinical models that included the traditional and preceptored models of clinical supervision (DeMeester, Hendricks, Stephenson, & Welch, 2017). Students, preceptors, and faculty completed open-ended surveys that revealed themes in each group (DeMeester et al., 2017). Student responses in the traditional clinical model revealed themes focused on learning opportunities and making connections, and preceptor responses revealed themes focused on giving back to the profession and reflective practice (DeMeester et al., 2017). The importance of the nurse's role in effective clinical learning was also represented in the thematic findings (DeMeester et al., 2017). Similarly, Ó Lúanaigh (2015) explored the influence of registered nurses on nursing students' learning in the clinical environment with a case study approach. The purpose was to inform strategies to assist staff nurses to support clinical learning more effectively and to assist nursing students in maximizing their clinical learning (Ó Lúanaigh, 2015). The findings underscored the importance of the staff nurse in helping students establish a professional nursing identify and improve clinical learning (Ó Lúanaigh, 2015).

The literature includes studies that explored the effectiveness of clinical learning in different settings or approaches. Palese et al. (2017) used a mixed methods design to describe nursing students' perspectives on clinical learning during night shift clinical rotations. A cross-sectional survey revealed less student satisfaction with night shift clinical rotations than with day shift placements, however, students reported that experiences in night shift placements could be effective for clinical learning (Palese et al.,

2017). Students reported boredom and a perception of wasted time during night shift placements; students perceived that more time was spent on non-nursing tasks rather than in managing clinical problems that could contribute to clinical learning (Palese et al., 2017). Lait, Suter, Arthur, and Deutschlander (2011) explored the effectiveness of interprofessional collaboration as a strategy to enhance clinical learning for nursing students. Lait et al. (2011) implemented an interprofessional mentoring program in which students interacted with providers who were from different health care disciplines in addition to the nursing staff. Evaluation of the interprofessional mentoring program demonstrated that clinical learning was enhanced by a focus on the interprofessional teamwork approach to providing patient-centered care (Lait et al., 2011).

## Clinical Data

### Terminology

The Institute of Medicine (IOM) (2010) defines clinical data as "information ranging from determinants of health and measures of health and health status to documentation of care delivery" (p. 8). Examples of determinants of health may include biomedical factors, genetic considerations, and demographic variables (IOM, 2010). Measures of health and health status may include data such as diagnostic and laboratory data, physical and psychological examination findings, results of imaging studies, diagnoses, recommended and prescribed interventions, patient responses (IOM, 2010). Clinical data may be used for a variety of purposes such as reimbursement, research, or

education and is managed in a variety of mediums such as EHRs or large scale data registries (IOM, 2010).

The Common Clinical Data Set (USDHHS, 2014), formerly known as the Meaningful Use (MU) Common Data Set, is collected on every patient and is a "summary of care records, care transitions, discharges, and patient access" (USDHHS, 2014). The MU Common Data Set was developed to ensure consistency in EHR development and use with the goal of supporting the meaningful use of EHRs (USDHHS, 2003). The Common Clinical Data set specifically includes the following information: sex, race, ethnicity, preferred language, smoking status, problems, medications, medication allergies, laboratory tests, laboratory results, vital signs, procedures, care team members, immunizations, identifying numbers and information for any implantable devices, assessment and plan of treatment, goals and health concerns (USDHHS, 2014).

Existing literature uses a variety of terms interchangeably with the term "clinical data." Examples include: data (Benner et al., 2010; Tanner, 2006), objective health care data (Benner et al., 2010), objective data (Tanner, 2006), assessment data (Tanner, 2006), information (Tanner, 2006), patient information (Lavin, Harper, & Barr, 2015), and health information (USDHHS, 2003). The term *Protected Health Information* (PHI) was used in the HIPAA Privacy Rule, which established standards to protect the identifiable health information of patients. PHI is defined as any information relating to:

- the individual's past, present or future physical or mental health or condition,
- the provision of health care to the individual, or

• the past, present, or future payment for the provision of health care to the individual. (USDHHS, 2003)

The USDHHS' (2003) definition describes information that could potentially identify a patient with the intent of protecting the identity of individuals, however, the definition and term aligns with the definition of the term "clinical data" used in this study.

The IOM (2010) described major categories of clinical data and stated that clinical data is a "basic staple of health learning" (p. 8). Three types of clinical data were identified:

• Data based on clinical care that come from electronic health records, clinic-based administrative datasets, and government payer datasets;

• Large-scale registries generated and maintained by government entities, professional societies, and the private sector; and

• Clinical trials, both publicly and privately funded examples of the types of purposes for which it is used. (IOM, 2010, p. 14)

According to the IOM (2010), clinical data should be available for learning on individual and system wide scales, asserting that those who possess clinical data have "an obligation to facilitate scientific, technical, and educational uses of information" (p. 162).

The ANA's (2015) Nursing Informatics: Scope and Standards of Practice presented several assertions about data. According to the ANA (2015), "Data are discrete entities that are described objectively without interpretation" (p. 2). The ANA (2015) also states that data become information once it is "interpreted, organized, or structured"

(p. 2). Thirdly, information, which results from data, becomes knowledge after it is "synthesized so that relationships are identified and formalized" (ANA, 2015, p. 2). Data may be gathered from a variety of sources, including the direct care of an individual patient, and may be used for decision-making on an individual or aggregate basis (ANA, 2015). For the purposes of this study, the term "clinical data" was used to indicate information about the individual patient such as health history, assessment data, vital signs, or laboratory study results.

## Theoretical Background

The use of a theoretical framework does not align with the philosophical foundations of phenomenology because the use of a theoretical framework is in conflict with the idea of bracketing all preconceived ideas, expectations, or knowledge. However, Tanner's (2006) Clinical Judgment Model provides a theoretical background for this study. In Tanner's (2006) Clinical Judgment Model, clinical data is regarded as a component of contextual material needed for clinical judgment and includes information such as background information about the patient and assessment data. Another component of Tanner's (2006) model is the process of analyzing and clustering clinical data and comparing a patient's expected responses to the actual patent situation represented by the clinical data.

Tanner (2006) asserted that clinical judgment in nursing requires an understanding of patient pathophysiology, diagnosis, clinical presentation, disease, the illness as the patient experiences it, and variables such as emotional, social, and physical

factors. Clinical data are required for clinical judgment, and students must engage in analytic processes in order to make a clinical judgment (Tanner, 2006). Tanner (2006) breaks this analytic process into four aspects: "noticing," "interpreting," "responding," and "reflecting" (p. 208). The aspect of noticing stems from having knowledge about a patient and encompasses the ability to notice whether or not norms and expectations are met (Tanner, 2006). Each of the remaining aspects of interpreting, responding, and reflecting is based on the process of noticing, which requires knowledge about the patient and clinical situation (Tanner, 2006).

Lasater (2006) developed the Lasater Clinical Judgment Rubric to evaluate clinical judgment based on the Clinical Judgment Model (Tanner, 2006). The student's ability to notice, interpret, respond, and reflect relative to the individual client's data is assessed in multiple ways in this tool, and the goal of the tool is to prompt discussion and questions that will improve a student's thinking and judgment (Lasater, 2006, 2011). Clinical data provide background information and context for patient situations, and clinical data must be clustered and analyzed in the process of clinical judgment (Tanner, 2006). The ANA (2015) describes the process of taking clinical action based on a patient's data, the context of the situation, experiential knowledge, and theoretical knowledge as "knowledge-in-use" (p. 4).

Benner's Novice to Expert theory is based on the Dreyfus Skill Acquisition Model (2004a). The developers of the model considered it to be applicable to acquiring a skill in any field or practice and proposed that the way in which a human being learns a

new skill is a universal one (Dreyfus & Dreyfus, 1980). The process proposed by Dreyfus and Dreyfus (1980) posited that knowledge and its rules must be supported by experience, practice, and context. Experience is not specific to the passage of time, but refers to exposure to many variations and contexts to provide a wealth of background (Dreyfus & Dreyfus, 1980). Benner (2004a) applied the Dreyfus Skills Acquisition Model to describe the process of becoming an expert nurse, rather than learning a specific skill. This wealth of background information and experience then provides the nurse with additional context with which to engage in clinical decision-making. In Benner's (2004b) theory, the new graduate nurse progresses through the stages of novice, advanced beginner, competent, proficient, and expert. Experience, practice, and context enable the increasingly expert nurse to engage in decision-making based on a patient's clinical data (Benner, 2004b).

The clinical reasoning cycle or "five rights of clinical reasoning" model (Levett-Jones et al., 2010) begins the cycle with the "right cues." Cues are described as "available patient information" and may include information such as patient history, current and previous assessments, as well as other information that aligns with the definition of clinical data that was used in this study (Levett-Jones et al., 2010, p. 517). The "right cues" step in the clinical reasoning cycle is equivalent to the Tanner's (2006) "noticing" stage in the Clinical Judgment Model. The second and third "rights" in the clinical reasoning cycle include the "right patient," which refers to using the cues in the clinical data to identify at-risk patients, as well as the "right time," which requires the

identification of the patient problem in a timely manner. The "right action" and the "right reason," or right evidence, finish out the clinical reasoning cycle (Levett-Jones et al., 2010, p. 519). Each step of the clinical reasoning cycle stems from the first step in which the right cues, or right clinical data, is noticed and interpreted within the context of the patient's situation (Levett-Jones et al, 2010).

## Clinical Rotations

Clinical rotations in nursing education may be known by a variety of names such as clinical experiences (Doucette et al., 2011) or clinical placements (Siggins Miller Consultants, 2012). Clinical rotations are the link between the theoretical knowledge learned in the classroom and real-world application (Doucette et al., 2011). Clinical rotations are also media for experiential learning in which nursing students learn from the experience of caring for patients (Benner et al., 2010). Clinical rotations also provide students with opportunities for skill development and socialization into the role of the professional nurse (Newton, Jolly, Ockerby, & Cross, 2010).

Benner (2004b) wrote that the practice of nursing requires two types of knowledge: *techné* and *phronesis*. *Techné* may be described as technical knowledge, whereas *phronesis* is guided by wisdom and experience (Knight, 2007). Benner (2004b) suggested that *techné* represents the procedural and scientific knowledge necessary for nursing practice. By contrast, *phronesis* may be represented by the reasoning of an experienced practitioner who continually improves practice and expands knowledge through shared, experiential learning and practice experiences (Benner, 2004b).

According to Benner (2004b), it is the experiential, contextual learning that takes place in clinical situations that produces *phronesis*. Benner (1982) asserted that clinical practice is the foundation of the development of nursing competence and proposed that student nurses and practicing nurses need clinical experiences to move along a continuum of expertise.

Because simulation experiences are used as a type of clinical learning experience, it is important to acknowledge simulation in this literature review. Simulation experiences may be used as an adjunct to direct care clinical learning experiences and "provide an effective, safe environment for learning and applying the cognitive and performance skills needed for practice" (AACN, 2008, p. 34). The NCSBN defines simulation as "a technique, not a technology, to replace or amplify real experiences with guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner" (Alexander et al., 2015, p. 40). Traditional clinical experience is defined as "practice in an inpatient, ambulatory care, or community setting where the student provides care to patients under the guidance of an instructor or preceptor" (Alexander et al., 2015, p. 40).

To determine whether simulation could be substituted for traditional clinical hours in prelicensure nursing curriculum, the NCSBN conducted a large-scale, randomized, controlled study called the National Simulation Study (Alexander, 2015). The study also sought to determine the impact of a curriculum that utilized simulation on educational outcomes and nursing practice (Alexander, 2015). The study hypothesis was that

traditional clinical experiences may be replaced with up to 50% high-fidelity simulation (Alexander, 2015).

A total of ten nursing programs, five associate degree programs and five baccalaureate degree programs, were selected from institutions of varied sizes, varied geography, and representing both urban and rural populations. Participants were randomized into one of three groups: 1) the control group, whose curriculum included traditional clinical experiences with no more than 10% of clinical hours spent in simulation; 2) a second group, in which 25% of clinical hours were replaced with simulation; and 3) a third group in which 50% of clinical hours were replaced with simulation. Students remained in their assigned groups with their assigned ratio of traditional clinical experiences and simulation hours for the entire undergraduate nursing curriculum. The simulation scenarios used in this study were varied and met the same requirements as a traditional clinical rotations. Participants were evaluated on their nursing knowledge using an established set of standardized exams, and participants also evaluated their perception of the extent to which their learning needs were met. The study also followed new graduate nurses into their first six months of employment after graduation, with both the new nurses and their direct supervisors assessing their performance, critical thinking skills, and competency (Alexander, 2015).

A total of 666 students completed the simulation study. There were no statistically significant differences in clinical competency as assessed by preceptors and instructors, no statistically significant differences in standardized nursing knowledge

assessments, and no statistically significant differences in NCLEX® pass rates among the three study groups. Furthermore, after moving into their first positions of nursing employment, there were no statistically significant differences in the study subjects' readiness for practice at any point during the follow-up period of time.

The evidence supported the hypothesis that high-quality simulation experiences may replace up to 50% of clinical hours, however, it is important to note that these findings did not imply that all simulation is equivalent to a traditional clinical experience or will produce the same educational outcomes (Alexander, 2015). For this reason, the remaining 50% of clinical hours should be composed of traditional clinical experiences in which nursing students care for real patients in real clinical settings in the hospital, ambulatory care, or community settings (Alexander, 2015). Based on these findings, the NCSBN developed simulation guidelines for prelicensure nursing programs that allow for no more than 50% of clinical hours to be replaced by simulation experiences (Alexander et al., 2015). Therefore, the guidelines also require that at least 50% of clinical hours are completed as traditional clinical experiences.

Victor, Ruppert, and Ballasy (2017) conducted a quantitative study with first-semester nursing students in their initial clinical course that further supports the NCSBN's guidelines that simulation is appropriate as an adjunct to clinical rotations; yet, the findings do not provide evidence that simulation may fully replace traditional clinical experiences. Victor et al. (2017) evaluated clinical judgment development with the Lasater Clinical Judgment Rubric after a simulation learning experience aimed at

postoperative nursing care. During the simulation experience, the Creighton Simulation Evaluation Instrument was also used to evaluate simulation performance (Victor et al., 2017). Participants completed the same simulation learning activity and evaluation procedure once in week five and a second time in week fourteen of the semester. Student clinical performance was evaluated by their clinical instructor once, in week thirteen of the semester, with both the Lasater Clinical Judgment Rubric and the Creighton Competency Evaluation Instrument (Victor et al., 2017).

Positive correlations existed between clinical judgment development and simulation performance, between clinical judgment development and clinical performance, and between simulation performance and clinical performance (Victor et al., 2017). However, using a paired samples t-test, clinical judgment development scores did not significantly increase for either simulation activities or clinical activities at the end of the semester when compared to the beginning of the semester (Victor et al., 2017). Victor et al. (2017) suggested that simulation activities may improve clinical performance when students encounter elements of patient care scenarios that are replicated between simulation scenarios and clinical experiences. Yet, it is important to note that repeated exposure to the same simulation scenario did not significantly improve clinical judgment development scores by the end of the semester (Victor et al., 2017). While these findings suggest that simulation can provide an appropriate experience to assist in the development of clinical judgment, the findings also suggest that real-life clinical experiences are equally important. It is the traditional clinical experiences, or, traditional

clinical rotations, that are a component of the phenomenon of interest; simulation clinical experiences are not a component of the phenomenon.

The NCSBN (2005) issued guidelines regarding clinical experiences in prelicensure nursing programs. These guidelines asserted that prelicensure clinical experiences should address developmental considerations across the lifespan, should be supervised by qualified faculty, allow for teaching strategies that complement clinical education, and should include interaction and experiences with real patients (NCSBN, 2005). The AACN (2008) stated that "clinical learning is focused on developing and refining the knowledge and skills necessary to manage care as part of an interprofessional team" (p. 33). Through the learning experiences in clinical rotations, students can connect theoretical knowledge with the reality of everchanging situations and the priorities of patient-centered care (AACN, 2008).

**Student and Faculty Perceptions of Clinical Rotations**

Existing literature includes research studies that explore both student and faculty perceptions of clinical rotations. Herron, Sudia, Kimble, and Davis (2016) conducted a phenomenological study to explore student perceptions of developing clinical reasoning. Eighteen students, either in their last semester of nursing school or recently graduated, completed a semi-structures interview (Herron et al., 2016). The themes of a) "Instructor Characteristics," b) "Importance of Clinical Reasoning," and c) "Best Place to Learn Clinical Reasoning" emerged from the data (Herron et al, 2016). Participants perceived

that the realism of the clinical arena made it the best environment to learn clinical reasoning (Herron et al., 2016).

Student perceptions regarding two different approaches to clinical rotations were explored with a focus on the possible impact of the two models on the learning experience (Birks, 2017). Participants were third-year undergraduate nursing students from four Australian universities; focus groups and individual interviews were used to collect data (Birks, 2017). Five main themes were identified: a) "We're there to learn," b) "Taking all that knowledge and practicing it," c) "You actually feel a part of the team," d) "Just prepare them for us coming," and e) "It's really individual" (Birks, 2017, pp. 18-20). Multiple implications for planning and preparation regarding clinical rotations emerged from the study, and Birks (2017) asserted that the most significant finding related to the student's need for feeling included as part of the interdisciplinary team.

Hickey (2010) used of a descriptive, exploratory case study approach with both quantitative and qualitative methods to identify a baccalaureate program's graduates' attitudes toward the instructional experiences in their clinical rotations (Hickey, 2010). Six months to one year after graduation, surveys were mailed to potential participants, and thirty-three out of 108 surveys were completed and returned (response rate = 31%) (Hickey, 2010). Participants indicated that clinical rotations were overall positive experiences, although the graduates perceived that there were significant differences between what they experienced in clinical rotations and what they thought was important their preparation for practice (Hickey, 2010). Participants also expressed that there were

not enough opportunities for activities such as prioritization of care and interacting with other members of the interprofessional team (Hickey, 2010).

The clinical learning experiences of 30 second-year Thai students were explored through a hermeneutic phenomenological approach (Manee & Autchareeya, 2017). Six thematic findings included: a) "lack of confidence," b) "fear of making a mistake," c) "getting excited and anxious," d) "hoping to do better," e) "feeling proud," and f) "needing close supervision" (Manee & Autchareeya, 2017, pp. 125-128). Rajeswaran (2016) also used a qualitative methodology to explore the perceptions of nursing students regarding their experiences of clinical learning. A total of 44 nursing students participated in four focus groups and revealed themes of "initial clinical anxiety," "lack of teaching and guiding support," "lack of organizational support and resources," "inadequate clinical supervision," and "role acceptance" (Rajeswaren, 2016, pp. 3-4).

Khishigdelger (2016) explored the meaning of "doing clinical" by conducting in-depth interviews with 160 baccalaureate nursing students. Participants described a lack of preparedness for clinical with regard to nursing skills and also perceived a lack of correlation between the theoretical classroom and clinical rotations. Vijayananthan, Premkumar, Jesudoss, and Rajan (2016) explored nursing students' perceptions of their clinical experience with the goal of improving the clinical learning experiences of the nursing students. Six focus groups with 7-10 nursing students in each group were conducted at both the midpoint and the last month of the academic year. Six thematic findings emerged from the data: a) "clinical anxiety," b) "clinical supervision," c)

"clinical teaching," d) "clinical requirement," e) "professional role," and f) "clinical environment" (Vijayananthan et al., 2016, pp. 12-13). The themes represented what the students perceived to be most important in clinical rotations and also revealed areas of clinical learning that the students perceived were in need of improvement (Vijayananthan et al., 2016). Similarly, De, Mahadalkar, and Bera (2016) explored the experiences of nursing students in clinical rotations with the goal of identifying barriers to clinical learning. 363 nursing students who had completed at least one year of nursing training completed a semi-structured questionnaire (De et al., 2016). Although most of the participants provided positive feedback regarding clinical learning in clinical rotations, multiple barriers to clinical learning in clinical rotations were identified such as inadequate clinical time, lack of equipment, uncooperative patients, and hospital restrictions on student activities (De et al., 2016).

Clinical educators' perceptions of student clinical reasoning ability and the ways that instructors guided and appraised these skills in clinical placements were explored by Hunter and Arthur (2016) through semi-structured interviews with ten clinical educators. The study revealed variability in the way that the clinical educators guided and appraised clinical reasoning recognition, and most participants described being challenged to appropriately assess a student's clinical reasoning ability during clinical placement (Hunter & Arthur, 2016). Dickson, Walker, and Bourgeois (2006) explored the lived experience of being a clinical faculty member, also called a clinical facilitator, with the goal of understanding how the role is carried out in clinical placements. Five themes

emerged from hermeneutic analysis of the data: a) “knowing your own limitations,” b) “employing the notion of stepping in or stepping back,” c) “developing alliances,” d) “acknowledging the reciprocity of the learning experience,” and e) “identifying appropriate clinical buddies” (Dickson et al., 2006, pp. 418-419). These five themes emphasize the changing and interdependent nature of serving as nursing faculty for clinical rotations (Dickson et al., 2006).

