

2010

# The effect of a planned instructional program on the empathy levels of registered nurses at a metropolitan hospital in Southern Louisiana

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THE EFFECT OF A PLANNED INSTRUCTIONAL PROGRAM  
ON THE EMPATHY LEVELS OF REGISTERED NURSES  
AT A METROPOLITAN HOSPITAL  
IN SOUTHERN LOUISIANA

A Dissertation

Submitted to the Graduate Faculty of the  
Louisiana State University and  
Agricultural and Mechanical College  
in partial fulfillment of the  
requirements for the degree of  
Doctor of Philosophy

In

The School of Human Resource Education  
and Workforce Development

by  
Deborah K. Charnley  
B. S. N., University of South Carolina, 1982  
M. N., University of South Carolina, 1987  
May, 2010

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## **DEDICATION**

This work is dedicated to my family who has loved me throughout this seemingly endless educational journey. I have some regrets in knowing that many hours have gone into my own personal education over the years, and perhaps more hours should have been shared with them. I hope they will reflect on my accomplishment and in some way benefit from this glorious outcome. I wish for my daughters (Anita and Farrah), a similar successful journey in life. For my beautiful two grandsons (Kaelan and Easton), I hope they learn to value education as I have and thrive in the joys of learning, for life is all about achieving a higher level of understanding and that is available only through education. I also wish my father (Orville) could see how he and my mom (Dorothy) instilled in me a genuine curiosity that led me in this educational pursuit. My sister (Renee) and brothers (Dean and Preston) always challenged me in so many ways, and I learned from each of them. Finally to my husbands (Danny and Richard), both of whom are deceased. I will cherish the lessons we learned together over the years.

I also dedicate this accomplishment to my colleagues (Wanda, Chris, Carol and Linda) who traveled the road with me and with whom I will share an everlasting bond. We have come a long way, but we can finally look back and say we are better human beings for having traversed these waters. To your ongoing personal and professional successes, I wish you the very best and look forward to continuing to learn with you.

Lastly, I dedicate this research to my mentors. Those on my dissertation committee, especially my major professor, taught me so much during this educational endeavor. Also my former administrators who helped me navigate my professional career. Your encouragement and advice was critical during this venture. You will forever be remembered for your kindness and expertise.

## ACKNOWLEDGEMENTS

I knew someday I would complete this doctorate but was not really certain when or where. I am so grateful to have held on to the desire and maintained the strength to continue to forge ahead. As I now see the light at the end of the tunnel, I thank God for his grace during this process. I am so blessed to have been afforded this opportunity to learn more about His world.

I especially thank my committee and my committee chair for teaching me more than just theory, but also character and understanding. From Dr. Michael F. Burnett, my major professor, I have learned what an inspirational, committed college professor is all about. I saw his dedication in the classroom and I felt his never-ending support during my dissertation preparation. I witnessed his kind and caring nature and realized what a fine example Dr. Burnett was for professors of future generations. He inspired me to do my best and not settle for anything less than excellence. I will always be indebted to Dr. Burnett as an educator, mentor, and role model. Thank you my friend.

To my supportive committee, Dr. Earl C. Johnson, Dr. Satish Verma, Dr. Judith L. Sylvester and Dr. Geraldine H. Johnson, I give you my heartfelt thanks for sharing with me your expertise, your many talents and your caring spirit. Without you and your never ending support, I would be less of a person today.

Dr. Earl C. Johnson, thank you for strengthening my philosophical foundation. I learned so much from you both inside and outside the classroom. Your compassion and continued interest in me and my colleagues were greatly appreciated. You are an inspiration, and I was blessed to have crossed paths with you.

Dr. Satish Verma, your patient, quiet and caring manner showed me that we are all one family here on earth. I appreciate your knowledgeable approach to the educational process and

especially your ability to empathize with students. I am a better leader because of you. Thank you for your support.

Dr. Judith L. Sylvester, I admire your interest and conviction in striving to correct some of society's faults. I have never smoked, but you would inspire me to quit if I were a smoker. Your perseverance is admirable and your interest in and support of others are inspirational. Thank you for being there.

Dr. Geraldine H. Johnson, you challenged me to do my very best. Your practical, yet caring approach to educating students was most appreciated. I learned more than concepts and theories in your class. I learned about assuming responsibility for others and how we are all in this world together. I admired the way you pushed yourself even when I know you did not feel well. What a remarkable example of a great human being. Thank you for all you did for me.

Mr. William Holman, my boss, my colleague and my friend, I thank you for allowing me to pursue this dream of completing my doctorate. Your insightful, progressive leadership inspired me to want to pursue a higher level of practice. Your kind and caring manner taught me that leadership begins from the bottom up, not the top down. Thank you for your many years of friendship.

Wanda Hughes and Chris Gatlin, my educational partners, can you believe we did it? You inspired me on a daily basis to keep pushing. Your professionalism and humor supported me throughout the process, and for that I am truly grateful. Thank you for being my friend and colleague. You will always have a special place in my heart.

Finally, I thank my God, for giving me the strength and will to complete this major endeavor. Without faith, I would have faltered. I also thank my family, who struggled on occasion during my educational journey. I appreciate your patience and all you have done for

me. There is a special place in Heaven for you. I love each of you and hope your life will be as challenging yet as rewarding as mine.

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## **ABSTRACT**

The professional nurse's role focuses on two distinct provisions of expert care involving the science and art of caring for patients. Nurses must attain and maintain a high level of scientific, clinical expertise. In addition, nurses must continuously seek to understand, relate to and connect with the patients with whom they work whether it is at the hospital bedside or in other arenas where healthcare services are provided.

The nurse plays a critical role in supporting patients through their most vulnerable times by empathizing and understanding where they are and where they want and need to be from a physiological and emotional health perspective. Empathy allows the nurse to better understand the unique challenges faced by patients and implement strategies to address their concerns.

The primary purpose of this study was to compare the level of empathy of registered nurses who received instruction on the development of effective empathy with nurses who did not receive this instruction at a hospital in a metropolitan area of Louisiana. The researcher reviewed the concept of empathy and outlined an approach to teach empathy to nurses with the goal of increasing nurse empathy levels.

This quasi-experimental study utilized a Solomon Four-Group-Like Design and incorporated empathy training and pre and post-training empathy measurements of participants. Empathy scores were measured utilizing the Mehrabian Balance Emotional Empathy Scale (1996).

Based on the findings, empathy scores did not increase following the participant's completion of the particular empathy training course provided during the study. Further exploration of strategies to teach empathy to nurses would enhance the nurse-patient relationship and produce positive patient care outcomes.

## CHAPTER 1

### INTRODUCTION TO THE RESEARCH

#### Scope of the Study

As the largest provider of healthcare services in the country, nurses participate in every component of the healthcare market by providing care to customers in multiple settings.

According to Buerhaus, Staiger & Auerbach (2009), registered nurses (RNs) make up the largest profession within healthcare, the nation's biggest industry.

Nurses touch the lives of millions of people on a daily basis and frequently at their most vulnerable moments. The American Nurses Association (ANA) acknowledged both the *science* and *art* of nursing in the Nursing Scope and Standards of Practice (2004). The *science* component relates to nursing practice based on scientific principles and disciplines. The *art* of nursing “embraces dynamic processes that affect the human person including, for example, spirituality, healing, empathy, mutual respect and compassion” (p. 12). ANA further explained that nurses promote health and facilitate healing by utilizing various emotional and interpersonal care-giving strategies some of which include compassion, being present, supporting, touching, empathy, and nurturing among others.

Nurses frequently serve as the patient advocate in circumstances when an individual cannot adequately represent him or herself. Nursing is perceived by the public as a trustworthy profession. According to the most recent Gallup survey of public perceptions of honesty and ethics (Saad, 2008), nurses once again topped the list of trusted professionals. Seventy-nine percent of those questioned said honesty and ethics of nurses are "very high" or "high." A trusting, caring relationship is essential for patients who are struggling to regain their health.

A basic human need is to be cared for and cared about. To be understood by others is critical to a sense of peace and wellbeing. According to Kalisch (1973), “empathy is the ability

to enter into the life of another person, to accurately perceive his current feelings and their meanings” (p. 1548). The connection that develops between a nurse and a patient establishes that caring relationship and serves as the foundation of nursing practice. Before a nurse can help a patient regain health, the nurse must understand the person completely. As noted by Henderson (1978), a popular nursing theorist, “Nurses must, in a sense, get ‘into the skin’ of each patient to know what help he or she needs from them” (p. 35). Empathy is critical to establishing a supportive, trusting relationship between a nurse and a patient. There is a growing theoretical consensus that in order for a nurse to individualize care for a patient, the nurse must understand the patient from his or her perspective (Pike, 1990). Empathy has been identified as a crucial component of caring (Caine, 1991 & Leininger, 1988).

Some nurses tend to have a natural ability to relate to patients from a humanistic standpoint while others are less comfortable in this role. Patients are very perceptive in being able to identify those nurses who possess the unique ability to relate to them during their most vulnerable moments.

An effective caring relationship facilitates comfort from a patient’s perspective since the patient is extremely reliant on the nurse to understand and advocate for them to others in the healthcare arena. Empathy is a core characteristic of a helping relationship from a nursing perspective and essential to patient comfort and the promotion of healing in a healthcare environment. Nurses have a responsibility to incorporate an empathetic approach to caring for patients.

