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Empirical testing of the Neuman Systems Nursing Education Model: Exploring the created environment of registered nursing students in Nevada's colleges and universities

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EMPIRICAL TESTING OF THE NEUMAN SYSTEMS NURSING EDUCATION MODEL: EXPLORING THE CREATED ENVIRONMENT OF REGISTERED NURSING STUDENTS IN NEVADA'S COLLEGES AND UNIVERSITIES

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ABSTRACT

Empirical Testing of the Neuman Systems Nursing Education Model: Exploring the Created Environment of Registered Nursing Students in Nevada's Colleges and Universities

by

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The purposes of this paper are to: (a) present the strategies and rationale for creation of a middle range nursing theory that is specific to nursing education, (b) to determine if propositions of the model are valid and appropriate to support further research based on the student-centered education model, and (c) to conduct initial research on the *created environment* of nursing students, which is one of two the primary constructs of the nursing education model. Use of the Neumans Systems Nursing Education Model (NSNEM), a student centered educational model, which is consistent with the Neumans System Model (NSM) provided the theoretical framework for creating initial research methods and empirical testing methods that allowed for further exploration of the concepts of the *created environment* and *prevention as intervention* in relation to the nursing education period of pre-licensure nursing students. The NSNEM focuses on the increasing complexity encountered in nursing education and nursing academia. Further, the NSNEM provided additional insights and clarity regarding the unique and symbiotic relationship that must be cultivated between nursing educators and nursing students in order for students to achieve successful outcomes in today's nursing education programs.

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CHAPTER 1

INTRODUCTION

Background and Significance of the Study

The Neuman Systems Nursing Education Model (NSNEM) is a middle range nursing education theory derived from, and consistent with the Neuman Systems Model (NSM). The purpose of this research paper is to initiate preliminary research based the basic constructs of the NSNEM that are specifically applicable to nursing education. It is proposed that use of the NSNEM provides the theoretical framework for creating research methods and empirical testing methods that will allow for further exploration of the concepts of the *created environment* and *prevention as intervention* in relation to nursing education. The NSNEM focuses on the increasing complexity encountered in nursing education and nursing academia. Further, the NSNEM provides additional insights and clarity regarding the unique and symbiotic relationship that must be cultivated between nursing educators and nursing students to achieve successful in nursing education programs and eventual safe efficacious practice.

Statement of the Problem

The complexity nurse clinicians face when planning meaningful interventions for their clients is similar to the complex situations and challenges nursing educators encounter in intervening to meet the diverse needs of their nursing students. As such, just as the basic tenets of the NSM can provide the needed theoretical basis and structure for responding to the challenges of complex and diverse client groups; development and integration of the Neuman Systems Nursing Educational Model (NSNEM) into nursing academia has the potential to help give clarity to difficult academic challenges and to provide a framework for both novice and experienced nursing educators to use when

meeting the individual needs of students from diverse backgrounds who are enrolled in nursing programs.

Statement of Purpose

The overall purpose of this research study is to initiate preliminary research based on constructs of the Neuman Systems Nursing Education Model (NSNEM) that are specifically applicable to nursing education. The NSNEM provides the theoretical framework for creating research methods and empirical testing method the concept of Created Environment (CE) of the registered nursing students. Specifically the study is designed to identify components of CE for registered nursing students. Discovery and identification of these factors that define a nursing student's CE and will add to the body of knowledge in nursing science and nursing education.

In the NSM conceptual model, the client is the central, focal, and definitive point of the model; and the natural place for the caregiver to begin assessment, planning, intervention, and evaluation of the adaptive processes that can aid the client. Likewise, in the NSNEM, the student is central in the framework and will be considered the focal and defining "starting off" point of the educational model and for this initial research using the NSNEM. The NSNEM will assist nurse educators in planning interventions to prepare and assist nursing student to achieve successful academic and clinical outcomes and to eventually be successful in passing the National Council Licensure Examination (NCLEX) and safe efficacious practitioners.

Summary

The development of a middle range nursing education theory that is derived from the Neuman Systems Model provides a mechanism for further exploration and research into the factors that support or detract from both nursing student and nursing educator success

and efficacy. Specifically, in the NSNEM, students are viewed as individuals having unique learning and personal needs that can be addressed through further research into their internal, external, and the created environment of nursing students. In the CE the nursing educator is viewed as the "caregiver" and as a partner in creating interventions that foster and sustain student success.

Further, the NSNEM allows for further research into the relationship between stressors and each nursing student's flexible lines of defense as a measure of their ability to learn and successfully adapt and flourish as nursing students. Additionally, the NSNEM provides a specialized focus and role for the nursing educator that allows operationalization of the constructs of prevention as intervention in an academic setting, to promote students to achieve successful outcomes during the period of their formal nursing education. Just as the NSM has consistently provided a well-described framework for directing patient care with the client as the central focal point of the model (Neuman & Reed, 2007); it is proposed that the NSNEM middle range theory provides a mutually benefical and wholistic framework for learners and students to: (a) place the student as the focal point of the model, (b) provide a systematic way to study and improve student-teacher relationships in nursing education, and (c) provide the needed theorectical concepts for further research on creating optimal academic outcomes for today's nursing students.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Nursing Theory

Over the last century, nursing has made important and meaningful achievement in the last century that has lead to the recognition of nursing as an academic discipline and a profession. A move towards theory-based practice has made contemporary nursing more meaningful and significant by shifting nursing's focus from vocation to an organized profession (Ingram, 199; Silva,1986). The need for knowledge-base theory to guide professional nursing practice had been realized in the first half of the twentieth century and many theoretical works have been contributed by nurses ever since; first with the goal of making nursing a recognized profession and later with the goal of delivering care to patients as professionals (Craig, 1980).

The theoretical works in nursing can be viewed and researched in the following metaparadigm constructs: (a) the human being or person, (b) environment, (c) health, and (d) nursing (Fawcett & Garrity, 2009). The metaparadigm level is the most abstract of the theoretical levels in nursing and describes the subjects most important to nurses and the profession of nursing. The second level is nursing philosophies, and the third level is conceptual models and grand theories. The fourth and least abstract level are nursing theories and middle range theories (Smith & Liehr, 2008; Walker & Avant, 2005). All of these theoretical levels have importance and add meaning and insight into how nursing and nursing education must function to bring about the best student outcomes and subsequently patient outcomes.

Theories are derived from concepts and abstractions, which provide ideas about a phenomenon. A nursing theory provides a meaningful perspective from which to view

and consider the complexity of nursing situations and how to appropriately meet and assist patients to meet their health and care goals (Raudonis & Acton, 1997). Nursing theory can also provide a framework for assisting nurses to understand and interpret the empirics, ethics, personal knowledge, and esthetics of nursing (Chinn & Jacobs, 1987). Nursing theory allows nurses to code, assimilate, and identify patterns in information and to attempt to bridge the gap between what is considered actual evidence. A nursing theory is a group of related concepts that provides a framework for guiding nursing practice and is a compilation of concepts, definitions, relationships, and assumptions or propositions derived from a nursing model from another related discipline and has the purpose of providing a systematic way to look at a specific nursing phenomena (Ingram, 1990; Fawcett & Garrity, 2009; Walker & Avant, 2005). Nursing theory can also provides a framework for examining the interrelatedness of nursing concepts for the purpose of describing, explaining, and predicting the phenomena (Chinn, & Jacobs, 1987; Tomey & Alligood, 2002). Theories are derived through two principal methods: 1. deductive reasoning. 2. inductive reasoning .

Nursing theorists use both of these methods and nursing theory attempts to describe or explain the phenomena (processes, occurrences and events) which make up the core of what nursing is (Fawcett & Garrity, 2009).

Further, nursing theories are important because they help define what nursing is, provide foundational support for gathering and creating nursing knowledge, and providing direction for nursing's best move into the future (Neuman & Fawcett, 2002; Smith & Liehr, 2008). Additionally, theory can help us understand what is already known, and know what knowledge is needed in the future. Nursing theory can also help define concepts that are difficult to define and can give a new perspective on how to

research these concepts (Walker & Avant, 2005). Generally, theories are logical, help connect concepts into a framework that provides a new way of looking at a particular phenomenon, are generalizable, and have researchable constructs.

Conceptual and theoretical nursing models help to provide knowledge to improve practice, guide research and curriculum and identify the goals of nursing practice. It is important that the development of nursing knowledge continues and that the knowledge gained applied continues to incorporate theory- based concepts to help guide and direct nursing practice for the profession. Additionally, the continued use of theory based nursing needs to be used to also develop and support the continued development of theory and testing.

Middle Range Theory

Middle range nursing theories are broadly described as a set of ideas and concepts that can be tested empirically (Cody, 1999; Fawcett & Garrity, 2009; Lasiuk & Ferguson, 2005;Smith & Liehr, 2008) and are more "concrete and narrower than the grand theories" (Fawcett, 2005 p.35). Nursing literature reveals that there may be explicit relationships between the grand theory and the derived middle range theory and that the concepts may be developed from the recognizable underpinnings of the actual theory or the underpinnings may be more centered at the paradigm level of the theory (Smith & Liehr, 2008). Fawcett (2005) further describes three approaches that have been used in conjoining conceptual models and middle range theories. The first is deriving the middle range theory directly from the grand theory; the second approach is to link an existing middle range theory to a conceptual model of nursing; and the third approach is to adapt a non-nursing discipline's middle range theory to a conceptual nursing model (p.37).

Fawcett and Garrity (2009) suggest that the usefulness and appropriateness of middle

range theory can be ascertained by determining if the middle-range theory is "socially significant" and "theoretically significant."(p.76) As such, when considering those two criterions, it becomes evident that there are theoretical and socially significant reasons to utilize middle range theory to examine and guide nursing education practice. First, if considered collectively, nursing students comprise a significant social group with specific physiological, socio-cultural, psychological, emotional, and spiritual needs. When a nursing student is being educated, the teaching and learning are not centered only in academic and theoretical knowledge. Clinical competence, ethical behavior, and safety issues must also be addressed. The social symbiosis of the student and teacher relationship must be examined in terms of how well the student is able to integrate complex constructs from a variety of disciplines. As such, student needs must be addressed and nursing curricula designed to produce the best academic and personal outcomes for these students.

The NSNEM is theoretically significant in that it provides a mechanism for educators to view the complexity of educating a nursing student in the 21st century. It provides a perspective to view the student as a client, and to view the forces that either support successful adaptation as a nursing student, detract or even prevent a student from becoming a nurse. In addition to providing a new perspective from which to view nursing student, the model also provides the theoretical support for how a nursing educator can intervene on three levels to help a student achieve success as a nursing student.

The NSNEM is a proposed middle range theory and conceptual model that is most assuredly linked with the grand theory/model at the theory level. The NSNEM includes provisions that closely mirror the verbiage, definitions, and basic conceptual model used to demonstrates the concepts found within the NSM. Gigliotti (2003), Neuman

and Fawcett (2004), and August-Brady (2000) have all supported the use of the NSM as a theory which supports the further development of middle range theories from the basic conceptual model. Smith & Liehr (2008) assert that "each middle range theory has its foundations in paradigmatic perspective" (p. 5), or in other words human beings, environment, nursing, and health must be addressed.

Chinn and Kramer (2004) and Fawcett and Garrity (2009) both discuss the importance and necessity of utilizing the concepts of *semantic clarity* and *semantic consistency* in the development of middle range theory. Semantic clarity and semantic consistency require that the terms and concepts used in the middle range theory are easily understood, and that the conceptual and operational definitions are used consistently and appropriately. The fact that the NSNEM is derived from and is consistent with the NSM helps to ensure that the requirements of semantic clarity and semantic consistency are met.

The development of the NSNEM, as a middle range theory of nursing education, will allow for further empirical testing of the concepts of the NSM in terms of "student as client" and "educator as caregiver." In much the same way patient and client responses and outcomes are measured on a contiuum; student adaptation, resiliency,efficacy, hardiness, and academic succesws will be meaured on a contiuum. It is proposed that the use of the NSNEM will provide the same similar structure and understanding to the discipline of nursing education in the 21st century, as has the NSM has for the last 40 years in nursing practice.

Educational Theory and Nursing Education

Theoretical knowledge about learning and education can equip nursing educators to draw on concepts from numerous academic professional disciplines including

anthropology, sociology, and psychology to interpret the complex realities of today's nursing classrooms. Nursing educators who lack educational theoretical background are left to deal with complexities of today's nursing world using only the tools and education they have, which unfortunately is usually based only on nursing theory, and usually not on principles of education and learning.

There are many who will argue that theories are not useful and have no practical application in the "real world of nursing." This often happens not because the theories are wrong or unworkable, but because nursing education programs usually do not create or provide opportunities to apply theory to practical situations. As John Dewey wrote in his book *The Question of Certainty*, "Nothing is so practical as a good theory." The truth however is that most educational theories are practical and can help nursing educators gain the knowledge and experience they need, because they are based on sound and tested ideas and can promote better student learning outcomes. Ideally, nursing education driven by theory will prepare nurses to perform not only technical tasks but will also help them to synthesize knowledge and provide safe and efficacious care that will improve patient outcomes (Biley, 2005).

Nursing education will be strengthened by examination of educational theories and how integration of concepts from these theories into academia and practice can provide a template for today's nursing educators and clinicians to respond in positive ways to the challenges of teaching.

There are four philosophies of education and their resulting educational theories that have contributed to the traditional methods utilized to teach nursing students. These philosophies and methods have direct application to nursing education. These four philosophies are (a) perennialism, (b) essentialism, (c) romanticism, and (d) progressivism

and are predominant in American educational systems. Each of these four philosophies describes a belief about how people are, how they should live their lives, and how students should be educated. These philosophies are generally either subject- centered or student- centered. In subject- centered learning, also known as teacher centered education; educators focus on teaching what must be taught and that there are certain ideas and knowledge that must be transmitted to the student (Ryan & Cooper, 2007).In student- centered learning, essentially, "learners are treated as co-creators in the learning process, as individuals with ideas and issues that deserve attention and consideration" (McCombs & Whistler, 1997, p.5). Each of the philosophies has contributed to the how nursing students have traditionally been educated and have direct implications for how teaching and learning in nursing will be addressed in the future.

Perennialism was developed primarily from the writings of Plato and from the writings of Thomas Aquinas (Gutek, 2005) and is one of the philosophies that are considered a subject/teacher- centered philosophy. They suggest that education should be centered on traditional subjects and that learning should provide insight into the human condition (Cohen, 1999; Cruey, 2006). For perennialists, education is teacher- directed and conservative instructional approach is preferred. Perennialists would argue that education must be designed and constructed to be rigorous and demanding.

Interestingly, most nursing programs are probably designed with many of the basic tenets of perennialism. When the nursing educators hear this, they always seem to deny it, but the proof is quite apparent in how and what is taught and seen in a majority of nursing classrooms. Consider for a moment what a traditional teaching and learning situation in nursing might look like. In the traditional nursing classroom, there is usually a nursing instructor (often referred to in academia as a "lecturer") who is in the front of the

classroom espousing and dispensing the facts and knowledge that must be learned for a nursing student to successfully pass their national licensure exam. Critics of perennialism suggest that it is far too "Eurocentric" and perpetuates the desire of the teacher to make everyone the same. It is "cookie cutter" nursing education and based on a model that is longer functional or appropriate. It is likely that nursing educators would argue that they are following an established pattern that has always served them well and generally guaranteed that their students pass their national licensing examination.

If Eurocentric in nature, then it is fair to assume that perennialism will not adequately meet the needs of diverse nursing students. How could it? Its basic premise is simply to produce students who are all the same. How is gender addressed? How are racial and cultural differences addressed? How are the learning needs of slower learners or exceptionally gifted learners addressed? Well, to be perfectly honest, while there is a great push in the nursing education community to embrace cultural and gender diversity, there still is a disproportionately high number of white female students. Conformity to the established norms takes precedence over everything and if students cannot conform, they are dismissed.

The second philosophy is essentialism. Essentialism has its roots in Plato's idealism and Aristotle's Realism Theory (Gutek, 2005). The essentialists believe that there is a core of information and skills that a person must have. Interestingly, the essentialist are not too terribly interested in teaching methods, rather they focus on the end result or outcomes, which to them is proof of knowledge acquisition (Ryan & Cooper, 2007). Unlike, the perennialists who espouse only the teaching of traditional learning and teaching, the essentialists leave more room for scientific and technical thought to be added.

Educational essentialism can also be considered a subject/teacher centered theory.

Additionally, essentialism is at the core of standardized testing practices such as SAT/ ACT testing, NCLEX, and even the heavily maligned "No Child Left Behind" Act (Ryan & Cooper, 2007). Essentialists believe that students need to be learners, need clearly defined rules, discipline, and pressure to insure learning is occurring appropriately and that teachers must provide education that is thorough and rigorous. An essentialist program will also provide education that proceeds from less complex skills to more complex and allow for more teaching creativity to find ways to engage their students to learn, but not student creativity (Cohen, 1999; Cruey, 2006).

Many nursing programs also follow the basic ideas of essentialism. The curricula from many programs are designed on the same premises of rigor, thoroughness, proceeding from less to more complex concepts. Teaching and learning in the essentialist nursing classroom is very linear and also follows a rigid and set pattern. In addressing the needs of diverse student groups, there is does not appear to be much room for individualism or for meeting the special needs of learners. Like its perennial counterpart, conformity rather than individuality seems to be a key construct of this philosophy.

In contrast to perennialism and essentialism, the next two philosophies, romanticism and progressivism, are learner- centered and focus on helping the student find the knowledge and answers they need, instead of being focused on a static curriculum and teacher focused lectures. The underpinnings of these philosophies are that a well- educated student does not have to have a finite body of knowledge: rather, a well-educated person will be able to function well in society and life because they can create their own meaning from life experiences.

Romanticism is based on the writings of Jean-Jacques Rousseau (Sharpes, 2002). Romantics consider the student more important than the needs of society. Romantics

espouse the ideas that education is a natural process and that student curiosity should guide learning. Learning is also individualized, self-directed, and self-guided (Ryan & Cooper, 2007).

Romanticism is not particularly well- suited to nursing when taken in totality; however, when considered as a way to facilitate individual learning experiences and to meet some of the special needs of diverse nursing student populations or to provide activities that could look at a certain phenomena from a multicultural perspective, romanticism may have some very salient possibilities.

Progressivism is a relatively new philosophy of education. It has drawn from the works of Dewey and Rousseau (Sharpes, 2002). The basic ideology of progressivism is that because the world we live in is in a constant state of flux, knowledge must continually be redefined and rediscovered to keep up those changes (Ryan & Cooper, 2007). Progressive education always begins with the student rather than the curriculum and the teacher then helps the student develop strategies to solve problems. Teaching methods are an integral part of progressivism; problem solving activities, group work and collaborative learning experiences are commonly utilized in the classroom. Central to progressivism is the idea that education should make society better, and for this to happen people must work together to solve problems (Gutek, 2005). Clearly, progressivism envelops the ideology foundations that can help met the needs of diverse student nurse populations. The needs and strengths of all students are explored and utilized for the betterment of the class as a model for further societal participation.

Interestingly, both progressive and essentialist educators profess that their particular approach is the true American philosophy of education (Ryan & Cooper, 2007). One could make the argument that they both are, but each reflects different aspects that

are encountered in today's educational milieu. Progressivism represents the ideals of antiauthoritarianism, experimentalism, and visionary educational practices. Essentialism embodies the practical, structured and task-oriented side of education.

In actuality, to attract and educate the best nursing students, regardless of race, ethnicity, or intellectual ability, embracing what is best in all of these theories will allow the 21st century nursing educators to meet both educational needs of their students and to provide society with excellent nurse who can provide excellent nursing care to all populations of clients. If the profession of nursing is truly as holistic and all encompassing as it professes to be, then it only seems plausible that creating a symbiotic curriculum that integrates both student- centered and subject centered theories will provide a broad enough foundation to meet the needs of nursing students in the future.

With the emergence of the study of nursing education as a discipline in and of itself, it has become even more apparent that it will be necessary for nursing and education theories to be utilized, researched, and the possibility exists that as nursing education evolves as a specialty discipline, there will be a need for nursing education theory development. In order for this to happen, nursing educators will need to continue to study and utilize educational theories and philosophies and then merge them with accepted nursing theories. The following discussion includes some examples of selected educational theories and provides examples of how nursing education could use the basic tenets of each theory to support some facet of nursing education.

John Comenius's theory included emphasizing sensory experiences in learning, appropriate education at the correct developmental stage, that schools should be joyful and pleasant places, and that one acquires knowledge of the world though our senses (Gutek, 2005;Sharpes, 2002; & Ryan & Cooper, 2007). Perhaps nursing education might

be improved if nursing educators embraced the idea of making nursing education joyful and pleasant.

John Locke was one of the first educational theorists who pioneered the ideas of inductive reasoning and the use of scientific method. He also espoused the concept that learning proceeds in a gradual process and that in order to teach, teachers must first increase their own knowledge and that increase of knowledge will allow them to deliver that knowledge to others (Gutek, 2005; Ryan & Cooper, 2007). In today's world evidence -based practice has become a necessity and it is largely based on the scientific method. Nursing educators need to be able to appreciate both educational theories and also scientific theories (Fawcett & Garity, 2009). Additionally, Locke's theory would support higher education levels for nursing educators.