**Studies Focused on Types of Clinical Rotations**

Research studies have been conducted on various types of clinical placements, specific teaching methods used in clinical rotations, and clinical rotations that focus on a specific student learning outcome such as interdisciplinary teamwork. Helgesen, Gregersen, and Østbye Roos (2016) explored students' experiences of using structured learning activities and targeted reflection during clinical rotations in an outpatient unit. Using a qualitative, exploratory design, the researchers conducted two focus group interviews with a total of seven nursing students. The three main thematic categories that emerged were “being prepared,” “being alert for new experiences,” and “being guided” (Helgesen et al., 2016, pp. 3-4). This study showed that preparedness and guidance during placement were important for making the clinical rotation meaningful and that structured learning activities in the outpatient learning environment empowered students to seek knowledge (Helgesen et al., 2016).

Powell (2007) discussed the purpose of an interventional radiology clinical rotation in Ontario, Canada and explored its effectiveness through the administration of

questionnaires to ten students before and after the clinical rotation. The results indicated that all ten students perceived that the experience was valuable for a reasons such as increased knowledge about the care of patients before, during, and after minimally invasive procedures and the opportunity to discover an area of nursing with which they were previously unfamiliar (Powell, 2007). Brynildsen, Bjørk, Berntsen, and Hestetun (2014) explored student experiences during clinical rotations in five nursing homes. The researchers used an exploratory design to gather data about 260 first- and third-year nursing students' experiences through questionnaires and logs after the nursing homes and the university collaborated to improve the learning environment (Brynildsen et al., 2014). The findings revealed that participants were positive about collaborative activities and an increased awareness of the future nursing role, but students were less positive about interactions with nursing preceptors and a perceived lack of site organization and preparedness for the presence of students (Brynildsen et al., 2014). The findings suggested that collaboration between clinical agencies and educational institutions are important to promote effective clinical learning experiences in the nursing home environment (Brynildsen at al., 2014).

Hood, Cant, Leech, Baulch, and Gilbee (2014) sought to describe how senior nursing students viewed the clinical learning environment and their professional identity through interprofessional learning on a student-led hospital "ward." A sample of 23 undergraduate nursing and medical students participated in a trial of interprofessional clinical learning by managing patients over a two-week period on a rehabilitation unit

(Hood et al., 2014). A mixed methods design was used for data collection via exit student focus groups and a satisfaction survey, and five main themes emerged: a) "experiencing independence and autonomy," b) "seeing clearly what nursing's all about," c) "altered images of other professions," d) "ways of communicating and collaborating," and e) "becoming a functioning team" (Hood, et al., 2014, p. 111). The experience in the clinical placement helped provide realism of roles and activities, promoted an understanding of the positioning of the nurse within the interprofessional team, and impacted the students' understanding of the nurse's professional identity (Hood et al., 2014).

Refrande et al. (2016) sought to understand the experiences of nursing student empathy and intersubjectivity during an infant health clinical rotation. Thirty undergraduate nursing students participated in interviews while providing care to the infants and their families (Refrande et al., 2016). The findings suggested that intersubjectivity was a result of the student experiencing the child's perception of the world. Zamineli de Lima, Aparecida Feltrin, Junqueira Rodrigues, and Aparecida Buriola (2016) explored the experiences of students in mental health home care clinical rotations; interview questions focused on the clinical rotation's impact on student knowledge and attitudes of mental health home care and the overall nursing education experience. The findings indicated that participants perceived the mental health home care rotations as contributing to their knowledge and experience (Zamineli de Lima et al., 2016).

## Students and EHRs in Clinical Rotations

This section of the literature review presents the existing literature on student experiences with EHRs. Research exploring student access was not represented in the literature prior to the transition from paper-based charts to EHRs that occurred in response to the HITECH Act of 2009 (USCCWM, 2009; USDHHS, 2014). After the transition to EHRs began, research began to emerge that explored the impact of electronic records on nursing education.

Various stakeholders in nursing education such as the American Association of Colleges of Nursing (AACN), the Quality and Safety Education for Nurses project, and the Technology Informatics Guiding Education Reform (TIGER) initiative have published statements or regulations to emphasize nursing students' competencies in using clinical data (AACN, 2008; Cronenwett et al., 2007; Gugerty & Delaney, 2009). Essential IV of the AACN (2008) Essentials of Baccalaureate Education for Professional Nursing Practice stated that "baccalaureate graduates ethically manage data, information, knowledge, and technology to communicate effectively; provide safe and effective patient care; and use research and clinical evidence to inform practice decisions" (p. 19). The QSEN project identified informatics competencies for prelicensure nursing students and included knowledge, skills, and attitudes relative to electronic documentation systems as well as the need to "use information and technology to communicate, manage knowledge, mitigate error, and support decision making" (Cronenwett et al., 2007, p. 129). The TIGER initiative promoted information literacy competencies for all nurses

and nursing students that include the ability to determine what information is needed, access the information, and apply it appropriately (Gugerty & Delaney, 2009).

Baillie et al. (2013) explored nursing and midwifery students' experiences of electronic health records (EHRs) in practice in the United Kingdom, where each clinical agency that students visited was managed by the National Health Service (NHS). All student nurses and midwives who had had at least one clinical rotation in a hospital or community setting were invited to initiate participate in the mixed methods study (n = 350) by completing a questionnaire. 215 students were invited to provide contact information if they were interested in participating in the focus groups and had had at least one EHR exposure in clinical rotations. Focus groups were used to collect qualitative data about the students' experiences (Baillie et al., 2013).

Sixty percent of students (n = 128) reported that they received no training in NHS EHR systems. Of the 40% (n = 87) who reported receiving EHR training, some reported formal training that was either completed before the clinical rotation (33%; n = 29) or during the clinical rotation (24%; n = 21). However, informal training that took place as needed during the clinical rotation was most common (59%; n = 51). Students were asked how prepared they felt for both electronic and paper record keeping prior to their first clinical rotation. 64% (n = 130) of students reported a feeling of preparedness for paper charting, but only 16% (n = 32) of students reported feeling prepared to use EHRs. Students in their third year of nursing education reported results that demonstrated increased feelings of preparedness, with 100% (n = 52) of third year students reporting

preparedness for paper recordkeeping. Yet, only 58% (n = 31) felt prepared for involvement with electronic records (Baillie et al., 2013).

The focus group data analysis revealed themes that included "preparation for using EHRs and skills development" and "access to EHRs and involvement." Students reported concerns about lack of training and preparation for using and accessing EHRs and provided examples of situations in which they were not given opportunities to develop skills using the EHR systems as well as examples in which supervising nursing staff provided opportunities for use of the EHR and guided students through skill development. The second theme of "access to EHR and involvement" was demonstrated by student descriptions of types of barriers and inconsistencies they encountered during their clinical rotations. Students also expressed concern that inconsistencies in access and use impacted their learning experience (Baillie et al., 2013).

Baillie et al. (2012) further explored the focus group data by thematic analysis, and the two major themes of "benefits to EHRs" and "concerns about EHRs" emerged. Students perceived the benefits of EHRs for care delivery as better information availability for health care team members and a higher quality of record keeping. Students' concerns about EHRs included the practical and logistical issues of needing a device for documentation, as well as difficulties in adjusting to electronic systems from paper-based charting (Baillie et al., 2012).

Brooke-Read et al. (2012) examined a subset of the sample by focusing only on the participants who were midwifery students (n = 28) Seven of the midwifery students

who completed the questionnaire were previously registered nurses who were enrolled in an 18-month midwifery course, and 21 of the midwifery students were not previously registered as nurses. Twenty-four students reported experience of EHRs, and four students reported no experience with EHRs. In addition to the themes described by Baillie et al. (2012, 2013), an additional theme of "incongruence between EHR and the concept of 'normality' in childbirth" emerged from the midwifery focus group. Students were concerned that the presence of a computer in the delivery room would be seen as less normal and less caring (Brooke-Read et al., 2012).

Bowers et al. (2011) presented a case example in which a student nurse portal (SNP) was develop as a result of a partnership between an academic institution and a health care facility. Through the SNP, students were able to complete required education sessions on the EHR prior to clinical; these education sessions were not just a video or presentation, but were actual practice sessions on the EHR system. The SNP training enabled students to understand how data entered into the computer transforms into the information that healthcare professionals use to provide optimal patient care. The author suggested that the results of student access and student-specific EHR training were not easily measurable but reported favorable results from student evaluations after the hospital EHR was used to provide learning modules for students (Bowers et al., 2011). Yen-Chiao and Yen-Ju (2016) conducted a qualitative study to understand the electronic documentation activities of nurses and nursing students on an obstetrics/gynecology ward in Taiwan. Sixteen nurses and senior nursing students participated in the study through

semi-structured interviews and participant observation (Yen-Chiao & Yen-Ju, 2016). The findings indicated that most participants perceived that the electronic system was useful with regards to efficiency of time and communication among the health care team (Yen-Chiao & Yen-Ju, 2016).

Foley (2011) used a cross-sectional research design to explore the effect of a learning environment that used an EHR on undergraduate nursing students' behavioral intention to use an EHR. Fifty-six junior and senior nursing students from three accredited Schools of Nursing were recruited during the fall and spring semesters of the 2010-2011 academic year. The three programs in which the participants were enrolled included experiences with EHRs in clinical rotations but used either a paper-based approach throughout the curriculum or integrated a realistic EHR experience (in the classroom, skills lab, or simulation lab) into the curriculum in addition to the exposure in clinical rotations. Participants were asked to complete a self-administered questionnaire that has items to assess the perceived usefulness and the perceived ease of use of an EHR. They were also given the option to participate in a follow-up interview, during which the participants were asked to share information about their behavioral intention to use an EHR in future practice (Foley, 2011).

Foley (2011) used the Technology Acceptance Model as a framework to compare positive behavior intention toward using an EHR upon entry into practice between nursing students who were exposed to EHRs and students who primarily used paper-based charting. A positive correlation existed between exposure to EHRs and reported

behavioral intention toward using EHRs (Foley, 2011). The mean scores and standard deviations for the overall survey responses and the mean score for individual items were consistent across both types of programs. There was a difference between the behavioral intention to use an EHR between junior and senior students' educated in a learning environment using an EHR with senior students reporting a higher behavioral intention score. During the interviews, a majority of participants indicated an increased perceived usefulness and increase perceived ease of use in programs that used a realistic EHR in the curriculum. However, the survey data did not predict behavioral intention for either of the factors of perceived usefulness or perceived ease of use. Participants reported that exposure to an EHR in the curriculum, in addition to EHR exposure in clinical rotations, had a positive effect of their behavioral intention to use an EHR (Foley, 2011).

Mahon, Nickitas, and Nokes (2010) explored faculty perceptions of teaching undergraduate student documentation skills during the transition from paper-based to EHR systems. Twenty-five nursing faculty in a large urban public school of nursing were interviewed using a 13-item survey questionnaire. Analysis was completed using the constant comparative method, and four major themes emerged from the data: "teaching strategies," "learning from experts," "road from novice to expert," and "legal, ethical, and institutional issues" (Mahon et al., 2010, pp. 616-617). Three of the themes are relative to the faculty experience of teaching nursing students in the clinical environment. However, the theme of "legal, ethical, and institutional issues" addresses the matter of student access to clinical data. Faculty reported situations in which only the

faculty member had the access code to retrieved clinical data from the record, so students were not able to access data in a timely manner due to logistical issues. Faculty also reported that hospital staff expressed legal and ethical concerns about nursing students accessing clinical data (Mahon et al., 2010).

## Summary

Individual components of the phenomenon are clearly represented in the literature. Research was conducted in response to the transition to EHRs and the implementation of regulations such as the HITECH Act of 2009, however, this research is focused on student experiences with EHRs rather than the phenomenon of nursing student experiences of clinical data use in clinical rotations. The role of clinical data to the clinical judgment process is also represented. Similarly, a variety of research on clinical rotations is presented in the literature; existing research on clinical rotations focuses on student experiences and types of rotations. The existing literature supports the role of clinical data as the beginning point for the clinical judgment learning process. The literature also addresses effective clinical learning for nursing students, but clinical data use as a factor in effective clinical learning is not represented in the literature. Existing research does not address nursing student experiences of clinical data use in clinical rotations. This research study will contribute new knowledge by filling this gap.

# CHAPTER III

# PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

Ensuring that the future nursing workforce is prepared to enter nursing practice is a matter of national concern (Benner et al., 2010). The increasing complexity of health care and shortened hospital stays for sicker patients require highly prepared, professional nurses that can engage in clinical judgment for improved patient outcomes (Benner et al., 2010). Effective clinical learning is needed in order for students to learn the competencies needed to apply clinical judgment, and clinical data is a required component of the development of clinical judgment (Tanner, 2006). However, the experiences of nursing students with using clinical data in clinical rotations is not represented in the literature. The findings of this study will assist in the development of an understanding of the essence of the experience of nursing students with clinical data use in clinical rotations. This chapter presents a discussion of the procedures that were used for the collection and treatment of the data for this study.

## Methodology

Phenomenology was the philosophical and methodological framework chosen for the study. Husserl's specific philosophy of phenomenology, Husserl's descriptive phenomenological methodology, and Colaizzi's (1978) method of phenomenological data analysis were used. Data was collected through the use of in-depth interview using a semi-structured, face-to-face approach. The following discussion includes a historical

overview of Husserl's phenomenology, a brief discussion of Husserl's central tenets of descriptive phenomenology, and a description of methodology through an explication of the procedures used to implement the research. The discussion of the research procedures includes the following: sampling, recruitment strategy, setting of the study, instrumentation, interview strategies, data analysis, an assessment of rigor in this descriptive phenomenological study, and protection of human subjects.

**Historical Overview**

Phenomenology developed as a reaction to views on the development of knowledge and truth that were prominent in the nineteenth century (Dowling, 2007). The word "phenomenon" originated in the Greek term *phaenesthai*, which means "to flare up, to show oneself, to appear" (Moustakas, 1994, p. 26). Phenomenology concerns itself with the nature and meaning of human experience (Scruton, 1995). A phenomenon is what emerges in a person's consciousness, and philosophers such as Husserl asserted that a return to self and "inner evidence" was a way to generate knowledge (Moustakas, 1994, p. 26).

Although Emmanuel Kant and George Hegel wrote about phenomenological thought in the eighteenth century, the phenomenological movement is centered in the nineteenth century (Moustakas, 1994). Franz Brentano, a German psychologist that rejected the idea of idealism and psychology as abstract, was intrigued by the nature of first-person knowledge and explored the concept of "intentionality" and "intentional objects" (Scruton, 1995). Brentano asserted that psychology would be established as a

rigorous science that is a descriptive study of mental acts and their elements; he coined the term “descriptive phenomenology” and characterized his approach as exclusively empirical (Moran, 2000).

Brentano’s pupil, Husserl, published *Logical Investigations* in two parts, in 1900 and 1901, and these writings are generally viewed as the work that began the phenomenological movement (Sokolowski, 2000). Husserl, a German mathematician and logician, engaged in philosophy as part of his investigations into logic and described what he considered to be pure phenomenology (Husserl, 1913/1982). Husserl said that the only way to study the nature of human experience was to return “to things themselves”; the return “to things themselves” is to study descriptions of human experience devoid of judgment or interpretation (Husserl, 1913/1982).

**Husserl’s Descriptive Phenomenology**

Husserl believed that consciousness was the foundation of phenomenology; consciousness was based on how a person experienced the phenomenon through his own personal thoughts, memories, and perception (Reiners, 2012). Husserl referred to the experience of perception as intentionality, in which consciousness is directed towards an outward object or event (Husserl, 1913/1982). Descriptive phenomenology developed as a result of Husserl’s belief that pure descriptions of perception represented experience, and that experience was the true origin of knowledge (Moran, 2000).

Major tenets of Husserl’s descriptive phenomenology include intentionality, essences, and phenomenological reduction. Using the tenet of intentionality, the act of

consciousness and the object of consciousness exist in mutual dependence through the perception of the object (Husserl, 1913/1982). Husserl's phenomenology is focused on descriptions of first person experiences, as consciousness intentionally interacting with the object, to represent the phenomenon of interest. Without intentionality, there is no object, there is no consciousness, and there is no experience (Giorgi, 2009). The essence of a phenomenon refers to the essential components of the phenomenon, or, it is "the most invariable parts of that experience" (Sadala & Adorno, 2002, p. 283). It is only possible to see a phenomenon's essence by using the principle of intentionality, in which consciousness may only be understood as being intentionally directed toward the object (Sadala & Adorno, 2002).

The concept of phenomenological reduction is an important part of the process of revealing the essence of a phenomenon. Generally, the qualitative research approach uses inductive reasoning to allow findings and patterns to emerge rather than beginning with a theory or hypothesis (Creswell, 2013). In descriptive phenomenology, phenomenological reduction is the inductive process by which the researcher eliminates things that are unessential from the descriptions of the phenomenon in order to describe the essential phenomenon, or, the essence of the phenomenon (Sadala & Adorno, 2002). An important component of phenomenological reduction is the process of bracketing or *epoche*, in which the researcher must acknowledge and set aside existing beliefs, experiences, knowledge, and expectations about the phenomenon (Moustakas, 1994). Engagement in bracketing assists the researcher to stay focused on the essential aspects

of the phenomenon rather than making judgments about the phenomenon based on personal perceptions (Moustakas, 1994).

**Descriptive Phenomenological Method**

Purposive sampling is governed by the focus of the phenomenon and "purposely seeks both typical and divergent data to maximize the range of information obtained about the context" (Erlandson, Harris, Skipper, & Allen, 1993, p. 148). Through purposive sampling, all participants experienced the phenomenon of interest. The inclusion of participants with experiences in a variety of types of clinical rotations assisted in maximizing the collection of diverse data in the study. Although the individual experiences varied, both common and divergent descriptions represented the overall shared experience and were important to reveal the essence of the phenomenon.

There is much variation in the suggested sample size for phenomenology (Guest et al., 2013), and the selected sample size should be adequate to generate richness of data while minimizing data redundancy (Erlandson et al., 1993). According to Patton (2015), the insights generated from qualitative research are not dependent on sample size; rather, they are related to the information richness of the cases in the sample and the capabilities of the researcher. Polkinghorne (1989) suggested that a sample size of 15-25 was appropriate for a phenomenological approach, and a sample size ranging from five to 20 participants is commonly used in nursing research using phenomenology (de Chesnay, 2015). Based on these suggestions regarding sample size for phenomenological studies, the researcher expected to recruit a sample size of 15-20 participants.

Interviewing was appropriate for this study because interviewing provides a way of generating data about the world by asking participants to describe their experiences (Holstein & Gubrium, 2003). In-depth interviewing is often used in phenomenology because the focus on the experiences of the participants is integrally tied to the philosophical assumptions of phenomenology; that is, that the descriptions of participant experience can reveal the phenomenon of interest (Wimpenny & Gass, 2000). An interview guide (Appendix A) with open-ended questions was used to elicit descriptions of the phenomenon (Colaizzi, 1978), and probing questions were used to ask participants for clarification or to expand on a description (Wimpenny & Gass, 2000). According to Giorgi (2009), it is critical for the researcher to keep the focus of the interview on the participant's descriptions. Therefore, the success of the open-ended interview questions will be determined by the extent of the descriptions that reveal the participants' experiences of the phenomenon (Colaizzi, 1978).

**Researcher as Instrument**

In phenomenological research, the researcher is the instrument. Because of this, the researcher's alignment with the philosophical approach is an important component of supporting the credibility of qualitative studies (Golafshani, 2003). According to Patton (2015), the quality of the information generated during an interview is greatly impacted by the skill of the interviewer. Holstein and Gubrium (2003) asserted that the interviewer must be certain to avoid shaping the information that is generated by avoiding any action that would impact the participant's responses. The researcher must be aware that every

interview is a two-way interaction in which the participant is observing the interviewer just as the interviewer is observing the participant (Patton, 2015). The interviewer must be nonjudgmental, authentic and trustworthy, and the researcher must work to establish rapport with the participants so that the participant will feel at ease during the interview (Patton, 2015).

The researcher must be immersed in the phenomenological philosophy and research method to ensure that all aspects of the study are conducted according to the philosophical perspective of phenomenology (Bevan, 2014). The researcher must also engage in a sampling method that focuses on participants who have experienced the phenomenon yet is as broad as possible to try to gain rich descriptions of the phenomenon (Creswell, 2013). In descriptive phenomenology, the researcher must engage in bracketing from the beginning of data collection until after analysis is complete (Colaizzi, 1978).

This qualitative, exploratory design describes the experiences of nursing students with clinical data use in clinical rotations. Descriptive phenomenology is focused on first person experiences as consciousness intentionally interacting with the object, to represent the phenomenon of interest. The descriptions of nursing student interactions with clinical data use will reveal the phenomenon of interest. The essence of the phenomenon will be illuminated through the analysis of the experiences and perceptions presented in the participant descriptions. Phenomenological reduction will eliminate unessential

components in the participant descriptions and will allow the essential description of the phenomenon to emerge.