### **Problem Statement**

Reynolds and Scott (2000) pointed out, however, that “while nurses are meant to provide helping relationships, they do not tend to show much empathy to clients” (p. 226). Other studies corroborated the finding that nurses score low in empathy for a helping profession (Becker &

Sands, 1988, Brunt, 1985, Farrell, Haley, & Magnasco, 1977, Kalisch, 1971b, LaMonica, Carew, Winder, Haase & Blanchard, 1976, & Reid–Ponte, 1992).

Conflicting information was found in the literature as to whether or not empathy could be taught and learned (Clay, 1984, Hardin & Halaris, 1983, Hills, 1983, Kalisch, 1971a, Layton, 1979, Myanatt, 1985, Rogers, 1986, Wallston, Cohen, Wallston, Smith & DeVellis, 1978, & Zimmermann, 1980). Beddoe and Murphy (2004) stated that “empathy and caring are considered cornerstones of nursing; yet much is unknown about how to foster these qualities” (p. 305).

The question, therefore, was whether or not nurses know how to provide empathic care or choose to avoid such behavior? If the nurse does not know how to demonstrate empathy, a second question is can empathy be effectively taught?

### **Study Purpose**

The primary purpose of this study was to compare the level of empathy of registered nurses who received instruction on the development of effective empathy with nurses who did not receive this instruction at a hospital in a metropolitan area of Louisiana.

### **Research Hypothesis**

Nurses who receive instruction on the development of effective empathy will demonstrate higher levels of empathy as measured by the Balanced Emotional Empathy Scale or BEES (Mehrabian, 1996) than those who do not receive this instruction.

### **Variables**

The dependent variable was the level of empathy score achieved by the registered nurses, and the primary independent variable was whether or not the registered nurses received the empathy educational course (treatment).

## Objectives

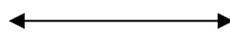
The objectives of the study included the following:

1. Describe and compare the registered nurse experimental and control groups to the overall hospital registered nurse population on selected personal and demographic characteristics to include:
  - Age
  - Gender
  - Years as a nurse
  - Educational level
  
2. Describe and compare the registered nurse experimental and control groups in terms of :
  - Gender
  - Marital status
  - Number of children
  - Number of years in nursing
  - Undergraduate nursing degree/diploma
  - Location of undergraduate nursing education
  - Highest level of education attained
  - Previous experience
  - Reading and social conversation practices
  - The effect technology has on nurse-patient relationships at the bedside
  
3. Compare pre-empathy levels for the experimental and control RN groups to determine group equivalency.

Experimental Group

Control Group

Pretest Empathy Scores



Pretest Empathy Scores

4. Compare post-empathy levels for the experimental and control RN sub-groups to determine if pretesting affected post-test scores.

Based on previous research findings, objectives five and six were written in the form of research hypotheses.

- Nurses who receive instruction on the development of effective empathy (experimental group) will demonstrate a positive improvement of scores from pre to post-training as measured by the Balanced Emotional Empathy Scale (BEES).

Experimental Group

Pretest Empathy Scores  
 Empathy Course  
 Post-test Empathy Scores ) +

- Nurses who receive instruction on the development of effective empathy (experimental group) will demonstrate higher post-training levels of empathy as measured by the Balanced Emotional Empathy Scale (BEES) when compared to those who do not (control group).

Experimental Group

Control Group

Post-test Empathy Scores ←————→ Post-test Empathy Scores

- Determine if a relationship exists between pre-study empathy levels for both experimental and control groups who receive a pretest and the demographic variables identified and collected including:

- Gender
- Marital status
- Number of children
- Number of years in nursing
- Undergraduate nursing degree/diploma
- Location of undergraduate nursing education
- Highest level of education attained
- Previous experience
- Reading and social conversation practices
- The effect technology has on nurse-patient relationships at the bedside

### **Significance of the Study**

The relationship between patients and their care provider is critical to effective care and the patient's healing. Blasi, Harkness, Ernst, Georgiou and Kleijnen (2001) wrote that Hippocrates stated in 400 BC, "The patient, though conscious that his condition is perilous, may recover his health simply through his contentment with the goodness of the physician" (p. 757). The Hawthorne or placebo effect on research participants also supports the fact that mere attention produces strong reactions in many cases. Larson and Yao (2005) summarized that "over the past 20 years, scholarly interest has increased as educators and practicing professionals have realized that a therapeutic relationship, along with integration of knowledge and skills, content of care, information management, teamwork and health systems is an integral part of healing and effective medical care" (p. 1100).

A strong empathic relationship supports patient healing and is a critical component of a registered nurse's role at the bedside. From a socioeconomic standpoint, if patients can be more comprehensively assessed and accurately diagnosed through the connection created by the empathic process, patients will return to health sooner and the overall cost of healthcare will be reduced.

The information gained through this research study will facilitate a better understanding of how empathy can be taught and learned from a nursing perspective. By increasing nurse empathy levels, patients will benefit, society will gain, healthcare costs will go down, and nursing practice will be enhanced.

### **Definition of Terms**

Registered nurses (RNs) – operationally defined as nurses who are currently licensed to practice as a registered nurse at a local community hospital in South/Central Louisiana.

At the Bedside – operationally defined as the provision of direct care for a hospitalized patient on a medical/surgical telemetry care unit.

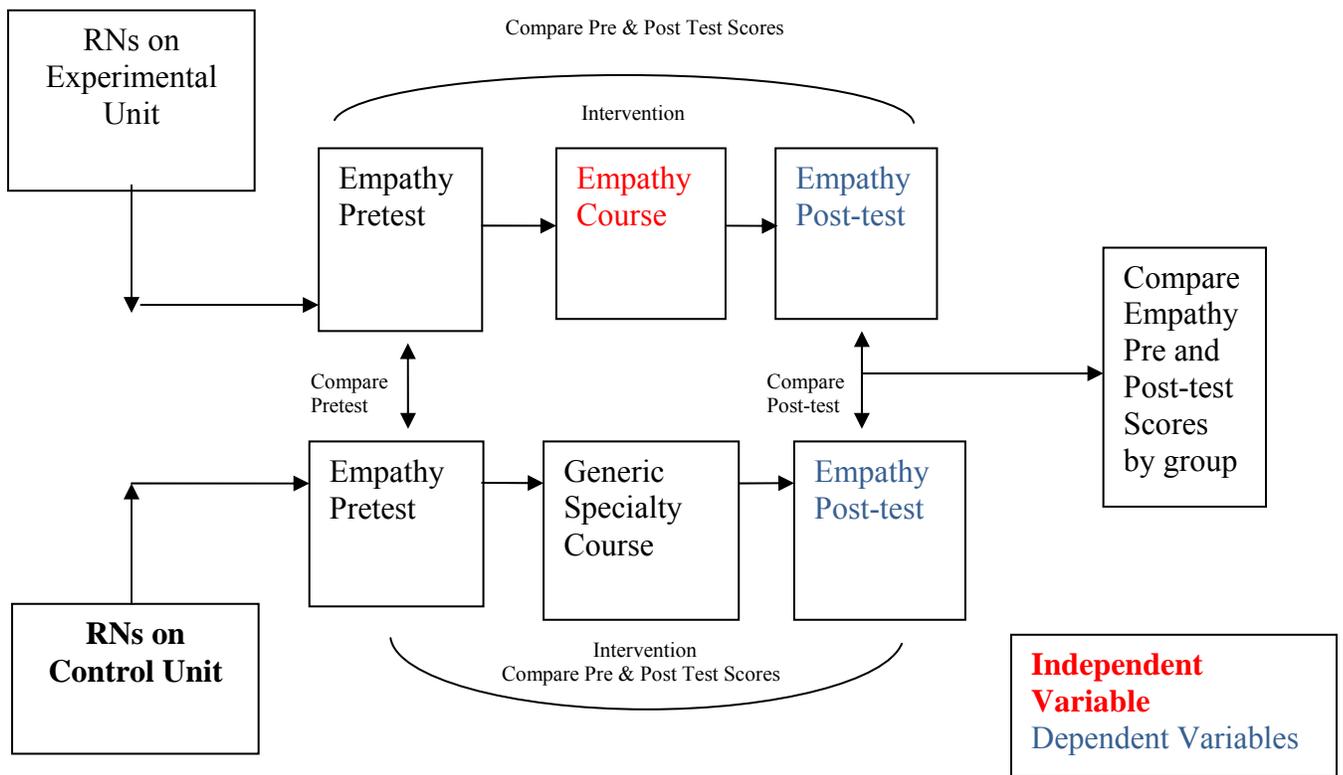
Empathy – “the ability to recognize and understand another person’s perceptions and feelings, and to accurately convey that understanding through an accepting response” (Haynes & Avery, 1979, p. 527).

Effective Empathy – operationally defined as a level of empathy that facilitates understanding of a patient by the nurse, but encourages the nurse to maintain a degree of distance, objectivity and professionalism in relation to practice so as not to compromise the care of the patient.

RN level(s) of empathy – as measured by the emotional empathy score achieved on the Balanced Emotional Empathy Scale or BEES (1996).

### **Conceptual Framework**

The conceptual framework (see Figure 1) illustrates the relationships among the dependent and independent variables associated with the study. The diagram demonstrates how teaching empathy to RNs was measured before and after the comprehensive empathy course was administered to the experimental group and before and after the generic specialty classes were offered to the control group.