Johann Pestalozzi stressed in his theory that that students learn through their senses and concrete situations. He also was unique in that he advocated love and unconditional acceptance of his students. Additionally, he stressed that schools should be like warm and loving homes (Gutek, 2005; Sharpes, 2002). While it may not be possible to love nursing students in the same way that one's own children can be loved, it is possible to create learning environments where students are always respected and their ideas and thoughts are respected. It may not be possible to re-create classrooms that are home- like, but it is possible to create that same kind of classroom ambience where it is comfortable to learn and where students possess the academic and knowledge tools they need to become nurses.

The German theorist Johann Herbart believed that chief aim of education was moral development and ethics. Additionally he developed the concept of curriculum correlation and he believed that each subject should be taught so it relates to other subjects (Ryan

& Cooper, 2007). In today's politically correct world it would be refreshing for nursing programs to embrace the exploration of moral development and moral reasoning to the same extent that we have included the study of ethics. Some nursing programs have embraced the incorporation of comprehensive and integrated curricula, however most nursing programs develop their program threads and curriculum on conceptual frameworks, which meet accreditation requirements. However, nursing programs do not focus on creating a program based on integration of philosophical concepts and patterns of knowing, that tie the programs courses together in a much more cohesive whole.

Freidrich Froebel introduced kindergarten, with its mission to cultivate the child's self- development, self- activity, and socialization to the world (Ryan & Cooper, 2007). Froebel also believed that teachers should be the model of human dignity and cultural values. His theory embraced the inclusion of songs, stories, and games because they stimulated the child's imagination and transmitted culture (Sharpes, 2002). Nursing educators can certainly learn from the simplistic ideas Froebel taught. Teaching nursing is not like teaching math. Nursing educators teach not only what is in the curriculum but should also teach by example. It is necessary to model the kind of behavior that we generally want our students to exhibit. Nursing educators teach their students to have a reverence for human life, cultural differences, and human dignity by their actions both in the classroom and in the clinical setting. Additionally, the use of creative teaching methods can certainly enhance learning in a nursing classroom and enhance student learning.

Maria Montessori's educational theory was established on the principle of allowing children freedom to explore within a carefully designed environment (Sharpes, 2002). It also included the provision that curriculum should focus on three types of experiences:

practical, sensory and formal studies. Her theory also required that teachers have considerable training and that they should implement a structured curriculum (Gutek, 2005). Nursing educators can learn principles of holistic teaching from the Montessori Method. It could be especially useful to use the basic tenets of Montessori's theory for clinical application and for the for the relatively new inclusion of high fidelity patient simulation in nursing education. In essence, clinical nursing education has been the same for the past half century. Perhaps adding creativity and inquiry based learning within a structured learning situation would help nursing students learn to synthesize complex nursing concepts in a new and more meaningful paradigm.

All of these theorists created ways of knowing that gave meaning to their work. These are just a few examples, and with the evolution of nursing education as its own specialty practice, there are probably concepts and theoretical constructs that nursing educators could pull and incorporate into their work from these education theories and philosophies. It certainly is apparent that nursing educators can learn from past theorists, incorporate ideas into their present teaching situations, and utilize principles derived from them to improve their teaching and their students' learning. Further, these theorists also believed strongly enough in their work and their educational beliefs to record them and to make their views known to the world. In similar fashion, nurse educators need to look at creating theory specific to nursing education and to leave the same legacy to the educators that will follow them.

The great challenge for nursing educators today is to learn from these great theorists, get with the "proverbial" program, and create new meaningful nursing educational theories that address the problems in today's nursing classrooms and practice settings; and then most importantly, they must share them with the world.

CHAPTER 3

THEORETICAL FRAMEWORK

The Theoretical Framework Guiding This Study

The Neuman Systems Model (NSM) has been used to provide the needed theoretical basis and structure for responding to complex nursing practice situations since its inception almost 40 years ago (Neuman & Fawcett, 2002). The NSM was created to provide a structural foundation for assessing and integrating information about individuals and how to aid them in maintaining and improving their health status in a multi-contextual and holistic manner. The basic constructs found in the NSM provide a conceptual framework in which a caregiver can most appropriately consider the uniqueness and individuality of every client, examine the environment in which the client exists and adapts, and then plan meaningful and caring interventions.

The Neuman Systems Model

In order to understand the need for a middle range nursing theory of nursing education based on the NSM, it is important to briefly visit the basic tenets of the Neuman Systems Model (Figure 1). The NSM is considered to be a model that directly embraces the concepts of client wholism and wellness (Ume-Nwagbo, DeWan, & Lowry, 2006), the concepts of stress and the clients' reactions to stressors (Skalski, DiGerolamo, & Gigliotti, 2006), and the concept of client adaptation through use of the "flexible lines of defense " (Neuman, 2002; Neuman & Fawcett, 2002).

The client in the Neumans System Model is viewed as an open system in which repeated cycles of input, process, output and feedback constitute a dynamic organizational pattern. The concept of the "client" may represent an individual, a group, a family, a community or an aggregate of people. Exchange with the environment are reciprocal,

both the client and the environment may be affected either positively or negatively by the other. The system may adjust to the environment to itself. The ideal environment is when the client achieves optimal stability. Within this open system, the client system will attempt to maintain a balance among the various factors, both within and outside of the system, especially when there is a disruption in the homeostasis of the client system environment.

Within all concepts in the model, the five system variables are simultaneously and comprehensively considered (Neuman & Fawcett, 2002). Neuman describes these client force disruptions as stressors and views them being able to exert either positive or negative effects. Reaction to the stressors may be possible or actual with identifiable responses and symptoms.

In the model, each layer, or concentric circle, of the Neuman model is made up of the five person variables, which are the:

1. Physiological variables which refers to the entirety of the biophysicochemical structures and functions of the body.
2. Psychological variables refer to the mental processes and emotions.
3. Sociocultural variables which refers to relationships; and social/cultural expectations and activities.
4. Spiritual variables which refers to the influence of spiritual beliefs.
5. Developmental variables which refers to those processes related to development over the lifespan.

The NSM consists of a basic structure or core, and the accompanying energy sources that provide for the basic survival of the person/client. The basic structure, or central core, is made up of the basic survival factors that are common to the species (Neuman,

1995). These factors include: system variables, genetic features, and the strengths and weaknesses of the system parts. Examples of these may include hair color, body temperature regulation ability, functioning of body systems homeostasis, cognitive ability, physical strength, and value systems. The person's system is an open system and therefore is dynamic and constantly changing and evolving. Stability, or homeostasis, occurs when the amount of energy that is available exceeds that being used by the system. A homeostatic body system is constantly in a dynamic process of input, output, feedback, and compensation, which leads to a state of balance.

Protective circles envelope the basic structure/core and these circles consist of layers that are activated or are energized when a stressor invades the system. These layers consist of the *lines of resistance*, *normal line of defense*, and *flexible line of resistance* and these conceptual representations reflect the range of the system's abilities to protect the individual from the negative impact of stressors.

The outer- most solid circle is referred to as the *normal line of defense* and represents the individual's normal state of wellness or the usual state of adaptation, which the person has maintained over time. The normal line of defense represents system stability over time. The normal line of defense can change over time in response to the environment.

The broken line outside the normal line of defense is the *flexible line of defense*. It acts as a buffering or protective mechanism to the normal line of defense and the core structure. If the flexible line of defense fails to provide adequate protection to the normal line of defense, the lines of resistance become activated. The flexible line of defense acts as a cushion and is described as accordion-like as it expands away from or contracts closer to the normal line of defense. The flexible line of defense is dynamic and can be changed/altered in a relatively short period of time. Ideally, the flexible lines of defense

will prevent stressors from invading the client system by blocking the stressors before they are able to invade the normal line of defense. When it is expanded, a greater degree of protection is provided. When it is narrowed and therefore pulled closer to the normal line of defense, its ability to protect is diminished.

The broken circles surrounding the basic structure or core are the *lines of resistance*, are defined as the reactions that occur within the client system when a stressor succeeds in penetrating the normal line of defense. Their function is to protect the basic structure and provide equilibrium to the client system (Memmott, Marrett, Bott, & Duke, 2000). The lines of resistance protect the basic structure and become activated when environmental stressors invade the normal line of defense. Example: activation of the immune response after invasion of microorganisms. If the lines of resistance are effective, the system can reconstitute and if the lines of resistance are not effective, the resulting energy loss can result in death.

The Neuman Systems Model looks at the impact of stressors on health and addresses stress and the reduction of stress (in the form of stressors). Stressors are capable of having either a positive or negative effect on the client system. A stressor is any environmental force that can potentially affect the stability of the system and may be:

1. Intrapersonal - occur within person, e.g. emotions and feelings.
2. Interpersonal - occur between individuals, e.g. role expectations.
3. Extra- personal - occur outside the individual, e.g. job or finance pressures.

The individual functions within three interacting and relevant environments. These environments must be considered when examining the individual. These environments are the internal environment, the external environment, and the created environment. In the NSM, the individual is in constant and dynamic interaction with the environment.

The interactions between the individual and environment are always influenced by each other. The overall goal for optimal individual wellness and positive adaptation is to achieve optimal system stability and balance. The environment is seen to be the totality of the internal and external forces which surround a person and with which they interact at any given time. These forces include the intrapersonal, interpersonal and extra personal stressors, which can affect the person's normal line of defense and so can affect the stability of the system. The *external environment* exists outside the client system.

The *internal environment* exists within the client system and in the NSM is defined as being all the intrapersonal factors and stressors that can influence the system. The *external environment* exists outside the client system and consists of all the factors, stressors, and influences that are interpersonal and extra-personal in nature. Neuman also identified a *created environment* which is an environment that is created and developed unconsciously by the client and is symbolic of system wholeness. The created environment as described by Neuman (Neuman & Fawcett, 2002) is a unique concept in the NSM. It describes or demonstrates the complexity in which nursing may consider the interconnectedness of all personal variables in a client's internal and external environment and then help the client by making appropriate interventions, especially in the client's environment.

In the NSM, prevention is described as having three levels of prevention, where the caregiver can intervene to assist the individual/client to maintain, return, or improve their health status. These three levels of prevention are described as primary, secondary, and tertiary levels of prevention (Neuman & Fawcett, 2002).

As defined in Neumans model, prevention is the primary nursing intervention. Prevention focuses on keeping stressors and the stress response from having a detrimental

effect on the body. Primary prevention occurs before the system reacts to a stressor. On the one hand, it strengthens the person (primarily the flexible line of defense) to enable him to better deal with stressors, and on the other hand manipulates the environment to reduce or weaken stressors. Primary prevention includes health promotion and maintenance of wellness (Neuman & Fawcett, 2002).

Secondary prevention occurs after the system reacts to a stressor and is provided in terms of existing systems. Secondary prevention focuses on preventing damage to the central core by strengthening the internal lines of resistance and/or removing the stressor.

Tertiary prevention occurs after the system has been treated through secondary prevention strategies. Tertiary prevention offers support to the client and attempts to add energy to the system or reduce energy needed in order to facilitate reconstitution (Neuman & Fawcett, 2002).

The concepts of reaction and reconstitution are also included in the model and reflect how the individual can increase in energy that occurs in relation to the degree of reaction to the stressors. Reconstitution is the increase in energy that occurs in relation to the degree of reaction to the stressor. Reconstitution begins at any point following initiation of treatment for invasion of stressors. Reconstitution may expand the normal line of defense beyond its previous level, stabilize the system at a lower level, or return it to the level that existed before the illness (Neuman & Fawcett, 2002).

Reconstitution is a concept that demonstrates the degree of reaction that begins after interventions are made to intervene to any stressors. Reconstitution also includes the concept that the normal lines of defense may be extended further from its previous level, can be indicative of client stabilization at a lower level, or return to the level of wellness that existed before the stressors (Lowry, 1998; Neuman & Fawcett, 2002). Neuman sees

health as being equated with wellness. She states, health for the client is equated with optimal system stability, which is the best possible wellness state at any given time (Neuman & Fawcett, 2002, p.23)". As the person is in a constant interaction with the environment, the state of wellness (and by implication any other state) is in dynamic equilibrium, rather than in any kind of steady state. Neuman proposes a wellness-illness continuum, with the person's position on that continuum being influenced by their interaction with the variables and the stressors they encounter. The client system moves toward illness and death when more energy is needed than is available. The client system moves toward wellness when more energy is available than is needed (Neuman & Fawcett, 2002).

Neuman sees nursing as a unique profession that is concerned with all of the variables which influence the response a person might have to a stressor (Neuman & Fawcett, 2004). The person is seen as a whole, and it is the task of nursing to address the whole person. Neuman defines nursing as actions, which assist individuals, families and groups to maintain a maximum level of wellness, and the primary aim is stability of the patient/client system, through nursing interventions to reduce stressors. Neuman further mentions that, because the nurse's perception will influence the care given, then not only must the patient/client's perceptions be assessed, but so must those of the caregiver (nurse).

The basic constructs found in the NSM (see Figure 1.) provide a conceptual framework in which a caregiver can most appropriately consider the uniqueness and individuality of every client, examine the environment in which the client exists and adapts, and then plan meaningful and caring interventions (Neuman & Fawcett, 2002).

Further, these same constructs provide the needed structure for development of the

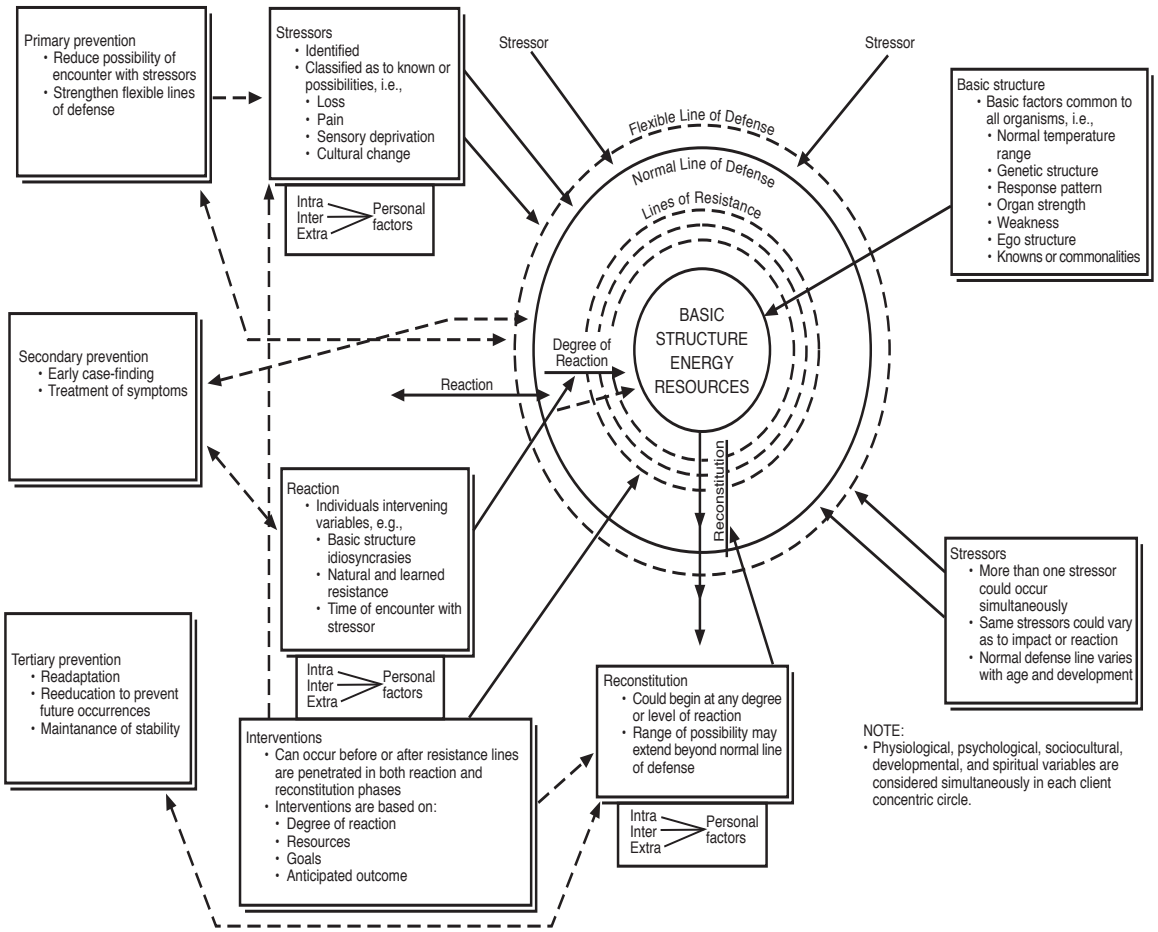

Figure 1. The Neuman systems model

Note: From The Neuman Systems Model (p. 13) by B. Neuman and J. Fawcett, 2002, Upper Saddle River, NJ: Prentice Hall.

Neuman Systems Nursing Education Model (NSNEM); a middle range nursing theory of nursing education built upon the foundational underpinnings and substructions of the NSM .

The National League for Nursing (NLN) has clearly set forth the case and rationale for the recognition of nursing education as a specialty area and a distinct nursing focus area that has its own agenda and research areas of need. It certainly would seem reasonable that along with creation of nursing education certification, creation of nursing

education standards of practice, creation of nursing education-specific policy statements, and creation of evolving faculty development studies, that creation of a middle range nursing education theory would be an appropriate next step in the evolution of this discipline.

The concepts found in the NSM also provide the needed structure for creation of a holistic middle range nursing theory that is able to address the increasing complexity encountered in nursing education and nursing academia. This paper will provide the rationale for development of the Neuman Systems Nursing Education Model (NSNEM); a middle range nursing theory of nursing education built upon the foundational underpinnings and substructions of the NSM. The NSNEM provides an exciting new theory from which to learn more about nursing students, nursing educators, and how to best create a symbiotic relationship in which both can not only function, but can also thrive.

The Neuman Systems Nursing Education Model

The complexity nurse clinicians face when planning meaningful interventions for their clients is similar to the complex situations and challenges nursing educators encounter in intervening to meet the diverse needs of their nursing students while assuring the graduate meets the standard for safe and ethical nursing knowledge. As such, just as the basic tenets of the NSM can provide the needed theoretical basis and structure for responding to the challenges of complex and diverse nursing client groups; development and integration of the Neuman Systems Nursing Educational Model (NSNEM) into nursing academia has the potential to help give clarity to difficult academic challenges. It also provides a framework for both novice and experienced nursing educators to use to appropriately meet the individual needs of diverse student

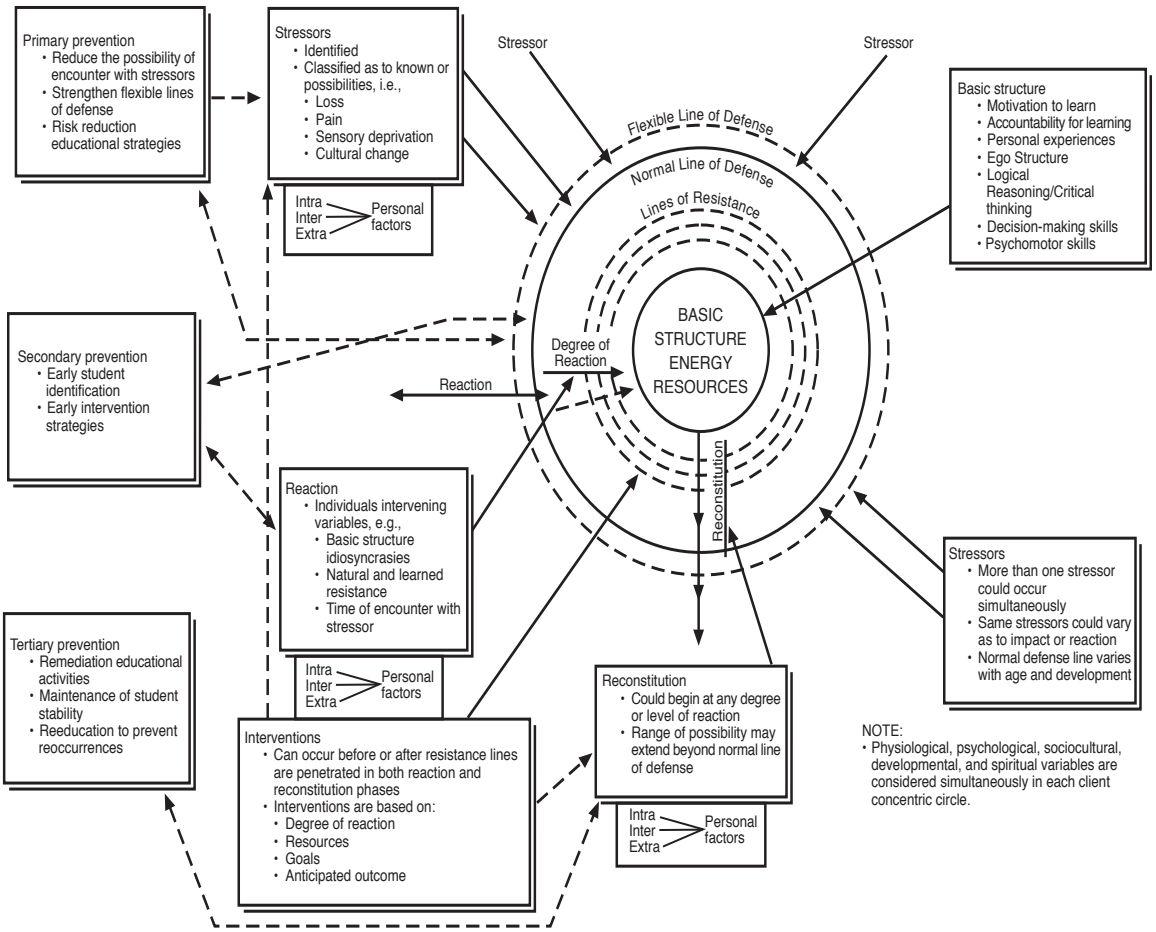

Figure 2. The Neuman systems nursing education model

Note: From The Neuman Systems Model (p. 13) by B. Neuman and J. Fawcett, 2002, Upper Saddle River, NJ: Prentice Hall.

populations. (see Figure 2.)