## Methods

### Setting

The study setting was a large, public university in the Texas with multiple campuses from which participants were recruited. The university's enrollment was approximately 15,000 students and awards degrees at the baccalaureate, master's and doctoral levels. The university's prelicensure baccalaureate program was housed on two major metropolitan campuses, and approximately 350 nursing students were enrolled at the junior and senior level. The study setting included the above university campuses, but also included locations off campus as desired by each participant. The interview settings were informal and in a relaxed atmosphere with as much privacy as possible. Each interview setting was a mutually agreeable site that allowed for privacy and supported anonymity and confidentiality for the participant.

### Participants and Sampling

This study used purposive sampling since nursing students using clinical data in clinical rotations are the experts on the phenomenon of interest. Participants for this study were junior and senior level nursing students in a baccalaureate program who had completed at least one semester of a clinical course in which they participated in clinical rotations. Nursing students who had not yet completed a clinical course were excluded from the study. The clinical rotation settings were inclusive of multiple types of clinical

sites represented in participant experiences such as inpatient acute care medical surgical hospitals, inpatient mental health facilities, community settings, ambulatory settings, and long-term care.

**Recruitment Strategy**

After receiving approval from the Institutional Review Board (IRB), 18 participants were recruited for participation in this study. The researcher requested permission to email study flyers (Appendix B) to students and to place study flyers in the student lounge. Flyers included an overview of the study, IRB approval information, expected time commitment, participant incentives, and the researcher's contact information. Interested participants who contacted the researcher were screened for eligibility through the use of a telephone screening script (Appendix C). At the time of the interview meetings, the researcher went over the informed consent form with the participant prior to collecting data. Each participant received a $20 gift card after completing the interview. Study recruitment and data collection began in March 2017 and concluded in April 2017.

**Data Collection**

Data was collected through the use of in-depth interview. Interviews were conducted in a location that allowed for privacy at a time and place that was mutually agreeable to both researcher and participant. Each participant was asked to complete one interview with an estimated time of 45-60 minutes. Interviews were recorded via a digital recording device and transcribed verbatim using a transcription protocol

(Appendix D). A transcription protocol provided clear, written guidelines to maintain authenticity throughout the transcription process and assisted with consistent representation of the nonverbal components of the interview such as pauses or physical movements (Davidson, 2009). Demographic data was obtained from each participant including: gender, age, ethnicity, classification year, number of courses completed with clinical rotations, and type(s) of clinical sites where rotations were completed. The researcher recorded field notes about each interview and maintained a reflexive journal with information about ongoing bracketing, details about interview scheduling and logistics, details about the rationale for decisions regarding the study, and any additional insights (Lincoln & Guba, 2005).

Confidentiality was maintained by assigning each recorded interview data file and demographic data collection form a number that corresponded to the participant's initials. One file with a master list with information that matches participants' initials with their assigned number was kept by the researcher in a password protected, encrypted data file on an external hard drive kept in a locked file cabinet in the researcher's office. All recorded interview data was transferred from the recording device to an external hard drive kept in a locked file cabinet in the researcher's office. The recorded interview files were password protected and encrypted. After all interviews were completed, the recording device was wiped clean. Only the researcher had access to the locked file cabinet, and only the researcher had access to the codes and passwords to access the external hard drive, the files with the master list, and the recorded interview data.

Participants were told that no identifying data will be presented in research reports. Participants were given the option of receiving study results once the study was completed.

**Data Analysis**

In qualitative inquiry, data analysis is an ongoing process that intersects with the process of data collection (Erlandson et al., 1993). The goal of data analysis in a descriptive phenomenological study is to reduce the data to the essential aspects of the phenomenon (Sadala & Adorno, 2002). Colaizzi's method of descriptive phenomenological analysis employs an active strategy to develop descriptions about human phenomenon (Shosha, 2012), and this method aligns with the philosophical assumptions of Husserl's (1913/1982) descriptive phenomenology. Colaizzi's method has also been extended to include an eighth step that allows symbolism to represent essential descriptions (Edward & Welch, 2011). This study used Colaizzi's (1978) seven step method of analysis.

The analysis steps in Colaizzi's seven-step method includes the following: 1) initial reading of transcripts, 2) extracting significant statements, 3) formulating meanings, 4) thematic clustering, 5) exhaustive description, 6) formulation of fundamental structure statement, and 7) validation of findings (Colaizzi, 1978). Interviews were transcribed verbatim as they were completed, and, through transcription, the researcher began the process of analysis prior to the next interview. One purpose of this overlapping approach was to critique the interview for weaknesses that the

interviewer needed to address. Another reason for the overlapping approach was to determine any ways in which the researcher may have influenced responses in the interview; if so, the interviewer addressed the issue prior to the next interview. Descriptive statistics were utilized to summarize and present the demographic information obtained regarding the participants.

Colaizzi's (1978) method includes a step in which the findings are validated with the study participants themselves. It was important that the essence of the experience is accurately portrayed, and participant review and validation provided a medium for the experts on the phenomenon, the nursing students themselves, to validate the results. After data organization, the first step was to transcribe the recorded interviews verbatim and thoroughly read each transcribed interview (Colaizzi, 1978). Second, the researcher returned to the protocols to extract significant statements, sentences, or phrases that directly address the phenomenon. The third step was to try to "spell out the meaning" of each previously extracted significant statement, known as formulating meanings. Colaizzi (1978) asserted that the third step is particularly precarious as the researcher must try to spell out meaning without imposing personal perspective related to preexisting knowledge, expectations, or experiences into the findings. Colaizzi (1978) also suggested that this risk can be minimized if the researcher approaches this step from the perspective of formulating meanings with the data rather than inserting meaning into the data (Colaizzi, 1978).

The fourth step required a grouping of the reformulated statements into thematic clusters. Colaizzi (1978) suggested that the fourth step carries a risk of imposition of meaning similar to the third step, and asserted that the researcher must continually refer back to the original protocols during this process to ensure that the clusters of theme remain true to the actual data. The fourth step also required that the researcher resolve any inconsistencies or contradictions in the clusters, and Colaizzi (1978) suggested that this second component of the fourth step requires the most patience and the most tolerance for ambiguity. The fifth step was the development of an exhaustive description of the phenomenon that integrated all results, and the sixth step was a reformulation of the exhaustive description into a statement of identification of the fundamental structure of the phenomenon. In the seventh step, the researcher returned to the participants, asked them how the findings compare to their personal experiences, and integrated any relevant new data resulting from the review process into the final research report.

**Scientific Rigor**

Scientific rigor was developed through evidence of trustworthiness, which includes the four components of credibility, dependability, confirmability, and transferability (Lincoln & Guba, 2005). Credibility, dependability, and confirmability were established through the use of reflexive journaling to provide insight, assist with ongoing bracketing, and assist in methodological decisions. Field notes were used during the entire research process to provide a clear audit trail and evidence that the study will be carried out according to philosophical assumptions. Dissertation chair debriefing was

utilized alongside reflexive field notes to support authenticity and promote the researcher's objectivity (Polit & Beck, 2012). Purposive sampling also promoted rigor in this phenomenological study by ensuring that all participants had experienced the phenomenon and, as an expert on the phenomenon, were able to provide information relevant to the phenomenon itself (Creswell, 2013). Lastly, the use of participant review and feedback on the description statement of identification of the phenomenon that was developed from the analysis promoted authenticity of the research (Colaizzi, 1978; Lincoln and Guba, 2005).

In this study, the researcher's experience as a clinical instructor supervising students in a variety of clinical rotations was the motivation to investigate this phenomenon. To maintain the validity of the research, the researcher used reflective journaling to engage in ongoing bracketing of any preconceived knowledge, expectations, or assumptions.

**Protection of Human Subjects**

Prior to recruitment of participants, approval of the Texas Woman's University IRB was obtained. Informed consent was obtained from each participant. A comprehensive explanation of the purpose of the study, the procedures to be used, and the rights of participants were provided prior to participation in the study. Potential benefits of participation in the study included catharsis, self-acknowledgment, sense of purpose, self-awareness, and empowerment. Potential risks associated with study participation included coercion, loss of anonymity, loss of confidentiality, emotional discomfort, loss

of time, and fatigue. The consent from was read out loud and explained to the participants at the time of the scheduled interviews. An incentive ($20 gift card) was provided to participants when the interview was completed.

Consent forms were kept in a locked file cabinet in the researcher's office. Only the researcher had access to the consent forms, and they were separated from the recorded interview data files in order to maintain anonymity and confidentiality. Each recorded interview data file and demographic data collection form was assigned a number. One file with a master list with information that matches participants' initials with their assigned number was kept by the researcher in a password protected, encrypted data file on an external hard drive kept in a locked file cabinet in the researcher's office. All recorded interview data files were transferred from the recording device to an external hard drive kept in a locked file cabinet in the researcher's office. The recorded interview files were password protected and encrypted. After all interviews were completed and transferred to the external hard drive, the recording device was wiped clean.

The researcher transcribed all interviews, and the researcher was the only person who heard the recorded interview data files. After transcription, all interview transcript files were password protected, encrypted, and stored on an external hard drive kept in a locked file cabinet in the researcher's office. Only the researcher had access to the locked file cabinet, and only the researcher had access to the codes and passwords to access the external hard drive and the files with the master list and recorded interview

data. Participants were told that no identifying data will be presented in the results presented in research reports. Participants were given the option of receiving study results once it is completed.

All electronic files with the master list, recorded audio data files, and interview transcripts will be permanently deleted, the external hard drive will be wiped clean with 5 years after the completion of the study, no later than December 2022. All hard copies of study documents, except consent forms, will be shredded within 5 years after the completion of the study, no later than December 2022. This time frame is in line with TWU IRB guidelines stating that study materials/documents should be destroyed a minimum of 4 years after completion of the study.

## Summary

This chapter provided information regarding the methodological procedures that were used to study the experiences of nursing students with using clinical data in clinical rotations. A brief overview of phenomenology as a philosophical framework was presented, with a specific emphasis on the central concepts of Husserl's (1913/1982) descriptive phenomenology. Aspects of the methodological plan were discussed including: a) site and setting, b) participants and sampling, c) recruitment strategy, d) researcher as instrument, e) data collection, and f) data analysis. Scientific rigor and protection of human subjects was also presented as part of the methodological approach.

# CHAPTER IV

# ANALYSIS OF DATA

The purpose of this study was to describe the experiences of nursing students with clinical data use in clinical rotations. The use of patient clinical data is an essential component of student learning in clinical settings. However, there is little information in the literature with regard to nursing students' experiences with patient clinical data use. This gap led the researcher to ask the following research question: "What are the experiences of nursing students with using clinical data in clinical rotations?" The qualitative framework of phenomenology was used to design the study. More specifically, the study used descriptive phenomenology as a methodology.

Using a purposive sampling method, eighteen nursing students met the inclusion criteria and were recruited from a large public university in Texas. Participants were interviewed face to face using an in-depth interview method after obtaining consent. All interviews were audio recorded and transcribed verbatim. Colaizzi's (1978) method, a phenomenological data analysis method, was used to guide the data analysis for this study.

This chapter presents demographic information about the participants and major findings of the study. Emerging themes will be presented as well as an exhaustive descriptive statement, which is a high level summary of the data analysis. This chapter also includes a descriptive statement of identification, which was distilled from the

exhaustive descriptive statement and represents the fundamental structure of the phenomenon (Colaizzi, 1978). Lastly, this chapter will present details about the validation of the study's findings, which was included as the seventh step of analysis according to the steps outlined in Colaizzi's (1978) method of descriptive phenomenological analysis.

## Characteristics of Participants

To qualify for the study, all 18 nursing students were either juniors or seniors in a baccalaureate nursing program and had completed at least one semester of clinical rotations. Prior to the interview, each participant completed a Demographic Data Form (Appendix E) with the following information: gender, age, ethnicity, native English speaker, number of clinical courses completed, types of clinical settings, previous health care experience, type of nursing program, and whether or not the participant had previously failed a nursing course.

All participants attended a large, state university in the Texas with multiple campuses in major metropolitan areas. As shown in Table 1, the ages of the participants ranged from 20 years old to 36 years old, and the mean age of the participants was 23 years. Seventeen (94.4 %) participants identified as female, and one (5.6 %) participant identified as male. Fifteen (83.3 %) participants identified as native English speakers, and three (16.7 %) participants indicated that they were not native English speakers. Four (22.2 %) participants identified as White, five (27.8%) identified as Hispanic or

Latino, six (33.3 %) identified as Asian/Pacific Islander, and three (16.7 %) identified as Black/African American.

Table 1

*Demographic Characteristics of Participants*

| Characteristic | *n* | % |
|---|---|---|
| Mean Age | 23.0 years | |
| Gender | | |
| Male | 1 | 5.6 |
| Female | 17 | 94.4 |
| Ethnicity | | |
| Asian/Pacific Islander | 6 | 33.3 |
| Black/African American | 3 | 16.7 |
| Hispanic/Latino | 5 | 27.8 |
| White | 4 | 22.2 |
| Native English Speaker | | |
| Yes | 15 | 83.3 |
| No | 3 | 16.7 |

The Demographic Data Form (Appendix E) also collected information from participants about their educational experiences and past work experience in health care, as seen in Table 2. The number of clinical courses previously completed by the participants ranged from having completed just one entire clinical course to having completed seven clinical courses, and the average number of clinical courses completed by participants was 3.167. Seven (38.9 %) participants identified as having some past work or volunteerism in a health care setting, and only three (16.7 %) participants reported working in direct care roles in their previous health care experience. Sixteen

(88.9 %) of the participants were enrolled in a traditional, four-year baccalaureate nursing program, and two (11.1 %) participants identified as second-degree nursing students. Three (16.7 %) of the participants reported a past failure in a classroom or clinical nursing course.

Table 2

*Educational Characteristics and Work Experience of Participants*

| Characteristic | *n* | *%* |
|---|---|---|
| Average Number of Clinical Courses Completed | 3.167 | |
| Previous Work in Health Care Prior to Nursing School | | |
| Yes | 7 | 38.9 |
| No | 11 | 61.1 |
| Direct Care Role in Previous Health Care Employment | | |
| Yes | 3 | 16.7 |
| No | 15 | 83.3 |
| Type of Nursing Program | | |
| Traditional Four Year | 16 | 88.9 |
| Second Degree | 2 | 11.1 |
| Past Nursing Course Failure | | |
| Yes | 3 | 16.7 |
| No | 15 | 83.3 |

Participants were asked about types of facilities in which they had attended clinical rotations. Types of facilities experienced by participants in clinical rotations included inpatient acute medical surgical units, inpatient mental health facilities,

community and ambulatory settings such as school nursing or home health, inpatient women's health, intensive care units, pediatrics, and emergency departments.

Participants were also asked how many clinical courses they had completed. Strictly speaking, the number of clinical course a student completes cannot measure the amount of experience with clinical education. However, the number of courses a student completes will provide the contextual information on the range of clinical experiences of the participants. It is also important to note that students may take more than one clinical course in a single semester, which explains the rationale for asking about the number of clinical courses completed. During the interviews, participants often referred to themselves or specific semesters in the program as J1, J2, S1, or S2. J1 refers to the first semester of the junior year, and J2 indicates the second semester of the junior year. Similarly, the first and second semesters of the senior year are often referred to as S1 and S2. For example, a student might say "when I was a J2" to indicate that they were in their second semester of the junior year of the nursing program. Participants were assigned Participant Identification Numbers (PINs) to support anonymity and confidentiality (see Appendix F to view demographic data by PIN). All quotes and descriptions refer to participants by their PIN.

## Participant Details

Qualitative inquiry provided the researcher with the opportunity to engage with eighteen individual students who each experienced the phenomenon of clinical data use in clinical rotations. Although each participant was either a junior or senior baccalaureate

nursing student who had completed at least one clinical course, differences in demographics and background create the context through which each participant experienced the phenomenon. Participant details are presented here to provide information about the lifeworld that framed the perceptions of each participant.

Participant 1 (P1) identified as a white female, age 18, who reported that she was a native English speaker and had never failed a nursing course. P1 had completed one clinical course at the time of the interview, and she described her clinical rotation as taking place in an inpatient, acute medical surgical unit. P1 reported having previous work experience in health care.

Participant 2 (P2) described herself as a 20 year-old, white, female. She also reported that she was a native English speaker who had never failed a nursing course. P2 had completed one clinical course at the time of the interview and described its setting as an inpatient, acute medical surgical unit. P2 also reported previous work experience in health care.

Participant 3 identified as a female, 21 year-old, Hispanic/Latino student. She described herself as a native English speaker who had never failed a nursing course. P3 had completed one clinical course prior to the interview session, which she described as including experiences in an inpatient, acute medical surgical unit as well as community, ambulatory, and outpatient settings. P3 described herself as having previous work experience in health care.

Participant 4 (P4) reported that she was a 21 year-old female of Asian/Pacific Islander descent. She identified as a native English speaker and stated that she had never failed a nursing course. P4 had completed three clinical courses at the time of the interview and described all of her clinical experiences as having occurred in an inpatient, acute medical surgical setting. P4 also denied having any prior work experience in health care.

Participant 5 (P5) identified as a 26 year-old, female, Asian/Pacific Islander. She reported that she was not a native English speaker and had no prior work experience in health care. P5 had completed seven clinical courses at the time of the interview and described the settings she experienced as inpatient, acute medical surgical units and mental health facilities. P5 also reported that she had failed a nursing course.

Participant 6 (P6) reported that she was a 22 year-old, Hispanic/Latino female and identified as a native English speaker. She had completed three clinical courses at the time of the interview and described the clinical settings as inpatient, acute medical surgical units and mental health facilities. P6 denied failing a nursing course and reported no previous work experience in health care.

Participant 7 (P7) described herself as a 20 year-old, female, Black/African American student who was a native English speaker. She had completed three clinical courses at the time of the interview and described the settings as an inpatient, acute medical surgical unit, an inpatient mental health facility, and an outpatient setting. P7

denied both previous work experience in health care and a history of failing a nursing course.

Participant 8 (P8) was the only participant who identified as male. He also described himself as a 26 year-old white, native English speaker. P8 reported the completion of three clinical courses and described the experiences as taking place in an inpatient, acute medical surgical unit, an inpatient mental health facility, and community and outpatient settings. P8 denied having failed a nursing course and reported no previous work experience in health care.

Participant 9 (P9) reported that she was a 26 year-old, white female who was a native English speaker. She had completed three clinical courses at the time of the interview, which she described as taking place in an inpatient, acute medical surgical unit, an inpatient mental health facility, and a community setting. P9 denied having failed a nursing course and reported no previous work experience in health care.

Participant 10 (P10) identified as a 22 year-old, Black/African American female who was a native English speaker. She had completed four clinical courses at the time of the interview and described their settings as an inpatient, acute medical surgical unit, an inpatient mental health facility, and a community setting. P10 reported previous work experience in health care, and she also reported having failed a nursing course.

Participant 11 (P11) reported that she was a 20 year-old female of Asian/Pacific Islander descent and described herself as a native English speaker. She had completed one clinical course at the time of the interview in an inpatient, acute medical surgical

setting. P11 reported previous work experience in health care and denied having failed a nursing course.

Participant 12 (P12) identified as a 25 year-old, female, Asian/Pacific Islander and described herself as a native English speaker. She had completed three clinical courses at the time of the interview and described these as occurring in in inpatient, acute medical surgical, inpatient mental health, and outpatient settings. P12 reported previous work experience in health care and denied a nursing course failure. P12 also identified as a second-degree nursing student.

Participant 13 (P13) described herself as a 22 year-old, Hispanic/Latino female who was not a native English speaker. She had completed one clinical course prior to the interview and described the rotations as having occurred in inpatient, acute medical surgical and outpatient settings. P13 denied both previous work experience in health care and a failure in a nursing course.

Participant 14 (P14) identified as a 21 year-old female of Asian/Pacific Islander descent and described herself as a native English speaker. She had completed six clinical courses at the time of the interview and described the rotations as having occurred in an inpatient, acute medical surgical unit, an inpatient mental health facility, and a community setting. P14 reported no previous work experience in health care and denied having failed a nursing course.

Participant 15 (P15) reported that she was a 21 year-old, non-native English speaking female of Hispanic/Latino descent. She had completed eight clinical courses at

the time of the interview and described these as having occurred in an inpatient, acute medical surgical unit, an inpatient mental health facility, and a community setting. P15 denied both previous work experience in health care and a nursing course failure.

Participant 16 (P16) described herself as a 22 year-old, female, Hispanic/Latino student who was a native English speaker. She had completed two clinical courses at the time of the interview and described the rotations as having occurred in inpatient, acute medical surgical units. P16 reported previous work experience in health care and denied having failed a nursing course.

Participant 17 (P17) identified as a 36 year-old, Black/African American female and described herself as a native English speaker. She had completed eight clinical courses at the time of the interview and described the clinical settings as an inpatient, acute medical surgical unit, an inpatient mental health facility, and community and outpatient settings. P17 denied previous work experience in health care and described herself as a second-degree nursing student. She also reported having failed a nursing course.