**Figure 1 Conceptual Framework**

## CHAPTER 2

### LITERATURE REVIEW

As the literature was explored relative to *connecting* with patients, the concept of empathy was repeatedly mentioned. The writer then began to associate the empathic component of a nurse's personality that allowed the nurse to be successful in his or her role at the bedside. A second concept of interest was the positive feedback associated with a mutually beneficial exchange between the patient and the nurse during these care-giving episodes. The interaction perhaps contributed both to the patient's healing and the nurse's sense of accomplishment in fulfilling his or her role as a caring professional.

#### Empathy Defined

Empathy comes from the parent term of *empathie* that was originally used to describe inanimate objects such as works of art and forms of nature. *Empathie* was thought to be an unconscious process where the observer endows such objects with vital content. Freud (1921) spoke of empathy in terms of identification and imitation. Freud's thought was that we learn empathy by imitating others and identifying with their circumstances and that is how we develop attitudes, thus empathy, toward others. Lipps (1935) further elaborated on the definition of *empathie* and explained that an individual could feel something, perhaps, himself, in the esthetic object. Empathy has also been described as a *mode of listening* (Schwaber, 1981), as an *emotional knowing* and a very special *way of perceiving* (Greenson, 1960). La Monica (1981) described empathy as "a central feeling with and in the client's world. It involves accurate perception of the client's world by the helper, communication of this understanding to the client, and the client's perception of the helper's understanding" (p. 398). Haslam defined empathy as "the capacity to take the perspectives of others, to be sensitive to their inner experience

and engage with them compassionately, rather than simply sharing their emotions (sympathy)” (p. 381). According to MacKay, Hughes and Carver (1990), empathy can be seen as a behavior, a personality dimension, and an emotion. Egan (1986) described empathy as a way of communicating to someone that another person is with them and that person has been listening intently to them and attempting to ensure that their understanding of the message is correct. Sutherland (1993) found it necessary to view empathy as a *process* versus an *intervention* applied to patient situations as it had been historically perceived. Kalisch (1973) emphasized that empathy relates to *current* feelings of a person versus *previous* feelings. Forsyth (1980, pp. 40 - 41) identified eight provisional criteria associated with the concept of empathy including:

1. Empathy occurs in consciousness.
2. Empathy implies relationship.
3. Empathy involves validation of experience.
4. Empathic understanding exists in variable degrees of accuracy.
5. Empathy has temporal dimensions restricted to the here and now.
6. Empathy involves energy, which varies in intensity.
7. Empathy requires objectivity.
8. Empathy requires freedom from judgment or evaluation.

Walker and Alligood (2001) explained that empathy is a *developmental* phenomenon that begins at conception and grows throughout one’s lifetime. Conceptually one grows more empathic as he or she ages and matures physically, mentally and socially. The authors identified two distinct theories related to empathy: borrowed theory (adapted from other disciplines) and nursing theory. They emphasize a need to “move beyond borrowed theory” (p. 140) and differentiate nursing’s holistic view of empathy from the psychological perspective. Walker and Alligood based their definition of empathy on King’s (1971) framework that included a personal, interpersonal, and social system component. Empathy is thus defined as “a feeling

attribute that defines the quality of human interaction, organizes perceptions, creates understanding and respects and values others, and can be used to guide conceptualization of the role of the nurse” (Walker & Alligood, 2001, p. 144).

Empathy has been described as being directly associated with the nurse-patient caring relationship (Alligood, 1992, Kalisch, 1971a & 1971b, La Monica, 1979, & Olsen, 1991). Williams (1990) stated that empathy could “be an instrument whereby the nurse can apprehend the patient’s world” (p. 168).

Baillie (1996) found in a phenomenological study exploring the nature of empathy from a hospital registered nurse perspective, that seven main themes evolved:

1. Empathy is a difficult concept to understand and may mean different things to different people.
2. Empathy relates to closeness with patients.
3. Empathy involves action toward the patient.
4. Empathy is individualized and dependent on the persons involved.
5. Tenure or experience as a nurse contributes to further development of empathy.
6. Familiarity with the patient enhances the nurse’s ability to empathize with him or her.
7. Several environmental factors were noted as barriers to empathy in the hospital setting such as increased workload, a stressful work environment, reduced availability of time, the nurse’s personal health, and like or dislike of the patient.

Baillie suggested that nurses need both an innate ability and accumulated professional and life experiences to develop increased levels of empathy.

Empathy has been found to be a multivariate construct that can be difficult to define in objective terms. Using the criteria established by Morse, Hupcey, Mitchem, & Lenz, (1997), the concept of empathy, at best, falls into the “partially developed” (p. 89) or emerging category on the immature, partially developed (or emerging) and mature scale.

Two types of empathy were frequently noted in the literature, emotional and cognitive (Alligood, 1992, Morse et al. 1992, Roberts, 1991, Williams, 1990). According to Mehrabian, Young & Sato (1988), emotional empathy relates to an individual's emotional response to the perceived emotional experiences of others. Morse et al. (1992) further implied that emotional empathy can be inherited and naturally develops over time as the individual matures. Wiseman (1996) clarified that there seems to "be consensus that a person may have a disposition to be empathic (trait) but whether she/he is depends on a number of factors (state)" (p. 1166). Morse et al. (1992) further differentiated emotional from therapeutic empathy, inferring that therapeutic empathy "may be less appropriate" (p. 277) for use in acute care settings because of the transient nature of the nurse-patient encounter and the patient's immediate focus on coping and recovery. Mehrabian and Epstein (1972) suggested that those who score high in emotional empathy are more responsive emotionally to others.

Cognitive empathy is associated with an intellectual process whereby one identifies and understands another's feelings and perspectives while at the same time maintaining objectivity and distance from the emotions (Morse et al. 1992). Wheeler and Barrett (1994) believed that cognitive empathy could be taught. Emotional and cognitive empathy operate simultaneously, but emotional empathy tends to be the initial, innate component of the pair. Emotional empathy is more associated with the personality of the individual and a characteristic of interest to the researcher in determining if there is a relationship between empathy levels and longevity of employment of a nurse at the bedside. Blasi, Harkness, Ernst, Georgiou, and Kleijnen (2001) found that a combination of emotional and cognitive care "was found to produce the most consistent (positive) effect" (p. 760) on patients' health status and outcomes.

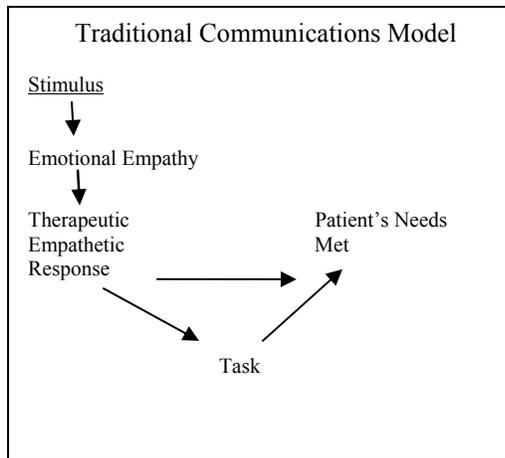
Irving and Dickson (2004) added a third, behavioral dimension to the description of empathy. They suggested that there is a skill component to empathy that “reflects the interpersonal process that happens between people in the expression of empathy while the cognitive and affective (emotional) dimensions are part of an intrapersonal process that happens within a single person who is experiencing empathy for another” (p. 213).

Williams (1990) described empathy as a “multidimensional phenomenon, with emotional, cognitive, communicative, and relational components” (p. 155). Morse et al. (1992) discussed four components of empathy including emotive, moral, cognitive and behavioral. Morse, Bottorff, Anderson, O’Brien, and Solberg (2006) differentiated *therapeutic* empathy by defining it as “a learned communication skill comprised primarily of cognitive and behavioural components which is used to convey understanding of the patient’s reality” (p. 75). Morse et al. (2006) further suggested that *therapeutic* empathy is impractical for nursing practice in a hospital setting given the acute nature of the patients’ illness and transient nature of the nurse-patient contact. The authors suggested an alternative communication model from the traditional approach as noted in Figures 2 and 3 (Morse et al. 2006, pp. 76 - 77).

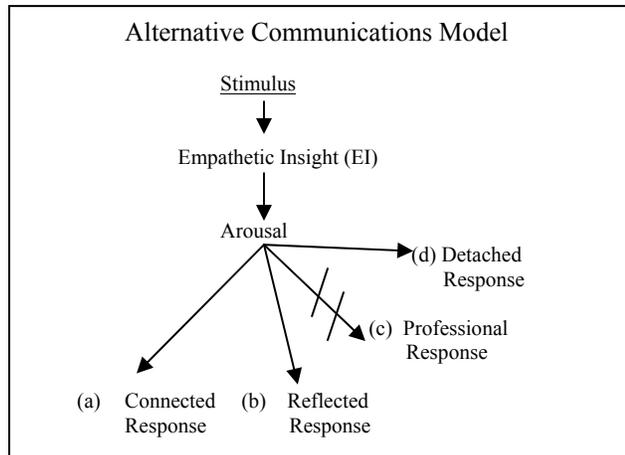
The authors suggested by incorporating empathetic insight (EI), which is defined as a “reflexive, subjective sensation that is vicariously aroused when observing the distress of the patient” (Morse et al. 2006, p. 76), the caregiver experiences *emotional* empathy which leads to *engagement* of the caregiver in an immediate and constructive manner.