In the NSM conceptual model the client is the central, focal, and definitive point of the model; and the natural place for the caregiver to begin assessment, planning, intervention, and evaluation of the adaptive processes that can aid the client. Likewise, in the NSNEM, the student is central in the framework and will be considered the focal and defining "starting off" point of the educational model. By creating an educational framework that mirrors the nursing framework, the possibility exists that the nurse educator will be better

prepared and more confident in their ability to meet the learning needs of each student and to create a caring environment where learning outcomes and academic success are enhanced.

The Client in the NSNEM

One of the most interesting propositions of the NSM model is that it includes a discussion of looking at the "client" from multiple perspectives. In the NSM, the client is viewed as a dynamic individual with physiological, psychological, developmental, sociocultural, and spiritual dimensions, which must be considered in order to relate to the client. This holistic perspective has allowed the nurse to consider the needs of the client from a perspective of what will best meet the needs of the client. In the NSM, the "client" may be considered an individual, a family, a group, or even as social issue (Neuman & Fawcett, 2004). Indeed, in the case of the ongoing construction the Neuman Systems Nursing Education Model (NSNEM) the "client" in the nursing education model is a nursing student. This principle proposition was first described by Lowry (1998) where the following was articulated:

> The Neuman Model is applicable to teacher–learner relationships as well as client-nurse relationships. In this example, students as the center of the system interact with teachers within the context of a teaching-learning environment. Teachers provide a climate that communicates values of care and concern for students. Students accept responsibility for a relationship that implies motivation and accountability for learning. Together teachers and students co-create an environment in which the select goals, create learning experiences, and interpret them in ways that promote thinking and knowing. (p. 27)

This basic proposition of placing the nursing student at the core of the nursing

educational model, just as the client is found in the NSM; allows for consideration of the multi-contextual nature of a nursing student's life experiences and personal variables in relation to their ability to adapt to the stressors encountered in the nursing education period. Placing the student at the core of the model also allows the wholeness of the created environment of nursing students to be thoroughly examined and researched.

Theoretical Propositions of the Neuman Systems Nursing Education Model

1. Each individual nursing student is considered to be unique with known and understandable common characteristics.
2. Each student encounters stressors during their nursing education. These can be universal in nature, known and unknown. Each stressor differs in its potential to disturb the student's usual stability of normal line of defense. There is a complex interrelationship and connection between the client variables (physiological, psychological, sociocultural, developmental, and spiritual) that can affect the degree to which the student can be protected by the flexible lines of defense against possible reaction to a single or multiple stressors.
3. Each student has a self created normal range of responses within their personal environment that is referred to as the normal line of defense. It represents change over time through the student's ability to cope with the complex nature of stress encounters. The normal line of defense can be used as the standard from which to measure hardiness (successful adaptation) or dissonance(unsuccessful)adaptation in the nursing education period.
4. When the cushioning effects of the flexible line of defense can no longer protect the student from the stressor(s); the stressor(s)breaks through the normal line of defense. The interrelationship of variables (physiological, psychological,

sociocultural, developmental, and spiritual) determine the nature and degree of student reaction or possible reaction to the stressor(s).

5. The student, whether in a state of adaptive hardiness or maladaptive dissonance is a dynamic composite of the variables (physiological, psychological, sociocultural, developmental, and spiritual). Hardiness (positive adaptation) is on a continuum of available adaptation to support the student in an optimal state of student stability. Dissonance (negative adaptation) is a condition where student stability is not supported and the student will have suboptimal performance and will be found in a state of instability.
6. Implicit in each student are internal resistance factors known as lines of resistance, which function to stabilize the student and return the student to optimal states of performance on the hardiness-dissonance continuum, following a stressor reaction.
7. Primary prevention relates to the general knowledge that is applied to assessing the student and creating interventions through early by identification and mitigation of the circumstances that pose actual or potential risk factors that can affect academic and clinical performance, and to prevent possible negative and maladaptive reactions.
8. Secondary prevention relates to the general knowledge of that is applied to actual student reactions to stressors, and the creation of interventions that can be employed by both teacher and learner to reduce further threats by stressors to the student.
9. Tertiary prevention relates to the adaptive processes and interventions that can be employed after there has been negative adaptation to the stressors and there has

been dissonance between academic standards and the student's performance. The teaching and learner interventions are based on initiating the reconstitution phase, which focuses on returning the student to satisfactory academic performance. The interventions are constructed in a circular manner to return the student to a state of academic stability where once again, the constructs of primary prevention can be used to improve academic performance.

10. The student is a dynamic individual in the center of the nursing education learning environment. Each student has unique learning needs, which can be fostered with caring and concern by the teacher. Students accept responsibility and accountability for their learning. The teacher intervenes at three levels of intervention as prevention to help promote learning and progression to successful professional role acquisition.

The Created Environment in the NSNEM

In the NSM, the "created environment" as described by Neuman (2004), is an essential and purposeful protective mechanism that helps the client to maintain personal stability and integrity. The created environment is dynamic and represents the client's unconscious mobilization of all system variables to assist the client in adapting to stressors and variables found in the internal and external environments. (p.19). Reality, as perceived by the student, can actually be erroneous in nature, may have been created as a coping mechanism, and may be reflective of real or perceived threats to the immediate stability of the client. It is within this created environment, the nurse may respond, by focused appraisement; which can be useful in determining what coping mechanisms the client has used, the corollary results, and any further protection that may be beneficial or realized from the protection offered in the created environment (Neuman & Fawcett,

2004). In the created environment, the nurse becomes an integral part of assisting the client in moving to a higher state of wellness. With information garnered from this assessment, the nurse is a position to help intervene to help move the client to optimal health and well-being.

Utilizing the basics tenets and constructs of the created environment as described in the NSM, the opportunity exists to make the same assumptions about the nature and climate that exists for a nursing student during the period of their nursing education. During the time frame the nursing student is pursuing his/her nursing education, there are undoubtedly complex stressors and variables in the student's internal and external environments, which have the potential to create a chaotic and often dysfunctional perception of what is or isn't real.

Just as a thorough investigation and understanding of the created environment of the client in the NSM is essential to the assessment process, the student's created environment is the logical place to initially assess nursing student well-being and successful academic adaptation. Understanding and assessing the factors and coping mechanisms nursing students have generated in their own created environments, as they attempt to make successful adaptation to the their nursing education experiences and new role acquisition, can then become the appropriate starting point for nursing educators to use the NSNEM. It can be an assistive model for systematically assessing and planning caring interventions to help and assist these student learners to achieve the best educational outcomes possible. In the NSM, Neuman (2004) postulates that with respect to the created environment, the caregiver must work to help the client achieve their highest level of wellness and that "The client should be treated in a gentle, nonjudgmental manner, allowing his or her control and choice as to change."(p.21).These same caring behaviors should also

be considered essential in the nurse educator who is working with a nursing learner to achieve his/her highest level of academic and clinical performance.

It should be apparent that just as a client may experience physical setbacks because of conditions associated with their mental and emotional health; those same conditions can hamper the academic performance of the student learner. Additionally, past educational experiences can also affect how a student learns. All aspects of a student's life may affect their academic performance. Just as a caring and competent nurse uses a holistic and multi-faceted assessment to create the most appropriate plan of care for their client; so should the caring and competent nurse educator use those same constructs to create a multi-faceted and holistic educational assessment to create a learning plan for their nursing students. Certainly, the use of an individualized educational care plan will help students be as academically successful as possible. As a nurse educator strives to understand the personal variables contributing to the created environment of his/her nursing students, to create a safe and caring learning environment for their students, and to improve interpersonal relationships with their students; then undoubtedly, teacher-learner relationships will be enhanced and increase each student's chance for a successful academic outcome and provide a strong foundation for future success as a nursing professional.

Prevention as Intervention (P as I) in the NSNEM

A particularly important concept in the NSMEM is the concept of "prevention as intervention (Neuman & Fawcett, 2002)." In the NSM, prevention as intervention(P as I) is interpreted to mean that nursing interventions are all considered preventative in nature; or in other words, there is the implication that at whatever point the caregiver is able to intervene, there will be prevention of further onslaught of stressors and strengthening of

the lines of defense. Prevention as intervention can be initiated at any phase- primary, secondary, or tertiary, and the caregiver-client relationship always has the ultimate goal of returning the client to the highest level of wellness possible.

Prevention in the NSNEM focuses on keeping threats and stressors from having detrimental effects on the nursing student's ability to learn and successfully complete their clinical and academic work. Any nursing student is subjected to a variety of stressors and threats to their internal, external, and created environments. All of these threats and stressors, whether academic or personal in nature, have the potential of derailing the student from academic success and successful completion of their nursing education. Further, by considering the myriad of stressors and threats that present day nursing students encounter; the student, at any given point in their nursing education, should be viewed in terms of their individual adaptation to the stressors they face on a conceptual continuum in the NSNEM, in much the same way that health is viewed on a continuum in nursing practice.

In the NSNEM, *primary prevention as intervention* is addressed by:

1. Incorporating primary prevention strategies before the student even experiences a stressor.
2. Thoughtful intervention by a nurse educator to address the creation of teaching methods that strengthen the student's flexible lines of defense.
3. The creation of a learning environment where risk reduction measures are incorporated and the actual stressors and threats are maneuvered to be reduced or eliminated. A caring and skilled nurse educator who understands, plans, and creates a mutually beneficial learning environment that supports cooperative and meaningful teacher-learner relationships would also be

considered to be a primary prevention intervention.

Secondary prevention as intervention in the NSNEM is described as implementation of interventions that are utilized after the student has a reaction to a threat or stressor. The overall goal of secondary prevention is to strengthen the student by strengthening the student's ability to better address the threats and stressors the student is encountering or by removing the stressors, when identified. In academia, this would be accomplished by implementing strategies that help the student and nurse educator to identify areas they consider to be stressful or threatening and by implementing early intervention strategies that can improve student performance.

Tertiary prevention as intervention in the NSNEM is centered on supporting the student in making changes that will prevent the downward spiral of poor academic performance. Tertiary interventions can include remediation activities, maintenance of student stability at both the academic and personal levels, and reeducation to prevent further occurrences of poor performance and to support reconstitution of the student's academic core.

Research Questions

This research uses the basic tenets and variables defined in the NSNEM to demonstrate factors nursing students perceive as being important in helping them to be successful or conversely, keep them from being successful. The research questions are framed within the context of the defined propositions of the NSNEM. All nursing students are subjected to a variety of stressors and threats to their internal, external, and created environments. All of these threats and stressors, whether academic or personal in nature, have the potential of derailing the student from academic success and successful completion of their nursing education. Further, by considering the myriad of stressors and

threats that present day nursing students encounter; the student, at any given point in their nursing education, should be viewed in terms of their individual "academic health" on a conceptual continuum in the NSNEM, in much the same way that health is viewed on a continuum in nursing practice.

Research Questions

1. What are the common factors that nursing students perceive as being important to their success (flexible lines of defense) or stressors & barriers (lines of resistance) to their in their didactic nursing education?
2. What are the common factors that nursing students perceive as being important to their success (flexible lines of defense) or stressors & barriers (lines of resistance) to their in their clinical nursing education?
3. What are the psychological factors that that nursing students perceive as being essential or barriers to their success throughout their nursing education period?
4. What are the developmental and role development factors that nursing students perceive as being essential to their success or barriers throughout their nursing education period?
5. What are the sociocultural factors that nursing students perceive as being essential to their success or barriers to their success throughout their nursing education period?
6. What are the physiologic factors that nursing students perceive as being essential to their success or barriers throughout their nursing education period?
7. What are the spiritual factors that nursing students perceive as being essential

to their success or barriers throughout their nursing education period?

8. Are there significant differences in the created environment of nursing students who are in different semesters of their nursing program?
9. Are there significant differences in the created environment of the Associate Degree Nursing Program students as compared to the created environment of Baccalaureate Nursing Program students?

Conceptual and Operational Definitions

Abstract Concept: A mental image derived from more indirect evidence that is not easily represented by a specific empirical indicator or object. The meaning of abstract concepts contained in theory can be derived from the context of the theory and often do not have the same meaning in common language. Because abstract concepts are constructed from indirect evidence, they are often interpreted differently by different people and are influenced by an individual's own perceptions of the experience (Walker & Avant, 2005).

Concept: A complex mental formulation of an object, property, or event that is derived from perception and experiences. Concepts are a major component of theory and refer to the abstract ideas related within the theory (Walker & Avant, 2005).

Conceptual framework: A structure comprised of concepts related in some way from a whole. Preliminary descriptive types of theoretical statements may be called conceptual models or frameworks (Brathwaite, 2003).

Construct: A type of highly abstract and complex concept whose reality base can only be inferred. Constructs are formed from multiple less abstract or more empirical concepts (Nicoll, 1986).

Components of theory: Essential features of theory that form categories useful

for describing theory. Components include goals, concepts, definitions, relationships, structure, and assumptions (Avant & Walker, 2005).

Created environment: The created environment represents an open system exchanging energy with both the internal and external environment (Neuman, 2004). This dynamic and purposeful environment is constructed unconsciously by the student and is a symbolic conceptual representation of system wholeness. The created environment also represents the mobilization of all system variables, especially the psychosocial variables. It is the conceptual representation of system integration, stability, and integrity and provides a protective coping mechanism (Lowry,1998) and safe place for the student to function.

Criteria for concepts: Essential features of a concept derived from concept analysis. Criteria are formulated with reference to the aims of analysis and should be useful to both identify and differentiate the concept from other concepts(Walker & Avant, 2005).

Developmental variables: Developmental variables refer to age related development processes and activities. In the NSNEM, generational issues can also be addressed in terms of developmental adaptation and role development (Neuman & Fawcett, 2002).

External environment: The external environment is the conceptual representation of all the forces and interactive forces that are outside the student system(Neuman & Fawcett, 2002).

Flexible lines of defense: The flexible line of defense is the outer barrier or cushion to the normal line of defense, the line of resistance, and the core structure of the student. If the flexible line of defense fails to provide adequate protection to the normal line of defense, the lines of resistance become activated. The flexible line of defense acts as a cushion and is described as accordion-like as it expands away from or contracts closer to

the normal line of defense. The flexible line of defense is dynamic and can be changed/ altered in a relatively short period of time (Neuman & Fawcett, 2002).

Internal environment: The internal environment is the conceptual representation of all the forces and interactive forces that are contained solely within the student system (Neuman & Fawcett, 2002).

Lines of resistance: The lines of resistance protect the basic structure of the student and become activated when environmental stressors invade the normal line of defense (Neuman & Fawcett, 2002).

Normal lines of defense: The normal line of defense represents the student's system stability over time. It is considered to be the usual level of stability in the system. The normal line of defense can change over time in response to coping or responding to the environment(Neuman & Fawcett, 2002).

NSM: The Neuman Systems Model (Neuman & Fawcett, 2002).

NSNEM: The Neuman Systems Nursing Education Model

Physiological variables: Physiological variables refer to bodily structure and internal functions, including all cognitive processes (Neuman & Fawcett, 2002)..

Psychosocial variables: Psychological variables is representative of all mental processes and interactive internal and external environmental effects (Neuman & Fawcett, 2002).

Prevention as Intervention: In the NSNEM, prevention is the primary nursing intervention. Prevention in the NSNEM focuses on keeping threats and stressors from having detrimental effects on the nursing student's ability to learn and successfully complete their clinical and academic work (Neuman & Fawcett, 2002).

Sociocultural variables: Socociocultural variables refers to the combined effect of

social and cultural conditions and influences (Neuman & Fawcett, 2002).

Spiritual variables: Spiritual variables refers to spiritual beliefs and influence (Neuman & Fawcett, 2002).

Stressor: The NSNEM examines at the impact of stressors on the health of the student and addresses stress and the reduction of stress (in the form of stressors). Stressors are capable of having either a positive or a negative effect on the stability of the student system. A stressor is any environmental force that can potentially affect the stability of the student as a system. Stressors may be categorized as: (a) intrapersonal, or those which occur within the student, (b) interpersonal, or those occur between individuals, and (c) extra-personal, those which occur outside the student. The student has a certain degree of reaction to any given stressor at any given time. The nature of the reaction depends in part on the strength of the lines of resistance and defense. By means of primary, secondary and tertiary interventions, the person (or the nurse) attempts to restore or maintain the stability of the system (Neuman & Fawcett, 2002).

CHAPTER 4

METHODOLOGY

Identification of Population and Sample

The proposed target population is all of the nursing students in the state of Nevada and the accessible population will be a convenience sampling of all the formally admitted nursing students in the Nevada System of Higher Education's (NSHE) four community colleges, one state college and two universities. As such, the participants will be both associate degree and baccalaureate degree pre-licensure nursing students. The population will be limited to students from the NSHE system, because of the established relationships that are already established between the "sister" institutions. Further the dean's and directors of all the NSHE institutions meet together regularly with the goal of increasing collaboration between institutions and this research study presents an opportunity for collaboration and sharing of the research results which will be beneficial for all the institutions.

Procedure

The researcher met with the NSHE Dean and Director's meeting to explain the basic concepts of the research and project, to explain the purpose of the study and their potential role in the proposed online data collection process, and to gain preliminary verbal approval from the deans and directors of the seven NSHE nursing programs. This meeting will be prior to the initiation of the respective IRB application processes.

Upon IRB approval, each of the deans and directors provided the necessary e-mail contact information for the respective nursing students who are currently enrolled in their nursing programs. Additionally, as courtesy, the researcher sent an introductory e-mail to the each of the deans and directors, containing a hyperlink to the research study prior to

distribution to the nursing students. An introductory e-mail invited the nursing students to voluntarily participate in the research study. Once the student clicks on the hyperlink, an introductory message was included which discussed (a) the purposes of the study, (b) how confidentiality issues will be addressed, and (c) instructions on how to complete the online survey. The students were also informed that by clicking on the hyperlink to the survey, they were agreeing to participate in the research study.

For the purpose of this study, nursing students' attitudes about their perceptions of the time in their life while in nursing education was measured using a quantitative semantic differential method. Data was gathered using an online questionnaire. Permission was first gained from the NSHE deans and directors to gain the names of contact individuals at each of the participating colleges. The online questionnaire was then distributed to the nursing students by the assigned contact at each of the participating colleges.

The online questionnaire data provided baseline information on the attitudes, perceptions, and behaviors of nursing students that help to describe the nursing students' internal, external created environments. The online questionnaire was generated using a reputable online survey service. To maintain the integrity of the questionnaire an encrypted password was used for all the schools and participants who volunteered to participate.

Design

This research study was a non-experimental, exploratory and descriptive research design study with quantitative data analysis. An exploratory design was appropriate to this study because this study was an initial exploration of the factors that make up a nursing student's created environment. The created environment as described by Neuman (Neuman & Fawcett, 2002) is a unique concept in the NSM. The created environment

which is an environment that is created and developed unconsciously by the client and is symbolic of system wholeness (Neuman & Fawcett, 2002). It further describes and demonstrates the complexity in which nursing may consider the interconnectedness of all personal variables (physiological, psychological, developmental, sociocultural, and spiritual) in a client's internal and external environment and then help the client by making appropriate interventions, especially in the client's environment.

Data were collected using a method developed by Osgood (1957) using a semantic differential (SD) construct on a seven-point rating scale. According to Burns and Groves (1997), the semantic differential scale was developed to measure attitudes, beliefs, or connotative meanings of concepts. The rationale for use of the semantic differential technique for this study is that is easily understandable and and little time is needed for completing a lengthy questionnaire.

Semantic Differential

The semantic differential scale is a bipolar rating scale. It differs from the Likert scale in that opposite statements of the dimension are placed at the two ends of the scale on the two ends of the scale and respondents are asked to indicate which end of the scale they agree with in relation to the stated concept by placing a mark along the scale. This has the advantage that there is no need for the scale points to be semantically identified. The advantage is that any bias towards agreeing with a statement is avoided, as both ends of the scale must be considered (Brace, 2005). The use of SD has also been shown to be in multiple tests to be both reliable and valid (Heise,1970; Osgood, Suci, & Tannenbaum, 1967).