Participant 18 (P18) described herself as a 21 year-old, female of Asian/Pacific Islander descent as well as a native English speaker. She had completed one clinical course at the time of the interview in an inpatient, acute medical surgical setting. P18 reported no previous work experience in health care and denied having failed a nursing course.

## Thematic Findings

### Coding

After transcribing each of the interviews, the researcher read each of the eighteen interview transcripts multiple times. After reading each interview transcript multiple times, the researcher entered into phenomenological reduction by formulating units of meaning. This was done by identifying significant statements in the participants' descriptions. Colaizzi (1978) asserted that similar statements by participants could be converted into a generalized significant statements that reflected multiple, similar significant statements by participants. Through a process of open coding, the researcher reviewed the individual significant statements for commonalities that could be reflected by generalized significant statements and identified a total of 50 generalized significant statements.

The researcher then developed a total of 50 formulated meanings, one for each generalized significant statement. The researcher examined the formulated meanings and made comparisons, asked questions, and explored similarities and differences with the purpose of grouping the formulated meanings into thematic clusters. Ultimately, the data analysis led to a total of six main themes describing nursing student experiences of clinical data use in clinical rotations. See Appendix G for a table demonstrating the analytic decisions regarding themes, generalized significant statements, formulated meanings, and participant numbers.

**Themes**

The six themes that evolved through the data relating to how students experience clinical data use in clinical rotations were: a) *Help Wanted*, b) *Making Sense*, c) *Recognizing Usefulness*, d) *Engaging in Communication*, e) *Nurse as Key Player*, and f) *Emotionally Charged*. The first theme, *Help Wanted*, describes student perceptions regarding the importance of assistance regarding clinical data use in clinical rotations. The essence of this theme relates to how students experience needing or receiving help with clinical data use (see Table 3 for generalized significant statements that reflect Theme 1). The students described the importance of receiving assistance in learning how to use clinical data. Students also recognized that their need for assistance changed as they gained more experience with clinical data and valued the way that instructors modified the amount of guidance given in recognition of increasing levels of student ability and independence.

Table 3

*Generalized Significant Statements Reflecting Theme 1: Help Wanted*

| |
|---|
| Difficulty in knowing what clinical data is important and where to even begin |
| Needing assistance in using the data |
| Ability to know what is important changes as the semesters progressed |
| Instructors give more guidance early in the program and less as the student progressed in the program |

The second theme, *Making Sense*, demonstrates various ways that students described making sense of clinical data or using clinical data to make sense of contextual factors. The essence of this theme relates to how students experience clinical data as a component of the analytic processes used in clinical learning (see Table 4 for generalized significant statements that reflect Theme 2). Students identified many ways that they used clinical data to make sense of the clinical picture. Descriptions included confirmation of understanding, connecting the patient status to assessment findings and laboratory test results, comparing and contrasting clinical data across multiple patients, and connecting clinical data to classroom theory in a variety of ways. Students also valued the real-life opportunity to make sense of the clinical data. Participants described a recognition that real-life clinical data may be more complicated than textbook patients and that the process of making sense of real data in real situations is important to the development of critical thinking. Students also recognized that clinical data increases in complexity as they progressed through the program, which required them to consider, analyze, and process more components of the data.

Table 4

*Generalized Significant Statements Reflecting Theme 2: Making Sense*

| |
|---|
| Used to confirm understanding, thinking, and learning |
| Connects patient status, assessment findings, and lab test results |
| Compare clinical data across multiple patients to look for similarities and differences in the disease processes |
| Clinical data is the connection between classroom, theoretical knowledge to real-life experiences in clinical |
| Sometimes the reality of clinical experiences and data appears disconnected from the theoretical and superficial knowledge learned in classroom |
| Real life clinical data is more complicated and multifaceted that what is in a textbook because real patients are more complicated and not static |
| Easier to understand and interpret the clinical data when caring for a patient with a condition already covered in lecture class |
| Clinical data in connection to class and assistance with answering questions on exams |
| Promoted critical thinking because need to be knowledgeable about the background |
| Pathophysiology of the clinical data in order to analyze it and determine interventions |
| Belief that classroom theory doesn't truly teach critical thinking and decision making, but that student has to get in real situations and make decisions themselves |
| Clinical data and the patients were simpler in the early semesters, but the data and the patients are more complex as the student progresses |

The third theme, *Recognizing Usefulness*, demonstrates what students perceive to be the purposes of clinical data use. The essence of this theme relates to how students see clinical data as useful or helpful in providing patient care (see Table 5 for generalized significant statements that reflect Theme 3). Students identified clinical data as useful in making decisions about the appropriateness of interventions, including educational interventions. Students also described using clinical data to individualize patient care, correct problems, or prevent harm to the patient. Students recognized that data is used throughout the nursing process and must be used alongside principles of prioritization.

Table 5

*Generalized Significant Statement Reflecting Theme 3: Recognizing Usefulness*

| |
|---|
| Used to make decisions about interventions that are needed |
| May be used to determine that an intervention like a medication is not appropriate for the patient |
| Can be used to make a difference for the patient and correct a problem or prevent harm |
| Focus on the individual patient's data for decisions about individualized patient care |
| Consider both the current data and historical data and patient trends to prioritize care |
| Data is used continuously to develop goals, plan interventions and then to evaluate the patient response before completing another intervention |
| Can use the data to plan patient education |
| Must be open-minded to a variety of interventions when using data, not just medications |
| Used data along with principles of prioritization of care to decide what must be done first |
| Examine and analyze the data to develop nursing diagnoses |

The fourth theme, *Engaging in Communication*, describes ways that students viewed the importance of clinical data use in communication activities. The essence of this theme relates to how students experienced clinical data in the context of communication (see Table 6 for generalized significant statements that reflect Theme 4). Students described clinical data as both content and tool related to communication and underscored the importance of communicating accurate clinical data. Participants described how clinical data itself communicates information by providing clues about expected assessment findings or patient responses, expected patient status, and possible focused assessments that might be needed. Students also expressed several concerns relative to communication about clinical data such as incomplete documentation of clinical data and missing data, lack of accessibility to clinical data, lack of opportunity to practice communicating through documentation, and the need to collect one's own data to verify that the finding son the chart are accurate. Participants also described how subjective clinical data can communicate about the patient's individual needs and priorities, and lamented the lack of subjective data represented in patient records.

Table 6

*Generalized Significant Statements Reflecting Theme 4: Engaging in Communication*

| |
|---|
| Clinical data is not only what is communicated with team members but is also a tool for collaboration. |
| Clinical data must be recorded so that appropriate communication can happen. |
| Data on the chart can help the nursing student know what to expect when interacting with the patient. |
| Picture the patient based on the clinical data in the chart and plan additional assessments to gather based on the data you already have. |
| Gives clues to students to look for associated findings that often accompany certain clinical data. |
| Use the data to help know what patient response to interventions you might anticipate. |
| Important to always gather and interpret your own data rather than relying on others. |
| Clinical data helped reveal that patients and their preferences were all very different, even if they might look the same on paper. |
| Need to consider both objective and subjective data to develop a complete clinical picture. |
| Subjective clinical data can have a major influence on interventions and prioritization, but it is often hard to find on the chart. |
| Clinical data was sometimes not accessible to the student on the EHR, which made it difficult to care for the patient. |
| Not allowed to document and practice communicating clinical data in the EHR |
| Concerned that clinical data is often missing in the chart. |

The fifth theme, *Nurse as Key Player,* encompasses the significance that students place on the nurse's role in their clinical learning experience. The essence of this theme

relates to how the students experienced the nurse's impact on their interaction with the clinical data or their ability to learn from the clinical data (see Table 7 for generalized significant statements that reflect Theme 4). Students described the importance of asking the nurse questions about the clinical data with the goal of promoting learning. Students also recounted that the receptivity and helpfulness or the nurse, or lack thereof, was a major factor in the student experience of using the clinical data.

Table 7

*Generalized Significant Statements Reflecting Theme 5: Nurse as Key Player*

| |
|---|
| Students ask the nurse questions about the clinical data that is gathered to increase learning. |
| Experience with using clinical data is dependent on the receptivity and helpfulness of the nurse. |

The sixth theme, *Emotionally Charged*, demonstrates the connection between student emotions and clinical data use in clinical rotations. The essence of this theme encompasses the ways that student experienced strong emotions relative to their experiences with clinical data use (see Table 8 for generalized significant statements reflecting Theme 6). Participants described emotionally charged experiences such as distress at inaction by the staff when the student perceived that the data indicated a need for action. Students also included descriptions of being worried about personal inexperience causing harm to the patient. Participants also recounted feelings of intense pressure and scrutiny to perform well, complete requirements, and to avoid disappointing faculty, staff, and self. Shyness, embarrassment, and lack of confidence impacted the

students' ability to interact with the nurse. Frustration about lack of decision-making ability and the belief that clinical was focused on completion of skills, observation, and paperwork also impacted the student experience. Students also reported positive feelings, excitement, and a sense of purpose when they recognized that their actions or decisions positively impacted a patient and their health status.

Table 8

*Generalized Significant Statements Reflecting Theme 6: Emotionally Charged*

| |
|---|
| Distress when nursing staff did not respond to clinical data that was concerning |
| Worry about inexperience with using data, with patient care, and possibly harming the patient |
| Pressured by time constraints to gather and analyze clinical data so some students will create it rather than gather it |
| Difficult to have confidence with interpretation of clinical data as a student, especially if immediate or emergent care may be indicated |
| Difficulty in discussing clinical data with the nurse due to shyness and embarrassment about lack of experience and knowledge |
| Felt the pressure to meet expectations of staff, instructors and patients and do not want to disappoint anyone |
| Felt positive that participant was able to help the patient improve or prevent harm |
| Believed that they didn't actually use data but just followed nurse and focused on skills or paperwork |

The experiences of the participants are best represented through their own descriptions as they perceived the phenomenon. Therefore, the following discussion is designed to clarify and support the thematic findings of the study. Direct quotes from the

transcripts of the participants' interviews are presented to underscore how the students perceive and experience the phenomenon.

**Theme 1: Help Wanted**

All participants described perceptions regarding assistance with using clinical data use in clinical rotations. The descriptions related to needing or receiving help with clinical data use revealed commonalities that explicated the theme. A majority of participants described how assistance from instructors, nurses, and clinical paperwork templates can provide guidance on clinical data use. Most participants also described early experiences with clinical data use in clinical rotations through the lens of needing assistance to function and to even know where to begin. Most participants also described an improved ability to use the data in different settings as experience was gained. Seven participants added to the description of improved ability to use data by explaining that the instructors gradually required more independence from students as they gained experience with using clinical data.

The theme of *Help Wanted* is clearly represented by descriptions of the importance of assistance in a variety of formats. P2 described the instructor as being particularly helpful in explaining clinical data use.

> Like, everyone has been very informative and explained everything to me. Especially like my clinical instructors that I've had. …If I have a question, then they go into that and answer it, and then, they'll give like reasons why we do a

blood pressure or something like that so I'm not like "oh go take a blood pressure" and be like "well I don't know why." I'm getting a reason of why. (P2)

P11's description further supported how clinical paperwork templates and patient data sheets can help students begin learning how to determine what is important to collect and consider for each patient.

> So that form, you know, basically tells us, okay, so their initials, their date of birth, their past medical problems, surgical problems, surgical history, medical history. Um. their lab values, anything that, you know, striked [*sic*] as abnormal. Um….It's just a collection form to help us, you know, understand like what's important…I think it's good. It's good practice for us for the future. Um…it helps us determine what needs to be addressed. (P11)

P1's description underscores the theme by describing early experiences with clinical data use in clinical rotations as confusing, wishing she had more help, and feeling abandoned.

> But it was just kind of confusing to try to sift through all of that material. And we only had like, you know, our uh, instructor just sat down with us once and kinda went through….And then after that it was kinda like well here's the entire day just have fun. (P1)

P5's description adds dimension to the thematic finding by explaining her improved ability to use clinical data as she gained clinical experience as follows:

> And as junior one we do not know which one is acceptable for this patient condition and which one is in red light….We move to the senior one year and then I know that hey the number is not in the set range, but it's acceptable for this patient condition because we have no way to push him to the normal range. (P5)

P6 described how the instructors provided more attention and assistance when students were less experienced in early semesters and allowed more independence and autonomy as the student progressed in the program.

> Um, before, I think our clinical instructor was more hands on, but now that, um, I guess, we know a little bit more and we're a little bit more independent, our instructor just kind of asks us, "oh, do you have any questions?" (P6)

P14 described her progress in using clinical data and the way that the instructor allowed more autonomy and independence as she progressed in the program by stating, "But I think it's one of those things where they really guided you in the beginning and they're starting to let go of the bike…."

The theme *Help Wanted* described how students perceive assistance with clinical data use in clinical rotations. It established that students recognize the role of the faculty, the nurse, and clinical paperwork as a means of assistance. Students describe needing help early in the program but also realize that they need less assistance and that faculty allow more independence as students gain experience with clinical data use. The second theme *Making Sense* will demonstrate various ways that students describe making sense of clinical data or using clinical data to make sense of contextual factors.

**Theme 2: Making Sense**

All participants described ways that they made sense of clinical data or used clinical data to make sense of contextual factors. Participant descriptions revealed the thematic finding. Ideas emerging through analysis included descriptions by a majority of participants regarding making sense of clinical data through actions that sought to confirm understanding, thinking and learning. The descriptions of six students also supported the thematic findings by proposing that the use of background knowledge such as pathophysiology combined with clinical data to analyze information and determine interventions. A majority of students described making connections across patient findings such as health status, assessment findings, medication, and health history. Most participants reported a variety of ways that clinical data helps make connections between the classroom and clinical, including exams; similarly, most participants described improved capacity for making sense of the clinical data when the patient's condition was previously addressed in class. Five participants described how real-life clinical data is often more complex than the knowledge learned in the classroom; they described this variance as required for the development of critical thinking and also as increasing in complexity as the student progressed in the program.

The theme of *Making Sense* is clearly represented by descriptions of how clinical data helps students make sense of the clinical learning experience. P8 described how he confirmed his understanding when he stated:

> Usually when I ask a question, I kind of know the answer already, but I want to make sure I'm following the right train of thought. I don't want to get down to the end and find out "oh, that's completely wrong." (P8)

Descriptions of using background knowledge such as pathophysiology alongside the clinical data also illuminated the theme. Participants' descriptions of the importance of using background knowledge alongside clinical data to centered on the need to make safe decisions about patient care. P11 described the use of background knowledge in clinical data use as follows:

> Without the knowledge behind what the clinical data is showing, you won't know what to do with the patient. Um…if they're clotting time is off, and you don't realize that maybe you could give them a blood thinner, and they may end up bleeding out if they cut themselves or something at one point, you know. (P11)

Most students described making connections across many components of clinical data to help them make sense of patient status and patient needs. P6 described the experience of making connections.

> So, you're able to see "oh, this level is low because he's going through this….You know, you are able to see it because you see that your patient is lethargic and you know you are able to connect that he has anemia because his hemoglobin is low you're able to see that and um connect it I guess with his recent colonoscopy or something like that. (P6)

The theme was further supported by the descriptions of the majority of participants regarding their experiences of clinical data helping classroom learning make sense. P15 asserted:

> Well, we learn it during lecture, like, what certain values mean, and then once we actually see it in the hospital setting, we kind of have better understanding of what it means for the patient and their health. So, what we learn in class, like, different values, and we see that the patient has, like…a high level of creatinine or something, we know what it means. We know what organs it's affecting. We know how it would be presented to us, how the patient would look, and stuff like that. (P15)

P12's description aligned with the theme through the suggestion that it was more difficult to make sense of the clinical data when her patient had a disease process that had not yet been addressed in the classroom.

> I went to the burn unit, and, we hadn't learned about it yet, but I had my burn. I was, like, man, I wish I would have known, that I had had this lecture before, because I would have known what questions to ask my nurse then….I did ask what percentage of burn is it, but then I didn't ask about the degrees of burn…and then even if I had asked that question, I probably would have made that connection in lecture better. But I didn't ask that question…. (P12)

P7 described the use of patient clinical data to make sense on classroom exams as follows:

So, it helps me make sense of all of what we're talking about, and I feel like that has helped me in testing, because for our tests, they don't just ask you direct questions. They ask application questions. So, being able to put that information together and see it in real life situations, when I see a question "oh, a patient presents with this and this and that. What diagnosis is expected?" or "what is your intervention?" I can pick up on that because I've had to take care of a patient with that diagnosis. (P7)

Student descriptions of patient clinical data in the clinical setting as more complex and multifaceted than textbook and theoretical material continued to be an important aspect of the theme of *Making Sense*. Students described how they considered patient findings in a holistic manner and addressed more than one system or patient problem at a time. P6 described how she made sense of the variation between classroom knowledge tested on exams and the reality of complex, ever-changing clinical data in clinical rotations.

You know it's, they give you a patient during tests, and it's expected of them to be normal, you know, a normal disease process. But, you know, in the clinical setting…you see this person with like a history of you know hypertension, history of MIs, and then so this is going to affect how this disease process is going to take its course….I think there was a question about restraints or something and one of my friends had told me "but what if they're missing an arm?" You know, and so you have to take all this into consideration, too. (P6)

The process of analyzing the clinical data of multiple patients in search of similarities and differences was described by P13 as a way to understand and learn in the clinical setting.

> If I've had two COPD patients. I want to see if maybe just a little bit if they have the same medical history…are their assessments kind of the same? So I'll find they're maybe on O2….Like, they're the same. That helps. That helps me, um, kind of get familiar with, if I see a COPD patient, this is what I may expect to see. And so…let's say I do get a COPD patient, and I get it, and I go in, get report when I'm practicing, and they're not on O2, I'll be like, "well why are they not on O2?" (P13)

Several participants described a realization that critical thinking and decision-making cannot be taught in the classroom; rather, participants asserted that real-life clinical situations were required for the development of thinking skills. P3 offered, "You're not just reading information off notes. You're actually taking yourself and throwing yourself into having experiences with that information."

P13's description expanded on the connection between classroom knowledge and clinical data.

> Because you can't really teach me how to critically think. Yeah, I have to go do it. And so, that's one of my weaknesses…is applying, you know, all this information I have and, you know, like for my tests, you know, you have this information. And going to a specific answer, like, okay, I have I need to figure

> out how to get there. And as many tests-taking strategy books as I can get, I'm not going to learn that until I'm out there. (P13)

Participants' descriptions included the perceptions that increasingly complex patients and more complex clinical data made more sense in later semesters because it built on simpler clinical data and simpler patients in earlier semesters. P15 asserted:

> …In my first semester, it was, uh…more simple things. It was more like vital signs.…They were barely, like, introducing the different lab values and we only knew, like, the basics like sodium, potassium, and those. But, if we saw that someone had, like, a 60/40 blood pressure, then we would know that they weren't perfusing correctly, that there was something wrong. But, it was a lot more…well…I guess a lot more basic compared to the semester that I'm at right now where we actually know how each level impacts every system of the body…. Now, it's more like, it's integrated with every other aspect of the patient. Like a holistic aspect, rather than, well, they have low blood pressure, so their pulses are going to be, like weak….Now it's like, if they have that blood pressure, then, their, their organs aren't being perfused, so they could go into, like, renal failure, or, you know, like, they're not getting all of the perfusing that they need…. (P15)

Whereas the first theme *Help Wanted* explained how students perceive assistance with using clinical data in clinical rotations, the second theme *Making Sense* described how student experience understanding clinical data and its context. Participants described how clinical data in clinical rotations is important to making connections across

a variety of contextual factors in their nursing education experience. The third theme *Recognizing Usefulness* describes student perceptions regarding the purpose of clinical data use in clinical rotations.

**Theme 3: Recognizing Usefulness**

All participants described ways that they perceived clinical data to be useful or helpful during the clinical rotation. Descriptions of the participants' perceptions of the usefulness of clinical data illuminated the theme of *Recognizing Usefulness*. All students described using clinical data to plan a variety of nursing interventions. Most participants also asserted that clinical data was important for the individualization and prioritization of patient care. Half of the participants pinpointed a focus on improving a patient's situation or preventing harm by using the clinical data. Six students also suggested that clinical data should be used continuously at every step of patient care.

All participants included a description or statement about using the clinical data to determine the appropriate interventions for their patient. P18's description illuminated the theme through a suggestion of how she focused on specific laboratory results and considered ways to improve those specific findings.

> I kind of, like, think about what I can do to treat those specific, like…data. Like if he has a high calcium level, what can I do to help that? Or high BP, what interventions can I do to help that data? And then I include that in my care plan. (P18)

P2 described her realization that clinical data might also be used to determine that an intervention, such as a medication, is not appropriate for a patient.

> We got the blood pressure….And then, when we were getting the medication out, that's whenever the computer actually popped up and it said "what was the blood pressure?" And so you put the blood pressure in. And then it says on there like what the range was, and it was too high so we didn't give it. (P2)

Participant commentary included descriptions centered on a patient's individual clinical data as an important consideration in providing individualized patient care. P3 asserted that each patient's clinical data is unique and indicates a need for individualized care for each patient.