Two levels of responses are noted in relation to EI and include the *first level response* considered more reflexive, automatic and “naturally comforting to the sufferer”

(p. 78). The second level response tends to be the “learned professional response of therapeutic empathy, informing reassurance, humor/distraction, and confronting” (p. 81)



**Figure 2 Empathy Model Used in Nursing Literature**



**Figure 3 The Communication Response Pathway**

and incorporating a more limited emotional investment of the caregiver when compared to the first level response. Emotional empathy, according to Morse et al (2006), is a better fit with nursing since it is primarily “the actions resulting from the emotional response or recognition of patient needs that are of value to patients...” (p. 82).

Rousseau (2008) explained the difference between empathy and sympathy. Sympathy incorporates sharing or experiencing another person’s emotions whereas empathy denotes the ability to understand another person’s emotions. Nissam - Sabat (1995) further clarified that “sympathy is a cognitive inference, while empathy is a perception” (p. 87).

### **Empathy Research**

In a qualitative study related to nurse-patient relationships in a hospice setting, Raudonis (1993) found that *affirmation* or *being seen as an individual of value* was a primary foundation of an empathetic nurse-patient relationship. Friendship was shown as

another component where the open sharing of thoughts and feelings was encouraged. Well-being was a third category identified including both physical and emotional well-being.

Evans, Wilt, Alligood, and O'Neil (1998) confirmed Alligood's (1992) proposal of two types of empathy in their study of 106 nursing students, trained and basic. The researchers further stated that trained empathy, as measured by the Layton Empathy Test, is not sustainable and that educators should focus on basic empathy in future.

Several studies revealed that females consistently scored higher than males on various empathy scales (Adams, Jones, Schvaneveldt, & Jenson, 1982, Adams, Schvaneveldt, & Jenson, 1979, Austin, Evans, Magnus, & O'Hanlon, 2007, Barnett, Howard, King, & Dino, 1980, Eisenberg & Lennon, 1983, Mehrabian & O'Reilly, 1980, Mehrabian & Epstein, 1972, Shapiro, Morrison & Boker, 2004 and Williams, 1989). In Shapiro's et al. study (2004), females, Asians and primary care medical students responded more strongly to an empathy educational program as demonstrated by the distinct increase in post-test (versus pretest) empathy scores after the empathy course.

In a study conducted by Astrom, Nilsson, Norberg and Winblad (1990), level of education was found to be positively correlated with higher empathy scores. Burnout was also found to be associated with lower empathy scores and poorer attitudes of staff.

Several studies discussed mindfulness as a means to increase empathy (Beddoe & Murphy, 2004, Kabat-Zinn, 1990, Roth, 2001, Santorelli, 2000, Santorelli & Kabat-Zinn 2002, Shapiro, Schwartz & Bonner, 1998, Shapiro & Schwartz, 2000). Mindfulness meditation incorporates affective, cognitive, interpersonal, and intrapersonal dimensions to foster empathy.

Beddoe and Murphy (2004) stated that “Empathy is considered an antecedent to prosocial behavior” (p. 306) leading one to believe there is a positive relationship between the social nature of an individual and his or her level of empathy. The more outgoing and socially connected a person is, the more empathic he or she will be. Beddoe and Murphy (2004) also linked empathy with potential “over-involvement and a loss of objective and professional boundaries” (p. 306) raising the question as to whether a nurse can be overly empathetic and lose sight of what is in the best interest of the patient from a professional standpoint. The term effective levels of empathy may not necessarily relate to a high level of empathy in nursing practice.

Olson (1995) found that when nurse empathy levels increased, patient distress decreased and patient-perceived empathy levels increased. One reported nursing concern regarding empathy was that empathy tends to increase personal stress and vulnerability (Hope-Stone & Mills, 2001). Carver and Hughes (1990) believed that empathy could induce emotional distress and overwhelm the nurse. Omdahl and O’Donnell (1999) associated increased nurse burnout with one empathy variable called *emotional contagion* which they defined as “sharing or taking on the emotion of another” (p. 1352). They also found that “emotional contagion was the one significant predictor of emotional exhaustion and reduced occupational commitment” (p. 1357).

Reynolds, Scott and Austin (2000) identified a possible barrier to nurse empathy as being the way nursing work is organized. Brunt (1985) stated that “factors (such as technology) that diminish the perceptual acuity and concentration of the nurse serve to block the empathic process” (p. 70). Given the rapid evolution of technology in the healthcare setting, the empathic processes could definitely be in jeopardy.

Watt-Watson, Garfinkel, Gallop, Stevens and Streiner (2000) found no correlation between nurse empathy and patient perception of pain. West et al. (2006) found that self-perceived medical errors are linked to burnout and a loss of empathy among internal medicine residents. Hojat, Gonnella, Nasca, Mangione, Vergare and Magee (2002) identified three components associated with physician empathy including perspective taking, compassionate care and “standing in the patient’s shoes” (p. 1566). The authors also suggested that individual physicians might choose specialties based on their own interpersonal skill (or empathy) level. Hojet et al. (2002) concluded that research related to empathy might have implications related to career counseling as well as selection and education of medical students. Kim, Kaplowitz, and Johnston (2004) found that effective use of empathic communication skills of the physician may increase compliance and patient outcomes. Fields, Hojat, Gonnella, Mangione, Kane and Magee (2004) found no significant difference in empathy scores when comparing female physicians to female nurses using the Jefferson Scale of Physician Empathy (JSPE).

Lee, Brennan, and Daly (2001) outlined several factors of interest in their study of informal caregivers of older adults. The researchers noted an average level of emotional empathy and a substantively lower level of cognitive empathy representing “a less-than-adequate level in therapeutic relationships according to the standards provided by Barrett-Lennard (1986), who suggested that a score of 24 represents adequate levels of empathy in a helping relationship and a score of 16 represents a less-than-adequate level in a therapeutic relationship” (p. 50).

Mehrabian and Epstein (1972) found in their study involving female undergraduate (psychology) students that “empathic persons are emotionally responsive to others’ needs” (p. 540). They further concluded that “empathic tendency was a direct

correlate of emotional arousal... (and that)... persons who are characterized as possessing higher empathic tendency tend to be more aroused by others' emotional experiences of both positive and negative quality" (p. 540). The researchers also found that "empathic tendency is the major personality determinant of helping behavior" (p. 542).

Mehrabian et al. (1988) defined emotional empathic tendency as "an individual's inclination to respond with emotions similar to those of others who are present" (p. 221). The researchers summarized associations of empathic tendency with various social behaviors including:

- High emotional empathy individuals respond more strongly to various behaviors of infants such as crying or smiling when compared to low emotional empathy individuals (Wiesenfeld, Whitman & Malatesta, 1984).
- Williams (1982) found that high emotional empathy individuals were more apt to weep than low emotional empathy individuals. Williams stated that "reduced inhibition to weeping is but one manifestation of a general openness to emotional experience" (p. 225).
- Barnett, Howard, King and Dino (1980) found that high emotional empathy subjects reported that "parents had spent more time with them, displayed more affections toward them, and more often had discussed feelings with them" (Mehrabian et al., 1988, p. 224).
- Adams, Jones, Schvaneveldt and Jenson (1982) found that higher levels of empathy in adolescent males were positively correlated with father and mother's support, father's rejection – control and mother's physical effect.

- Eisenberg-Berg and Mussen (1978) found that “mothers of highly empathic boys were non-punitive, nonrestrictive, egalitarian, and they maintained affectionate relationships with their sons” (p. 186).
- Barnett, King, Howard and Dino (1980) found that daughters of highly empathic mothers and low empathic fathers demonstrated high levels of empathy.
- Kalliopuska (1984) found that highly empathic mothers were more tolerant of infants crying than low empathic mothers.
- Gray (1978) found that abusive mothers were less empathic than non-abusive mothers.
- Various studies showed a positive correlation between pro-social orientation and empathic tendency (Crandall & Harris, 1976, Elizur & Rosenheim, 1982, Mehrabian & Epstein, 1972, and Rushton, Chrisjohn & Fekken, 1981).

Mehrabian and Epstein’s (1972) study demonstrated that individuals high in emotional empathy were emotionally responsive to other people’s needs and more vulnerable to rejection. The data suggested that individuals with high emotional empathy levels may seek acceptance by adhering to various rules, morals, ethics and values such as traditional marriage and child-bearing practices.

Williams (1989) found that empathy levels were positively correlated with emotional exhaustion and personal accomplishment. The researcher further found that depersonalization did not correlate with empathy levels but did correlate with emotional exhaustion. A summary of Williams (1989) findings indicated “that empathy is emotionally draining and may, secondarily, lead to interpersonal withdrawal” (p. 174).

## Empathy Taught

Although some believe that empathy is primarily an innate characteristic that develops over the course of a lifetime, many studies have shown that empathy levels can be increased through education (Burnard, 1987, Cox, 1989, Layton, 1979, Morath, 1989, & Tshuldm, 1989). According to Hatcher and Nadeau (1994), “a readiness for effective empathy training develops during the same time period that secure abstract thought, augmented moral development, and the ability to introspect appear during the college years” (p. 970). Burnard (1987) emphasized a need for self-awareness as a prerequisite to empathy and the importance of listening and suspending judgment.