The rationale for using Osgood's semantic differential as the measuring instrument is that research demonstrates it is one of the most effective methods for measuring

the affective component of attitudes and perceptions (Heise, 1970) The constructs and adjectives used in this study were obtained from a focused content analysis of the current nursing literature, nursing education literature, and education literature regarding student perceptions of successful achievement and adaptation to the formal nursing education period. The constructs were as representative as possible of all the connotations of the concept under examination. The semantic differential technique can also be very valuable in determining differences in reactions from different student populations in terms of demographic such as age, prior work experience, career objectives, etc. (Whitney & Soukup, 1988). For example, spirituality issues may be viewed very differently by dissimilar groups of students. Osgood, Suci, and Tannenbaum (1967) introduced the method in their book "The Measurement of Meaning." The SD is a general procedure for assessing affective responses. The technique has features that distinguish it as an instrument for social psychological research. First, SDs are easy to set up, administer, and code. This, coupled with the demonstrated reliability and validity of the procedure, gives it favorable cost-effectiveness. The use of SD has been applied frequently as a technique for attitude measurement. Its usefulness in this respect is indicated by the wide variety of meaningful results that have been obtained in multiple research studies (Heise, 1970). Further, SD measurements have been found to correlate highly with measurements on traditional attitude scales.

Although the original purpose of semantic differential was not necessarily the assessment of attitudes, the procedure is well adapted for attitude assessment. A semantic scale is composed of polar opposite adjectives/adjective phrases separated by a five to seven point rating scale, like this:

Bad ___ ___ ___ ___ ___ ___ ___ Good

To utilize the scale, the subject was given an attitude referent. The attitude referent will be perhaps an object or event in the subject's environment, for example, the referent "teacher flexibility." The participant's task will be to rate the referent "teacher flexibility" on the seven point scale from bad to good. If the student selects the middle space then it is advanced that the evaluation is neutral. However, if the student selected one of the spaces closer to the "good" end of the scale, then his/her evaluation was seen as a positive endorsement of the referent "teacher flexibility". Conversely, selection closer to the "bad" end of the scale was seen as a negative endorsement. Numerical values of 1 through 7 area assigned to the various spaces on the scales, a neutral score is a 4, a very positive endorsement a 7, and a very negative endorsement a 1.

In addition to the semantic differential scale, the online questionnaire allowed for further comments on experiences. These repsonses were anlayzed to gain a qualititative perspective, which will was also useful in defining the created environment of the nursing student. Demographic information was collected for background information on the respondents and in regards to their age, gender, educational background, and the current semester level of their respective nursing programs. The personal demographic information was used to interpret the study findings since personal and environmental characteristics can be linked with attitudinal patterns (Knapp, 1998). Demographic data were used to describe the sample.

Description of the NSNEM Questionnaire

Development of the NSNEM questionnaire was used for assessing the strength of five variables described by Neuman as comprising the created environment of the nursing student. As previously discussed the created environment is inclusive of all the five personal variables as described by Neuman and envelops all the internal and external

environment factors; both those known and those which are part of the unconscious or unrecognized . The questionnaire was divided into seven subsections which reflected the seven research questions centered around defining the created environment and included: (a) academic factors, which are encompassed by Neuman's physiologic/ cognitive variable, (b) factors in clinical rotations and work, which are also encompassed by the physiologic /cognitive variable, (c) psychological factors, (d) sociocultural factors, (e) developmental factors, (f) physiologic factors, and (g) spiritual factors. The NSNEM survey also addresses the intrapersonal, interpersonal and extrapersonal stressors that are encountered by nursing students. Each of the seven sections included a separate semantic differential scale of between 10-25 items. Responses to all items were graded using a seven point bi-polar semantic differential scale.

Research Question Analyses

1. What are the common factors that nursing students perceive as being important to their success (flexible lines of defense) or stressors & barriers (lines of resistance) to their in their didactic nursing education?

The Academic Factors subsection of the NSNEM questionnaire (RQ1) was created to explore the perceptions and feelings that constitute the created environment of the nursing students which deals with factors concerning their academic preparation during the nursing education period. This subsection was comprised of a 25 item semantic differential scale that asked students to address their perceptions concerning: (a) academic performance, (b) their relationship with their instructors, (c) views about their academic assignments and learning environments. (Appendix D)

2. What are the common factors that nursing students perceive as being important to their success (flexible lines of defense) or stressors & barriers (lines of resistance)

to their in their clinical nursing education?

The Clinical Factors (CF) subsection of the NSNEM questionnaire was created to explore the perceptions and feelings that constitute the created environment of the nursing students, which deals with factors concerning their clinical preparation during the nursing education period. This subsection was comprised of a 21 item semantic differential scale that asked students to address their perceptions concerning: (a) their clinical nursing education performance, (b) their relationship with their clinical instructors, (c) their clinical learning environments and clinical assignments, (d) how they feel about their ability to perform safely in the clinical setting, and e) their current skills acquisition. The survey items are listed in (Appendix E)

3. What are the psychological factors that that nursing students perceive as being essential or barriers to their success throughout their nursing education period?

The Psychological Factors (PF) subsection of the NSNEM questionnaire was created to explore the perceptions and feelings that constitute the created environment of the nursing students, which deals with issues concerning how nursing students perceive the psychological factors that affect them during their nursing education period. This subsection was comprised of a 15 item semantic differential scale that asked students to explore their perceptions concerning: (a) how their psychological state affects their performance in their nursing education, and (b) how they perceive their interpersonal relationships with classmates and instructors. (Appendix F)

4. What are the developmental and role development factors that nursing students perceive as being essential to their success or barriers to their success throughout their nursing education period?

The Developmental Factors (DF) subsection of the NSNEM questionnaire was created

to explore the perceptions and feelings that constitute the created environment of the nursing students, which deals with issues concerning how nursing students perceive the developmental and role development factors during their nursing education period. This subsection was comprised of a 15 item semantic differential scale and the items are listed in Appendix G

5. What are the sociocultural factors that that nursing students perceive as being essential or barriers to their success throughout their nursing education period?

The Sociocultural Factors (SCF) subsection of the NSNEM questionnaire was created to explore the perceptions and feelings that constitute the created environment of the nursing students, which deals with issues concerning how nursing students perceive the sociocultural factors that affect them during their nursing education period. This subsection was comprised of a 20 item semantic differential scale that asked students to explore their perceptions concerning their: (a) relationships with their classmates, (b) cultural beliefs, (c) factors in personal lives outside of the classroom, (d) personal relationships, and (e) relationships with their instructors. The items are listed in Appendix H.

6. What are the physiologic factors that nursing students perceive as being essential to their success or barriers throughout their nursing education period?

The Physiological Factors (PHF) subsection of the NSNEM questionnaire was created to explore the perceptions and feelings that constitute the created environment of the nursing students, which deal with issues concerning how nursing students perceive their physiologic health and wellness. This subsection was comprised of a 10 item semantic differential scale and the items are included in Appendix I.

7. What are the spiritual factors that nursing students perceive as being essential to

their success or barriers throughout their nursing education period?

The Spiritual Factors (SF) subsection of the NSNEM questionnaire was created to explore the perceptions and feelings that constitute the created environment of the nursing students, which deal with issues concerning how nursing students perceive their spirituality physiologic health and wellness. This subsection was comprised of a 10 item semantic differential scale and the items are included in Appendix J.

8. Are there significant differences in the created environment of nursing students who are in different semesters of their nursing program?

This research question was developed to ascertain if there are significant differences in the created environment of nursing students at different levels during their nursing education period. For example, will there be difference between the created environment of a first semester nursing student as compared to a last semester nursing student?

9. Are there significant differences in the created environment of the Associate Degree Nursing Program students as compared to the created environment of Baccalaureate Nursing Program students?

The purpose of this research question is to determine if there are statistical differences in the created environment of nursing students who attend Associate Degree programs as opposed to baccalaureate programs.

Ethical Considerations

Participation in this study was voluntary and data were treated as grouped data in reporting study results. There was no personally identifying data collected. Additionally, there was no information collected that would individually identify what institution a student is affiliated with. To ensure confidentiality, no identifying information was required to fill out the online survey. Submission of the online survey was considered

informed consent. There was minimal risk involved with participating in this study, arising from the possibility of some level of discomfort from answering the questions on the survey. The participants were given the option of skipping any questions that might cause discomfort for any reason.

Protection of Human Subjects

Approval of the research was obtained from the University of Nevada, Las Vegas Institutional Review Board (IRB). No data were collected until approval was obtained from UNLV's IRB and all of the participating NSHE institutions. This provided further protection for the participants who participate in the study. No identifiable names were used on the surveys and all information concerning the participants will remain confidential. Data will be entered into the Predictive Analytics Software (PASW), version 17. Only the researcher and the dissertation committee chair will have access to the raw data. All completed surveys will only be accessible with an encrypted password. It is believed that the data from each individual nursing student will remain anonymous. Completion of the online survey was considered implied consent by the participants for this study.

Data Collection Procedures

The accessible population was recruited from all the NSHE colleges and universities in the State of Nevada registered nursing programs. According to the Nevada State Board of Nursing website there are seven (7) programs that have been approved by the Nevada State Board of Nursing. Recruitment procedures began once UNLV IRB approval had been obtained and any Office of Protection of Research Subjects approvals from the participating colleges and universities had been obtained. The researcher contacted the Office of Protection of Research Subjects of each institution in which the accessible

population for the study is being sought to (a) provide a description and purpose of the study; (b) provide a description of the intended method for contacting the accessible population; (c) inform them that IRB approval from UNLV to conduct the study had been obtained; and (d) request information about the required protocol to obtain approval to seek participants for the study from the participating institutions.

In this study, the accessible population was all nursing students in each of the seven registered nursing programs in the NSHE system. All nursing students were informed of the research study and participation was purely voluntary. Once approval was obtained from the IRB at UNLV, the required protocol was sent to each selected institution for recruiting participants for the study. Contact was made to each dean, director, or chairperson of the nursing department of each selected institution via phone/e-mail. The participating institutions were provided with a description and purpose of the study and a request for permission to recruit all enrolled nursing students as participants. The deans/directors/designated chairpersons of the selected schools of nursing were then contacted via e-mail and invited to participate in the study. The method of recruitment was discussed with each dean/director to determine the best official contact person to meet the needs of the nursing department. Each of the deans/directors were sent a recruitment letter (Appendix C) and a recruitment flyer (Appendix D) that would be distributed and explained to the students via e-mail from the their official nursing department designee. Each of the designees was also given a description of the study and the researcher reviewed the recruitment procedures with them. The recruitment letter and flyer provided the purpose of the study, what the participant will do in the study, how to become a participant, and how to contact receive more information or have additional answers provided by the investigators.

The recruitment materials asked the students to participate in online email survey during the recruitment period. The survey was comprised of 105 questions and took approximately 20-30 minutes to complete. The website was monitored daily for submission of the survey from participants and for questions related to the study

The researcher has stored all collected data in encrypted data base in Survey Monkey to protect data. The only persons who had access to the data in Survey Monkey was the principal investigator and the student investigator. The surveys completed online through via the internet were saved on an eight (8) gigabytes SanDisk Cruzer Micro USB flash drive and the flash drive will be stored in a locked facility in the principal investigator's office BHS 428 at UNLV for 3 years after completion of the study. After the storage time, data on the flash drive will be permanently deleted and the flash drive will be discarded. The surveys completed online were permanently deleted from the Survey Monkey system once the cut-off date has been reached on January 15, 2010, data was saved on the flash drive, and data was imported into Excel and imported into the PASW Version 17 software used for analysis. At the completion of the research study, all data will be permanently deleted from Excel and the PASW version 17 software used for analysis. The probability that harm occurred is unlikely.

Statistical Analyses

Initial data and preliminary statistics were generated by an online survey company. The data was then exported from the online site to an Excel® file and converted for use in the PASW statistical program version 17 for Windows. The data was then labeled and in PASW version 17 to analyze the data obtained from the questionnaire/instrument. Measures of central tendency and frequency distributions for each item in each variable section were generated. The descriptive statistics and qualitative comments extrapolated

from the data were also identified and noted. Quantitative data was examined using multivariate statistics including factor analysis techniques, correlation studies, and nonparametric tests of variance.

Multivariate regression, a family of techniques was run to examine the relationship between one continuous dependent variable and multiple independent variables or predictors. Multiple regression can also be used to explain how well a set of variables is able to predict a particular outcome. It also can allow the researcher to test whether adding a variable contributes to its predictive value (Pallant, 2005). A nonparametric correlation matrix was run for all of the attitudinal variables on the instrument to measure the strength of the relationship between the variables, to determine the portion of common variation in the variables, and used in the analysis of the research questions. A matrix that is favorable should include several sizeable correlations.

Tabachnick and Fidell (2007) suggest using a correlation value of .30. If there are no correlations that exceed the .30 threshold, then factor analysis should not be used and this value was inputted in the PASW software. Additionally, two PASW statistical tests were used to address the strength of the inter-correlations among the items in the factor analysis. Bartlett's Test of Sphericity was generated for each factor analysis in this study. Bartlett's test is at known to be a highly sensitive test of the hypothesis that the correlations in a correlation matrix are zero. Because of its sensitivity, the use of Bartlett's test is particularly appropriate and recommended when there are fewer than five case per variable. Bartlett's test should be significant ($p<.05$) for factor analysis to be considered appropriate (Tabachnick & Fidell, 2007). The second test that was used was the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. The KMO ranges from 0-1, with .6 suggested as the minimum value for a good factor analysis (Tabachnick & Fidell, 2007).

Because study of the factors that describe a nursing student's created environment is in the initial stages of development exploratory factor analysis was performed. Tabachnick & Fidell (2007) recommend the use of principal component analysis (PCA) to reveal the nature of the factors. With PCA, variances in the observed variables were analyzed and items that are closely correlated are loaded into factors. When factor analysis is used to examine preliminary data and examine patterns of correlations among items, limitations are less rigid (Tabachnick & Fidell, 2007). Even with a small sample size N = 134), exploratory factor analysis was performed to examine the interrelationships of the NSNEM questionnaire and to examine the factors that were closely correlated.

An exploratory factor analysis using a Varimax rotation was performed on each of the seven subsections groups to check for homogeneity of the items and to group and rate them. The goal of exploratory factor analysis is description and summary of data through the grouping of correlated variables (Tabachnick & Fidell, 2007). The data was analyzed by use of factor analytic procedures to determine possible common factors, which could be identified in the collection of semantic scales. To achieve adequate power in factor analysis, a representative sample requires approximately 6-10 times the number of people as semantic differential scales used (Gable, 1993). Grimm and Yarnold (1995) call this the subjects-to-variables (STV) ratio and they suggest a minimum ratio of 5 and a minimum N of 100 regardless of the ratio. Descriptive analyses of each of the seven subsets of the NSNEM including frequency distribution and measures of central tendency for interval and ratio level variables were also generated.

Assumptions

There were several assumptions that are notable in this study. It was assumed that a convenience sample was available from the participating NSHE nursing programs and

that there was cooperation with the participating universities and community colleges to gain access to that sample. It was also assumed that these nursing students understood all the terminology that they would encounter in the testing instruments in order to make proper decisions in their assessment of themselves. It was assumed that students answered the questions honestly to provide reliable data for analysis.

CHAPTER 5

FINDINGS OF THE STUDY

Analysis of Data

Description of the Sample and Demographic Information

The target population was all the formally admitted registered nursing students in the State of Nevada. The accessible population was all the formally admitted registered nursing students in the Nevada System of Higher Education (NSHE). The NSHE system has nursing programs in two universities, one state college, and four community colleges. All of the NSHE institutions were amenable to disseminating the online survey to their nursing students. The total participants (N = 134) started and partially completed the survey and 118 (89%) participants completed the full survey. (see Table 1.)

Fifty-two percent (52%) of the participants were students in baccalaureate nursing programs and forty-eight percent (48%) were from associate degree programs. Ninety-three percent (93%) of the participants were female and 7% were males. Thirty-three percent (33%) of the participants were first semester nursing students, Seventeen (17%) were second semester nursing students, thirty-three percent(33%) were third semester nursing students, fourteen percent (14%) were fourth semester students, Two percent (2%) were fifth semester students, and one percent (1%) were sixth semester students.

The population of the sample was roughly equal between the two nursing program types. This study was initiated during the Fall of 2009, and this is reflected in the fact that there were greater number of students in the first and third semesters of their programs.

The race/ethnicity data reveals that 0.7% of the participants were Black or African American, 78% were Caucasian, 9% were Hispanic, 5% Filipino, 0.7% were Japanese, 0.7% were Korean, and 4.5% of the participants reported they were “other.” Participants

Table 1

Descriptive Statistics of Sample Population

	N	Minimum	Maximum	Mean	S.D.	Variance
1. Please indicate your age in years.	123	18	55	28.69	8.169	66.740
2. Prior to being accepted into your nursing program, what was the highest educational degree you have obtained?	129	1	5	2.77	.897	.805
3. What type of nursing program are you enrolled in?	128	1	2	1.48	.502	.252
4. Please indicate your gender.	129	1	2	1.06	.242	.059
5. Please indicate your current educational level in your nursing program.	127	1	6	2.38	1.195	1.427
6. Please indicate the primary race/ethnicity you identify with.	129	2	13	4.25	2.601	6.766

ranged from 18 years of age to 55 years of age, with a mean age of 28. The survey demographics also revealed that prior to starting their nursing education 3% of the participants had graduate degrees, 20% had bachelor degrees, 31% had associate degrees, 44% had high school diplomas, and 2% of the participants had not completed any previous academic degrees.

Statistical Analysis

Descriptive statistics for research Questions 1-7 were generated using the same

statistical analysis procedure. The procedure was to:

1. Generate frequency distribution data for each subsection of NSNEM questionnaire related to the research question on PASW version 17.
2. Assessment of the suitability of the data for factor analysis. This included running the Bartlett's Test of Sphericity for statistical significance ($p<.05$) and the Kaiser-Meyer-Olkin (KMO) measures of sampling of adequacy tests.
3. Generating the Factor Extraction and Principal Components Analysis (PCA) including correlations matrices for each research question. Inspection of the correlation matrices was completed to ascertain that only coefficients of .3 or higher were used in the PCA. This was done to determine the number of factors that will best describe the underlying relationship among the variables. This addressed two conflicting areas of concern: (a) the need to find a simple solution with the original data set as possible, and (b) to explain as much of the variance in the original data set possible (Tabachnick & Fidell, 2007).
4. Examine the data set using Kaiser's criterion, or the eigenvalue rule. This meant that only factors that with an eigenvalue of over 1.0 were retained for further investigation.
5. A scree plot test was generated for each of the seven research questions. It is recommended that when visualizing the scree plot that only the factors above the "elbow" or break in the plot be used because these factors contribute the most to the explanation of the variance set (Tabachnick& Fidell, 2007).
6. Once the number of factors were determined the next step in the process was to rotate the factors. For data analysis of each of these research questions an orthogonal Varimax rotation was utilized, which is used to minimize the number

of factors that variables that have high loadings on each factor.

Analysis of Research Question 1

RQ1: What are the common factors that nursing students perceive as being important to their success (flexible lines of defense) or stressors & barriers (lines of resistance) to their in their didactic nursing education?

The 25 items of the Neuman Systems Nursing Education Model (NSNEM) Academic Factors (AF) subset were subjected to principal components analysis (PCA) using PASW version17. The data set met all suitability criteria, with a KMO value of .881 and a Bartlett' Test that was significant at .000.

Principle components analysis revealed the presence of eigenvalues exceeding 1.0 (Tabachnick & Fidell, 2007) explaining 36.8%, 11.7%, 7.5%, 5.4%, and 4.9% of the variance respectively. An inspection of the scree plot revealed a clear break after the second component. Using the scree test results, it was decided to retain two components for further investigation. This was further supported by the results of the Parallel Analysis, which showed only two components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix.

The rotated Varimax solution revealed the presence of simple structure (Tabachnick & Fidell, 2007), with both most variables loading substantially on two components. The two-component solution explained a total of 48.6% of the variance, with Component 1 contributing 32.9% and Component 2 contributing 15.7%. The interpretation of the two components revealed the positive affect items loading strongly on Component 1 and the negative affects loading strongly on Component 2. Using .7 as the cut-off for loading, 8 items were identified from the Component 1 list and 2 components from the Component 2 list. (see Table 2.)

Table 2

Academic Factors Components Factor Analysis with Varimax Rotation

Item	Factor Loadings of Variables		Description of the Extracted Variables
	Component 1 *a*	Component 2 *b*	
AF17	.836		My teachers use caring behaviors
AF25	.820		My teachers provide guidance for me
AF22	-.820		My teachers are suitable role models
AF9	.818		My teachers stimulate me to learn
AF10	-.816		My teachers are prepared to teach me
AF20	.791		My teachers inspire me
AF11	-.712		My teachers show interest in me
AF13		.749	I have adequate time to study
AF5		.722	I worry about my grades

Notes:

a. *Component 1 explains 32.9% of the variance*
b. *Component 2 explains 15.7 % of the variance*
c. *A negative sign (-) denotes a negatively directed question in the NSNEM Questionnaire.*

In examining the two component lists, it is clear that the factors that continued the most to the variance in the Academic Factors subsection, all had to do with the student-teacher relationship. The Component 1 list revealed that students understand the interconnectedness of the relationship that must be cultivated between their teachers and the students. Component list 2 demonstrated the concern that students have with the general issues surrounding normal student life: grades and study time.

Analysis of Research Question 2

RQ 2: What are the common factors that nursing students perceive as being important to their success (flexible lines of defense) or stressors & barriers (lines of resistance) to their in their clinical nursing education?

The 21 items of the NSNEM clinical factors (CF) were subjected to principal components analysis (PCA). The Kaiser-Meyer-Olkin value of .892 exceeded the recommended value of .6 and the Bartlett's Test of Sphericity reached statistical significance, supporting the factorability of the correlation matrix.