> I feel that in lecture they try and give you scenarios and examples, but like I said everything is completely different in clinical because there's not one set situation. Um, every patient is different, their bodies are different, their past medical history is different. Everything has to be individualized for each certain patient…. (P3)

P5's description further supported the theme by asserting that a patient's baseline, trends, and medical history must be considered in using clinical data to individualize patient care.

> I have to know what the patient baseline is. Um, because it is very important because everyone is different….Usually the normal range in the book is like that some patient they do not stay in that range. It may be lower, but you need to…compare the baseline when he in the hospital or in the last shift….And

> because the patient is too low from the range and we cannot push him all the way to the range. We need to like improve him step by step. So, we need to know what is the goal for that patient.... (P5)

P9 suggested that using both objective and subjective clinical data was important to determine the best intervention or combination of interventions for the patient.

> Well subjective and objective [data]. But pain is a big thing that comes up.…Anytime someone is in pain, and…uh…making sure that they're getting medication but also if there's something else that can be done. …I've seen patients that a lot of times that just repositioning a certain way can help with that. (P9)

Participants also acknowledged that clinical data was useful for prioritization of care. P17 described using data for prioritization as she described difficulty in using the data for this purpose.

> And one thing I've always had an issue with is prioritizing. You know, it's like ABCs, airway, breathing, circulation. You know, to me it's like so obvious. Okay, airway. Are they breathing? Do they have circulation? But at the same time, the data isn't necessarily presented to you that basic. And you're trying to figure out okay is this an airway problem? Is this a breathing problem? Or is this a circulation problem? (P17)

Students also recognized that clinical data might be used to prevent harm to the patient. P3 described an event in which she used the clinical data to prevent harm to her patient by alerting the nurse of a very low blood pressure.

> I was going to take one of my patient's, um, blood pressure, to see if I was able to give them a blood pressure lowering medication….So, I went into the room and I took my patient's blood pressure, and it was really abnormally low…70 over 39. So, it was seriously low, and they had a level of consciousness that was really decreased. They were having a hard time staying awake….And so I went down and I found my nurse and I said "her blood pressure is really low." And she actually had to call a rapid response because she could have gone into a code blue. So, I feel like that was one instance where I actually felt, oh my goodness. Just because I went in at that moment to take her blood pressure, maybe I prevented something worse from happening. (P3)

Participants' descriptions of using clinical data in a cyclical process to determine interventions, evaluate the effectiveness of interventions, and to determine the next set of interventions further aligned with the theme of *Recognizing Usefulness*. P5 described the cycle of using clinical data over the entire shift as follows:

> We use all of that information…what does the urine look like? What does the lab value look like? What medication is the patient using? And how is the last shift's patient condition? If for example, the last shift, everything happened the same…his urine is, like, the baseline of the patient, then, ok, this is his baseline.

> So we keep looking and watching him. And if last shift he do better and then he get worse in our shift, and then we have to do something. Then we give him medication…and we watch it if it improve then its ok. We keep watching him. And if not, then it's the time to contact the doctors. (P5)

The theme of *Recognizing Usefulness* explored student perceptions on ways that clinical data is useful in clinical rotations. Recurring ideas revealed the essence of the thematic findings. The fourth theme *Engaging in Communication* represents student experiences with clinical data in clinical rotations relative to communication activities.

**Theme 4: Engaging in Communication**

All participants described ways in which they engaged in communication relative to patient clinical data. Participant descriptions of experiences relative to clinical data and communication activities illuminated the theme of *Engaging in Communication*. Clinical data was described as both the content of communication and tool for communication by five participants. A majority of participants asserted that clinical data provides information and clues about what students and staff might need to plan for the patient and expect from the patient such as behavior, focused assessments, assessment findings, and responses to interventions. Four students discussed the importance of thorough documentation so that accurate communication can occur, and a majority of student discussed the frustrations of missing, inaccurate, or inaccessible clinical data. Half of the participants described a lack of subjective clinical data in the patient record, which in turn inhibited their ability to care for the patient.

Clinical data was described as both a means by which information is communicated and a tool for collaboration. P4 described how clinical data is used as a tool for collaboration by stating:

> And so, I guess everybody documents like their findings….I guess like, every, like practitioner, they have their own section that they focus on. And then like the nurse and the physician kinda like get the whole picture….Even the pharmacist, they all kind of come together to take care of one patient….because I guess like, also, in the hospital, like a patient could come in for this but then we kinda cause more stuff. Like, you know, we cause like muscle weakness and breakdown because we want them to be on, you know, bedrest. And then, um, like PT and OT will work with them with that, and just, and like, they'll not eat as much or drink as much and the dietician comes in and assess them for that, and so we all just utilize the data to make sure that the patient is getting better not worse. (P4)

Descriptions of how clinical data can communicate what to expect when interacting with the patient illuminated the theme. P8 described how the existing clinical data helped him know what clinical picture to expect when caring for a patient experiencing substance withdrawal.

> So, his chart, um, showed his addiction…the withdrawal…his alcohol blood level. And then, the first thing I jumped to was, like, delirium. He was in the ICU, and he already had the potential for delirium, and he's in alcohol withdrawal, so he's already going to be delirious when I walk in there. So, sure enough, you know,

> restraints. He was hallucinating, only oriented to self. …Looking at the chart before going in there, I was able to kind of see how my day was going to go with this patient. I know that there's certain things that have to go on now that this patient is not oriented times four. (P8)

P10's description further supported the theme with the assertion that the existing clinical data communicated the need for a focused assessment.

> After I've picked my patient and write down my data…and I go in to actually see the patient… maybe they had a problem with low blood pressure….So when I go in to assess my patient it's kind of one of the first things I'll look at. Okay, what are they reading at this time right now? And then kind of just look at any signs and symptoms of…um...so, if it's like low blood pressure…that's how I gear my, my, um, initial assessment. So, I'll do capillary refill, and just, you know, look for any edema or shallow breaths. So I kind of just focus on those first, and then I go back and do my full, um, initial assessment. (P10)

P18 described how she accurately predicted the outcome of a pending lab result based on existing clinical data.

> I was in the nursery, and um, that week we had talked about treating babies with jaundice, you know. And we talk about certain tests that you know would be affected by that. So um, that morning, a baby was just born, really early in the morning, and after, he was small for his gestational age, so he was sent to the NICU, and I was in the NICU. …They did some tests on him and the lab results

had come back and um they didn't diagnose him yet but I saw, like oh, this test is positive. The Coombs test was positive. He's probably going to have jaundice later in the afternoon….And later in the afternoon, lo and behold, they found out he had jaundice. (P18)

P2 described her perception of the need to do her own assessment because the clinical data communicated on the chart may be incomplete.

Because I do see, like not full assessment being done because of like lack of time, but it's still, like I found that it's still very important to do it. Take the time to do it because you could find something that's not on there. (P2)

P10's description expanded on the challenge of incomplete communication due to missing subjective data or the collection of subjective clinical data that contradict what was communicated in the chart.

Like, so besides doing what's in the chart, which is imaging um, vitals, assessment…it's also important to get the information from the patient if they're capable….I mean a lot of times when you're talking to the patient you find out that there's contraindications of things that may be in a chart from what they're telling you. Uh, especially, you know, if they're oriented and everything, like, they might have said one thing at one point and it was never followed up with and it could be like a completely different story. …I like to go in and talk with the patient, because um you can sometimes get more information than, than what you were told in report, or maybe you were told one thing in report but it's something

else…I personally believe that um, if, if the patient is capable, like they're the best source of information for their care because, you know, everything is happening to them…. (P10)

Communication activities related to clinical data were hampered at times because of a lack of access or limited access to the clinical data on the electronic charting system. P12 described how she had access to the clinical data in the EHR only because her clinical was at a facility where she worked as a tech; her fellow students did not have access to the EHR. "Well, I have access because I work there, but my other cohort members, they don't have access…." (P12). P7 described a barrier to communication activities as not having the privilege of documenting in the EHR.

Um, you can't document on their systems. I know that some hospitals let you document as a student nurse, but the ones that I've been in I've not been able to document. So, you just go in and look. And if there's any changes, you report to the nurse. So, the nurse is the one who does all the documenting in the actual system. So, we just look at what they already have there. (P7)

The theme *Engaging in Communication* described student experiences with clinical data in clinical rotations and communication activities. Descriptions included ways that participants used clinical data to engage in communication. The fifth theme *Nurse as Key Player* describes how students viewed the role of the nurse relative to their experiences with clinical data use in clinical rotations.

**Theme 5: Nurse as Key Player**

All 18 participants included descriptions of ways that the nurse had a major role in their experience of clinical data use in clinical rotations. Participant descriptions of perceptions of the nurse's influence on the student experience revealed the theme *Nurse as Key Player*. All students included descriptions of asking questions and learning about clinical data and its role in patient care through interactions with the nurse. A majority of students also described the receptivity, attitude, or helpfulness of the nurse as having an impact on the experience with clinical data use.

P13 described how the nurse challenged her to think about how clinical data connects to other data. "If I have a question about…why my patient taking is this drug, I'll ask her. She'll be like, did you look at their labs? So, she'll kind of push me to look at their labs, to look at other data" (P13). P3's description further supported the thematic finding by relating the perception that the nurse plays a larger role in the student's experience with clinical data than the instructor plays.

> Yeah, I think maybe the nurse herself is very, very helpful. Even more than an instructor. Because the instructor is kind of there pushing you, pressuring you. And then there's the nurse. And she actually quizzes you and she questions you and says, "what could this mean?" and "what is this used for?" But, it's not in the pressuring way. It's more in the way of trying to make you think and make connections. And then, if you can't really piece it together yourself, she starts

kind of guiding you towards the correct response....And it's a lot more helpful…than the actual instructor…. (P3)

The nurse and his/her receptivity to questions and tolerance of students was described as one of the major factors in the experience of clinical data use in clinical rotations. P11 describing contrasting experiences with using clinical data when the student is assigned to a nurse that is receptive to students versus a nurse who is not receptive.

> Oh, my nurse. I mean that's the hardest…that's the biggest thing about us in clinical rotations. If our nurse is very willing to help us, we'll learn a lot more. If there are nurses who, like, ignore us, and don't, you know, help us like stick two and two together, it's hard for us to like walk into the patient's room and know exactly what's going on. And there are some nurses you're scared to ask questions to because they're they just shut you down. (P11)

P6's description of the impact on the learning experience when she was assigned to a nurse who was not receptive towards nursing students further supported the thematic finding *Nurse as Key Player:*

> She wasn't, like, receptive at all to any of our questions. She would ignore us….and it was difficult in that setting because, you know, as a nursing student you have a lot of questions. They may be dumb questions, but they're questions that matter to us, at least. It really means a lot when a nurse takes the time to address those questions that may seem silly, you know, for someone who's been

in the profession for so many years. But that is an honest question coming from the nursing students. (P6)

The fifth theme *Nurse as Key Player* described how students viewed the role of the nurse relative to their experiences with clinical data use in clinical rotations. Participant descriptions included experiences of ways that the nurse played a significant role in experiences with clinical data. The sixth theme *Emotionally Charged* demonstrates ways that student experienced strong emotions relative to their experiences with clinical data use.

**Theme 6: Emotionally Charged**

The sixth theme describes the connection between student emotions and clinical data use in clinical rotations. Participant descriptions of emotional responses regarding clinical data use in clinical rotations illuminated the theme of *Emotionally Charged*. All participants described emotionally charged experiences with clinical data use. Five participants described distress when the student believed that action was needed and the staff did not act. A majority of students also described of being worried about missing important clues regarding a need for emergent care or about personal inexperience causing harm to the patient. Almost half of participants also recounted feelings of intense pressure and scrutiny to perform well, complete requirements, and avoid disappointing faculty, staff, and self. Four participants recounted that shyness, embarrassment, and a lack of confidence impacted their ability to interact with the nurse. Two students described feelings of frustration about their lack of decision-making ability and espoused

the belief that clinical was focused on completion of skills, observation, and paperwork. Six students also reported positive feelings, excitement, and a sense of purpose when they recognized that their actions or decisions positively impacted a patient and their health status.

P4's description of staff completing a pain assessment without acting on the assessment findings illuminated this theme.

> So, I was watching…wound care. She was not a nurse. She was PT but she was trained in wound care….And I just remember she asked "Hey, are you in pain." And he was like "oh my goodness I am in so much pain." And he kind of went on and on about, you know, like the details of his pain. And she was like "Okay, well I'm going to put this wound vac on." And I was just kinda [thinking] wait, I thought you asked and he said his pain was like 7 out of 10. And so clearly that means that, you know, you need to premedicate him….This was still when I was timid, so I was just like "so, do you not premedicate him?" She was like, "well, I'm not a nurse." …So she is shoving the sponges in and he was groaning and screaming in pain….And I had an opportunity to be like, "wait, can I go find the nurse?" Because I was like, I could tell that he was in a lot of pain…that this was going to create a lot of pain. And she was like, "ok"….So the nurse came….And in maybe even less than a minute he was like, snoring. So, and she finished, and I was just like, wow….All you had to do was wait maybe five minutes. The nurse

could have come in and administered the meds, and like, he would have been ok…. And prevent all of that trauma and just emotional and physically. (P4)

P3 described her fear about being responsible for making decisions by stating:

> I feel a lot of anxiety at times because I do know that, um, my patient's life could be on the line basically if I could make a little mistake. And then they always tell us just how responsible nurses have to be….Such as, a doctor may write an order for one medication, but you have to look at it and think "oh…this might not be the right medication for this patient." And if you give it anyways, it's going to end up being your fault completely, not the doctor's. (P3)

P17 recounted her fear of making a mistake:

> I was like scared to mess up. Because like I like critical care and I could see myself being a critical care nurse, and so you know when you see something that you'd like, and it's like oh my goodness, I don't want to mess this up because I actually like this and I might want to do this. (P17)

P8's description of his actions in response to the pressure to complete paperwork and his desire to avoid appearing silly to the nurse further supported the thematic finding:

> …I did not have time to sit down however many hours it would have taken me to fill in every little box. So, as a student, sometimes it feels like you have to kind of improvise, or, you won't have a complete patient data sheet….Sometimes I had to, like, fill in boxes when I didn't necessarily know that that was exactly true….I would have the first hour and the third hour, but I couldn't find the second hour

on the chart. And, the nurse was busy. I didn't want to ask her a silly question, so I was able to say "okay, this one is small, this one is big, so this one is probably somewhere in the middle." So, it's, that's kind of frustrating. (P8)

P17 described the stress of trying to avoid disappointing others:

So, one of the uh, the stresses of being in nursing school is…I don't want to disappoint. I don't want to disappoint the clinical staff. Our instructors come around and…ask us information on the fly….If we have a preceptor who's really on their business they want you to know and they want you to do well and they're firing off these questions. Why? What are you doing? What is this for? Whatcha going to do with it? Why? You know, why? Why? Why? You're trying to meet that demand. (P17)

P8 recounted feelings of personal frustration and incompetence:

You're sitting there with all this data and trying to make all of these connections and you're trying to figure it out. And then the instructor comes up to you and points out all these different things like, right there, and you have to attempt to make a connection. Which…a working nurse for many years with lots of experience, they off the bat pretty much know what's going on. And, you as the student, you're just sitting there with a mess of data trying to piece it together. That's where personal frustration comes out, you know, towards yourself. You feel incompetent, or like you can't do enough for your patient. (P8)

P9 expressed a lack of confidence and feelings of worry regarding the ability to know when immediate intervention is needed for the patient.

> Well, at what point do you call someone and let them know? And that was kind of the direction I was thinking…but then someone else said it. That was when I was like, okay we really need to…I think they let the physician know, but that was like, no we really need to get someone here now. (P9)

Participant descriptions of shyness or embarrassment about lack of knowledge and experience hindered learning because it made them hesitant to ask questions or ask for help. P9's description of her personal challenge with shyness and a lack of confidence further illuminated the theme:

> I tend to be on the shyer side.…And it's been sort of a process for me to figure out how to ask questions. Especially regarding clinical data….I think even my very first clinical rotation…the patient I had had very high blood pressure, that came in with a stroke and the blood pressure was still very high….I had been in nursing school for…I don't know how many weeks at that time….And so…I didn't quite know how to phrase that question at the time, and…it's still hard for me to know how to phrase the question, "is this bad?" (P9)

P4 described how a student's shyness is impacted by the nurse's receptivity towards students.

> If the nurses did not want us, and we could tell, so we were shy, and so we didn't get as much experience. But…there'd be nurses where they're amazing and

> they'll be like "come see this!" Like, "this is so cool!" Like, "go do this!" And they'll, like, want us to try it even if we're shy. (P4)

Another component of the theme *Emotionally Charged* was the perception that some students had about their role as a student. Participants described confusion and frustration about a lack of decision-making authority and the perception that they were only in clinical rotations to complete paperwork or perform skills. P12 described the experience of following the nurse and focusing on skills rather than using clinical data:

> Honestly, um…I feel like as students we don't really use that much clinical data, like use that for our clinical judgment. We, well, in my experience at least, we more so follow the nurse around and see that they do and we practice more skills, like giving shots, or, you doing an IV. We don't ever really, like, go into charts and, like, really interpret the data that much. (P12)

The theme *Emotionally Charged* also encompasses positive emotions that resulted from experiences of clinical data use in which the student was able to make a positive change or intervene for the patient. P1 described the emotions she experienced as she improved a patient's comfort level by providing basic nursing care.

> The guy had hard, you know, emerald green plaques on the roof of his mouth that when I, you know, swabbed, it just, you know, fell out.…I can't stand it just going one night without brushing my teeth. I cannot imagine what this poor guy must have felt like.…And I felt so good being able to help him out, and I thought "Man, what if I wasn't there?" …And then he had, like, IVs in him that didn't

> even need to be there, and, so, I got to take out IVs and…you know, his arms, which were hanging down…my instructor put up with the, uh, pillows…and we got him sitting up and immediately he stopped breathing so heavy. Um, so I got to see a lot of "Hey, you really can, you know, change this." (P1)

P15's description of her realization that she prevented possible harm to patient further illuminated the theme:

> So, the patient was actually going to get sent to dialysis, and they had ordered…amlodipine and…metoprolol. And, the physician was actually in the room. And the physician knew that the patient was going to go into dialysis….And he looked at the entire list, and they were like, okay that's fine. And I was like, but they're taking these two blood pressure medications and they're about to leave to dialysis right now. Should I hold it? And they were like, "Oh, well, but they're only taking 25 mgs", but the order said 75 mg, and the only reason they said 25 was because I was holding a 25 mg tablet. But the patient was going to take 3 of those. I was like, no they're taking actually 75. They're taking 3 of these little pills and amlodipine. And they were like, "…So, hold it and we'll like correct the order" or something like that. But, if I hadn't noticed, I would have just been like, oh well they said it was okay. They said it was fine. Then he would have gone and maybe coded in dialysis. (P15)

The sixth theme *Emotionally Charged* described how students experience

emotional responses relative to clinical data use in clinical rotations. Descriptions of how students experienced emotional responses related to clinical data use in clinical rotations supported the emergence of the theme. The six thematic findings led to the next step of Colaizzi's (1978) method of descriptive phenomenological analysis, the development of an exhaustive statement of description.

**Defining the Exhaustive Statement of Description**

The fifth step of Colaizzi's (1978) method is to merge the emergent themes, the formulated meanings, and the significant statements to develop the exhaustive statement of description. The meanings, statements and themes were then integrated into an exhaustive description. The exhaustive statement of description is organized by thematic findings and represents a comprehensive integration of results. The exhaustive statement emerged from the investigation of the phenomenon and presents the essence of the experience from the perspective of the participants.

**Exhaustive Statement of Description**

- Even knowing where to begin the process of using clinical data is difficult early in the program, resulting in frustration, fearfulness, and concern. One needs assistance in learning to collect, analyze, and prioritize clinical data relative to each patient. Assistance may come from clinical paperwork guides and templates, direct assistance from instructors, or assigned nurses. The ability to use the data improves with experience and results in increased comfort with making decisions about gathering, analyzing, and prioritizing clinical data;

however, specialty areas such as critical care and women's health still require guidance due to a relatively small amount of exposure and experiences. Instructors provide more guidance early in the program when students have little experience, and provide less guidance as students gain more exposure to using clinical data.

- Confirmation of understanding, thinking, and learning is important for students to build confidence. One experiences clinical data in clinical rotations as the connection between classroom, theoretical knowledge to real-life experiences in clinical. Connections are made among individual patient findings such as medical diagnoses, assessment findings and lab test results, and analysis of clinical data across multiple patients provide an additional opportunity for understanding, connections, and confirmation of learning. When a patient condition or body system has previously been taught in the theoretical classroom setting, the level of background knowledge results in improved understanding and an increased ability to use the clinical data. A greater amount of background knowledge and pathophysiology supports a greater ability to analyze clinical data and determine interventions. A broader base of knowledge and increased experiences supports the progression from making simple connections between class and clinical early in the program to more complex connections in later program phases. Alongside the connections and confirmation, one perceives a disconnect between the complicated and multifaceted reality of clinical data and real patients in clinical

rotations and the theoretical, static, and somewhat simplistic knowledge learned in the classroom. One discovers that classroom theory does not teach critical thinking and decision making in isolation, requiring the application of theoretical knowledge by making decisions in complex, multifaceted situations with real clinical data.