Several approaches to teaching empathy can be found in the literature. Empathy can be taught utilizing art, such as painting, poetry, theatre and dance (Noddings, 2002), imagination (Greene, 2001), communications training (Winefield & Chur-Hansen, 2001), skills training (Kremer & Dietzen, 1991), and modeling (Dalton, Sunblad & Hylbert, 1976).

According to Beddoe and Murphy (2004), both cognitive and interpersonal strategies have been utilized to teach empathy with mixed results. Cognitive education focuses on the nature and importance of empathy. The interpersonal approach to empathy education focuses on communications training and perceptual skills. Reynolds, Scott and Jessiman (1999) explained that a major limitation associated with teaching empathy is failing to properly define empathy operationally.

Stapien and Baernstein (2006) summarized a list of studies where medical students were taught empathy in various ways such as through an interpersonal skills workshop (Fine & Therrien, 1977), a communication skills workshop (Evans, Stanley, Burrows & Sweet, 1989), a literature and medical course (Lancaster, Hart & Gardner, 2002 & Shapiro et al., 2004), an empathy, spirituality and wellness course (DiLalla, Hull & Dorsey, 2004), a theatrical

performance (Shapiro & Hunt, 2003), and through reflective writing (DasGupta & Charon, 2004). Spiro (1992) suggested that reading and social conversation might be key to enhancing one's empathy level.

Misch and Peloquin (2005) suggested, "confluent education is a suitable approach for developing empathy" (p. 49) with confluent education integrating affective and cognitive learning components such as "perception, cognition, emotion and feeling, introspection, right and left brain functions..." (p. 43). Herbek and Yammarino (1990) found that empathy training did enhance empathy in hospital nursing staff. The training program included six (one hour) training sessions over a seven-week period. The Carkhuff (1969) model was utilized to develop the course and included the following five levels of empathic understanding:

1. Ignores or detracts significantly from patient's statement.
2. Subtracts noticeable affect.
3. Interchangeable with patient's statement.
4. Adds noticeably to patient's statement.
5. Adds significantly to patient's statement.

The training program produced nurse empathy scores for the experimental group that were two and a half times higher than the scores of the control group.

Layton (1979) found that *modeling* was effective in teaching junior-level nursing students. In the study, senior-level nursing student empathy levels did not increase at the same level as the junior nursing students leading one to believe that the novice learner could gain more from empathy education. It was also noteworthy that senior-level nursing students' pre-study empathy scores were generally higher than the junior nursing students. Rogers (1986) found no relationship between undergraduate nursing student empathy scores and their grade point average.

Kalisch (1971a) included four elements in her empathy teaching plan: didactic, experiential training, role playing and role modeling of empathy. LaMonica (1993) included six

teaching modules; didactic, experiential, modeling, rehearsal, feedback and imagery. Carkuff and Truax (1965) and Lewis (1974) incorporated vignettes where students rated the demonstrated empathic behaviors. Reynolds (1998) believed the critical components of his empathy training program were “the opportunity to review transcripts of clinical interviews, an open two-way and non-defensive supervisory relationship, and direction with clinical work” (p. 1181). Reynolds et al. (1999) summarized the issues associated with identifying the best approach to teaching empathy:

- What should be the appropriate length of empathy training program?
- What components should be included?
- Empathy measurement tools are considered unreliable.
- What are the long range effects of empathy training?
- Empathy training programs have been methodologically weak.

LaMonica, Madea, and Oberst (1987), found no improvement in empathy scores of nurses in the experimental group after empathy training was provided to the nurses in the study regarding nursing care outcomes. Interestingly, they did find that patients cared for by nurses in the experimental group demonstrated less anxiety and hostility when compared to the control group. To summarize, no conclusive strategy to teach empathy to nurses has yet been identified.

### **Empathy Teaching Plan**

In order to increase registered nurse empathy scores, a teaching plan was outlined to incorporate ideas from the literature (Appendix A). The teaching plan utilized Wlodkowski and Ginsberg’s (2008) Motivational Framework for Culturally Responsive Teaching to facilitate participant motivation for learning. Wlodkowski (1995) outlined four major motivational conditions that serve to separate the various stages of learning; inclusion, attitude, meaning, and competence. Under each condition, purpose and strategies are outlined.

A four-hour program was developed to provide time for integrating the concepts learned by the nurse into practice. The plan included visuals, modeling, communications, reflective

writing, and reflective review components in the course and pre/post-assessment measures of participant empathy levels.

**CHAPTER 3**  
**METHODOLOGY**

**Study Design**

The study utilized a quasi-experimental design noting that the full power of random assignment was not feasible. Registered nurses working on the two telemetry units targeted for the study were not randomly assigned as part of one of the study groups, therefore pre-study equivalency of groups could not be assured. However, the treatment was randomly assigned to one of the two groups, thus establishing this study as a quasi-experimental design.

A pre and post study, Solomon Four-Group-Like Design was utilized for this study as noted in Campbell and Stanley's (1963) Design #5 (p. 24). The study was organized as follows:

Control Group	O <sub>1</sub>	X <sub>c</sub>	O <sub>2</sub>
		X <sub>c</sub>	O <sub>3</sub>
Experimental Group	O <sub>4</sub>	X <sub>e</sub>	O <sub>5</sub>
		X <sub>e</sub>	O <sub>6</sub>

The following defines the terms listed in the design:

- O<sub>1</sub> and O<sub>4</sub> - represent administration of the empathy pretest
- O<sub>2</sub>, O<sub>3</sub>, O<sub>5</sub>, O<sub>6</sub> – represent administration of the empathy post-test
- X<sub>c</sub> - represents treatment for the Control Group
- X<sub>e</sub> - represents treatment for the Experimental Group

The Solomon Four-Group-Like Design addressed the potential reactive or interactive effects of testing (an external validity factor), thus facilitating an increased potential for inference and generalizability of the study results. The design further enhanced the rigor of the study.

## **Population and Sample**

The target population for the study was currently employed licensed registered nurses who practiced direct patient care at the bedside in metropolitan area hospitals in Louisiana. The accessible population from which the sample was drawn was currently employed licensed registered nurses who practiced direct patient care at the bedside at one metropolitan area hospital in South Louisiana.

The hospital utilized for the study holds a single hospital license but provides services on two separate campuses approximately seven miles apart. The main campus consists of 343 beds and provides all general hospital services except for cardiac surgery and obstetrics. The satellite campus consists of 201 beds and provides all general hospital services plus cardiac surgery, obstetrics, and pediatrics.

The hospital is a community, secular organization with a mission of providing exceptional healthcare to the community. The values of the organization speak to the importance of compassion, respect and caring (as noted below) in providing excellent healthcare to the community.

### **MISSION**

Improving lives and strengthening our community by providing exceptional healthcare.

### **VALUES**

#### **Caring**

A deep abiding belief that caring moments reflect our genuine compassion and respect, fostering a loving, healing environment.

#### **Excellence**

An allegiance to the relentless pursuit of perfection, we individually and collectively demonstrate expertise, innovation and accountability in all that we do.

#### **Service**

The honor and privilege of giving of ourselves, creating one-on-one connections that respond to the deepest human needs.

### **Integrity**

Ascribing to the highest standards, we commit to integrity, respect and ethical stewardship of all resources entrusted to our care.

An indication of support of these values is a condition of hire and continued employment. The goals of the organization and employees are aligned based on these principles. Accomplishments related to the mission and values are reviewed annually with continuing plans outlined for improvement.

The researcher explored various sampling options, one of which was to randomly assign nurses within each campus to either the control or experimental group. Having both a control and experimental group represented on each campus provided an enhanced opportunity for nurses to communicate with each other, thus increasing the possibility and probability of experimental contamination. Therefore, the researcher elected to identify one unit on the main campus and a similar unit on the satellite campus to ultimately serve as a control and an experimental unit. By separating the control and experimental groups, the possibility of experimental contamination was minimized.

Another sampling option explored was utilizing staff on two oncology units, one on the main campus and one on the satellite campus. Although these two units are both called oncology units, the unit on the main campus typically cares for more general medical rather than oncology patients, and the oncology unit on the satellite campus is far more sophisticated in the types of oncology services provided. The dissimilarities of the two units far exceeded the similarities and were not selected for the study.

A third sampling option explored was utilizing staff on two intensive care units, one on the main campus and one on the satellite campus. The researcher identified that the intensive care unit on the satellite campus typically cared for more surgical patients whereas the

intensive care unit on the main campus cared primarily for medical patients. Nurses tend to migrate to surgery or medical patient care settings based on their particular strengths and interests. Once again, the dissimilarities of these two units far exceeded the similarities and were not selected for the study.

Ultimately the researcher elected to utilize staff on two telemetry units (one on the main and one on the satellite campus) because of the similarities of the units both in terms of the types of patients served as well as the characteristics of nurses employed to care for these patients. The telemetry units on both campuses provide services for acute cardiac patients and employ nurses particularly interested and skilled in caring for cardiac patients. Most of the nurses on the telemetry units enjoy the challenge of caring for more complicated patients. Telemetry nurses are also professionally self-directed and aggressive learners. Telemetry nurses are usually upwardly mobile from a career standpoint and frequently move on to work in the intensive care setting where they become some of the most knowledgeable and skilled nurses within the hospital system. The only difference in the patient populations of the two units was that at the satellite campus, post cardiac surgery patients are admitted to the unit which is not true on the main campus unit.