Principle components analysis revealed the presence of 4 eigenvalues exceeding 1, explaining 44.3%, 13.3%, 3.6 % and 1.0 % of the variance respectively. An inspection of the scree plot revealed a clear break after the second component. This was further supported by the results of the Parallel Analysis, which showed only two components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix.

The Varimax rotation revealed all variables loading substantially on only two (2) components. The two-component solution explained a total of 57.5 % of the variance, with Component 1 contributing 32.4 % and Component 2 contributing 25.2%. Using .7 as the cut-off for loading, 10 items were identified with 5 components from the Component 1 list and 5 components from the Component 2 list. (see Table 3.)

Once again, the highest loadings for the Clinical Factors subsection were related to the nursing students' relationship with their clinical instructors. The second component list also had strong loadings and revealed that students are concerned about providing safe and efficacious care to their patients in the clinical settings.

Table 3

Clinical Factors Components Factor Analysis with Varimax Rotation

Item	Factor Loadings of Variables		Description of the Extracted Variables
	Component 1 *a*	Component 2 *b*	
CF4	.914		My clinical instructors are caring
CF8	.902		My clinical teachers are attentive to me needs.
CF2	-.871		My clinical teachers are approachable
CF10	-.857		My clinical teachers are patient
CF11	.824		My clinical teachers are good resources
CF13		.838	I feel knowledgeable
CF5		.828	My clinical skills are adequate
CF3B		.781	I am effective in caring for my patients
CF3A		.767	I feel confident in the clinical setting
CF15		-.711	I feel safe in the clinical setting

Notes:

a. *Component 1 explains 32.4% of the variance*
b. *Component 2 explains 35.2% of the variance*
c. *A negative sign (-) denotes a negatively directed question on the NSNEM Questionnaire*

Analysis of Research Question 3

RQ 3: What are the psychological factors that that nursing students perceive as being essential or barriers to their success throughout their nursing education period?

The 15 items of the NSNEM psychological factors (PF) were subjected to principal components analysis (PCA). The correlation matrix revealed the presence of many

Table 4

Psychological Factors Components Factor Analysis with Varimax Rotation

Item	Factor Loadings of Variables		Description of the Extracted Variables
	Component 1 *a*	Component 2 *b*	
PF15	-.859		Teachers are more concerned with me
PF14	.847		Teachers respect my individuality
PF13		.722	I feel nurtured
PF5		.800	I feel valued
PF2		.756	I feel I am a happy person

Notes:

a. *Component 1 explains 28.6% of the variance*
b. *Component 2 explains 25.1% of the variance*
c. *A negative sign (-) denotes a negatively directed question on the NSNEM Questionnaire*

coefficients of .3 and above. The Kaiser-Meyer-Olkin value of .892 exceeded the recommended value of .6 reached statistical significance, supporting the factorability of the correlation matrix.

PCA revealed the presence of 4 eigenvalues exceeding1, explaining 44.3%, 13.3%,7.4% and4.9 % of the variance respectively. An inspection of the scree plot revealed a clear break after the second component. Using the scree test results, it was decided to retain two components for further investigation. This was further supported by the results of the Parallel Analysis, which showed only two components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix.

Varimax rotation revealed the presence of simple structure and all variables loading substantially on only two components. The two-component solution explained a total of 53.8 % of the variance, with Component 1 contributing 28.6 % and Component 2 contributing 25.1%. Using .7 as the cut-off for loading, 5 items were identified with 3 factors from the Component 1 group and 2 factors from the Component 2 group. (see Table 4.)

The factors in The Psychological Factors Component List 1 are reflective of the importance of the teacher student relationship and the factors in Component List 2 reflect that the students feel good about their choice to become nurses. The results reflect that the students feel happy, nurtured through their nursing education period, and valued as nursing students.

Analysis of Research Question 4

RQ 4: What are the developmental and role development factors that nursing students perceive as being essential to their success or barriers to their success throughout their nursing education period?

The 15 items of the NSNEM developmental factors (DF) were subjected to principal components analysis (PCA). Inspection of the correlation matrix revealed the presence of many coefficients of .3 and above. The Kaiser-Meyer-Olkin value of .878, exceeding the recommended value of .6 and the Bartlett's Test of Sphericity reached statistical significance, supporting the factorability of the correlation matrix.

PCA revealed the presence of 3 eigenvalues exceeding 1, explaining 51%, 9.7%, and 8.0% of the variance respectively. An inspection of the scree plot revealed a clear break after the second component. Using the scree test results, it was decided to retain two components for further investigation. This was further supported by the results of the

Table 5

Developmental Factors Components Factor Analysis with Varimax Rotation

Item	Factor Loadings of Variables		Description of the Extracted Variables
	Component 1 *a*	Component 2 *b*	
DF11	.877		In my transition from student to nurse I feel knowledgeable
DF8	.850		In my transition from student to nurse I feel prepared
DF9	.835		In my transition from student to nurse I feel competent
DF13	.834		In my transition from student to nurse I feel experienced
DF14	.805		In my transition from student to nurse I feel satisfied
DF15	.790		In my transition from student to nurse I feel educated
DF12	.777		In my transition from student to nurse has been smooth
DF5		.766	My understanding of the human condition has been expanded

Notes:

a. *Component 1 explains 44.9% of the variance*
b. *Component 2 explains 15.4% of the variance*
c. *A negative sign (-) denotes a negatively directed question on the NSNEM Questionnaire*

Parallel Analysis, which showed only two components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix.

A Varimax rotation was performed. The rotated solution revealed the presence of simple structure with both components showing a number of strong loadings and all variables loading substantially on two components. The two-component solution explained a total of 60.3% of the variance, with Component 1 contributing 44.9 % and Component 2 contributing 15.4%. Using .7 as the cut-off for loading, 7 items were identified from the Component 1 list and 1 component from the Component 2 list.(see Table 5.)

In examining the Developmental Factors, almost 455 of the variance can be explained by the seven factors in the Component 1 List. The items in the list were all reflective of that students are concerned with how they are making positive steps towards transitioning towards professional nursing practice. The role development process is clearly important and meaningful to the students.

Analysis of Research Question 5

RQ 5: What are the sociocultural factors that that nursing students perceive as being essential or barriers to their success throughout their nursing education period?

The 20 items of the NSNEM sociocultural factors (SCF) were subjected to principal components analysis (PCA). The suitability of the data for factor analysis was assessed. Inspection of the correlation matrix revealed the presence of many coefficients of .3 and above. The Kaiser-Meyer-Olkin value of .861, exceeded the recommended value of .6 and the Bartlett's Test of Sphericity reached statistical significance at .000, supporting the factorability of the correlation matrix.

PCA revealed the presence of 4 eigenvalues exceeding 1, explaining 35.9 %, 19.4 %, 10. 2 % and 5.1% of the variance respectively. An inspection of the scree plot revealed a clear break after the third component. Using the scree test results, it was decided to retain

three components for further investigation. This was further supported by the results of the Parallel Analysis, which showed three components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix.

A Varimax rotation was performed. The rotated solution revealed the presence of simple structure (Tabachnick & Fidell, 2007), with three components showing a number of strong loadings and all variables loading substantially on three components. The three-component solution explained a total of 65.5% of the variance, with Component 1 contributing 28.9%, Component 2 contributing 20.2%, and Component 3 contributing 16.3%. Using .7 as the cut-off for loading, 8 items were identified from the Component 1 list, 4 components from the Component 2 list, and 3 components from the Component 3 list. (see Table 6.)

The factor analysis of the Sociocultural Factors turned out to produce the only results where there were three clear components identified after the factor analysis. The Component List 1 revealed that nursing students value the relationships they create with their nursing instructors and that they understand the professional roles and mentoring that teachers provide to their students. The Components List 2 reveals that the nursing students understand and appreciate the relationship that they create with their classmates, and the Components List 3 reveals that the students' personal lives are complicated, meaningful and that their home environment can be sources of help and comfort for them.

Analysis of Research Question 6

RQ 6: What are the physiologic factors that nursing students perceive as being essential to their success or barriers throughout their nursing education period?

The 10 items of the NSNEM physiologic academic factors (PHF) were subjected to principal components analysis (PCA). The suitability of the data for factor analysis was

Table 6

Sociocultural Factors Components Factor Analysis with Varimax Rotation

Item	Factor Loadings of Variables			Description of the Extracted Variables
	Component 1 *a*	Component 2 *b*	Component 3 *c*	
SCF11	.878			My teacher care if I succeed
SCF19	.858			My teachers are attentive to my cultural needs
SCF8	-.850			My teachers believe in me
SCF10	.847			My teachers are role models
SCF15	.808			My teachers promote teamwork
SCF9	.805			My teachers care about my life
SC20	.746			I feel understood
SCF2	.735			My cultural beliefs are recognized
SCF12		.905		My classmates are friendly
SCF18		.878		My classmates are caring
SCF1		-.871		My relationship with my classmates is important
SCF7		.766		I feel I am approachable to my classmates
SCF4			.814	My personal life is complicated
SCF17			.812	My home environment is calm
SCF6			-.760	My family decrease stress for me

Notes:

a. *Component 1 explains 28.9 % of the variance*
b. *Component 2 explains 20.2% of the variance*
c. *Component3 explains 16.3% of the variance*
d. *A negative sign (-) denotes a negatively directed question on the NSNEM Questionnaire*

assessed. Inspection of the correlation matrix revealed the presence of many coefficients of .3 and above. The Kaiser-Meyer-Olkin value of.888, exceeded the recommended value of .6 and the Bartlett's Test of Sphericity reached statistical significance of .000, supporting the factorability of the correlation matrix.

Principle components analysis revealed the presence of 2 eigenvalues exceeding 1, explaining 49.9 %, and 11.7 % of the variance respectively. An inspection of the scree plot revealed a clear break after the second component Using the scree test results, it was decided to retain two components for further investigation. This was further supported by the results of the Parallel Analysis, which showed only two components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix.

The Varimax rotation revealed the presence of simple structure, with both components showing a number of strong loadings and all variables loading substantially on only two components. The two-component solution explained a total of 61.6% of the variance, with Component 1 contributing 46.0% and Component 2 contributing 15.6%. Using .7 as the cut-off for loading, 3 items were identified from Component list 1 and 2 from component list 2. (see Table 7.)

In the Physiological Factors analysis, 46% of the variance was explained by factors that affect their personal health. The data revealed that their energy levels are low, that they feel unhealthier, that their nutrition is inadequate, and that they do not get enough sleep.

Analysis of Research Question 7

RQ 7: What are the spiritual factors that nursing students perceive as being essential to their success or barriers throughout their nursing education period?

The 10 items of the NSNEM spiritual factors (AF) were subjected to principal

Table 7

Physiologic Factors Components Factor Analysis with Varimax Rotation

Item	Factor Loadings of Variables		Description of the Extracted Variables
	Component 1 *a*	Component 2 *b*	
PHF3	.860		My energy level is low
PHF2	-.821		I feel unhealthy
PH4	.818		My nutrition is inadequate
PHF10	.775		Being in nursing school has affected my health in negative ways
PHF6	.767		I get an insufficient amount of sleep
PHF1	.760		I feel tired
PHF8		.810	My access to health care is sufficient

Notes:

a. *Component 1 explains 46% of the variance*
b. *Component 2 explains 15.6% of the variance*
c. *A negative sign (-) denotes a negatively directed question on the NSNEM Questionnaire*

components analysis (PCA). The suitability of the data for factor analysis was assessed. Inspection of the correlation matrix revealed the presence of many coefficients of .3 and above. The Kaiser-Meyer-Olkin value of .781, exceeded the recommended value of .6 and the Bartlett's Test of Sphericity reached statistical significance at.000 supporting the factorability of the correlation matrix.

Principle components analysis revealed the presence of 2 eigenvalues exceeding 1, explaining 40.1 % and 17.4 % of the variance respectively. An inspection of the scree plot

revealed a clear break after the second component. Using the scree test results, it was decided to retain two components for further investigation. This was further supported by the results of the Parallel Analysis, which showed only two components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix.

A Varimax rotation was performed. The rotated solution revealed the presence of simple structure with both components showing a number of strong loadings and all variables loading substantially on two components. The two-component solution explained a total of 57.57% of the variance, with Component 1 contributing 29.3% and Component 2 contributing 28.2%. Using .7 as the cut-off for loading, 4 items were identified from the Component 1 list and 2 components from the Component 2 list.(see Table 8.)

The Spiritual Factors Components List 1 revealed that prayer, spirituality, and that spirituality levels change for students in their nursing education period. The Component List 2 reveals that nursing students would like to explore spiritual feelings with their nursing instructors and that they understand that there is a spiritual dimension in how they care for their patients.

Analysis of Research Question 8

RQ 8: Are there significant differences in the created environment of nursing students who are in different semesters of their nursing program?

RQ 8 was analyzed using a standard nonparametric multivariate technique to determine if there are significant differences in the data based on semester level. A Kruskal-Wallis Test is the nonparametric alternative to a one way between- groups analysis of variance (Tabachnick & Fidell, 2007) and it allows the researcher to compare the scores on some continuous variable for three of more groups. Scores are converted

Table 8

Spiritual Factors Components Factor Analysis with Varimax Rotation

Item	Factor Loadings of Variables		Description of the Extracted Variables
	Component 1 *a*	Component 2 *b*	
SPF4	.775		My reliance on prayer has increased
SPF2	-.751		Exploring my personal spirituality is important
SPF6	.751		Exploring my spiritual feelings make me feel hopeful
SPF5	-.748		Since starting nursing school my spirituality has decreased
SPF7		-.818	If my teachers understood my spirituality needs my nursing education would be more meaningful
SPF9		.786	My spiritual beliefs always affect how I care for patients

Notes:

a. *Component 1 explains 29.3% of the variance*
b. *Component 2 explains 28.2% of the variance*
c. *A negative sign (-) denotes a negatively directed question on the NSNEM Questionnaire*

into ranks and the mean for each group is compared. The Kruskal-Wallis test is also known as the *between groups'* analysis so different people must be each of the different groups.

After analyzing the data with the Kruskal-Wallis the data sets revealed that there was an uneven distribution in the between-groups of students at the different semesters of their nursing programs. As such, the original data set, which included six different

semester levels was considered skewed and could potentially produce biased data that was skewed incorrectly. To reduce biasing errors, the data was re-coded and the first and second semester students were assigned to the Level One group and all third, fourth, fifth, and sixth semester students were assigned to the Level Two groups. Recording the semester level variables into level one and level two variables resulted in roughly 50% of the sample falling into each grouping.

The data was then re-analyzed using the non-parametric Mann-Whitney U test, which is used to test for differences between two independent groups on a continuous measure. It converts the scores on the continuous variables to ranks, across two groups. It then evaluates whether the ranks for the two groups differ significantly (Tabachnick & Fidell, 2007). The factors that were statistically significant for the data set are included in Table 9.

The data revealed that there are not many differences between how nursing students at different levels in their nursing education perceive their nursing education. The factors that were statistically significant included that students who have progressed past their first year (at finishing at least two semesters) were more likely to perceive they were happier, more positive, had better nutrition, have a better understanding of the mind-spirit-body connection, perceived that they had discussed spiritual issues more frequently, and that their spiritual beliefs were more likely to affect how they cared for their patients; than the students who were in the first year of nursing school.

Analysis of Research Question 9

RQ 9: Are there significant differences in the created environment of the Associate Degree Nursing Program students as compared to the created environment of Baccalaureate Nursing Program students?

Table 9

Significant Differences Between Educational Levels

Factor	Neuman Questionnaire Label	Mean Ranks		Z value	Asymp. Sig
		Level 1	Level 2		
AF16	I feel Happy /Unhappy	56.7	69.2	-2.013	.04
PF 1	I feel Negative/Positive	49.4	63.9	-2.445	.01
PHF4	My nutrition is Inadequate/Adequate	63.0	51.1	-1.959	.05
SPF1	I feel the Mind-Body-Spirit is Non-Essential/ Essential	49.5	64.12	-2.544	.01
SPF8	Spiritual Issues are discussed Frequently/Infrequently	49.23	62.2	-2.237	.03
SPF9	My spiritual beliefs Never/Always affect the way I care for patients	49.6	63.2	-.210	.02

RQ 9 was analyzed using the non-parametric Mann-Whitney U test, which is used to test for differences between two independent groups on a continuous measure. It converts the scores on the continuous variables to ranks, across two groups. It then evaluates whether the ranks for the two groups differ significantly (Tabachnick & Fidell, 2007). This test was used to determine if there were statistical differences between nursing program types. The factors that were statistically significant for the data set are included in Table 10.

The data revealed that there are multiple factors in each of the seven subsections that demonstrate there is statistical significance in how students from associate degree nursing programs perceive their created environment as compared to students in baccalaureate nursing programs. In almost all cases, the data revealed that students in baccalaureate

Table 10

Significant Differences Between Program Types

Factor	Neuman Questionnaire Label	Mean Ranks		Z value	Asymp. Sig
		Associate Degree	Bac Degree		
AF7	Additional time with my Teacher Would be Helpful/Would Not be Helpful	70.3	56.2	-2.245	.03
AF9	Teachers stimulate my learning/do not stimulate my learning	57.3	70.6	-2.190	.03
AF11	Teachers do not show me respect/are respectful	70.6	54.5	-2.531	.01
AF12	Teachers use grades to control me/ do not use grades to control me	68.4	54.8	-2.138	.03
AF13	My study time is adequate/not adequate	72.3	54.11	-2.829	.01
AF19	The time I have to complete my assignments is reasonable/ inadequate	54.6	74.1	-3.029	.00
AF20	Teachers Inspire me/do not inspire me	55.6	72.18	-2.611	.01
AF25	Teachers provide guidance/avoid providing guidance	55.9	70.8	-2.362	.02
CF4	My clinical teachers are understanding/ are insensitive	53.23	67.8	-2.296	.02
CF16	When I go to my clinical rotations I feel tired/energized	66.2	52.1	-2.259	.02
CF 18	When I care for patients I feel valued/ not valued	65.9	51.8	-2.417	.02
PF1	I feel negative/positive	51.4	64.0	-2.097	.04
PF8	I feel uninspired/energized	65.1	49.12	-2.622	.01

Table 10 (continued)

PF12	I feel I can be successful	51.6	68.8	-2.768	.01
PF 14	My teachers respect my individuality/Do not respect my individuality	52.3	68.4	-2.633	.01
PF 15	My teachers are more concerned with themselves/are more concerned with me	68.7	48.6	-3.231	.00
DF4	My Development as a nursing student has been insignificant/ significant	66.2	48.7	-3.034	.00
DF7	My personal roles are more secure/ less secure	51.2	66.9	-2.560	.01
DF10	As a transition from student to nurse my teachers help me envision/keep me from envisioning my future as a nurse	46.3	72.8	-4.330	.00
DF15	I feel educated/uneducated	49.7	67.7	-2.996	.00
SCF2	My cultural beliefs are recognized/ ignored	50.1	64.2	-2.347	.02
SCF3	My social relationships are helpful/ detrimental to my success	51.8	64.3	-2.260	.02
SCF5	My financial situation affects/does not affect my academic success	68.0	45.4	-3.694	.00
SCF8	My teachers believe in me/do not believe in me	68.9	44.3	-4.100	.00
SCF9	My teachers care about my life/do not care about my life	44.7	71.9	-4.444	.00
SCF10	My teachers are role models for me	49.8	66.3	-2.788	.01
SCF11	My teachers care if I succeed/ do not care if I succeed	48.9	68.6	-3.270	.00

Table 10 (continued)

SCF14	My personal relationships deflate my self esteem/ increase my self esteem	62.9	50.0	-2.153	.03
SCF15	My teachers promote teamwork/do not promote teamwork	48.43	68.32	-3.325	.00
SCF16	I feel alone/part of a team	64.46	49.5	-2.467	.01
SCF19	My teachers are attentive/inattentive to my cultural needs	45.4	69.3	-4.048	.00
SCF20	I feel understood/misunderstood	47.13	70.1	-3.850	.00
PHF1	The sleep I get is sufficient/ insufficient	64.1	47.0	-2.847	.00
PHF2	I feel healthy/unhealthy	50.2	67.11	-2.743	.01
PHF3	The access I have to healthcare is sufficient/insufficient	68.0	45.45	-3.707	.00
PHF4	Prior to nursing school I was unhealthier/healthier	65.7	47.7	-2.935	.00
PHF5	I exercise never/regularly	70.0	45.0	-4.262	.00
PHF6	The sleep I get is sufficient/ insufficient	47.81	69.9	-3.633	.00
PHF7	When I am sick I attend class/stay home	61.84	51.33	-2.023	.04
PHF10	Nursing School has affected my health in negative/positive ways	63.8	48.2	-2.550	.01
SPF2	Exploring my personal spiritual feelings in unimportant /important	63.2	50.7	-2.091	.04
SPF6	Exploring my spirituality makes me feel more hopeful/hopeless	49.6	64.2	-2.493	.01
SPF8	Spirituality issues are addressed frequently/infrequently	49.9	66.1	-3.002	.00
SPF9	My spiritual beliefs never/always affects how I care for patents	48.9	66.1	-2.851	.00

programs were generally more positive and had higher mean ranks than did the associate degree students.