- Subjective data, in addition to objective data, are sought as a factor in interventions and prioritization. Decisions are made regarding interventions that can improve patient status, correct a problem, or prevent harm. One must focus on an individual patient's data for decisions about individualized patient care, and, based on the clinical data, one may determine that a previously planned intervention is not appropriate. Patient education activities and interventions may also be planned as a result of the clinical data findings, and it is critical that one considers a variety of interventions, not just medications. Principles of prioritization of care, patient trends, and normal findings must be analyzed alongside the clinical data as factors in determining care priorities. Clinical data perpetuates a cycle in which the clinical data is analyzed to assign nursing diagnoses, develop goals, plan interventions, and then to evaluate the patient response before planning another intervention. Both objective and subjective data are synthesized to develop a complete clinical picture and determine patient-centered care. Subsequently, the realization that patients whose objective findings

appear to be similar may have substantially different priorities in care based on both subjective data and patient preferences.

- An understanding develops that clinical data is not only the informational content that is communicated, but is also a tool for communication. Clues regarding expected findings are communicated in the clinical data, one is able to plan focused assessments based on the clinical data, and existing clinical data often suggests what patient response to interventions might be anticipated. The importance of communication to the health care team requires accuracy of data, and one must gather and interpret data oneself to ensure accuracy rather than relying on the interpretation of the previous shift. A lack of opportunity to practice the documentation of clinical data in the record is concerning.
- The nurse plays an important role in nursing student clinical data use in clinical rotations. The nurse's receptivity and helpfulness, or lack thereof, has a significant impact on nursing student use of clinical data in clinical rotations. In addition to the nurse's receptivity as a factor, shyness or embarrassment about lack of experience or knowledge may result in difficulty in asking questions or discussing clinical data with the nurse. Often, the assigned nurse has a greater role in assisting the student in using clinical data in clinical rotations than the assigned instructor, resulting in the nurse having greater influence on the learning experience.

- Emotions such as frustration, worry and distress are experienced when nursing staff and other members of the health care team collect clinical data that indicate a need for intervention, yet, the team member does not intervene. One also experiences positive emotions with the realization that individual nursing actions, based on clinical data, can make a clear difference for the patient. One fears the possibly of harming the patient or overlooking a cue that would indicate a need for emergent or immediate care. Feelings of worry and embarrassment due to inexperience and a lack of confidence with using data may be overwhelming. Limited time to gather and analyze clinical data cause worry and concern and result in incomplete data collection, worry about missed care, and decreased learning opportunities. The perceived role of the nursing student in clinical rotations contributes to experiences with clinical data use. A belief exists that students must only follow the nurse, observe the nurse's actions, focus on completion of a required skills list, and complete assigned clinical paperwork.

## Developing the Descriptive Statement of Identification

The descriptive statement of identification was developed as the sixth step of Colaizzi's method of phenomenological analysis. The descriptive statement of identification was reduced from the exhaustive descriptive of the phenomenon and represents the phenomenon's fundamental components (Colaizzi, 1978). In this step, the reduction of findings was completed by eliminating redundant descriptions and synthesizing components from the overall structure of the exhaustive description

(Shosha, 2012). The reduction also connects findings from different emergent themes to holistically describe the fundamental structure of the experience rather than illuminating segments within the phenomenon.

**Descriptive Statement of Identification**

- The early experience frustrates, overwhelms, and often requires assistance. Collecting, analyzing, and prioritizing become easier in most settings with increased exposure; however, incomplete or inaccessible clinical data creates challenges. One realizes that clinical data is both a tool for communication and the content itself that must be communicated. Clues are present in the clinical data regarding additional assessments that are needed, interventions that might be required, and potential patient responses to interventions. It is the context of the clinical data, among trends, norms, history, and patient preference that reveal the patient's reality.
- Analysis of both objective and subjective clinical data leads to decisions regarding planning and implementing a variety of actions to improve a patient's status. One realizes that each patient requires holistic care that is prioritized according to his or her individual needs and preferences. Observation of abnormal data that requires intervention leads one to understand that individual actions can impact a patient's condition. Connections are made between theoretical knowledge and real-world patients, and confirmation of one's understanding and ability to apply is important to confidence levels. Background

knowledge from the theoretical classroom setting advances one's ability to make connections, but, at some point the student perceives a disconnect between the complex reality of clinical data in human patients and the theoretical knowledge learned in the theory classroom.

- The nurse's receptivity and the student's comfort level in asking questions needed for making connections have a great impact on the experience. Frustration, worry, distress, and a lack of confidence can contribute to an overwhelming fear about embarrassing oneself with the staff or potentially causing harm to the patient. Limited time to gather and analyze data compound these emotions. Perceptions exist that the student's role is limited to observation, the performance of skills, and the completion of paperwork rather than using clinical data.

## Validation of Findings

The seventh and final step of Colaizzi's (1978) method of descriptive phenomenological analysis was the validation of findings. In this step, the researcher returned to the participants and asked them how the descriptive findings compared to their personal experiences. According to Colaizzi's (1978) method, any relevant new data resulting from the review process must be integrated into the final research report. Participants indicated whether or not they were willing to be contacted for validation of findings by providing a telephone number on the consent form.

Seventeen of the eighteen study participants indicated a willingness to participate in the validation of the research findings on their consent form. Each of the 17

participants were called via the telephone number provided on the consent form. A total of thirteen participants responded and participated in the validation of findings. All 13 participants validated the findings with no additions or suggested changes.

During the telephone call for validation of findings, the researcher read the following two questions to participants prior to reading the descriptive statement of identification.

1. How do the descriptive results compare with your experience? In other words, how does your experience fit in with the descriptive results?
2. What aspects of your experience have I left out of my description?

Participants were asked to consider both questions while listening to the researcher read the descriptive statement of identification out loud. No additions or suggested changes were made by the participants (see Appendix H for a table of example statements made by participants during validation of findings).

## Summary of the Findings

Chapter Four presented the findings of data analysis of and began with a description of the sample. Demographics of the sample were presented, and results from descriptive statistics provided de-identified information about the sample and about each participant. Next, the six thematic findings were presented along with a description of the open coding process that allowed the themes to emerge from recurring ideas in the participants' descriptions. This discussion included a description of the process of formulating meanings from the generalized significant statements and clustering the

meanings into the emergent themes. The six themes that emerged from the data were a) *Help Wanted*, b) *Making Sense*, c) *Recognizing Usefulness*, d) *Engaging in Communication*, e) *Nurse as Key Player*, and f) *Emotionally Charged*. Participant statements were presented that illuminated or added value to each of the thematic findings.

This chapter included an exhaustive statement of description of the phenomenon developed from the significant statements, formulated meanings, and themes. After the exhaustive statement was presented, the descriptive statement of identification, which was reduced from the exhaustive description and represented the fundamental structure of the phenomenon, was revealed. Lastly, the process of validating the findings of the study were discussed, along with the results of validation. Chapter Five will present a discussion of the findings, conclusions, and implications of the study.

# CHAPTER V

## SUMMARY OF THE STUDY

The purpose of this qualitative study was to explore nursing student experiences of clinical data use in clinical rotations. Eighteen undergraduate nursing students enrolled in a baccalaureate nursing program at a public university in Texas were asked to describe their experiences using clinical data in clinical rotations through in-depth, face-to-face interviews. The philosophical framework of phenomenology guided the entire study, and the methodological framework selected for this research was descriptive phenomenology. Colaizzi's (1978) seven step method of descriptive phenomenological analysis was used to analyze the data. Methodological rigor was established using the criteria of trustworthiness, which includes the four components of credibility, dependability, confirmability, and transferability (Lincoln & Guba, 2005)

This chapter presents a concise overview of the findings that emerged from data analysis. These findings are discussed through the descriptive phenomenological lens and include a reiteration of the problem statement and study procedure. The chapter includes a discussion of the major themes and study findings.

The researcher engaged in bracketing of personal assumptions through ongoing reflection. These assumptions are re-examined in this chapter along with a discussion of how the findings relate to current literature. This chapter also includes a discussion of

how these findings might contribute to knowledge both within the discipline of nursing and across multiple disciplines.

Limitations of the research are presented and the findings are discussed from a broader phenomenological paradigm. The chapter concludes with recommendations for nursing instructors, educational leaders, nursing staff who work with students, clinical facilities, and policymakers. Suggestions for further research are included in this chapter and are based on topics or experiences that were revealed as part of the experience of clinical data use in clinical rotations.

## Overview of Findings

The experiences of 18 undergraduate nursing students who had completed at least one clinical course were explored to uncover descriptions of the phenomenon of nursing student experiences of clinical data use in clinical rotations. The researcher aligned with the philosophical paradigm of phenomenology, in which descriptions of individual experiences are considered to be a valid way to develop knowledge about the world. Indeed, every individual who experienced the phenomenon experienced it through the perspective of their own lifeworld, which made each participant an expert on their own experience. Therefore, nursing students who had experienced the phenomenon of clinical data use in clinical rotations were considered to be the experts on the phenomenon.

Participants were interviewed about their experiences, and the interviews yielded rich descriptions of the phenomenon. Data analysis generated insight into the phenomenon of nursing student experiences of clinical data use in clinical rotations. The

analysis of the 18 participants revealed six themes, which were developed into an exhaustive description of the phenomenon. The exhaustive description was distilled into a descriptive statement of identification.

**Overview of Thematic Findings**

Open coding was used to allow themes to emerge from data analysis. The clustering of significant statements and their formulated meanings into thematic findings fulfilled step four of Colaizzi's (1978) method of descriptive phenomenological analysis. The exhaustive statement of description and the statement of identification were based on the six emergent themes. For this reason, the discussion of findings in chapter 5 is organized by the thematic findings.

**Six Emergent Themes**

Six themes were revealed through data analysis. Theme 1: *Help Wanted* was revealed in participant descriptions of needing or wanting help with using clinical data and assistance with knowing where to begin the process of clinical data use. Participant descriptions of ways that clinical data made sense illuminated Theme 2: *Making Sense*; this theme included descriptions about ways that contextual information helped clinical data make sense as well as ways that clinical data assisted students in making sense in clinical and in the classroom. Theme 3: *Recognizing Usefulness* emerged from descriptions of how participants saw that clinical data was used or could be used. Participant descriptions of how clinical data in clinical rotations was related to communication illuminated Theme 4: *Engaging in Communication*. Descriptions of the

significant impact of the assigned nurse on student experiences with using clinical data in clinical rotations resulted in the emergence of Theme 5: *Nurse as Key Player*. Lastly, Theme 6: *Emotionally Charged*, emerged from student descriptions about emotional experiences related to their experiences of clinical data use in clinical rotations.

Thematic findings, significant statements, and formulated meanings were clustered to form the Exhaustive Statement of Description. The Exhaustive Statement of Description was subsequently refined into a fundamental statement about the phenomenon known as the Statement of Identification, which eliminated redundancy and synthesized descriptive content from the Exhaustive Statement. Thirteen participants participated in the validation of findings with no changes suggested.

The descriptive phenomenological approach may be used to reveal poorly understood phenomena. This approach allows nurse researchers to arrive at a deeper understanding of the experience so that nursing faculty, facilities, and nursing students can work to try to address some of the issues that are inherent in clinical data use in clinical rotations. It was important to study nursing students' experiences of clinical data use in clinical rotations because clinical data is a contextual factor in effective clinical learning. Clinical learning experiences provide the opportunity to apply theoretical knowledge in real-life situations, and clinical data is an important components of the real-life patient situation. In order to ensure quality clinical learning for nursing students, it is vital to hear the voices of nursing students on how they experience clinical learning, particularly with regards to clinical data use.

## Discussion of the Findings

### Clinical Data Use for Clinical Judgment Development

The theme of *Making Sense* emerged from descriptions about ways that student understand clinical data. Existing theories and models related to nursing education including are replete with theoretical assertions about using clinical data. Participant descriptions of making sense aligned with Tanner's Clinical Judgment Model (2006), Benner's Novice to Expert (2004b), and the Clinical Reasoning Cycle (Levett-Jones et al., 2010). For example, students described using background knowledge from the theoretical classroom such as pathophysiology and expected norms alongside the actual clinical data to make decisions, and this aligned with Tanner's (2006) step of "Noticing," which requires the student to notice data that is different from expectations, and the step of "Interpreting," in which the student analyzes the data and comes to a conclusion. This also aligned with the student descriptions of how contextual information was a component of recognizing that clinical data might be abnormal aligned with this step.

Similarly, the Clinical Reasoning Cycle (Levett-Jones et al., 2010) aligned with the findings because the step of "Consider[ing] the patient situation," in which information and cues are collected and the data is reviewed, looking for clues about what is going on, was illuminated by many of the participant descriptions. "Processing information" and "identifying problems" were also supported by the descriptions of the participants and align with the theme of *Making Sense*. The theme of *Recognizing Usefulness* emerged from participant descriptions of ways that the student saw the

usefulness of clinical data, and supported the "Responding" step of the Clinical Judgment Model (Tanner, 2006). In this step of Tanner's (2006) model, a decision is made and action is taken. The descriptions similarly aligned with the with the steps of the Clinical Reasoning cycle in which students must establish goals, take action, and evaluate outcomes (Levett-Jones et al., 2010).

The thematic finding of *Engaging in Communication* aligned with existing literature. Shannon (2015) described how the breakdown in communication contributed to the spread of Ebola in a critical care unit in Dallas, Texas. On a larger scale, the Institute of Medicine recognized communication as a contributing factor in medical errors (Kohn, Corrigan, & Donaldson, 2000), and the Joint Commission (2014) has been consistent in its indictment of communication failures as one of the most common causes of sentinel events.

Inconsistent documentation, inaccurate documentation, and variable modes of communication were identified by Johnson, Carta, and Throndson (2015) as nursing factors in communication errors; this was supported by the findings of the study. The findings of the study also provided continued support of the literature on the challenges associated with the EHR transition and challenges with access or incomplete documentation, lack of being allowed to document, and lack of consistency in opportunities to use EHRs (Baillie et al., 2012, 2013).

**Support for Clinical Data Use**

The thematic finding of *Help Wanted* was represented in the existing literature as a general approach to student support. Benner et al. (2010) discussed the necessity of a nurturing environment in clinical rotations. Dickson et al. (2006) presented the perspective of clinical facilitators supervising and assisting students. This phenomenological study of ten clinical facilitators revealed themes focused on the clinical facilitators perspective: a) "Knowing Your Own Limitations," b) "Employing the Notion of Stepping In or Stepping Back," c) "Developing Alliances," d) Acknowledging the Reciprocity of the Learning Experience," and e) Identifying Appropriate Clinical Buddies" (Dickson et al., 2006, pp. 419-420). The theme of "Identifying Appropriate Clinical Buddies" addressed the clinical facilitators search for staff nurses who were willing and able to assist students. The emergence of the theme of *Help Wanted* supported this finding (Dickson et al., 2006). However, the student perspective of needing or wanting help to use clinical data was not found in the existing literature.

The theme of *Nurse as Key Player* is supported by the literature. Bifarin and Stonehouse (2017) asserted that the clinical supervision of students is an important aspect of the practice of every professional nurse. Although Bifarin and Stonehouse (2017) presented this assertion within the context of supervision of professional nurses in the work environment, it accurate for nursing students in clinical rotations as well. The relationship between the person supervising and the one being supervised has a major impact on the outcome (Bifarin & Stonehouse, 2017). Rebeiro, Evans, Edward, and

Chapman (2017) suggested that the staff nurse assigned to a student is an informal nurse educator. Experiences with informal nurse educators are variable, and these variations can greatly impact the quality of the student experience with using patient data in clinical rotations. (Rebeiro et al., 2017). This supports the emergence of the theme *Nurse As Key Player* from the participants' descriptions of the level of influence that the nurse possessed in nursing students' experiences with clinical data use in clinical rotations.

**Emotional Challenges in Use of Clinical Data**

The theme *Emotionally Charged* emerged from students descriptions about experiencing strong emotions associated with their use of clinical data in clinical rotations. Much of the existing literature on emotional support of nursing students is related to supporting students when dealing with emotional experiences with difficult or dying patients, the study findings support the existing literature on emotional stress in clinical rotations. The literature revealed that nursing students perceive clinical anxiety as a negative component of clinical learning experiences (Vijayananthan et al., 2016). Borrott, Day, Sedgwick, and Levett-Jones (2016) explored emotional support for students through the lens of belongingness and workplace satisfaction in clinical rotations through a cross-sectional, mixed methods study; belongingness and workplace satisfaction had a positive impact on the student experience in the final semester of clinical rotations. Melincavage (2011) explored nursing student anxiety during clinical rotations from a phenomenological perspective and found that students experiences a great deal of anxiety

related to factors such as inexperience and fear of being demeaned, feeling like an outsider, feeling abandoned, and even competition among nursing students.

The theme of *Emotionally Charged* is supported by literature addressing the impact of Emotional Intelligence (EI) in nursing students. High levels of EI have been correlated with effective leadership behaviors in nurses (Parker & Sorensen, 2008), and high levels of EI in nurse leaders have been correlated with increased job satisfaction and higher retention rates in clinical nurses (Coladonato, 2017). Yet, the need for EI is not limited to nurses in leadership positions, and existing research findings support the need for EI in nursing students. Zhang et al. (2017) used a cross-sectional survey design and found that found that EI negatively impacted levels of psychological distress; thus, EI acted as a mediator of psychological distress in nursing students. Kong et al. (2016) investigated the relationship between EI levels communication with the use of cross-section research design; results indicated that strong EI levels were positively associated with the clinical communication abilities of nursing students. The findings of the current study align with existing literature that suggests a need for EI development of nursing students in dealing with real clinical data and patient care practice.

The theme of *Emotionally Charged* also aligned with the reflection-on-action component of the Clinical Judgment Model (Tanner, 2006) as the student described experiencing distress and frustration regarding the inaction of a nurse or staff member. In these experiences, the student reflected back on their use of the clinical data and how they would have responded; distress or frustration occurred when the student reflected back

and maintained the belief that the staff member should have taken action. In several participant descriptions, the student responded to this reflective process by advocating for their patient, seeking assistance from others, or engaging in discussions about the patient's needs.

**Philosophical Implications**

Participant descriptions of experiences of clinical data use in clinical rotations represented each individual's perception of the phenomenon as seen from their unique "lifeworld." Just as the individual experience is predicated entirely on the way of the way that an individual perceives the experience from their lifeworld (Husserl, 1954/1970), they are entering a community lifeworld when they engage in clinical rotations. The community lifeworld has cultural norms, foundations, and expectations (Husserl, 1954/1970), and the students must engage with the community lifeworld at the same time that they are perceiving the experience from their individual lifeworld.

As students are expected to use clinical data in learning how to apply knowledge in patient care, they are also grappling with a community lifeworld that may not be welcoming to them. Learning to use the clinical data assists students with learning how to function within the community lifeworld. However, many of the experiences described by participants coalesce into the idea that they are passive receivers of whatever is allotted to them from the community lifeworld, and that they are outsiders in that community.

**Researcher Assumptions and Expectations**

The researcher presented four assumptions at the beginning of the study, and all four assumptions were supported by the findings. First, the researcher assumed that each participant would have experienced the phenomenon of interest. This assumption was met through purposive sampling and the inclusion and exclusion criteria. Each participant was a junior or senior nursing student in a baccalaureate program who had completed at least one clinical course with clinical rotations. Nursing students who were enrolled in nursing courses but had not yet completed a clinical course with clinical rotations were excluded. All 18 participants were nursing students who had experienced clinical data use in clinical rotations.

Secondly, the researcher assumed that each participant's experiences with the phenomenon of interest made him or her an expert on the nursing student experience of clinical data use in clinical rotations. This assumption was met through alignment with the philosophical foundations of the study. The descriptions of each student revealed his or her individual lifeworld perspective. Although each student had an individual perspective due to the unique lifeworld from which they experienced the phenomenon, the participant descriptions coalesced to describe the essential components of the phenomenon. Therefore, each student was an expert on the phenomenon as experienced from his or her perspective.

The third assumption was that participants would have been willing to share their experiences with the researcher and give an accurate description of their experiences. All

participation was voluntary, and participants were eager to talk about their experiences in clinical rotations. Although the researcher is fully dependent on the participants regarding the accuracy of their descriptions, the researcher had no indication that any of the participants were providing inaccurate descriptions. Moreover, it is the participant's personal perspective that shapes their experience, even if that personal perspective might be viewed as inaccurate by someone else. The researcher strove to avoid giving clues or cues regarding approval or disapproval of participants' descriptions. The researcher also strove to avoid influencing the participants' responses in any way through ongoing bracketing. Therefore, the researcher believes that this assumption was met.