Although the nurses on each of the units were not randomly assigned to the unit on which they work, the treatment (empathy training program) was applied randomly to one or the other unit and the remaining unit served as a control unit. The experimental unit was determined by a random drawing whereby each unit had an equal and random chance of being selected as the experimental unit.

Campbell and Stanley (1963) stated that “The more similar the experimental and the control groups are in their recruitment, and the more this similarity is confirmed by the scores

on the pretest, the more effective this control becomes (p. 47).” By utilizing two similar (telemetry) units on separate campuses, one for control and one for study, similar comparative groups was established as supported by this rationale. Assessment of pre-study empathy scores of RNs from the study and control groups allowed the researcher to further compare the groups for equivalency.

### **Intervention**

A four-hour empathy program was presented to the experimental group of nurses over a five week period with one hour of instruction provided each week. Several educational sessions were provided to accommodate RNs on all shifts who worked on the unit as outlined in the educational plan schedule (see Appendix C). The researcher communicated with the participant’s prior to the program start date to clarify options for their attendance. No make-up sessions were provided since a minimum of four sessions with the same content was presented each week for the participants to attend.

The class size included a maximum of 10 participants per class to facilitate participation and engagement of the learners. The class was conducted in a small classroom away from the participant’s clinical work area to facilitate proper focus on the class content in the beginning but later nearer to the clinical unit for staff convenience. Refreshments were provided during each session.

A generic specialty-related educational program was provided to participants in the control group. The topic was generic and separate from the topic of empathy to prevent confusion between the two groups. The program provided three educational hours per participant over a five-week period. Several sessions were provided each week to enable as many RNs to attend as possible similar to the schedule outlined for the experimental group.

## **Instrumentation**

Demographic information was collected via a demographic survey given to the participants prior to treatment. In addition, demographic information was obtained through organizational records made available to the researcher.

An empathy measurement tool was utilized to measure participant empathy levels both pre and post treatment. Numerous instruments were found in the literature to measure empathy such as the Hogan Empathy Scale (Forsyth, 1979, MacDonald, 1977), the Carkhuff indexes (Lamonica, 1976, Sparling, 1977), the Truax Accurate Empathy Scale (Kalisch, 1971a, Mansfield, 1973, and Williams, 1979), and the Barrett-Lennard Relationship Inventory or BLRI – Empathy Subscale (Forsyth, 1979, Gagan, 1980, Johnson, 1980, Kalisch, 1971a, Kirk, 1979, Layton, 1979, and Stetler, 1977). All of the instruments noted above are self-rated scales except for the BLRI which is client-rated. Reynolds et al. (1999) emphasized the importance of the client’s perception of empathy and noted the lack of available tools to measure empathy from a client’s perspective.

The instrument selected to measure empathy in this study was the Balanced Emotional Empathy Scale or BEES (Mehrabian, 1996) because of its strong focus on the emotional component of empathy and its relationship with a healthy, adjusted functional personality state and interpersonal positiveness. The BEES instrument was the result of updating the previously designed tool (Emotional Empathic Tendency Scale developed by Mehrabian & Epstein, 1972) to incorporate a more balanced review of the empathy trait. The newly revised tool was designed to reduce “acquiescence bias” as noted by Mehrabian (1996, p. 2) which was considered the participant’s tendency to either always agree or disagree with statements given to them.

The tool was a questionnaire containing 30 items that uses a 9 point answer scale (with -4 representing very strong disagreement to +4 representing very strong agreement) to assess the degree to which the participant agreed or disagreed with the statement. The emotional empathy score was then tallied by summing the response points to the negatively worded statements and deducting the total negative points from the sum of the response points associated with all positively worded statements.

Mehrabian (1997) found the alpha internal consistency score of the BEES to be .87 (p. 440). The test-retest reliability coefficient was .79 (Mehrabian, 2000, p. 4). Validity was further based on comparison of the BEES with a previously developed (older) Emotional Empathic Tendency Scale (EETS). Mehrabian (1997) found results for the EETS and the BEES to be strongly and positively correlated with an  $r$  of .77 at a  $p < .05$ . Mehrabian and Epstein (1972) established validity of the EETS through an extensive literature review, expert opinions and through confirmed correlations among various convergent and divergent constructs some of which included negotiation skills, empathy training, forgiveness, and aggression. The EETS was also found to be highly reliable and discriminately valid based on a 0.06 correlation with the Crowne and Marlowe social desirability scale (1960).

### **Data Collection**

All participants were asked to complete a demographic questionnaire. Half of the participants in the experimental and half of the participants in the control group were asked to complete an empathy pretest. The remaining half of participants did not complete the empathy pretest as noted in the study design.

To maintain confidentiality of the participants and ensure total anonymity for all subjects, the researcher asked an unbiased party to distribute and collect completed documents (the

demographic survey and pretests from the groups completing pretests) from each participant on the medical telemetry experimental unit of the hospital and the medical telemetry control unit. The documents were placed in a sealed envelope by the unbiased party and given to the individual who entered the data into an excel spreadsheet. The same procedure occurred at the conclusion of the educational sessions. The unbiased party distributed and collected the post-tests from all participants at the end of the last educational session and placed the documents in a sealed envelope. The documents were then handed to the individual who entered the data.

The person entering the data maintained privacy of information at all times and entered data into a spreadsheet where it was stored on a removable flash drive with a redundant flash drive to prevent loss of data. At no time was any information logged into a hard or shared drive or emailed internally or via the internet. The data entry person kept the two flash drives in a secure (locked) location until such time as all data were entered. Once all data were entered, the data entry person removed all names associated with the data. The data were then delivered to the researchers after the names had been removed. The researchers at no time had access to the data until the names were removed, thus eliminating the possibility of associating names with data.

Nurses from both the control and experimental groups were provided a participant packet (see Appendix B) and asked to review the documents. Enclosed in the packet requesting this information was:

- 1.** A letter informing the potential participant of the purpose of the study and the researcher's request that they participate. The word empathy was not utilized in providing information regarding the purpose of the study in order to reduce the introduction of bias into the participant responses to the pre and post-tests.

2. A face sheet explaining the specifics related to the study and providing information should the participant have questions.
3. A demographic survey requesting information pertaining to the participant's age, gender, marital status, number of children, number of years in nursing, original undergraduate nursing degree/diploma, location of undergraduate nursing education, highest level of education attained, previous experience as a nurse, reading and social conversation practices, and how the participant thinks technology affects his or her ability as a nurse to connect and engage with patients at the bedside.
4. A copy of the (BEES) empathy instrument to be utilized as the pretest with instructions for completing the questionnaire (for those groups specified in the study design).
5. Completion of the pre-course document (demographic survey) by the participant served as subject consent for participation in the study.

A four-hour (one hour per week) empathy course was provided by the researcher for the nurses on the experimental unit over a five-week period. All presentations were provided in a consistent manner as each session was repeated at least four times during the week on both days and nights to allow for all RNs to attend (see Appendix C, Educational Plan Schedule).

Completion of at least two of the four sessions offered resulted in the participant receiving credit for completion of the empathy program. Those who attended fewer than two sessions were not awarded credit for the course. Those who received credit for the course were included in the overall study dataset and analysis. Study mortality rates were documented and analyzed separately from the review to determine potential effects on the overall study results.

A generic specialty related educational program was provided to participants in the control group. The topic for the control group was generic and separate from the topic of empathy to prevent confusion between the two groups. After both educational sessions were completed, nurses from the control and experimental groups were asked to complete an empathy post-test.

To encourage participation and serve as a reward for completing the empathy educational sessions, the researcher provided meals during the didactic portion of the presentations. Refreshments were also provided for the control group participants by the instructors of the classes.

### **Data Summary**

The empathy test scores for the four subgroups (both pre and post) were entered into a spreadsheet (along with the demographic information collected) where all data were stored. The spreadsheet facilitated an orderly overview of data. A second electronic copy was maintained in order to prevent accidental loss of data.

Appropriate statistical analyses measures were utilized to review the data associated with each objective as noted below:

1. Describe and compare the registered nurse experimental and control groups to the overall hospital registered nurse population on selected personal and demographic characteristics to include:
  - Average age
  - Gender
  - Years as a nurse
  - Educational level

The statistical tests utilized to analyze the data related to this objective were measures of central tendency, frequencies, percentiles and the chi-square test for goodness of fit to determine if the observed counts *fit* the distribution.

2. Describe and compare the registered nurse experimental and control groups in terms of :

- Gender
- Marital status
- Number of children
- Number of years in nursing
- Undergraduate nursing degree/diploma
- Location of undergraduate nursing education
- Highest level of education attained
- Previous experience
- Reading and social conversation practices
- The effect technology has on nurse-patient relationships at the bedside

The statistical tests utilized to analyze the data related to this objective were measures of central tendency, frequencies, percentiles, chi-square tests of independence (homogeneity), and independent t-tests.

3. Compare pre-empathy levels for the experimental and control RN groups to determine group equivalency.



The statistical tests utilized to analyze the data related to this objective were measures of central tendency, frequencies, percentiles, and independent t-tests.