In the Academic Factors subsection, baccalaureate students were more positive about almost all the student-teacher relationship factors. In the Clinical Factors subsection, the baccalaureate students had higher rank means for factors involving the student-teacher relationship and that they felt energized by clinical rotations. The associate degree nursing students reported feeling more valued by their patients than did the baccalaureate students.

In the Psychological Factors subsection, the data reveals that the baccalaureate students had higher rank means in all the areas were statistically significant. This includes factors that reflect positive attitudes, feeling energized, that they can be more successful, and that their teachers are more concerned with student success than their own success.

In the Developmental Factors section the baccalaureate students rank their role development as a nurse has been more significant, feel more educated, and that their teachers help them envision their future roles as nurses. The associate degree nurse report that they are more secure in their personal roles.

The Sociocultural Factors subsection reveals that baccalaureate students see teachers as role models, they perceive that their teachers care if they succeed, their teachers don not promote teamwork and they also feel misunderstood. The associate degree students believe that their cultural beliefs are recognized, that their financial situations does not negatively affect their academics, their teachers believe in them, and that they feel alone.

The Physiological Factors subsection the baccalaureate students report that they feel unhealthy and their sleep is insufficient. The associate degree students report that they are unhealthier, they never exercise, and when they are sick they stay home from class.

The Spiritual Factors subsection reveals that the baccalaureate students feel that exploring spirituality issues are important, that their spiritual beliefs affect how they care for their patients, exploring spirituality issues makes them feel more hopeful, and that spirituality issues are addressed more frequently than those of the associate degree program nursing students.

Statistical Assessment of the NSNEM

The statistical analysis of the Neuman Systems Nursing Education Model (NSNEM) revealed that it was wholly appropriate to divide the model in the seven subsections and to run factor analyses on each section to examine the constructs that provided information about research questions 1-7. Each subsection allowed for generation of important data that helped describe and generate additional understanding of the created environment of nursing students and how nursing teachers can help provide interventions that address variables form many facets of a nursing student's life that can help the nursing students to be successful.

The data generated in answering RQ 8 about differences in nursing students who are at different levels provided important information for nursing students and nursing educators to consider when thinking about the differing needs that students may have. The Mann-Whitney U test allowed for clear identification of several factors from the NSNEM subsections that highlights the fact that nursing students have some different learning needs and concerns at different points in their programs.

The data generated from the Mann-Whitney U test to answer RQ 9 produced multiple differences between how nursing students in associate degree programs and students perceive the factors that influence their success in nursing school. At this point there is

no information that supports answering why the data demonstrated these differences, just that they exist.

The data certainly supported the use of empirical testing methods to gain information about the created environment of nursing students and that the use of multiple factor analyses was an effective way to generate information about affective thought, values, and ides, and provide a mechanism for reducing and prioritizing large amounts of data into understandable patterns and to extract meaning from the results.

CHAPTER 6

SUMMARIES, CONCLUSIONS, AND RECOMENDATIONS

FINDINGS OF THE STUDY

Summary of Research Purpose and Methods

The primary purpose of this paper was to present the strategies and rationale for creation of a middle range nursing theory that is specific to nursing education. The secondary purpose of this research paper was to initiate preliminary research based the basic constructs of the NSNEM that are specifically applicable to nursing education. It is proposed that use of the NSNEM provides the theoretical framework for creating research methods and empirical testing methods that will allow for further exploration of the concepts of the *created environment* and *prevention as intervention* in relation to nursing education.

The NSNEM questionnaire, a newly developed survey, was used for data collection and was designed by the researcher to gather initial data and findings, which could help define the created environment of nursing students. The research study was a non-experimental, exploratory and descriptive research design study with quantitative data analysis that included seven factor analyses and non-parametric tests to help explain and define what the created environment of registered nursing students is, using the concepts found in the NSM and in the NSNEM.

This chapter presents discussion about the five variables and findings for the nine research questions, as well as ancillary analyses and issues. Conclusions of this study, study limitations, implications for further study, and recommendations for further research are also presented.

Discussion of NSNEM Conceptual Model and Findings

The primary purposes of this study were to determine if the propositions of the NSNEM were valid and would provide a framework for creation of a middle-range nursing model/theory specific to nursing education, to determine of the propositions of the model were valid and appropriate to support further research based on the student centered NSNEM model, and to conduct initial research related to the created environment of nursing students, which was one of the two major constructs of the proposed middle range theory.

The data generated from the NSNEM questionnaire produced interesting insights into what constitutes the created environment of nursing students and validates the propositions of the NSNEM as being valid. The basic proposition of placing the nursing student at the core of the nursing educational model, just as the client or patient is in the center of the NSM, allowed the researcher to (a) consider the totality of a nursing student's life experiences, and to (b) also examine personal variables in relation to their ability to adapt to the stressors encountered in the nursing education period by examining the created environment of the nursing student and allowed the researcher to consider how nursing education is delivered, and if current practices are truly aligned with the philosophical underpinnings of progressive student- centered learning and teaching, or whether nursing education has remained connected to more teacher –centered philosophies.

Initiating research into the created environment of the nursing student and development of the NSNEM questionnaire built on the basic proposition of that model, which places the student is at the core of the NSNEM, also allowed the researcher to consider how nursing students perceive the wholeness of their created environment, and

to create initial impressions of that environment and how nursing faculty can support the continued academic and personal success of each student during their nursing education period. The following is a discussion of the theoretical propositions of the NSNEM presented earlier in this paper, and how initial impressions and meanings about the created environment of nursing students can be constructed.

1. Each individual nursing student is considered to be unique with known and understandable common characteristics.

When initiating research on the created environment of the nursing student, it was a challenge to determine if it would be possible to gain a singular collective sense of what the students were saying about how they perceived the totality of factors that were determining whether or not they would be successful in nursing school. This realization made it very clear to the researcher that along with gaining aggregate information, that it would still be important to gain insight into what the "one voice" of a nursing student was saying. The NSNEM questionnaire, the students were given the option to write individual comments about each question, and write they did. Most of the comments were reflections on the day-to-day, course-to-course, semester-to-semester, challenges they were facing while going to school. Although not a formal part of the empirical testing methods, it was impossible to not mentally "hear" those comments while assimilating meaning from the results. Each of these students most definitely have individual needs that extend far beyond the confines of the classroom and clinical setting. Their collective voice, which is reflected in the statistical outputs, and their individual voices were clear in telling nursing educators, that the relationship we cultivate with them is known and important to them.

2. Each student encounters stressors during their nursing education. These can be universal in nature, known and unknown. Each stressor differs in its potential to

disturb the student's usual stability of normal line of defense. There is a complex interrelationship and connection between the client variables (physiological, psychological, sociocultural, developmental, and spiritual) that can affect the degree to which the student can be protected by the flexible lines of defense against possible reaction to a single or multiple stressors.

The results of the study clearly showed that there are a number of stressors that each student experiences during his/her nursing education period, and these stressors definitely affect the way they learn in both the academic and clinical settings. The results demonstrated that the students are very aware that their family situations are complicated and add another whole layer of complexity to how they are able to positively adapt while in school. For example, the results from the Physiological Factors demonstrated that the nursing students are not healthy. It may be from internally based stressors they create, or it can be from externally based stressors that are "forced" upon them as part of their nursing education, like time- consuming clinical assignments they are given to complete the night before a clinical rotation. An interesting finding that might fit in the "unknown" stressor category, is found in the fact that the questionnaire results revealed that the students had increased their use of prayer during their nursing education period or that they perceived that their nursing education period would be enhanced if they were given more opportunities to explore spirituality issues.

3. Each student has a self- created normal range of responses within their personal environment that is referred to as the normal line of defense. It represents change over time through the student's ability to cope with the complex nature of stress encounters. The normal line of defense can be used as the standard from which to measure hardiness (successful adaptation) or dissonance (unsuccessful) adaptation

in the nursing education period.

This proposition demonstrated that there was huge variation in how each individual reacts to the stressors they encounter in their nursing education period. Those who had stronger family and social connections had created stronger lines of defense, while those who did not, reported they felt lonely or misunderstood. The results from the Developmental Factors section revealed that the students were well aware of the tremendous strides they were taking in their role development and transitioning period towards becoming professional nurses.

When the cushioning effects of the flexible line of defense can no longer protect the student from the stressor(s); the stressor(s) breaks through the normal line of defense. The interrelationship of variables (physiological, psychological, sociocultural, developmental, and spiritual) determine the nature and degree of student reaction or possible reaction to the stressor(s).

The responses revealed that for the most part students knew when they were not coping well, or needed help. The results revealed that they felt that their teachers were approachable, wanted them to succeed and that on a whole they felt valued and hopeful. They did worry about their grades, but no inferences can be made about whether that was positive or negative adaptation to academic stress.

One of the most interesting findings from the results revealed that as whole, in almost every situation, students in the baccalaureate programs demonstrated that their flexible lines of defense enabled them to make positive adaptation to the stressors and that their created environment, in both their internal environments and external environments was functioning at a higher level than that of the associate degree students.

4. The student, whether in a state of adaptive hardiness or maladaptive dissonance is

a dynamic composite of the variables (physiological, psychological, sociocultural, developmental, and spiritual). Hardiness (positive adaptation) is on a continuum of available adaptation to support the student in an optimal state of student stability. Dissonance (negative adaptation) is a condition where student stability is not supported and the student will have suboptimal performance and will be found in a state of instability.

While hardiness and dissonance were not directly referred to as such, the very use of a questionnaire using a semantic differential methodology, gave clear evidence that positive adaptation produced academic hardiness and that the maladaptive processes that students used, produced dissonance. The students clearly recognized that their sociocultural relationships and the relationships with their nursing faculty strengthened their normal lines of defense, and in essence made them more hardy as students. Once again, the Physiological Factors revealed that the students understood the value of physical health and well-being but that did not necessarily translate into changed behaviors!

5. Implicit in each student are internal resistance factors known as lines of resistance, which function to stabilize the student and return the student to optimal states of performance on the hardiness-dissonance continuum, following a stressor reaction.

This study was not interventional in nature, so the questionnaire did not really deal with determining how students act or react to stressors. The questionnaire was used to gain more of a global sense of what could generally be inferred about the created environment of a typical nursing student. It is clear from the data that there are ways that students could be helped to strengthen their lines of resistance and defense, and through

the future study of prevention as intervention. This is an area that can and should be researched with the context of the NSNEM.

6. Primary prevention relates to the general knowledge that is applied to assessing the student and creating interventions through early by identification and mitigation of the circumstances that pose actual or potential risk factors that can affect academic and clinical performance, and to prevent possible negative and maladaptive reactions.

The responses in each of the NSNEM questionnaire subsections, also indicates that the concept of prevention as intervention is certainly worthy of further research. It has the potential to aid a nursing educator in intervening on three different levels to help promote the highest level of student academic wellness during their formal nursing education period. The data highlighted the fact that that nurse educators must consider their students as individuals who have special and varying needs, and that how we work to help students be successful must be considered from a multi-contextual viewpoint. To support the educator's role in the NSNEM, the study also explored the concept of the "caregiver as instructor" role, which mirrors the "client as student" role and examined the relationship between successful student adaptation and meaningful instructor intervention in the created environment.

In analyzing the results in terms of the created environment of students, the NSNEM has the potential to guide nursing faculty to create primary prevention interventions at all levels throughout the curriculum. If nursing faculty know that students want to explore spirituality issues, or feel that would enhance their learning, then perhaps those interventions should be included throughout any student-centered curriculum. If faculty know that their student's health through the nursing education period, may be at risk,

perhaps addressing their health issues early in their nursing education would prevent negative health situations from occurring.

7. Secondary prevention relates to the general knowledge that is applied to actual student reactions to stressors, and the creation of interventions that can be employed by both teacher and learner to reduce further threats by stressors to the student.

Throughout the questionnaire results, knowledge of the factors that make up the emerging patterns of the created environment, can help nurse educators to develop and foster relationships that will allow students to feel comfortable and safe in asking for help in their academic, clinical performance, or in their personal life. Intervening when the academic or personal problems are small, may make the difference in whether a student is ultimately successful.

8. Tertiary prevention relates to the adaptive processes and interventions that can be employed after there has been negative adaptation to the stressors and there has been dissonance between academic standards and the student's performance. The teaching and learner interventions are based on initiating the reconstitution phase, to focus on returning the student to satisfactory academic performance. The successful interventions return the student to a state of academic stability where once again, the constructs of primary prevention can be used to improve academic performance.

Nursing faculty deal with the students who are not adapting or making the kind of academic progress that is necessary to be successful. They are in essence, the "academically critically ill" patient. While difficult, if there is a chance the students can be helped to be returned to higher academically functioning level, then efforts should

be made to make interventions on a tertiary level. The results of this questionnaire point to the fact that the answer lies within the teacher's ability and resources to create an environment for students to be remediated and to become academically healthier.

In an acute care setting, miracles happen. In some cases, even the most critically ill patients not only can survive, but actually can thrive with the timely and skilled interventions of the nurses that care for them. In the NSNEM, if the teacher assumes the rule of academic caregiver, then perhaps there are some skilled interventions that can be made to help "revive" a student who has been negatively impacted and is not meeting the needed academic outcomes.

9. The student is a dynamic individual in the center of the nursing education–learning environment. Each student has unique learning needs, which can be fostered with caring and concern by the teacher. Students accept responsibility and accountability for their learning. The teacher intervenes at three levels of intervention as prevention to help promote learning and progression to successful professional role acquisition.

The results from every one of the subsections of the NSNEM questionnaire revealed that the singular most important factor that students perceive as being essential for their academic success is their relationship with their teachers. The responses underscore the trust and faith that nursing students place in their teachers and the symbiotic relationship that must be fostered for nursing student success. The results also indicate that to nursing students, there is not an area where teacher involvement is not a significant factor in their success. To the students, the student-teacher relationship extends beyond the academic and clinical areas, and is significant in the psychological, sociocultural, developmental, physiologic, and spiritual areas of their lives. This is indicative of the fact that the

NSNEM is an appropriate model for examining the strength or fragility of the flexible lines of defense, and the student's ability to make successful adaptation in the nursing education period.

Study Limitations

The most obvious limitation in this study was the number of participants. The sample characteristics may not have accurately represented the general nursing student population because all the students used in this study were students who attend state supported colleges and universities. Another possible limitation is that the results were all self-reported measures and may not be valid and/or reliable measures of how the student really perceived the factors being assessed in the NSNEM questionnaire.

The results of this study would be strengthened if there were many more participants and if they study was replicated in nursing programs across the country. Another limitation was that the NSNEM questionnaire was developed to only gather initial data and to gain perspective on how students perceive the wholeness of the nursing education period. The survey tool needs further testing for reliability and validity.

Implications of the Study

This research generated the creation of the Neuman Systems Nursing Education Model, which is a new model specific to nursing education. This is seen as a step towards creation of a middle range theory of nursing education. This research provided a broader understanding of the concept of the created environment in nursing students. It also provided foundational structure for further clarification and study of concepts in nursing education. The study also helped to demonstrate that a middle range nursing education theory based on the NSM, is a framework that can help nurse educators in the future to both create a clearer understanding of the student's created environment and then to be

able to incorporate the tenets of prevention as intervention to help the student.

Recommendations for Practice and Further Research

The most important recommendation for practice that can be made in light of the results from this study, are that nursing educators need to be made aware of the fact that students consider their personal relationship with their nursing teachers as being the very most important factor in whether they will be successful or not during their academic period. This study underscores the absolute necessity for nurse educators to consider variables that the students are encountering while in nursing school, and to realize that each of these students does indeed, have unique, special, and varying needs. This is concept is central to embracing student-centered learning and teaching.

In considering recommendations for further research, it is imperative to understand the defining hallmark of a meaningful middle range theory is whether research can be generated from its use and from use of its defining concepts (Smith & Liehr, 2008). As previously stated, the two major concepts derived from the Neuman Systems Educational Model (NSNEM) the original Neuman Systems Model are: (a) the created environment and (b) prevention as intervention in nursing education.

This research study underscored the importance of considering the needs of individual students and exploring the created environments of their students in five interacting variable areas individually and also collectively. Just as the client is the central focal point of NSM research, it is equally important that in research using the NSNEM, that the student and his/her five interacting variables also be the research keystone of this middle range theory. As such, creation of the NSMEM provides the needed framework for an initial study examining nursing student perceptions of the student-teacher relationship

and the factors in their created environment, that can help support or hinder academic success.

Another defining characteristic of middle range theory is that the concepts can be tested and evaluated, because the concepts are more concrete (Fawcett & Alligood, 2005; Smith & Liehr, 2008). While comprehension of the concepts of the created environment and prevention as intervention in the NSM may be more nebulous and difficult concepts to understand; when conceptualized in terms of a nursing student or their relationship with a caring instructor, it is much easier to create the appropriate parameters for further research and study.

For example, it would be possible to narrow the focus of study to the created environment of first semester nursing students who are living away from home for the first time, to study the created environment of the clinical nursing student working in critical care, or to study the psychosocial issues that affect nursing student success.

This research study also presented many areas that need to be studied in terms of nursing education as a specialty area. Would there be significant difference in the study results betweens student who attend nursing programs with teacher –centered curricula as opposed to those with student centered curricula?

The study revealed gaps in how students perceive how spirituality issues are taught and explored. Are there more meaningful ways to teach and address spirituality issues with nursing students? Do nursing instructors have preconceived ideas about spirituality issues that keep them from discussing them in the academic and clinical setting?

The research also demonstrated that social relationships with other students are extremely important to their success. Do nursing teachers, look for teaching opportunities that would enhance the possibility of improved social relationships in the academic

setting? Is teamwork promoted and opportunities for improving social skills provided and encouraged? Do faculty believe it is appropriate to intervene to aid students who may find creating social relationships difficult?

This research also highlighted the fact that when it comes to physiological health, faculty may not be promoting health practices that can help students to actually be healthy while they are students. Are there interventions teachers can implement to help nursing students to be more healthy? Are there ways to prevent some of their unhealthy behaviors?

This initial research demonstrates how important it is to students for teachers to explore role development during the nursing education period and to help their students make the complex transition from student to professional nurse. It was also clear from the study results that the created environment of students from baccalaureate programs have entirely different perceptions about their created environments, than do those form associate degree program. What factors are present in their education that should/must/ can be replicated in an associate degree program that will help those students to be more successful?

Summary

The purposes of this paper were to: (a) present the strategies and rationale for creation of a middle range nursing theory that is specific to nursing education, (b) to determine if propositions of the model are valid and appropriate to support further research based on the student-centered education model, and (c) to conduct initial research on the *created environment* of nursing students, which is one of two the primary constructs of the nursing education model

To summarize, in considering the three purposes of this research, it is apparent

that there is ample evidence to support the creation or a middle range nursing theory of nursing education. Further, by incorporating the known terminology and concepts from Neumans Systems Model, there are a "built-in set of values, concepts, and knowledge that can be transferred from a practice setting to an academic setting. By adapting this middle-range theory from an existing and well- tested theory, it is possible to construct meaningful research immediately with its inception.

The results demonstrate that the propositions of the NSNEM are an appropriate representation of the concepts in the education model and can be used to further test concepts from the model in the academic setting.. The propositions provide a systematic way to evaluate the students' responses about how they perceive their creative environment and to provide a usable framework to evaluate their responses.

Further, this research supported the study of the created environment as a methodology for considering the needs of nursing students and for the continued use of the model as one that supports the use of student-centered learning. It is clear that these are all research areas worthy of further quantitative and qualitative research. Similarly, when the concept of prevention as intervention is further researched, there is support that the NSNEM has the potential to provide an easily understandable framework to research student success from a holistic frame of reference. Defining and understanding the created environment of nursing students is the first step in creating a middle-range nursing education theory that will be mutually beneficial for both nurse educators and students for years to come.

APPENDIX A

COPYRIGHT PERMISSION

Diane Elmore
1850 Griswold Drive
Elko, Nevada 89801-2651
775-738-5591 (H)

March 26, 2010

Dr. Betty Neuman
P.O. Box 77
Watertown, OH 45715

Dear Dr. Neuman:

I am completing a doctoral dissertation at the University of Nevada, Las Vegas University entitled " Empirical Testing of the Neuman Systems Nursing Education Model: Exploring the Created Environment of Registered Nursing Students in Nevada's Colleges and Universities."

I would like your permission to reprint in my dissertation excerpts from the following:

1. A copy of the Neuman Systems Model Image (page 13) from:Neuman, B. M., & Fawcett, J. (2002). *The Neuman systems model* (4th ed.). Upper Saddle River,NJ: Prentice Hall.

2. Permission to revise the NSM model image. The model has been revised to show the new as the Neuman Systems Nursing Education Model (NSNEM). (Attached on to permission letter)

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If these arrangements meet with your approval, please sign this letter where indicated below and return it to me in the enclosed return envelope. Thank you very much.