The fourth assumption was that the researcher would strive to participate in ongoing bracketing of knowledge, beliefs, and experience with the phenomenon of interest. As the researcher, I acknowledge that my own knowledge, expectations, and assumptions may have contributed to the findings of the study. However, I strove to avoid influencing the responses or outcomes in any way through ongoing reflection and bracketing through the use of a reflexive journal, dissertation chair debriefing, field notes, and a clear audit trail regarding analytical decisions.

Is it also important to discuss the expectations that were bracketed and how the results compared to those expectations. The researcher expected that the participants would describe the phenomenon of clinical data use in clinical rotations as focused on ways that they think about the clinical data, analyze it and make decisions for the patient. The themes of *Making Sense*, *Recognizing Usefulness*, and *Engaging in Communication*

aligned with these expectations. However, much of the data also focused on external factors that impacted their ability to use the clinical data as they strove to function and learn in clinical rotations. The themes of *Help Wanted, Nurse as Key Player,* and *Emotionally Charged* emerged from descriptions of nursing student experiences of using clinical data in clinical rotations use that were externally driven; these external variables were perceived as impacting the participants' clinical data use. These thematic findings indicated that students' experiences of clinical data use in clinical rotations was affected by a variety of factors, many of which were perceived by the participants as beyond their control.

**Support and Extension of Theory**

Students' descriptions of how they made sense of the clinical data included using context, patient trends, norms, history, and background knowledge as important factors in helping to make sense of the clinical data. These findings expand on the existing research by providing student perspectives on how clinical data is used in these processes. This is important because educators need to understand how students experience the process and determine factors that impedes or support learning to use clinical data. By developing an understanding about these experiences, educators can better serve the students in their learning.

The reflective component of using clinical data in clinical rotations is of particular interest in the discussion of how this research expands nursing theory. Reflection includes both an evaluation of how the patient responded to the intervention and a

reflection on one's own actions. Students described using the data to determine if an intervention was appropriate or beneficial to the patient; that is, they evaluated the effectiveness of their own nursing action. They also described reflection on the nurse's actions as they observed the nurse and assisted the nurse in interpreting and responding.

Additionally, participant descriptions of frustrating and distressing situations where the student interpreted that clinical data indicated the need for a response, yet the nurse did not respond, also indicates reflection on the part of the student and both supports and extends theory. Existing theory is supported by the student's reflection, and existing theory is extended by applying it to a student's reflection on someone else's action or inaction. This may indicate that students are engaging in vicarious learning of reflection on action. Vicarious learning is a type of experiential learning which may also be known as observational learning (Roberts, 2010). The intersection of the Clinical Judgment Model (Tanner, 2006) and vicarious learning theory expands both theories.

These findings also expand on the current literature by viewing the concerns regarding documentation, needing to learn documentation skills, and the importance of communication with the team through the lens of using clinical data. Communication considerations emerged as participants discussed clinical data use; from the perspective of the participants, these matters of nursing and interprofessional communication are not isolated from clinical data use. Rather, the ways that the data are used, and, even the accuracy and completeness of the data themselves impact the way that the data are used.

### No Difference in Clinical Data Use by Demographics

No clear patterns emerged from the data analysis regarding differences in student experiences related to differences in demographic data. Student backgrounds ranged from having completed just one clinical rotation to having completed seven rotations. There were differences among participants with regard to the data collected such as ethnicity, previous work experience in health care, and whether or not they had failed a previous clinical course. However, the variations in background serve to show how the phenomenon of interest is truly a shared experience, no matter what the demographic background is of the participant.

## Implications

### Nursing Education

Nursing education programs must provide students with the opportunity to develop the nursing competencies required to enter professional nursing practice (NCSBN, 2017). To achieve this, programs must provide students with clinical learning experiences that support the development of clinical judgment (NCSBN, 2017). The findings of the study have implication for nursing education that are directly related to this standard prescribed by the NCSBN. The findings of the study were revealed as participants described contextual factors relative to their use of clinical data. Consequently, the findings have implications for the effectiveness of clinical learning experiences.

The theme of *Emotionally Charged* represents the emotional context of student experiences with clinical data use in their clinical learning environment, and nurse educators must strive to better prepare students to navigate these emotional challenges. The inclusion of learning activities focused on EI may be an effective approach for nurse educators. Harrison and Fopma-Loy (2010) conducted a pilot study during the development of reflective journal prompts aimed at addressing EI, and the findings suggested that this approach assisted with EI development. Codier, Freitas, and Muneno (2013) used a mixed method, pre-test post-test design to measure the effectiveness of emotional intelligence team meetings in an inpatient oncology unit. Although a low response rate on the post-test prevented the comparison of EI scoring, a positive impact of the intervention was suggested by 94% participation in the team meetings, 100% positive feedback on the evaluation of the meetings, and poststudy improvements noted in nursing documentation focused on emotional care of patients. The findings of these studies suggest that activities such as reflective journaling and patient care discussions centered on emotional intelligence may be used effectively to help students in EI development. Nurse educators must also strive to better prepare students for the community lifeworld of the clinical environment as well as the variety of nursing attitudes that they may encounter. Nurse educators should ensure that students understand the purpose of clinical paperwork as a guide to using the clinical data so that the student can better focus on using the clinical data, no matter what the circumstances of their clinical rotation.

Educators must also develop and maintain excellent working relationships with clinical facilities. If clinical facilities would be willing to provide some training for nurses about how to work with students, it would support the future nursing workforce. Nurse educators must be aware that student performance in clinical is greatly driven by what the student perceived to be outside influence that are beyond their control. King, Bulsara, and Russell (2017) conducted a Delphi study to develop a tool to assist nursing students with relationships and community in clinical rotations. The acronym *WANTED*, presents a method for nurses to use to make students feel welcome and decrease anxiety; this method is focused on simple actions that the nurse can take and include:

- Welcome – legitimisation of the student role
- Attitude – compassion for self and students
- Nurture – encourage sociable exchange
- Talk – involve in ward and work discussion
- Encourage – appropriate autonomy for completion of tasks
- Delight - in a supportive relationship and success (King et al, 2017, p. 50)

The clinical-academic partnership approach to clinical learning may also provide a way to address many of the contextual factors impacting clinical data use and clinical learning that were described by participants. The clinical-academic partnership approach recognizes the expertise of staff nursing as a paramount to student learning and recognizes the need for students to develop relationships in order for effective clinical learning to occur (Jeffries et al., 2013). Multiple variations on the clinical academic

partnership model exist, such as the Clinical Academic Practice Partnership (CAPP) model and the Portland Dedicated Education Unit (DEU) model (Jeffries et al., 2013; Nishioka, Coe, Hanita, & Moscato, 2014).

There are fundamental principles of this approach that result in a substantial departure from the traditional model of clinical education (Hudacek, DiMattio, & Turkel, 2017). An underlying premise of the clinical-academic partnership approach is that academic nursing programs and clinical facilities determine that each partner provides a mutual benefit to the other (Hudacek et al., 2017). Students are recognized as an asset to clinical facilities rather than as a burden, and all nurses are expected to take part in preparing future generations of nurses (Jeffries et al., 2013). Rather than the traditional model in which one clinical instructor supervises a number of students and the staff nurses are used as resources, the clinical-academic partnership approach adjust the academic faculty role to one of consultation, resource, and support for the preceptor, while the staff nurse receives preceptor training and acts as the primary clinical faculty for nursing students. Hudacek et al. (2017) used qualitative descriptive design to examine the role of the clinical nurse educator in a clinical-academic partnership and found that building relationships and reciprocal learning among the nurse, student, and patient were some of the benefits that resulted from this approach. Hudacek et al. (2017) also suggested that the academic-clinical partnership approach represents professional practice and collaboration and enfolds students into the professional role in a way that cannot be achieved through a traditional clinical education model.

## Nursing Practice

The preparedness of new graduate nurses is important for nursing practice because it is an issue of patient safety. New graduate nurses enter a workplace that is increasingly complex and ever-changing (Benner et al., 2010). Effective clinical learning experiences for nursing students will help the new graduate nurse to be prepared to engage in safe practice in an increasingly complex environment. It is important for the nursing profession that new graduate nurses have engaged in effective clinical learning experiences with clinical data in real, ever-changing and complex situations so that they enter nursing practice with the foundation needed to adapt to the professional role.

## Nursing Policy

Nursing education policies provide regulatory standards and may also support programs in ensuring effective clinical learning experiences. The NCSBN standard currently states that no more than 50% can be composed of simulation (Alexander et al., 2015), which has the result of requiring that at least 50% of experiences in a direct patient care setting. Findings included descriptions of ways that students interact with clinical data, with the nursing staff, and with the electronic record itself. However, no guidelines, policies, or incentives exist for clinical facilities to follow relative to their role in effective clinical learning experiences for nursing students. It would be beneficial for institutional policies regarding nursing students to be reviewed on a broad scale, with the goal of developing some best practice standards regarding nursing students in clinical facilities. One possible implication for policy is for lawmakers to tie reimbursement to

requirements and expected outcomes regarding hosting nursing students in clinical facilities. Magnet status might also be tied to a direct support of nursing education through clinical requirements and evidence of positive experiences for nursing students as they use clinical data in their clinical learning experiences. Another implication of the study findings is a need to explore facility requirements for staff nurses and the informal educator role that staff nurses fulfill in the traditional clinical education model.

The preparation of nursing students for entry into practice is ultimately a nursing workforce concern. Effective clinical learning is a requirement in order for students to develop the competencies needed to enter the nursing workforce and provide safe, high quality patient care. The projected shortfall of licensed professional nurses by 2022 underscores the importance of effective clinical learning. Therefore, the findings of this study have implications for policy regarding nursing workforce development policy. The contextual factors that influence the experiences of nursing student clinical data use in their clinical learning experiences have major implications for the future nursing workforce.

The projected nursing shortage requires federal resources in order to continue to prepare new graduate nurses to enter the workforce and meet this demand (NLN, 2017). Policy priorities must include funding to support nursing students, support clinical facilities and nursing programs as they provide opportunities for student to engage in effective clinical learning and develop the competencies needed to enter the workforce. Title VIII funding opportunities are often available for nursing education and have

historically provided funds for nursing programs to pursue effective clinical learning experiences for students (ANA, 2016). Past awards have included funds for the development of clinical-academic partnership program for senior-level BSN students to engage in effective clinical learning experiences in traditionally underserved areas (Health Resources & Service Administration, 2015). Funding must continue to support nursing education, particular for the support of effective clinical learning experiences.

**Nursing Research**

This qualitative, exploratory, descriptive study was a phenomenological study that used in-depth interviews. Participant descriptions illuminated many factors that may impact student experiences with clinical data use and clinical learning. Based on the findings of this study, the following research studies would be appropriate for the future:

- An observational, cross-sectional study on factors related to nursing student synthesis of clinical data to develop best patient care
- A longitudinal study to evaluate the progress of clinical judgment skill development relative to the clinical data use
- An interventional study with an academic-clinical partnership approach for clinical data use and clinical learning outcomes
- A system development project to create a method for nursing faculty to easily monitor and evaluate nursing students' clinical data use and clinical judgment skill development

## Study Limitations

Qualitative studies are not inherently transferable. The reader and those who will seek to apply the findings must make a determination of transferability based on the data and the trustworthiness of the findings. There were various limitations to the current study. It was anticipated that a variety of ethnic groups would be represented in the sample. This was achieved, however, the ethnic diversity of the sample does not mirror the national data. The sample included a higher percentage of ethnic diversity than the national population of baccalaureate nursing students, but the low percentage of white students in the sample compared to national data may limit the transferability of the findings. Similarly, the percentage of males represented in the sample is less than the national population of nursing students and may limit transferability.

Another possible limitation of the study is that all study participants attended the same public university in one southern state of the U.S. The university had multiple campuses in metropolitan areas. However, the findings may not be representative of students who attend nursing school in other states or regions of the U.S. This may also limit the global application of the findings. The findings may also have limited transferability to students who attend nursing school in rural areas or who attend private universities.

Although the researcher strove to establish rigor through the implementation of procedures designed to promote scientific rigor in qualitative studies, the scientific implemented to maintain rigor, the qualitative approach of the study might be considered

a limitation. The researcher is the instrument in qualitative research; therefore, exact replication may be difficult due to researcher decisions about probing questions in the interviews or analytic decisions during analysis. Even small variations in the researcher's approach or decision-making might result in inconsistent results.

## Chapter Summary

This chapter presented the conclusions of this study along with a discussion of implications for nursing education, policy, and research. The participants of the study described many factors that impact their clinical data use in clinical rotations. Unexpected themes emerged that represented outside factors that impacted student use of clinical data included *Help Wanted, Nurse as Key Player*, and *Emotionally Charged*. Themes that encompassed ways that students understand and use the clinical data were not a surprise to the researcher and included *Making Sense, Recognizing Usefulness,* and *Engaging in Communication*. This research filled a gap in the literature because of the student-centered perspective on the process of clinical data use in clinical rotations. The findings both supported and expanded existing theory and models on clinical judgment and clinical reasoning.

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# APPENDIX A

# IN-DEPTH INTERVIEW GUIDE

IN-DEPTH INTERVIEW GUIDE

1. Can you please tell me about your experience with clinical data use in clinical rotations?
2. What data have you used in clinical rotations and how have you used the data?
3. Can you please describe, using as much detail as possible, a specific experience with clinical data use in your clinical rotations?
4. What do you think about your experiences as a nursing student using clinical data in your clinical rotations?
5. How has clinical data use in clinical rotations impacted your nursing education?
6. Is there anything else that you would like to add about this topic?

Additional probing questions:

a. How did you feel when that happened?
b. What were you thinking when that happened?
c. Can you tell me more about [the experience]?

# APPENDIX B

# STUDY FLYER

# participants needed for research study

## *Nursing Student Experiences of Clinical Data Use in Clinical Rotations*

**ELIGIBILITY:**

- Must be a junior or senior enrolled in a baccalaureate nursing program
- Must have completed at least one nursing course in which you attended clinical rotations

**DETAILS:**

- Describe your experiences in a 45-60 minute interview
- Receive a $20 Visa gift card after completion of the interview.

*If you are eligible and interested, please contact:*

**Marcia Straughn - XXX-XXX-XXXX - MStraughn@twu.edu**

**Confidentiality Statement:** There is a potential risk of loss of confidentiality in all email, downloading, and internet transactions.

This study is voluntary and you may discontinue at any time

This study has been approved by the Texas Woman's University institutional Review Board. IRB Protocol #19398

# APPENDIX C

# TELEPHONE SCREENING SCRIPT

TELEPHONE SCREENING SCRIPT

**Study Introduction**

Thank you for emailing [or calling]. I am returning your call to provide more information about my research study.

My name is Marcia Straughn, and I am a PhD student at Texas Woman's University. The purpose of my research study, A Descriptive Phenomenological Study of Nursing Student Experiences of Clinical Data Use in Clinical Rotations is to describe the experiences of nursing students with using clinical data in clinical rotations.

Data are "discrete entities described objectively without interpretation," and students must use clinical judgment to interpret clinical data. Examples of clinical data include health history, assessment data, vital signs, or laboratory study results. The term "clinical rotations" will be used to represent "practice in an inpatient, ambulatory care, or community setting where the student provides care to patients under the guidance of an instructor or preceptor."
I will be asking nursing students to complete an interview with questions about experiences in clinical rotations with clinical data, how the data was acquired and communicated, about positive and negative experiences, and how the experiences impacted their nursing education.
It will require one interview session that will last approximately 45-60 minutes.

Do you have any questions or concerns?

(If **yes**, address questions or concerns)
(If **no**, continue to next line)

Now that you have a basic understanding of the study, do you think you might be interested in
participating?

If **No**: Thank you very much for your time. (**end call**)

**Caller is Interested**

Before enrolling people in this study, I need to determine if you may be eligible to participate. I would now like to ask you a series of questions about your current student status and number of clinical learning experiences. It will take approximately 15 minutes of your time.

There is a possibility that some of these questions may make you uncomfortable or distressed; if so, please let me know. You can skip questions you do not wish to answer.

I will keep all the information I receive from you by phone, including your name and any other identifying information, confidential.

The purpose of these screening questions is to determine if you are eligible to participate in the study. Remember, your participation is voluntary; you do not have to complete these questions.

Please feel free to stop me at any time if you have any questions or concerns.

Do I have your permission to ask you these questions?

If **No**: Thank you very much for your time. (**end call**)

**Screening Questions to Confirm Eligibility:**

| **Inclusion Criteria:** | **Response** | **Results** |
|---|---|---|
| Are you currently enrolled in a baccalaureate nursing program as a junior or senior student? | Yes No | If no,<br>ineligible |
| Have you completed at least one semester of a clinical course in which you participated in clinical rotations at a location other than your program's classrooms or labs? | Yes No | If no,<br>ineligible |

If **No** to any of the above questions: Unfortunately, based on your responses, you are not eligible for this study. Thank you very much for your time. (**end call**)

**Post Screening Question Communication**

Based on your answers to the questions, it appears that you are eligible to participate in the research study. Would you be willing to schedule a time and place to meet with me for participation in the study?

In addition, would you like me to send you information to review before the meeting?

Obtain the potential participant's contact information and schedule date/time/location for the interview.

Thank you for taking the time to talk with me today. If you have any questions or concerns, please feel free to contact me. My name is Marcia Straughn, and I can be reached at XXX-XXX-XXXX and/or MStraughn@twu.edu.

# APPENDIX D

# TRANSCRIPTION PROTOCOL

TRANSCRIPTION PROTOCOL

**General Instructions**
Interviews are recorded in individual data files on a digital audio recording device. The transcriber shall transcribe each in-depth interview using the following formatting:

A. Times New Roman 12-point font
B. One-inch top, bottom, right, and left margins
C. All text shall begin at the left-hand margin (no indents)
D. Entire document shall be left justified

**Labeling Interview Transcripts**
Individual interview transcripts shall include the following labeling information at the top of the document:

Assigned Participant Identification Number:
Interview Location:
Date:
Time:
Name of Transcriber:
Size of Data File:

**Documenting Comments**
Comments or questions by the Interviewer should be labeled with by typing **I:** at the left margin and then indenting the question or comment.

Comments or responses from participants should be labeled with **P:** at the left margin with the response indented.

Example:

**I:** OK, before we begin the interview itself, I'd like to confirm that you have read and signed the informed consent form, that you understand that your participation in this study is entirely voluntary, that you may refuse to answer any questions, and that you may withdraw from the study at anytime.

**P:** Yes, I read it and understand this.

**I:** Do you have questions before we proceed?

**End of Interview**
In addition to the above formatting, the transcriber shall indicate when the interview session has reached completion by typing END OF INTERVIEW in uppercase letters on the last line of the transcript. A double space should precede this information.

Example:

**I:** Is there anything else that you would like to add?

**P:** Nope, I think that about covers it.

**I:** Well, thanks for taking the time to talk with me today. I really appreciate it.

END OF INTERVIEW

**Content**

Interviews shall be transcribed verbatim (i.e., exactly as said and exactly as recorded), including any nonverbal or background sounds such as laughter, sighs, coughs, claps, finger snapping, tapping foot, and car horn).

A. Nonverbal sounds shall be typed in parentheses, for example, (short sharp laugh), (throat clearing), (dog barking in background).

B. If the interviewer or participant mispronounces words, these words shall be transcribed as the individual said them. The transcript shall not be edited by removing foul language, slang, grammatical errors, or misuse of words or concepts.

C. If an incorrect pronunciation results in difficulties with comprehension of the text, the correct word shall be typed in square brackets. A forward slash shall be placed immediately behind the open square bracket and another in front of the closed square bracket.

Example:

**P:** I thought that was pretty pacific [/specific/] (cleared throat), but they disagreed.

Filler words such as *hmm*, *huh*, *mm*, *mmhmm*, *uh huh*, *um*, *yeah*, *nah*, *oh*, *huh*, *ugh*, *whoa*, *uh oh*, *ah*, and *aha* shall be transcribed.

**Pauses**

If an individual pauses briefly (less than 5 seconds) between statements or trails off at the end of a statement, the transcriber shall use three ellipses.

Example:

**P:** Sometimes…we went to lunch…and had pizza.

If a substantial speech delay occurs at either beginning or the continuing a statement occurs (more than approximately 5 seconds), the transcriber shall use “long pause” in parentheses.

Example:

**P:** Sometimes, we went to lunch and had pizza (long pause), but then I was still hungry.

**Questionable Text**

If the transcriber is unsure of the accuracy of a word or statement made by a speaker, this word or statement shall be placed inside parentheses and a question mark is placed in front of the open parenthesis and behind the close parenthesis.

Example:

**P:** I wanted to switch to ?(pepperoni)? pizza because I thought it would taste better.

**Sensitive Information**

If an individual uses his or her own name during the discussion, the transcriber shall replace this information with the assigned participant identification number.

Example:

**P:** My supervisor said to me, “11, think about things before you open your mouth.”

If an individual provides others’ names, locations, organizations, and so on, the transcriber shall enter an equal sign immediately before and after the named information. The researcher will use this labeling information to easily identify sensitive information that may require substitution.