4. Compare post-empathy levels for the experimental and control RN sub-groups to determine if pretesting affected post-test scores.

The statistical tests utilized to analyze the data related to this objective were measures of central tendency, frequencies, percentiles, and independent t-tests.



- Number of years in nursing
- Undergraduate nursing degree/diploma
- Location of undergraduate nursing education
- Highest level of education attained
- Previous experience
- Reading and social conversation practices
- The effect technology has on nurse-patient relationships at the bedside

The statistical tests utilized to analyze the data related to this objective were measures of central tendency, frequencies, percentiles, Pearson 2-tailed correlation coefficients and the independent sample t-tests.

Once the data were analyzed and summarized, a report was compiled addressing those relationships noted in the research objectives and research hypotheses. The information was reviewed by two other researchers to corroborate the findings and approach to data analysis. Findings were outlined in an executive summary format and documented in chapters four and five of this manuscript as required in the dissertation process for the Louisiana State University doctoral program.

## **CHAPTER 4**

### **RESULTS**

The primary purpose of this quasi-experimental study was to compare the level of empathy of registered nurses who received instruction on the development of effective empathy with nurses who did not receive this instruction at a hospital in a metropolitan area of south Louisiana. The dependent variable was defined as the level of empathy score achieved by the registered nurses, and the primary independent variable was whether or not the registered nurses received the empathy educational course (treatment). A total of seven objectives were developed to guide the study. The results are organized around and presented in response to each of the objectives.

#### **Study Results**

##### **Objective One**

The first objective was to describe and compare the registered nurse experimental and control groups to the overall hospital registered nurse population on selected personal demographic characteristics including: age; gender; years as a nurse; and educational level. To accomplish this objective on each characteristic, the nurses who participated in the study (both experimental and control groups) are first described. Following this, the descriptive information is presented for the overall group of nurses employed by the hospital in which the study took place. Finally, the participating nurses are compared on these four descriptors with the overall group of nurses.

##### **Age**

Nurses participating in the study were asked to report their ages by checking the most appropriate of the following age categories that were provided: "19-24," "25-34," "35-44," "45-54," "and 55 or more." Of the 45 participants in the study, 44 provided useable data in response

to this item. The “25-34” age category was reported by the largest group of respondents ( $n = 15$ , 34.1%) and the category that received the smallest number of respondents among the participants was the “55 or more” category ( $n = 4$ , 9.1%) (see Table 1).

The ages of the overall nurse population of the study hospital were provided by the human resource office of the organization. To be able to validly compare the information with the data collected from the study groups, the ages of the overall nurse population were grouped into the same categories as the study participant’s ages. When the data were organized in this format, the age category that included the largest number of the nurse population was the “25 – 34” group ( $n = 251$ , 37.9%). The age category that included the smallest number of the nurse population was the “19 – 24” group ( $n = 43$ , 6.5%) (see Table 1).

**Table 1**  
Comparison of Registered Nurse Study Participant Groups and the Overall Hospital Nurse Population on Age

Age Groups	Study Participants		Overall Nurse Population	
	<i>n</i>	%	<i>N</i>	%
19 – 24	10	22.7	43	6.5
25 – 34	15	34.1	251	37.9
35 – 44	9	20.5	190	28.7
45 - 54	6	13.6	120	18.1
55 or >	4	9.1	58	8.8
Total	44 <sup>a</sup>	100	662 <sup>b</sup>	100

Note.  $\chi^2(4, N = 44) = 19.526, p < .01$

<sup>a</sup> One study participant did not provide age data

<sup>b</sup> Overall Nurse Population ( $N = 662, M = 37.82, SD = 10.765, Min = 21, Max = 69$ )

The next step was to compare the study participants with the overall nurse population. To accomplish this component of the objective, the researcher utilized the chi-square goodness of fit test to determine if the sample of study participants was drawn from a population with the same characteristics as the overall nurse population. The computed chi-square value ( $\chi^2(4, N = 44) = 19.526, p < .01$ ) was significant indicating that the study participant group did not have the

same age characteristics as the overall nurse population. The nature of the difference between the age distributions of the groups was such that the study participant group had a higher percentage of individuals in the youngest age category (22.7%) than the overall nurse population group (6.5%). Additionally, the overall nurse population group had a higher percentage in the “35 – 44” age category (28.7%) and the “45 – 54” age category (18.1%) than the study participant group (20.5% and 13.6% respectively).

### Gender

Nurses participating in the study were asked to report their gender on the demographic survey. Of the 45 participants, 44 provided useable data in response to this item. The majority of the nurses participating in the study ( $n = 39$ , 88.6%) reported their gender as female.

Gender of the overall nurse population of the study hospital was provided by the human resources office for the organization. Examination of this data revealed that the majority of the overall nurse population was female ( $n = 592$ , 89.6%) as noted in Table 2.

**Table 2**  
Comparison of Registered Nurse Study Participant Groups and the Overall Hospital Nurse Population on Gender

Gender	Study Participants		Overall Nurse Population	
	<i>n</i>	%	<i>N</i>	%
Male	5	11.4	69	10.4
Female	39	88.6	592	89.6
Total	44 <sup>a</sup>	100	662	100

Note.  $\chi^2(1, N = 44) = .044, p < .05$

<sup>a</sup>One study participant did not provide gender data

The next step was to compare the study participants with the overall nurse population. To accomplish this component of the objective, the researcher utilized the chi-square goodness of fit test to determine if the sample of study participants was drawn from a population with the same characteristics as the overall nurse population. The

computed chi-square value ( $\chi^2 (1, N = 44) = .044, p > .05$ ) was not significant indicating that the study group had the same gender characteristics as the hospital registered nurse population.

### Years as a Nurse

Nurses participating in the study were asked to report their years as a nurse by checking the most appropriate of the following categories that were provided: "1-5," "6-10," "11-20," "21-30," and "31 or more." Of the 45 participants in the study, 44 provided useable data in response to this item.

The "1-5" years as a nurse category was reported by the largest number of study group participants ( $n = 28, 63.6\%$ ). The category that was reported by the smallest number of respondents among the participants was the "31 or more" category ( $n = 2, 4.5\%$ ) (see Table 3).

The years as a nurse data of the overall nurse population of the study hospital were provided by the human resource office of the organization. To be able to validly compare the information with the data collected from the study groups, the years as a nurse data of the overall nurse population were grouped into the same categories as the data of the study participants. When the data were organized in this format, the years as a nurse category that included the largest number of the nurse population was the "1-5" group ( $n = 292, 44.1\%$ ). The years as a nurse category that included the smallest number of nurse population was the "31 or more" group ( $n = 28, 4.2\%$ ) (see Table 3).

The next procedural step was to compare the study participants with the overall nurse population. To accomplish this component of the objective, the researcher utilized the chi-square goodness of fit test to determine if the sample of study participants was drawn from a population with the same characteristics as the overall nurse population. The computed chi-

square analysis was not significant ( $\chi^2(4, N = 44) = 8.524, p > .05$ ) indicating that the study group had the same years as a nurse characteristics as the hospital registered nurse population.

**Table 3**  
Comparison of Registered Nurse Study Participant Groups and the Overall Hospital Nurse Population on Years as a Nurse

Years as a Nurse	Study Participants		Overall Nurse Population	
	<i>n</i>	%	<i>N</i>	%
1 – 5	28	63.6	292	44.1
6 - 10	3	6.8	137	20.7
11 – 20	8	18.2	158	23.9
21 – 30	3	6.8	47	7.1
31 or More	2	4.5	28	4.2
Total	44 <sup>a</sup>	100	662 <sup>b</sup>	100

Note.  $\chi^2(4, N = 44) = 8.524, p > .05$

<sup>a</sup>One study participant did not provide years as a nurse data

<sup>b</sup>Overall Nurse Population ( $N = 662, M = 9.68, SD = 8.973, Min = 0, Max = 44$ )

### Educational Level

Nurses participating in the study were asked to report their educational level by checking the most appropriate of the following categories that were provided: “Associate Degree,” “Diploma,” or “Bachelor’s Degree.” Of the 45 participants in the study, 44 provided useable data in response to this item. The “Bachelor’s Degree” category was reported by the largest number of participants ( $n = 30, 68.2\%$ ) and the category that received the smallest number of respondents was the “Diploma” category ( $n = 2, 4.5\%$ ) (see Table 4).

The educational level of the overall nurse population of the study hospital was provided by the human resource office of the organization. To be able to validly compare the information with the data collected from the study groups, the educational level of the overall nurse population were grouped into the same categories as the study participant’s ages. When the data were organized in this format, the educational level category that included the largest number of the nurse population was the “Bachelor’s Degree” group ( $n = 337, 50.9\%$ ). The educational

level category that included the smallest number of nurse population was the “Diploma” group ( $n = 135, 20.4\%$ ) (see Table 4).