Sincerely,

Diane Hoem Elmore

Diane Hoem Elmore Ph.D (c), MSN, RN

PERMISSION GRANTED FOR THE USE REQUESTED ABOVE:

Dr. Betty Neuman

Dr. Betty Neuman

Date: 3/26/10

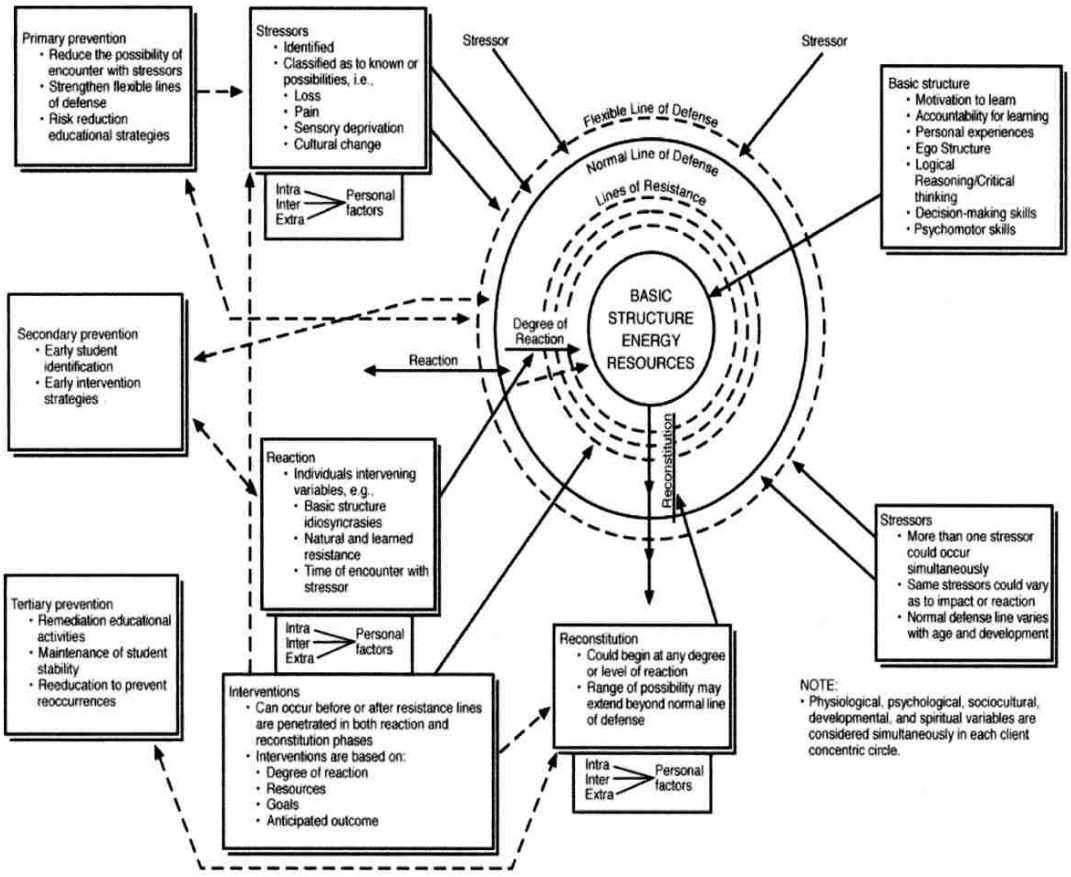

Figure 2 The Neuman Systems Nursing Education Model

Note: Adapted from The Neuman Systems Model (p. 13) by B. Neuman and J. Fawcett, 2002, Upper Saddle River, NJ: Prentice Hall. Original copyright ©1970 by Betty Neuman. Adapted with permission.

APPENDIX B

RECRUITMENT LETTER FOR DEANS ANS DIRECTORS

Date: November 19, 2009

Protocol Number: 0907-3156M

Protocol Title: Empirical Testing of the Neuman Systems Nursing Education Model: Exploring the Created Environment of Nursing Students in Nevada's System of Higher Education

Dear Dr/MS._____

A research study entitled *Empirical Testing of the Neuman Systems Nursing Education Model: Exploring the Created Environment of Nursing Students in Nevada's System of Higher Education* is being conducted by a doctoral nursing student from the University of Nevada, Las Vegas. We have attached the IRB approval from UNLV, which has determined that this survey has exempt status.

The purpose of this quantitative is to present the strategies and rationale for creation of a middle range nursing theory that is specific to nursing education and to begin empirical testing of the *Created Environment* of the nursing student, which is one of the major constructs of the theory. The study is aimed at providing new knowledge to nursing and more specifically to nursing education. The study will help *nurse educator*s better understand the complex and multidimensional nature of the environment that nursing students live and perform in. This will provide foundational data to create more meaningful interventions that will help better facilitate student success through their nursing education period.

We are requesting permission to have your institution designate a representative who will:

1) Has access to student e-mail accounts and is willing to help with the project.

2) E-mail an investigator produced recruitment letter and information flyer to all formally admitted nursing students from you institution between now and November 30, 2009.

3) E-mail the Survey Monkey survey link, via e-mail to all nursing students on November 30th and re-send the Survey Monkey survey link via e-mail one week later on December 7th.

The survey asks for demographic information and includes questions about the student's perceptions about their academic education, clinical education, psychological factors, sociocultural factors, developmental factors, and spiritual factors; and how they perceive those variables either hindering or contributing to their success. The survey takes approximately 20-30 minutes to complete.

If requested, the results of the study will be also be made available to all of the participating colleges and universities. The results will be e-mailed to the designated members of the nursing departments who helped disseminate the survey.

If you have any questions regarding the study, you can contact Diane Elmore, Student Investigator, at dmeelko@msn.com or dianee@gwmail.gbcnv.edu

Thank-you for your time and we look forward to your collaboration in this study.

Dr. Margaret Louis
Principal Investigator
University of Nevada, Las Vegas
Contact Phone: 702-895-3812

Diane Elmore, PhD(c), MSN, RN
PhD Doctoral Student Investigator
University of Nevada, Las Vegas
Contact Phone: 775-777-1810

APPENDIX C

NURSING RECRUITMENT FLYER

HAVE YOU EVER WISHED YOUR NURSING

INSTRUCTORS UNDERSTOOD YOU BETTER?

Now is your chance to let them know what you think and how you feel!

Are you a registered nursing student currently enrolled in one of Nevada's Public Universities or Colleges?
If so, you may be eligible to participate in a nursing research study!

PURPOSE OF THE RESEARCH STUDY: To collect data to identify the academic factors, clinical factors, psychological factors, sociocultural factors, developmental factors, physiologic factors, and the spiritual factors that affect your life as a nursing student.

WHO IS ELIGIBLE: All registered nursing students who are at least 18 years of age and are enrolled in one of Nevada's public universities or colleges.

Confidentiality will always be maintained.
Your email addresses will never be shared with anyone and the only persons who have access to survey responses are the Principal Investigator and Student Investigator of the study.

Time Commitment

The research study questionnaire will be e-mailed to you and will take approximately 20-30 minutes of your time and there is NO financial cost to you for participating!

- **WHAT YOU WILL BE DOING IN THE RESEARCH STUDY:**

✓ You will be asked to answer survey questions on-line between November 30, 2009 and December 18, 2009.
✓ The survey will be available to you via a secure and encrypted web link that will be e-mailed to you.
✓ You will be asked about demographic information, and what you think and how you feel about your nursing education experience.

- **HOW TO BECOME A PARTCIPANT:**

1. Simply "click on" the survey link that will be emailed to you by a representative of your college or university.
2. Complete the survey and click "done" and your survey is completed.

- **CONTACT INFORMATION:**

If you have questions about this research study, please contact the investigators. ***Principal Investigator:*** Dr. Margaret Louis, University of Nevada, Las Vegas, Nursing Department; Contact number: 702-895-3812 ***Student Investigator:*** Diane Elmore, MSN, RN, University of Nevada, Las Vegas , Contact number: 775-777-1810 or 775-934-0560

APPENDIX D

SURVEY TOOL: ACADEMIC FACTORS

Introductory section statement: When thinking about my Academic experiences,

Factor	Item
AF1	I feel that generally I feel UNPREPARED/PREPARED
AF2	I feel the required reading is EASY/HARD
AF3	I feel that generally the classroom environments I have experiences are STRESSFUL/CALM
AF4	I feel my nursing assignments are HELPFUL/NOT HELPFUL
AF5	When it comes to my grades, generally I feel WORRIED/AT EASE
AF6	I believe that when it comes to communicating with my teachers, I can communicate EFFECTIVELY/INEFFECTIVELY
AF7	Having extra time in the classroom with my teachers WOULD BE HELPFL/ WOULD NOT BE HELPFUL
AF8	I generally feel STRESSED/NO STRESS
AF9	My teachers STIMULATE MY DESIRE TO LEARN/DO NOT STIMULATE MY DESIRE TO LEARN
AF10	I feel my instructors are UNPREPARED TO TEACH ME/PREPARED TO TEACH ME
AF11	I Feel my teachers SHOW NO PERSONAL INTEREST IN ME/ SHOW PERSONAL INTEREST IN ME.
AF12	I feel that in nursing school my nursing instructors USE GRADES TO CONTROL THEIR STUDENTS/DO NOT USE GRADES TO CONTROL THEIR STUDENTS
AF13	The amount of time I have to spend studying is NOT ADEQUATE/ ADEQUATE
AF14	Personal teacher attention is ESSENTIAL/NON-ESSENTIAL
AF15	I generally feel INCOMPETENT/ COMPETENT

AF16	I generally feel UNHAPPY/HAPPY
AF17	Generally, my teachers exhibit CARING BEHAVIORS/ UNCARING BEHAVIORS
AF18	The role I take in class participation is ACTIVE/PASSIVE
AF19	The amount of time it takes to complete my assignments is REASONABLE/ EXCESSIVE
AF20	Generally, I feel my teachers INSPIRE ME TO DO MT BEST WORK/DO NOT INSPIRE ME TO DO MY BEST WORK
AF21	I feel generally I am RESPONSIBLE/IRRESPONSIBLE
AF22	Teachers are UNSUITABLE ROLE MODELS/ SUITABLE ROLE MODELS
AF23	I usually feel DISORGANIZED/ORGANIZED
AF24	My instructors are ENCOURAGING/DISCOURAGING
AF25	My teachers PROVIDE GUIDANCE TO ME/ AVOID HELPING ME

APPENDIX E

SURVEY TOOL: CLINICAL FACTORS

Introductory section statement: When thinking about my Clinical Nursing experiences,

Factor	Item
CF1	I usually am PREPARED/UNPREPARED
CF2	My clinical instructors are DISTANT/APPROACHABLE
CF3A	In my clinical rotations I generally feel I AM CONFIDENT/I LACK CONFIDENCE
CF3B	When I care for my patients generally I feel EFFECTIVE INEFFECTIVE
CF4	I feel my clinical instructors are UNDERSTANDING/INSENSITIVE
CF5	My clinical skills are ADEQUATE/INADEQUATE
CF6	When I care for patients, I am INDIFFERENT/CARING
CF7	The amount of clinical preparation I have to do is APPROPRIATE/ EXCESSIVE
CF8	My teachers are ATTENTIVE TO MY NEEDS/INATTENTIVE TO MY NEEDS
CF9	My clinical rotations are ENJOYABLE/FRIGHTENING
CF10	My instructors are IMPATIENT WITH ME/PATIENT WITH ME
CF11	My instructors are GOOD RESOURCES FOR ME/POOR RESOURCES FOR ME
CF12	My clinicals are STRESSFUL/CALM
CF13	I feel KNOWLEDGEABLE/IGNORANT
CF14	I feel my instructors want me to focus on COMPLETNG TASKS/CARING FOR MY PATIENTS
CF15	I feel I am UNSAFE/SAFE
CF16	When I go to my clinical rotations I generally feel TIRED/ALERT

CF17	Generally, I feel HAPPY/SAD
CF18	I feel the work I do caring for patients is VALUED/HAS NO VALUE
CF19	In my clinical rotations I feel UNCOMFORTABLE ASKING FOR HELP/ COMFORTABLE ASKING FOR HELP
CF20	When I have to perform new skill, I generally feel FEARFUL/FEARLESS

APPENDIX F

SURVEY TOOL: PSYCHOLOGICAL FACTORS

Introductory Section Statement: When I think of the Psychological Factors that affect my nursing education.

Factor	Item
PF1	Generally, I feel POSITIVE/NEGATIVE
PF2	Generally, I feel I am a HAPPY PERSON/UNHAPPY PERSON
PF3	Compared to my classmates, I feel I have MORE SELF=ESTEEM/LESS SELF- ESTEEM
PF4	Generally, I feel CALM/STRESSED
PF5	Generally, I feel WORTHLESS/VALUED
PF6	Generally, I feel EFFECTIVE /INEFFECTIVE
PF7	I feel APPRECIATED/IGNORED
PF8	I feel UNINSPIRED/ENERGIZED
PF9	I feel CONNECTED/ISOLATED
PF10	I feel PASSIVE/ACTIVE
PF11	Generally, I feel CALM/ANXIOUS
PF12	Generally, I feel CERTAIN I WILL BE SUCCESSFUL/WORRIED I WILL NOT BE SUCCESSFUL
PF13	I feel NURTURED/LONELY
PF14	I feel my instructors RESPECT MY INDIVIDUALITY/DO NOT RESPECT MY INDIVIDUALITY
PF15	I feel my instructors are MORE CONCERNED ABOUT THEMSELVES/ MORE CONCERNED WITH ME

APPENDIX G

SURVEY TOOL: DEVELOPMENTAL FACTORS

Introductory Section Statement: When thinking about the Development Factors and Roles I assume in my nursing education,

Factor	Item
DF1	At this stage of my life, I feel CONFIDENT/FRIGHTENED
DF2	In my role as a nursing student DISRESPECTED/RESPECTED
DF3	I feel moral reasoning is ESSENTIAL/NON-ESSENTIAL
DF4	My development as a nursing student has been INSIGNIFICANT/ SIGNIFICANT
DF5	My view of the human condition EXPANDED/DIMINISHED
DF6	My social roles have been STRENGTHENED/WEAKENED
DF7	My personal roles are MORE SECURE/LESS SECURE
DF8	As I transition from student to nurse I feel PREPARED/UNPREPARED
DF9	As I transition from student to nurse I feel INCOMPETENT/COMPETENT
DF9	As I transition from student to nurse I feel my instructors HELP ME ENVISION MY FUTURE ROLE AS A NURSE/KEEP ME FROM ENVISIONING MY ROLE AS A NURSE
DF11	As I transition from student to nurse I feel KNOWLEDGEABLE/ IGNORANT
DF12	My transition from student to nurse is SMOOTH/ROUGH
DF13	My transition from student to nurse makes me feel EXPERIENCED/ INEXPERIENCED
DF14	My transition from student to nurse makes me feel SATISFIED/ UNSATISFIED
DF15	When I think of my future role as a nurse, I feel EDUCATED/ UNEDUCATED

APPENDIX H

SURVEY TOOL: SOCIOCULTURAL FACTORS

Introductory Section Statement: When I think of the Sociocultural Factors that affect me in my in my nursing education,

Factor	Item
SCF1	The relationship I develop with my classmates are IMPORTANT/ UNIMPORTANT
SCF2	My cultural beliefs RECOGNIZED/IGNORED
SCF3	My personal relationships ARE HELPFUL TO MY SUCCESS/ARE DETRIMENTAL TO MY SUCCESS
SCF4	My personal life UNCOMPLICATED/COMPLICATED
SCF5	My financial situation AFFECTS MY ACADEMIC PERFORMANCE/ DOES NOT AFFECT MY ACADEMIC PERFORMANCE
SCF6	My family INCREASE STGRESS FOR ME
SCF7	As a classmate, I feel APPROACHABLE/UNAAPROACHABLE
SCF8	Generally, my nursing instructors DO NOT BELIEVE IN ME/BELIEVE IN ME
SCF9	My nursing instructors CARE ABOUT MY LIFE/ARE NOT CONCERNED ABOUT ME
SCF10	My nursing instructors are ROLE MODELS/ARE NOT ROLE MODELS
SCF11	My instructors CARE IF I SUCCEED/DO NOT CARE IF I SUCCEED
SCF12	My classmates are UNDERSTANDING/INSENSITIVE
SCF13	My classmates are FRIENDLY/HOSTILE
SCF14	My personal relationships DELFALTE MY SELF-ESTEEM/ENHANCE MY SELF ESTEEM
SCF15	My teachers PROMOTE TEAMWORK/DO NOT PROMOTE TEAMWORK
SCF16	I feel I AM ALONE/PART OF A TEAM

SCF17	My home provides a CALM ENVIRONMENT FOR ME/STRESSFUL ENVIRONMENT FOR ME
SCF18	My classmates are UNCARING/CARING
SCF19	My teachers are ATTENTIVE TO MY CULTURAL NEEDS/ INATTENTIVE TO MY CULTURAL NEEDS
SCF20	I feel UNDERSTOOD/MISUNDERSTOOD

APPENDIX I

SURVEY TOOL: PHYSIOLOGICAL FACTORS

Introductory Section Statement: When I think of the Physiological Factors that affect me in my in my nursing education,

Factor Item	
PHF1	Generally, I feel TIRED/ENERGIZED
PHF2	I feel HEALTHY/UNHEALTHY
PHF3	My energy level is LOW/HIGH
PHF4	My nutrition is INADEQUATE/ADEQUATE
PHF5	I exercise NEVER/REGULARLY
PHF6	The sleep I get is SUFFICIENT/INSUFFICIENT
PHF7	Generally when I am sick, I feel I should ATTEND CLASS/STAY HOME
PHF8	The access I have to healthcare SUFFICIENT/INSUFFICIENT
PHF9	Prior to attending nursing school I was UNHEALTHIER/HEALTHIER
PHF10	Being in nursing school has affected my health in NEGATIVE WAYS/ POSITIVE WAYS

APPENDIX J

SURVEY TOOL: SPIRITUAL FACTORS

Introductory Section Statement: When I think of the Spiritual that affect me in my in my nursing education,

Factor Item	
SPF1	Understanding the mind-body-spirit connection is NONESSENTIAL/ ESSENTIAL
SPF2	Exploring my personal spirituality is UNIMPORTANT/IMPORTANT
SPF3	Caring and spirituality RELATED/NOT RELATED
SPF4	My reliance on meditation/prayer has INCREASED/DECREASED
SPF5	Since starting my nursing education , I feel my spirituality has DECREASED/INCREASED
SPF6	Exploring my spiritual feelings make me feel HOPEFUL/HOPELESS
SPF7	If my nursing educators understood my spiritual needs, my education would be MORE MEANINGFUL/LESS MEANINGFUL
SPF8	Spirituality issues are addressed FREQUENTLY/INFREQUENTLY
SPF9	My spiritual beliefs affect how I care for my patients
SPF10	I believe that in nursing school, exploring my feelings about death and dying are NON-ESSENTIAL/ESSENTIAL

APPENDIX K

NSNEM ONLINE QUESTIONNAIRE

1. Description of the Study

TITLE OF THE RESEARCH STUDY: Empirical Testing of the Neuman Systems Nursing Education Model: Exploring the Created Environment of Registered Nursing Students in Nevada's Colleges and Universities

INVESTIGATORS: Principal Investigator: Dr. Margaret Louis;702-895-3812; FAX: 702-895-4807 Student Investigator: Diane Elmore MSN, RN;775-738-5591
For questions regarding the rights of research subjects, any complaints or comments regarding the manner in which this research study is being conducted you may contact the UNLV Office for the Protection of Research Subjects at 702-895-2794.

DESCRIPTION:
The purpose of this quantitative study is to present the strategies and rationale for creation of a middle range nursing theory that is specific to nursing education and to begin empirical testing of the Created Environment of the nursing student, The study is aimed at providing new knowledge to nursing and to nursing education. The study will help nurse educators better understand the complex and multidimensional nature of the environment that nursing students live and perform in. This will provide foundational data to create more meaningful interventions that will help better facilitate student success through their nursing education period.

* If you agree to participate in this research study, please read the information below and on the next three pages. Press the "NEXT" button at the bottom of each page and the next page will appear. Once you read the consent, information, and directions pages, press the "NEXT" button at the bottom of the page and the survey will begin. You may press the "EXIT THIS SURVEY" button in the top right hand corner of the screen to leave the survey at any time.

2. Informed Consent

Eligible Participants & Procedures for the Research Study
You are being asked to participate in the study because:1) you are currently and officially enrolled in one of the seven Nevada System of Higher Education's Universities or Colleges nursing programs, 2) and you are at least 18 years of age. Approximately 1000 nursing students will be invited to participate in this research study. If you volunteer to participate in this research study, you will be asked to complete one 105- item survey that will ask you to answer questions about your nursing education experience. It will take 20-30 to complete. The survey must be completed by November 22, 2009.The findings of this research study may be published. If findings are published, there will be no information in the publication that can link you as a participant of this study. The data collected in this research study may also be used for future analysis and publication of findings.

Benefits and Risks of Participation in the Research Study
There may not be any direct benefits to you as a participant in this research study. However, we hope to learn more about the factors that will help nursing educators to understand nursing students and how to help students achieve the best educational outcomes possible. There are risks involved in every research study. This research study may include only minimal risk. You may become uncomfortable when answering a question. If a question makes you uncomfortable you will be able to skip the question, leaving it unanswered, and proceed to the next question in the survey. Survey Monkey is being used for sending the survey to you and for you to submit the survey, and its database is encrypted to protect you. The only persons who will have access to the results you provide are the principal and student investigator. Your email address will only be known to the college representative who sent you the survey link..

Cost/Compensation Issues for the Research Study
There will be no financial cost to you for participating in this study.