Example:

**P:** My friend =John = was very unhappy in his job so he started talking to the hospital administrator at = Kagadi Hospital = about a different job.

**Accuracy**

The transcriber shall proofread all transcriptions against the original, digital recording and revise the transcript file accordingly. The transcriber shall adopt a three-pass-per-interview policy whereby each file is listened to three times against the transcript before the initial transcription process is considered complete. As an additional precaution, all transcripts shall be proofread against the recording by the researcher one final time before data analysis proceeds.

**Saving Transcripts as Digital Files**

The transcriber shall save each transcript as a rich text file with an .rtf extension.

The file name should include the assigned participant identification number and date of interview.

# APPENDIX E

# DEMOGRAPHIC DATA FORM

DEMOGRAPHIC DATA FORM

**Interview Date: _____**

**Study Participant Identification Number**: _____

**Gender**: _____

**What is your age in years? _____**

**Please circle your ethnicity (***please write in your ethnicity if it is not listed***)**:

White

Hispanic or Latino

Black or African American

Native American or American Indian

Asian / Pacific Islander

Other Ethnicity: _____

**Please enter the number of nursing courses with clinical rotations that you have completed**:

_____

**Please circle the type(s) of clinical site(s) where you have completed clinical rotations.**

Inpatient acute care medical surgical hospital

Inpatient mental health facility

Community setting

Ambulatory setting

Other (please describe):

_____

_____

**Did you have any previous experience working in health care prior to your acceptance to the baccalaureate nursing program? Please circle your answer.**

**Yes No**

**(***if yes, please provide a brief description of your prior experience***)**

_____

_____

_____

**Are you enrolled in a traditional (generic) four-year baccalaureate program, or are you enrolled in an alternative type of baccalaureate program such as a second-degree program, RN-to-BSN program, weekend-only program, or accelerated program?**
**Please circle the term that you would use to describe your program.**

**Traditional (generic) four-year program**

**Second-degree program**

**RN-to-BSN program**

**Weekend-only program**

**Accelerated program**

**Other (***please describe***)**

_____

_____

_____

**Have you ever failed a nursing course (either classroom or clinical)?**
**Please circle your answer:**

**Yes**

**No**

# APPENDIX F

# TABLE OF DEMOGRAPHIC DATA BY

# PARTICIPANT IDENTIFICATION NUMBER

Appendix F

*Table of Demographic Data by Participant Identification Number (PIN)*

| PIN | Gender | Age | Ethnicity | Native English Speaker | Number of Clinical Courses Completed | Types of Clinical Settings | Previous Health Care Experience | Type of Nursing Program | Failed Nursing Course |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Female | 18 | White | Yes | 1 | IAMS | Yes | 4-year | No |
| 2 | Female | 20 | White | Yes | 1 | IAMS | Yes | 4-year | No |
| 3 | Female | 21 | Hispanic/ Latino | Yes | 1 | IAMS, C, A, O | Yes | 4-year | No |
| 4 | Female | 21 | Asian/ Pacific Islander | Yes | 3 | IAMS | No | 4-year | No |
| 5 | Female | 26 | Asian/ Pacific Islander | No | 7 | IAMS, IMH | No | 4-year | Yes |
| 6 | Female | 22 | Hispanic/ Latino | Yes | 3 | IAMS, IMH | No | 4-year | No |
| 7 | Female | 20 | Black/ African American | Yes | 3 | IAMS, IMH, O | No | 4-year | No |
| 8 | Male | 26 | White | Yes | 3 | IAMS, IMH, C, O | No | 4-year | No |
| 9 | Female | 26 | White | Yes | 3 | IAMS, IMH, C | No | 4-year | No |
| 10 | Female | 22 | Black/ African American | Yes | 4 | IAMS, IMH, C | Yes | 4-year | Yes |
| 11 | Female | 20 | Asian/ Pacific Islander | Yes | 1 | IAMS | Yes | 4-year | No |
| 12 | Female | 25 | Asian/ Pacific Islander | Yes | 3 | IAMS, IMH, O | Yes | Second degree | No |
| 13 | Female | 22 | Hispanic/ Latino | No | 1 | IAMS, O | No | 4-year | No |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 14 | Female | 21 | Asian/ Pacific Islander | Yes | 6 | IAMS, IMH, C | No | 4-year | No |
| 15 | Female | 21 | Hispanic/ Latino | No | 8 | IAMS, IMH, C | No | 4-year | No |
| 16 | Female | 22 | Hispanic/ Latino | Yes | 2 | IAMS | Yes | 4-year | No |
| 17 | Female | 36 | Black/ African American | Yes | 6 | IAMS, IMH, C, O | No | Second degree | Yes |
| 18 | Female | 21 | Asian/ Pacific Islander | Yes | 1 | IAMS | No | 4-year | No |

*Note.* Inpatient acute medical surgical = IAMS; Inpatient mental health = IMH; Community setting = C; Ambulatory setting = A; Other = O

# APPENDIX G

# TABLE OF THEMES, SIGNIFICANT STATEMENTS, FORMULATED MEANINGS, AND PARTICIPANT NUMBERS

Appendix G

*Table of Themes, Significant Statements, Formulated Meanings, and Participant Numbers*

| Theme and Significant Statements | Formulated Meaning | Participant Numbers |
|---|---|---|
| Theme 1: Help Wanted | | |
| Difficulty in knowing what clinical data is important and where to even begin | The process of determining which clinical data should be gathered and considered was overwhelming, especially early in the program. | 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 18 |
| Needed assistance in using the data | Assistance from instructors, nurse, and clinical paperwork templates is important so students have a place to begin learning what clinical data is most important for each patient. | 1, 2, 4, 6, 7, 8, 11, 13, 14, 15, 17, 18 |
| Ability to know what is important changed as the semesters progressed | Every small piece of information seemed critically important early in the program, but the student's ability to discern what clinical data is important for each patient increased as the student was exposed to more patient and progressed in the program. Specialty areas such as women's health and mental health still required assistance in prioritizing clinical data because the student had minimal exposure to those types of patients and their data. | 1, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17 |

| | | |
|---|---|---|
| Instructors give more guidance early in the program and less as the student progressed in the program | Instructors guide students more in using data early in the program, but later on they expect and allow the student to handle to clinical data more independently. | 1, 4, 7, 9, 11, 14, 15 |
| Theme 2: Making Sense | | |
| Used to confirm understanding, thinking, and learning | Clinical data confirms learning and understanding as the data aligns with wat the student expects based on theoretical knowledge or based on patient norms and trends; the clinical data can also confirm that planned interventions are appropriate by providing evidence. | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 |
| Connects patient status, assessment findings, and lab test results | Look at the clinical data and compare and analyze to make connections across different findings such as health status, assessment findings, ordered medications, health history and more. | 1, 2, 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 |
| Compare clinical data across multiple patients to look for similarities and differences in the disease processes | A comparison of data across multiple patients helps identify similarities and differences among patients with the same disease process or similar disease processes. | 13 |

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| Clinical data is the connection between classroom, theoretical knowledge to real-life experiences in clinical | Clinical data represents the theoretical knowledge learned in the classroom and makes the connection between theory and real life experiences in clinical. | 2, 3, 5, 6, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18 |
| Sometimes the reality of clinical experiences and data appears disconnected from the theoretical and superficial knowledge learned in classroom | At times the real-life experiences in clinical and clinical data is disconnected from the theoretical, straightforward, superficial and less complex information learned in the classroom. | 6, 8, 9, 11, 12, 17 |
| Easier to understand and interpret the clinical data when caring for a patient with a condition already covered in lecture class | Preference for caring for a patient whose condition or disease process has already been taught in the classroom because of having a preexisting level of basic knowledge that gave confidence and provided enough understanding to know what questions to ask. | 2, 5, 6, 8, 9, 12, 13, 16, 18 |
| Clinical data in connects to class and helps answer questions on exams | Recall about clinical data and experiences using clinical data are used back in the classroom to help answer exam questions. | 4, 6, 7, 8, 9, 18 |
| Promoted critical thinking because need to be knowledgeable about the background and pathophysiology of the clinical data in order to analyze it and determine interventions | The students recognized that they had to be knowledgeable about the background and pathophysiology of a patient's condition in order to analyze the clinical data and determine interventions. | 5, 6, 8, 11, 14, 17 |

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| Real life clinical data is more complicated and multifaceted that what is in a textbook because real patients are more complicated and not static | Experiences with clinical data did not entirely line up with classroom knowledge because real-life patients and data are more complicated and more complex than what is in a textbook; real patients usually do not have only one thing wrong with them. | 6, 7, 8, 9, 11 |
| Belief that classroom theory doesn't truly teach critical thinking and decision making, but that student has to get in real situations and make decisions themselves | Using clinical data in clinical rotations is what actually develops critical thinking instead of learning theory in a classroom; students must get into real situations and make decisions with the data. | 6, 8, 9, 13 |
| Clinical data and the patients were simpler in the early semesters, but the data and the patients are more complex as the student progresses | Clinical data becomes more complex and multifaceted, with more things to consider, analyze and process as students care for more complex patients in later semesters as more complex courses are completed. | 6, 7, 13, 15, 17 |
| <u>Theme 3: Recognizing Usefulness</u> | | |
| Used to make decisions about interventions that are needed | Clinical data is analyzed to plan appropriate interventions for the patient by determining their personal normal and by helping to set appropriate goals for the patient. | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 |

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| May be used to determine that an intervention like a medication is not appropriate for the patient | Clinical data may also be used to determine that a particular intervention is not appropriate or should be held for the current time based on the patient condition. | 2, 6, 9, 12, 18 |
| Can be used to make a difference for the patient and correct a problem or prevent harm | By analyzing clinical data, the student determines what needs to be corrected to improve the patient's situation or prevent harm. | 1, 3, 4, 7, 9, 11, 13 16, 18 |
| Focus on the individual patient's data for decisions about individualized patient care | It is necessary to examine and analyze each patient's clinical data as unique and individual, according to each patient's norms, values and preferences, so that patient care is specific to each patient | 1, 3, 4, 6, 7, 8, 9, 11, 14, 15, 16, 17, 18 |
| Data is used continuously to develop goals, plan interventions and then to evaluate the patient response before completing another intervention | Clinical data is used cyclically as the data is analyzed to determine priorities, goals, and interventions; then more data is collected and analyzed to evaluate the effectiveness of the intervention and make further plans. | 2, 3, 5, 12, 15, 18 |
| Can use the data to plan patient education | Clinical data can be used to develop a variety of interventions, including an educational interventions and the considerations for each patient. | 8, 9, 14 |

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| Must be open-minded to a variety of interventions when using data, not just medications | Clinical data may indicate a variety of interventions, such as repositioning or ambulation, and is not just a treatment or medication. | 9, 14, 16 |
| Used data along with principles of prioritization of care to decide what must be done first | Clinical data cannot be viewed in isolation but must be processed and considered in context with principles of prioritization such as Maslow or ABCs. | 5, 7, 10, 12, 13, 14, 15, 17 |
| Consider both the current data and historical data and patient trends to prioritize care | Consider the current clinical data alongside the patient's historical data; consider norms and trends when making a decision about the patient's goals. | 5, 7, 8, 9, 11, 12, 15 |
| Examine and analyze the data to develop nursing diagnoses | Nursing diagnoses can be developed by examining the data, analyzing it, and determining patient problems that need to be corrected. | 4, 5, 7, 12, 13, 16, 18 |
| <u>Theme 4: Engaging in Communication</u> | | |
| Clinical data is not only what is communicated with team members but is also a tool for communication | Clinical data is what is communicated on the chart, but it is also a tool for communication with interdisciplinary team members and fellow nurses. | 4, 5, 6, 9, 11 |

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| Sometimes necessary to have a direct conversation with other members of the interdisciplinary team is data is not recorded on the chart | The chart is sometimes incomplete or unclear and direct conversations with other caregivers are sometimes necessary to clarify or communicate clinical data with the goal of excellent patient care. | 7 |
| Clinical data must be recorded so that appropriate communication can happen | If the chart is incomplete, appropriate communication between team members cannot happen, and patient care suffers. | 1, 4, 6, 7 |
| Data on the chart can help the nursing student know what to expect when interacting with the patient | Clinical data on the chart gives information about what to expect when interacting with the patient such as hearing status, vision, language etc. | 4, 6, 7, 8, 9, 10, 11, 13, 14, 16, 17, 18 |
| Picture the patient based on the clinical data in the chart and plan additional assessments to gather based on the data you already have | The clinical data in the chart gives clues about what to expect from the patient and also directs what additional data and focused assessment data to gather and watch for. | 2, 4, 6, 7, 10, 13, 15, 16, 17 |
| Gives clues to students to look for associated findings that often accompany certain clinical data | Existing data gives clues about associated findings to look for that often accompany diagnoses, patient findings, data such as vital signs. | 3, 5, 9, 10, 11, 13, 14, 15, 17, 18 |

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| Use the data to help know what patient response to interventions you might anticipate | Analysis of the patient's current and historical data will provide insight on what response to expect from currently planned interventions. | 3, 5, 7, 11, 13 |
| Important to always gather and interpret your own data rather than relying on others | Often, people rely on clinical data in the chart, but it is very important to gather and interpret your own data so you not only are learning but also verifying what others have done. | 2, 6, 7, 13 |
| Clinical data that is gathered is verified by the student with the nurse | Students verify the clinical data that they gather such as assessment findings and vital signs with the nurse to be certain that the nurse has the same findings and that the student collected accurate clinical data to be used in planning care. | 6, 10, 13, 14, 18 |
| Need to consider both objective and subjective data to develop a complete clinical picture | Consider objective and subjective data to develop the complete clinical picture of with the purpose of planning holistic care. | 2, 7, 9, 10, 12, 13, 14, 18 |
| Real clinical data helped reveal that patients and their preferences were all very different, even if they might look the same on paper | Patients might sometimes look the same in the chart or on paper until one really looks carefully and analyzes the clinical data; then one may realize that patients can have similar diagnoses and data but be very different in the care that they need. | 7 |

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| Clinical data was sometimes not accessible to the student on the EHR, which made it difficult to care for the patient | Learning is less and students are frustrated on days when the data isn't accessible or the student is too hurried to gather the needed data, so the day feels passive and as if they are not really learning anything. Some students are focused on paperwork and feel compelled to create clinical data to complete their paperwork rather than leave it blank, ask the nurse, or admit that they could not access or gather the data. | 5, 7, 8, 10, 11, 14 |
| Not allowed to document and practice communicating clinical data in the HER | Students may only be able to view the clinical data on the chart and do not have the opportunity to practice using the clinical data for documentation and communication in the EHR systems. | 1, 7, 11, 12 |
| Concerned that clinical data is often missing in the chart | Clinical data was often missing or incomplete; this was concerning since the complete picture of the patient was not available to plan care. | 1, 6, 8 |
| Subjective clinical data can have a major influence on interventions and prioritization, but it is often hard to find on the chart | Subjective clinical data is difficult to find on the chart, and objective data is often given preference even though subjective data can have a major impact on data analysis, prioritization and development of interventions. | 1, 2, 4, 7, 8, 10, 13, 14, 16, 18 |

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| Theme 5: Nurse as Key Player | | |
| Students ask the nurse questions about the clinical data that is gathered to increase learning | Students ask the nurse lots of questions about the clinical data, how it fits into the clinical picture and how it impacts patient care in order to promote learning and make the connections needed to learn. | 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18 |
| Experience with using clinical data is dependent on the receptivity and helpfulness of the nurse | The daily experience was largely dependent on the nurse to whom the student was assigned and the nurse's receptiveness and attitude towards having a student; if the nurse was negative towards the student, it was more difficult to ask questions needed to learn how to use clinical data. If the nurse was impatient or the student perceived that the nurse was irritated, it was more difficult to move forward with learning and using the data. | 1, 3, 4, 5, 6, 9, 11, 12, 13, 16 |
| Theme 6: Emotionally Charged | | |
| Distress when nursing staff did not respond to clinical data that was concerning | Participants felt distressed and concerned when staff collected data and ignored the need for intervention or determined that no intervention was needed; yet, the student felt strongly that a different decision should be made and was troubled. | 1, 2, 4, 7, 16 |

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| Worry about inexperience with using data, with patient care, and possibly harming the patient | Worry about inexperience with using data could be paralyzing because the student worried about harming the patient by missing something or using the data in an incorrect way. | 3, 4, 9, 10, 15, 17, 18 |
| Limited time to gather and analyze clinical data so some students will create it rather than gather it | Time was a factor in collecting and using the clinical data, and when running out of time, it was more convenient at times to create data to fit in the trends rather than collecting it or admitting that it had not been collected. | 5, 7, 8, 9 |
| Difficult to have confidence with interpretation of clinical data as a student, especially if immediate or emergent care may be indicated | Lack of confidence in using and interpreting the clinical data caused worry about whether or not immediate or emergent care might be indicated. | 3, 4, 9, 13, 14, 15, 17, 18 |
| Difficulty in discussing clinical data with the nurse due to shyness and embarrassment about lack of experience and knowledge | Shyness or embarrassment about lack of knowledge and experience hindered students from asking questions or asking for help, and this fear of interacting with the nurse or showing inexperience hindered learning. | 4, 6, 8, 9 |

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| Felt the pressure to meet expectations of staff, instructors and patients and do not want to disappoint anyone | Participants feel the pressure of wanting to please their instructor, their nurse, and their patient although they understand their own level of inexperience; there is a fear of being a disappointment and of making a mistake. | 1, 4, 17 |
| Felt positive that participant was able to help the patient improve or prevent harm | Experienced excitement and a sense of purpose when participant was able to initiate an action or participate in an intervention that positively impacted patient condition or comfort; recognized that they made a difference or could make a difference. | 1, 3, 11, 12, 15, 18 |
| Believed that they didn't actually use data but just followed nurse and focused on skills or paperwork | Believes that students don't actually use the data since they do not have decision-making authority for the patient's care, and a belief that students are there to simply do their clinical paperwork, observe the nurse, and complete skills. | 1, 12 |

# APPENDIX H

# TABLE OF VALIDATION OF FINDINGS:

# PARTICIPANT STATEMENTS

Appendix H

*Validation of Findings: Participant Statements*

| Participant # | Statements |
|---|---|
| 1 | It lines up.<br>Yep, that covers it. I have nothing to add. |
| 2 | Absolutely. You described it perfectly.<br>I can't think of anything to add. |
| 3 | Yes, it covers it.<br>Listening to you read that matches what I experienced.<br>I was reliving all of those feelings. |
| 4 | Yes, I think you got it right.<br>I don't have anything additional. |
| 6 | Yes, I think you described it very accurately.<br>I don't have anything else to add. |
| 7 | Yes, that was totally my experience.<br>I think you really covered it. |
| 10 | Yes, I think it represents everything from the beginning of J1 to the end that I'm about to experience.<br>I also think it addressed the variation in experiences due to different nurses and different facilities. |
| 11 | Yes, absolutely. You touched on everything I experienced.<br>I don't think you need to add anything. |
| 14 | Yes, that's it and it brings out the way I felt.<br>There's nothing else to add. |
| 15 | It fits.<br>I don't think you need to change anything. |

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| 16 | Yes, it really emphasizes how the classroom supports clinical data.<br>No, that’s how I experienced it. |
| 17 | Yes. I think you hit the nail on the head.<br>No changes that I can think of. |
| 18 | You covered it all: how we are worried about paperwork, and nervousness. How we want to save face.<br>There’s nothing. You didn't miss a beat. |

# APPENDIX I

# IRB APPROVAL LETTER

**Institutional Review Board**
Office of Research and Sponsored Programs
P.O. Box 425619, Denton, TX 76204-5619
940-898-3378
email: IRB@twu.edu
http://www.twu.edu/irb.html

DATE: January 13, 2017

TO: Ms. Marcia Straughn
Nursing

FROM: Institutional Review Board (IRB) - Denton

*Re: Approval for A Descriptive Phenomenological Study of Nursing Student Experiences of Clinical Data Use in Clinical Rotations (Protocol #: 19398)*

The above referenced study has been reviewed and approved by the Denton IRB (operating under FWA00000178) on 1/13/2017 using an expedited review procedure. This approval is valid for one year and expires on 1/13/2018. The IRB will send an email notification 45 days prior to the expiration date with instructions to extend or close the study. It is your responsibility to request an extension for the study if it is not yet complete, to close the protocol file when the study is complete, and to make certain that the study is not conducted beyond the expiration date.

If applicable, agency approval letters must be submitted to the IRB upon receipt prior to any data collection at that agency. A copy of the approved consent form with the IRB approval stamp is enclosed. Please use the consent form with the most recent approval date stamp when obtaining consent from your participants. A copy of the signed consent forms must be submitted with the request to close the study file at the completion of the study.

Any modifications to this study must be submitted for review to the IRB using the Modification Request Form. Additionally, the IRB must be notified immediately of any adverse events or unanticipated problems. All forms are located on the IRB website. If you have any questions, please contact the TWU IRB.

cc. Dr. Anita Hufft, Nursing
Dr. Fuqin Liu, Nursing
Graduate School