Confidentiality
All data gathered in this research study will be kept confidential and only the principal and student investigator will have data access. No reference will be made in written or oral materials that could link you to this study. The surveys completed online through the Internet will be saved on an eight gigabyte SanDisk Cruzer Micro USB flash drive and will be stored in a locked facility in the principal investigator's office at UNLV for 3 years after completion of the study. After the storage time, data on the flash drive will be permanently deleted and the flash drive will be discarded. The surveys completed online will be permanently deleted from the Survey Monkey system once the deadline date for data collection has been reached, data has been saved on the flash drive, and data has been imported into Excel and the software used for analysis. After the data is analyzed the data will be permanently deleted from Excel and the software used for analysis.

Voluntary Participation
Your participation in this research study is voluntary. You may refuse to participate in this study or in any part of this study. You may withdraw at any time (by clicking the EXIT THIS SURVEY button at the top right of the survey screen) without penalty to your relations with your institution.

Participant Consent
If you read the above information and agree to participate in this study, click the NEXT button at the bottom of the screen to proceed. If you choose not to consent to this study, please click EXIT THIS SURVEY at the top right corner of this screen and you will be rerouted out of the survey. Additionally, if at any time you choose not to participate in this study you can click EXIT THIS SURVEY and you will be rerouted out of the survey.

I HAVE READ THE ABOVE INFORMATION & I AM AT LEAST 18 YEARS OF AGE. BY SUBMITTING THE SURVEY,I CONSENT TO PARTICIPATING IN THIS STUDY.

3. Directions and Information

Directions and information for the survey:

Ø The purpose of this survey is to research your feelings and attitudes about your NURSING EDUCATION experience. Assessing how an individual feels about their nursing education is an important task in understanding how students and teachers can collaboratively create the most meaningful and supportive environment for your success as a student.

Ø On the following survey pages, you will find a concept or idea. In each case these concepts or ideas will have a rating scale that has two bi-polar adjectives (opposites or opposite points) that represent extreme ways of feeling about that concept. Each of these scales will measure how you feel about that particular concept. Between each pair of adjectives there are seven spaces in which you may indicate your rating. Please check the box that most closely mirrors how you feel about that concept.

Ø Make your ratings quickly and give your first impression. Research has demonstrated that initial reactions on surveys like this are usually the most valid expressions of how a person really feels.

Ø You do not have to answer any question that makes you feel uncomfortable. You may skip that question and simply move to the next question.

§ You may exit the survey at any time by simply clicking on the "exit survey" link in the top right corner of every page.

Ø Several questions may be similar to other questions you have already answered, but there are differences, so please do your best in answering them again.

Ø After each question, there is a comment box where you can add any comments you may wish to make about the question. Please feel free to share any additional ideas or insights you have about that concept. It is not necessary to add any additional comments unless you want to.

4. Demographic Data

1. Please indicate your age in years.

2. Prior to being accepted into your nursing program, what was the highest educational degree you have obtained?

- ◯ No degree
- ◯ High School Diploma
- ◯ Associate's Degree
- ◯ Bachelor's Degree
- ◯ Graduate Degree

3. What type of nursing program are you enrolled in?

- ◯ Associate Degree (A.A.S. or ADN)
- ◯ Bachelor's Degree (BSN)

4. Please indicate your gender.

- ◯ Female
- ◯ Male

5. Please indicate your current educational level in your nursing program.

- ◯ First Semester
- ◯ Second Semester
- ◯ Third Semester
- ◯ Fourth Semester
- ◯ Fifth Semester
- ◯ Sixth Semester

6. Please indicate the primary race/ethnicity you identify with.

- ◯ Native American
- ◯ Black or African American
- ◯ Caucasian
- ◯ Chinese
- ◯ East Indian
- ◯ Eskimo
- ◯ Hispanic
- ◯ Filipino
- ◯ Inuit
- ◯ Japanese
- ◯ Korean
- ◯ Other
- ◯ Prefer not to answer

5. Survey:Academic Experiences

§ This section will ask you questions about what you think and feel about the many factors and relationships that make up your ACADEMIC EXPERIENCE in your nursing education.

ACADEMIC EXPERIENCES (Questions 1-25)

When I think of my ACADEMIC EXPERIENCES,

	UNPREPARED						PREPARED
1. I feel that generally I am:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	EASY						HARD
2. I feel the required reading is:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	STRESSFUL						CALM
3. I feel that generally the classroom environments I have experienced are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	HELPFUL						NOT HELPFUL
4. I feel my nursing assignments are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC PERFORMANCE,

	WORRIED						AT EASE
5. When it comes to my grades, generally I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	EFFECTIVELY						INEFFECTIVELY
6. I believe that when it comes to communicating with my teachers, I can communicate:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	WOULD BE HELPFUL						WOULD NOT BE HELPFUL
7. Having extra time in the classroom with my teachers:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	STRESSED						NO STRESS
8. I generally feel:	◯	◯	◯	◯	◯	◯	◯

When I think of my ACADEMIC EXPERIENCES,

	STIMULATE MY DESIRE TO LEARN						DO NOT STIMULATE MY DESIRE TO LEARN
9. My teachers:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	UNPREPARED TO TEACH ME						PREPARED TO TEACH ME
10. I feel my instructors are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	SHOW NO PERSONAL INTEREST IN ME						SHOW PERSONAL INTEREST IN ME
11. I feel my teachers:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	USE GRADES TO CONTROL THEIR STUDENTS						DO NOT USE GRADES TO CONTROL THEIR STUDENTS
12. I feel that in nursing school my nursing instructors:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	NOT ADEQUATE						ADEQUATE
13. The amount of time I have to spend studying is:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	ESSENTIAL						NON-ESSENTIAL
14. Personal teacher attention is:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	INCOMPETENT						COMPETENT
15. I generally feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	UNHAPPY						HAPPY
16. I generally feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	CARING BEHAVIORS						UNCARING BEHAVIORS
17. Generally, my teachers exhibit:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	ACTIVE						PASSIVE
18. The role I take in class participation is:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	REASONABLE						EXCESSIVE
19. The amount of time it takes to complete my assignments is:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	INSPIRE ME TO DO MY BEST WORK						DO NOT INSPIRE ME TO DO MY BEST WORK
20. Generally, I feel my teachers:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	REPONSIBLE						IRRESPONSIBLE
21. I feel generally I am:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	UNSUITABLE ROLE MODELS						SUITABLE ROLE MODELS
22. My teachers are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	DISORGANIZED						ORGANIZED
23. I usually feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	ENCOURAGING						DISCOURAGING
24. My instructors are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my ACADEMIC EXPERIENCES,

	PROVIDE GUIDANCE TO ME						AVOID HELPING ME
25. My teachers:	◯	◯	◯	◯	◯	◯	◯

Comments?

6. Survey: Clinical Experiences

§ This section will ask you questions about what you think and feel about your CLINICAL NURSING EXPERIENCES in your nursing education.

CLINICAL EXPERIENCE (Questions 1-20)

When I think of my CLINICAL NURSING EXPERIENCES,

	PREPARED						UNPREPARED
1. I usually am:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	DISTANT						APPROACHABLE
2. My clinical instructors are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	I AM CONFIDENT						I LACK CONFIDENCE
3. In my clinical rotations I generally feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	EFFECTIVE						INEFFECTIVE
3. When I care for my patients generally I feel:	◯	◯	◯	◯	◯	◯	◯

When I think of my CLINICAL NURSING EXPERIENCES,

	UNDERSTANDING						INSENSITIVE
4.I feel my clinical instructors are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	ADEQUATE						INADEQUATE
5. My clinical skills are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	INDIFFERENT						CARING
6. When I care for patients, I am:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	APPROPRIATE						EXCESSIVE
7. The amount of clinical preparation I have to do is:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	ATTENTIVE TO MY NEEDS						INATTENTIVE TO MY NEEDS
8. My teachers are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	ENJOYABLE						FRIGHTENING
9. My clinical rotations are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	IMPATIENT WITH ME						PATIENT WITH ME
10. My instructors are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	GOOD RESOURCES FOR ME						POOR RESOURCES FOR ME
11. My instructors are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	STRESSFUL						CALM
12. My clinicals are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	KNOWLEDGEABLE						IGNORANT
13. I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	COMPLETING TASKS						CARING FOR MY PATIENTS
14. I feel my instructors want me to focus on:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	UNSAFE						SAFE
15. I feel I am:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	TIRED						ALERT
16. When I go to my clinical roations I generally feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	HAPPY						SAD
17. Generally, I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	VALUED						HAS NO VALUE
18. I feel the work I do caring for patients is:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	UNCOMFORTABLE ASKING FOR HELP						COMFORTABLE ASKING FOR HELP
19.In my clinical rotations I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of my CLINICAL NURSING EXPERIENCES,

	FEARFUL						FEARLESS
20. When I have to perfrom a new skill. I generally feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

7. Survey: Psychological Factors

This section will ask you questions about what you think and feel about the psychological factors that your experience during you nursing education.

*Psychological factors include your mental processes, thoughts, feelings, attitudes, about your life during nursing education.

PSYCHOLOGICAL FACTORS(Questions 1-15)

When I think of the PSYCHOLOGICAL FACTORS that effect me in my nursing education,

	NEGATIVE						POSITIVE
1. Generally,I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PSYCHOLOGICAL FACTORS that effect me in my nursing education,

	HAPPY PERSON						UNHAPPY PERSON
2. Generally,I feel I am a:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PSYCHOLOGICAL FACTORS that effect me in my nursing education,

	MORE SELF ESTEEM						LESS SELF ESTEEM
3. Compared to my classmates, I feel I have:	◯	◯	◯	◯	◯	◯	◯

Comments

When I think of the PSYCHOLOGICAL FACTORS that effect me in my nursing education,

	CALM						STRESSED
4. Generally,I feel:	◯	◯	◯	◯	◯	◯	◯

When I think of the PSYCHOLOGICAL FACTORS that effect me in my nursing education,

	WORTHLESS						VALUABLE
5.Generally,I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PSYCHOLOGICAL FACTORS that effect me in my nursing education,

	EFFECTIVE						INEFFECTIVE
6. Generally,I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PSYCHOLOGICAL FACTORS that effect me in my nursing education,

	APPRECIATED						IGNORED
7. I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PSYCHOLOGICAL FACTORS that effect me in my nursing education,

	UNINSPIRED						ENERGIZED
8. I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PSYCHOLOGICAL FACTORS that effect me in my nursing education,

	CONNECTED						ISOLATED
9. I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PSYCHOLOGICAL FACTORS that effect me in my nursing education,

	PASSIVE						ACTIVE
10. I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PSYCHOLOGICAL FACTORS that effect me in my nursing education,

	CALM						ANXIOUS
11. Generally, I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PSYCHOLOGICAL FACTORS that effect me in my nursing education,

	CERTAIN I WILL BE SUCCESSFUL						WORRIED I WILL NOT BE SUCESSFUL
12. Generally, I feel:	◯	◯	◯	◯	◯	◯	◯

Comments

When I think of the PSYCHOLOGICAL FACTORS that effect me in my nursing education,

	NURTURED						LONELY
13. I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PSYCHOLOGICAL FACTORS that effect me in my nursing education,

	RESPECT MY INDIVIDUALITY						DO NOT RESPECT MY INDIVIDUALITY
14. I feel my instructors:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PSYCHOLOGICAL FACTORS that effect me in my nursing education,

	MORE CONCERNED ABOUT THEMSELVES						MORE CONCERNED WITH ME
15. I feel my instructors are:	◯	◯	◯	◯	◯	◯	◯

Comments?

8. Survey: Developmental Factors

This section will ask you questions about what you think and feel about the developmental factors/roles you are experiencing during your nursing education.

*Developmental factors include: 1) how your age and generational differences affect your life during nursing school, and 2) how the various roles you assume as a nursing student affect your lives.

DEVELOPMENTAL FACTORS and ROLES (Questions 1-15)

When I think of the DEVELOPMENTAL FACTORS and ROLES I assume in my nursing education,

	CONFIDENT						FRIGHTENED
1. At this stage of my life,I feel:	◯	◯	◯	◯	◯	◯	◯

COMMENTS?

When I think of the DEVELOPMENTAL FACTORS and ROLES I assume in my nursing education,

	DISRESPECTED						RESPECTED
2. In my role as a nursing student I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the DEVELOPMENTAL FACTORS and ROLES I assume in my nursing education,

	ESSENTIAL						NON-ESSENTIAL
3. I feel moral reasoning is:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the DEVELOPMENTAL FACTORS and ROLES I assume in my nursing education,

	INSIGNIFICANT						SIGNIFICANT
4.My development as nursing student has been:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the DEVELOPMENTAL FACTORS and ROLES I assume in my nursing education,

	EXPANDED						DIMINISHED
5. My view of the human condition has:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the DEVELOPMENTAL FACTORS and ROLES I assume in my nursing education,

	STRENGTHENED						WEAKENED
6. My social roles have been:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the DEVELOPMENTAL FACTORS and ROLES I assume in my nursing education,

	MORE SECURE						LESS SECURE
7. My personal roles are:	◯	◯	◯	◯	◯	◯	◯

Comments

When I think of the DEVELOPMENTAL FACTORS and ROLES I assume in my nursing education,

	PREPARED						UNPREPARED
8. As I transition from student to nurse I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the DEVELOPMENTAL FACTORS and ROLES I assume in my nursing education,

	INCOMPETENT						COMPETENT
9. As I transition from student to nurse I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the DEVELOPMENTAL FACTORS and ROLES I assume in my nursing education,

	HELP ME ENVISION MY FUTURE ROLE AS A NURSE						KEEP ME FROM ENVISONING MY ROLE AS A NURSE
10. As I transition from student to nurse I feel my instructors:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the DEVELOPMENTAL FACTORS and ROLES I assume in my nursing education,

	KNOWLEDGEABLE						IGNORANT
11. As I transition from student to nurse, I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the DEVELOPMENTAL FACTORS and ROLES I assume in my nursing education,

	SMOOTH						ROUGH
12. My transition from student to nurse is:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the DEVELOPMENTAL FACTORS and ROLES I assume in my nursing education,

	EXPERIENCED						UNEXPERIENCED
13. My transition from student to nurse makes me feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the DEVELOPMENTAL FACTORS and ROLES I assume in my nursing education,

	SATISFIED						UNSATISFIED
14. My transition from student to nurse makes me feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the DEVELOPMENTAL FACTORS and ROLES I assume in my nursing education,

	EDUCATED						UNEDUCATED
15. When I think of my future role as a nurse, I feel:	◯	◯	◯	◯	◯	◯	◯

Comments

9. Survey:Sociocultural Factors

This section will ask you questions about what you think and feel about the SOCIAL and CULTURAL factors that effect your nursing education.

*Sociocultural factors include how you view social relationships, cultural influences in your life, and how you interact with others in your nursing education.

SOCIOCULTURAL FACTORS (Questions 1-20)

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	IMPORTANT						UNIMPORTANT
1. The relationships I develop with my classmates are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	RECOGNIZED						IGNORED
2. My cultural beliefs are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	ARE HELPFUL TO MY SUCCESS						ARE DETRIMENTAL TO MY SUCCESS
3.My personal relationships:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	UNCOMPLICATED						COMPLICATED
4. My personal life is:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	AFFECTS MY ACADEMIC PERFORMANCE						DOES NOT AFFECT MY ACADEMIC PERFORMANCE
5. My financial siutation:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	INCREASE STRESS FOR ME						DECREASE STRESS FOR ME
6. My family:	◯	◯	◯	◯	◯	◯	◯

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	APPROACHABLE						UNAPPROACHABLE
7. As a classmate, I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	DO NOT BELIEVE						BELIEVE IN ME
8. Generally, my nursing instructors:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	CARE ABOUT MY LIFE						ARE NOT CONCERNED ABOUT MY LIFE
9. My nursing instructors:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	ROLE MODELS						ARE NOT ROLE MODELS
10. My nursing instructors are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	CARE IF I SUCCEED						DO NOT CARE IF I SUCCEED
11. My instructors:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	UNDERSTANDING						INSENSITIVE
12. My classmates are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	FRIENDLY						HOSTILE
13. My classmates are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	DEFLATE MY SELF ESTEEM						ENHANCE MY SELF ESTEEM
14. My personal relationships:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	PROMOTE TEAMWORK						DO NOT PROMOTE TEAMWORK
15. My teachers:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	I AM ALONE						PART OF A TEAM
16. I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	CALM ENVIRONMENT FOR ME						STRESSFUL ENVIRONMENT FOR ME
17. My home provides a:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	UNCARING						CARING
18. My classmates are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	ATTENTIVE TO MY CULTURAL NEEDS						INATTENTIVE TO MY CULTURAL NEEDS
19. My teachers are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SOCIOCULTURAL FACTORS that affect me in my nursing education,

	UNDERSTOOD						MISUNDERSTOOD
20. I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

10. Survey:Physiological Factors

This section will ask you questions about what you think and feel about the physiological factors that effect your nursing education.

*Physiologic factors include the factors that determine how our physical bodies work and our internal body functions are working.

PHYSIOLOGICAL FACTORS (Questions 1-10)

When I think of the PHYSIOLOGICAL FACTORS that affect me in my nursing education,

	TIRED						ENERGIZED
1. Generally,I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PHYSIOLOGICAL FACTORS that affect me in my nursing education,

	HEALTHY						UNHEALTHY
2. I feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PHYSIOLOGICAL FACTORS that affect me in my nursing education,

	LOW						HIGH
3. My energy level is:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PHYSIOLOGICAL FACTORS that affect me in my nursing education,

	INADEQUATE						ADEQUATE
4. My nutrition is:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PHYSIOLOGICAL FACTORS that affect me in my nursing education,

	NEVER						REGULARLY
5. I exercise:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PHYSIOLOGICAL FACTORS that affect me in my nursing education,

	SUFFICIENT						NONSUFFICIENT
6. The sleep I get is:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PHYSIOLOGICAL FACTORS that affect me in my nursing education,

	ATTEND CLASS						STAY HOME
7. Generally, when I am sick, I feel I should:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PHYSIOLOGICAL FACTORS that affect me in my nursing education,

	SUFFICIENT						INSUFFICIENT
8. The access I have to healthcare is:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PHYSIOLOGICAL FACTORS that affect me in my nursing education,

	UNHEALTHIER						HEALTHIER
9. Prior to attending nursing school I was:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the PHYSIOLOGICAL FACTORS that affect me in my nursing education,

	NEGATIVE WAYS						POSITIVE WAYS
10. Being in nursing school has effected my health in:	◯	◯	◯	◯	◯	◯	◯

Comments?

11. Survey: Spiritual Factors

This section will include questions concerning what you think and feel about spirituality and spiritual factors in your nursing education.

*Spiritual factors include our beliefs, values and ideals about what is sacred, what inspires us, why we are here, the meaning and purpose in our lives, and our connectedness to each other and the natural world. Spiritual factors may include religion if you view them that way, but do not necessarily have to be conncected to religion.

When I think of the SPIRITUAL FACTORS that affect me in my nursing education,

	NON-ESSENTIAL						ESSENTIAL
1.Understanding the mind-body-spirit connection is:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SPIRITUAL FACTORS that affect me in my nursing education,

	UNIMPORTANT						IMPORTANT
2.Exploring my personal spirituality is:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SPIRITUAL FACTORS that affect me in my nursing education,

	RELATED						NOT RELATED
3.Caring and spirituality are:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SPIRITUAL FACTORS that affect me in my nursing education,

	INCREASED						DECREASED
4. My reliance on meditation/prayer has:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SPIRITUAL FACTORS that affect me in my nursing education,

	DECREASED						INCREASED
5. Since starting my nursing education, I feel my spirituality has:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SPIRITUAL FACTORS that affect me in my nursing education,

	HOPEFUL						HOPELESS
6. Exploring my spiritual feelings makes me feel:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SPIRITUAL FACTORS that affect me in my nursing education,

	MORE MEANINGFUL						LESS MEANINGFUL
7. If my nursing educators understood my spiritual needs, my nursing education would be:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SPIRITUAL FACTORS that affect me in my nursing education,

	FREQUENTLY						INFREQUENTLY
8.Spirituality issues are addressed:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SPIRITUAL FACTORS that affect me in my nursing education,

	NEVER						ALWAYS
9. My spiritual beliefs affect how I care for patients:	◯	◯	◯	◯	◯	◯	◯

Comments?

When I think of the SPIRITUAL FACTORS that affect me in my nursing education,

	NON-ESSENTIAL						ESSENTIAL
10.I believe that in nursing school, exploring my feelings about death and dying are:	◯	◯	◯	◯	◯	◯	◯

Comments?

12. Thank-you!

*We appreciate you taking the time to participate in this research study. Your responses will be invaluable in helping nursing students and nurse educators to better understand the interconnectedness of the teacher-learner relationship;and to help nursing students to achieve the best academic and personal outcomes possible during their nursing education.

*Electronically submitting this survey indicates your consent to participate in this research study,use of the data collected for analysis and possible publication for this study and any future analysis and future publication.

* All responses will remain confidential and will not be linked to you in any way.

*To electronically submit this survey, click on the "DONE" button below.

Sincerely,
Dr. Margaret Louis, Principal Investigator
Diane Elmore,MSN,RN Student Investigator
University of Nevada,Las Vegas

If you have any questions, please contact Dr. Margaret Louis at 702-895-3812 or Diane Elmore MSN, RN at 775-738-5591

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