**Table 4**  
Comparison of Registered Nurse Study Participant Groups and the Overall Hospital Nurse Population on Educational Level

Educational Levels	Study Participants		Overall Nurse Population	
	<i>n</i>	%	<i>N</i>	%
Associate	12	27.3	190	28.7
Diploma	2	4.5	135	20.4
Bachelor’s	30	68.2	337	50.9
Total	44 <sup>a</sup>	100	662	100

<sup>a</sup>One study participant did not provide educational level data

The next step was to compare the study participants with the overall nurse population. To accomplish this component of the objective, the researcher utilized the chi-square goodness of fit test to determine if the sample of study participants was drawn from a population with the same characteristics as the overall nurse population. In order to provide adequate numbers for each cell in the cross tabulation table needed to conduct the analysis, associate degree and diploma numbers were combined as one group. Therefore, in this analysis subjects were grouped into two categories, “bachelor’s degree” and “other than bachelor’s degree” participants (see Table 5).

**Table 5**  
Comparison of Registered Nurse Study Participant Groups and the Overall Hospital Nurse Population on Educational Level (Grouped Data)

Educational Levels	Study Participants		Overall Nurse Population	
	<i>n</i>	%	<i>N</i>	%
Other than Bachelor’s	14	31.8	325	49.1
Bachelor’s	30	68.2	337	50.9
Total	44 <sup>a</sup>	100	662	100

Note.  $\chi^2 (1, N = 44) = 5.258, p < .05$

<sup>a</sup>One study participant did not provide educational level data

The computed chi-square value ( $\chi^2 (1, N = 44) = 5.258, p < .05$ ) was significant indicating that the study participant group did not have the same educational level characteristics as the overall nurse population. The nature of the difference between the educational level distributions of the groups was such that the study participant group had a higher percentage of individuals in the Bachelor's Degree category (68.2%) than the overall nurse population group (50.9%). Additionally, the overall nurse population group had a higher percentage in the "Associate" and "Diploma" combined levels (49.1%) as compared to the study group (31.8%).

### **Objective Two**

The second objective was to describe and compare the registered nurse experimental and control groups in terms of: gender; marital status; number of children; number of years in nursing; undergraduate nursing degree/diploma; location of undergraduate nursing education; highest level of education attained; previous experience; reading and social conversation practices; and the effect technology has on nurse-patient relationships at the bedside.

To accomplish this objective, the control and experimental combined groups of nurses who participated in the study are described. Following this, the descriptive information is presented for each (control and experimental) group of nurses employed by the hospital in which the study took place. Finally, the two groups are compared on the personal and demographic data.

#### Gender

Nurses participating in the study were asked to report their gender on the demographic survey. Of the 45 participants in the study, 44 provided useable data in response to this item. Of the 44 participants who completed the demographic survey, 18 (40.9%) were from the control

group (with one of the control participant's data missing) and 26 (59.1%) were from the experimental group.

The control group consisted of 17 females (94.4%) and 1 male (5.6%). The experimental group had 22 females (84.6%) and 4 males (15.4%) as noted in Table 6.

**Table 6**  
Comparison of the Gender of Registered Nurses by Whether or Not They Received Empathy Training

Gender	Control Group		Experimental Group <sup>a</sup>		Combined Groups	
	n	%	n	%	N	%
Male	1	5.6	4	15.4	5	11.4
Female	17	94.4	22	84.6	39	88.6
Total	18 <sup>b</sup>	100	26	100	44	100

Note.  $\chi^2(1, N = 44) = 1.020, p = .312$

<sup>a</sup> Participated in Empathy Training Program

<sup>b</sup> One study participant did not provide gender data

The next step was to compare the control group with the experimental group on the characteristic of gender. To accomplish this component of the objective, the researcher utilized the chi-square test of independence to determine if the variables gender and study group (control and experimental) were independent. The computed chi-square value ( $\chi^2(1, N = 44) = 1.020^b, p = .312$ ) was not significant at the .05 alpha level indicating that the variables gender and study group were independent.

### Marital Status

Nurses participating in the study were asked to report their marital status by checking one of six options on the demographic survey: married; divorced; single; separated; widowed; or other. Of the 44 participants who completed the demographic survey, 18 (40.9%) were from the control group (with one of the control participant's data missing) and 26 (59.1%) were from the experimental group.

When the study groups were examined on the variable marital status, the majority of the control group ( $n = 11$ , 61.1%) indicated that they were married. Additionally, three (16.7%) of the members of the control group reported they were single. In contrast, half ( $n = 13$ , 50%) of the nurses in the experimental group reported they were single, and five (19.2%) indicated that they were divorced (see Table 7).

**Table 7**  
Comparison of Marital Status of Registered Nurses by Whether or Not They Received Empathy Training

Marital Status	Control Group		Experimental Group <sup>a</sup>		Combined Groups	
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%
Married	11	61.1	8	30.8	19	43.2
Divorced	1	5.6	5	19.2	6	13.6
Single	3	16.7	13	50	16	36.4
Separated	1	5.6			1	2.3
Widowed	1	5.6			1	2.3
Other	1	5.6			1	2.3
Total	18 <sup>b</sup>	100	26	100	44	100

Note.  $\chi^2(1, N = 44) = 3.311, p = .069$

<sup>a</sup> Participated in Empathy Training Program

<sup>b</sup> One study participant did not provide marital status data

The next step was to compare the control group with the experimental group data. To accomplish this component of the objective, the researcher utilized the chi-square test of independence to determine if the variables marital status and study group were independent. In order to provide adequate numbers for computation of the chi-square test, the categories were reduced to either “married” or “not married” which included all options other than married. The computed chi-square value ( $\chi^2(1, N = 44) = 3.311, p = .069$ ) was not significant at the .05 alpha level indicating that the variables marital status and study group were independent.

## Number of Children

Nurses participating in the study were asked to report the number of children who resided in their household. Those who had children were asked to respond by checking one of five options on the demographic survey: one; two; three; four; or five or more. Of the 44 participants who completed the demographic survey, 18 (40.9%) were from the control group participants (with one of the control participant's data missing). Twenty-six (59.1%) were from the experimental group.

The largest group ( $n = 21$ , 47.7%) of the participants in the combined groups noted on the survey that no children were living in the household. In the control group, the largest number ( $n = 7$ , 38.9%) noted one child. In the experimental group, the largest number ( $n = 16$ , 61.5%) noted zero children (see Table 8). Measures of central tendency were determined for the combined control and experimental groups ( $M = .86$ ,  $SD = 1.11$ ).

**Table 8**  
Comparison of Number of Children of Registered Nurses by Whether or Not They Received Empathy Training

Number of Children	Control Group		Experimental Group <sup>a</sup>		Combined Groups	
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%
0	5	27.8	16	61.5	21	47.7
1	7	38.9	7	26.9	14	31.8
2	4	22.2	1	3.8	5	11.4
3	2	11.1	1	3.8	3	6.8
5	0	0	1	3.8	1	2.3
Total	18 <sup>b</sup>	100	26	100	44 <sup>c</sup>	100

Note.  $t(42) = 1.089$ ,  $p = .283$

<sup>a</sup> Participated in Empathy Training Program

<sup>b</sup> One study participant did not provide number of children data

<sup>c</sup> Combined group ( $N = 44$ ,  $M = .86$ ,  $SD = 1.11$ ,  $Min = 0$ ,  $Max = 5$ )

The next procedural step was to compare the control group with the experimental group data. To accomplish this component of the objective, the researcher utilized the

independent t-test. The computed t-test value ( $t(42) = 1.089, p = .283$ ) was not significant at the .05 alpha level indicating no difference existed between the variables number of children and the study group.

### Number of Years in Nursing

Nurses participating in the study were asked to report the number of years in nursing by checking one of five options on the demographic survey: 1-5; 6-10; 11-20; 21-30; or 31 or more. Of the 44 participants who completed the demographic survey, 18 (40.9%) were from the control group (with one of the control participant's data missing) and 26 (59.1%) were from the experimental group.

Among the members of the control group, the category of years as a nurse reported by the largest number was "1 – 5 years" ( $n = 8, 44\%$ ). The "1 – 5 years" category was also reported by the largest number of the experimental group members ( $n = 20, 76.9\%$ ) (see Table 9).

**Table 9**  
Comparison of Number of Years in Nursing of Registered Nurses by Whether or Not They Received Empathy Training

Number of Years	Control Group		Experimental Group <sup>a</sup>		Combined Groups	
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%
1 - 5	8	44.4	20	76.9	28	63.6
6 – 10	2	11.1	1	3.8	3	6.8
11 – 20	5	27.8	3	11.5	8	18.2
21 – 30	1	5.6	2	7.7	3	6.8
31 or >	2	11.1	0	0	2	4.5
Total	19 <sup>b</sup>	100	26	100	44 <sup>c</sup>	100

<sup>a</sup> Participated in Empathy Training Program

<sup>b</sup> One study participant did not provide number years in nursing data

<sup>c</sup> Combined group ( $N = 44, M = 1.82, SD = 1.23, Min = 1, Max = 5$ )

Measures of central tendency were determined for the combined control and experimental groups ( $M = 1.82, SD = 1.23$ ). The mean for the control group was 2.28 ( $SD =$

1.41) and the experimental group, 1.5 ( $SD = .99$ ). The categories were scored based on the interpretive scale: 1 = 1 – 5 years in nursing, 2 = 6 – 10 years in nursing, 3 = 11 – 20 years in nursing, 4 = 21 -30 years in nursing, and 5 = 31 or more years in nursing.

The next step was to compare the control group with the experimental group data. To accomplish this component of the objective, the researcher utilized the chi-square test of independence. Due to the number of cells with counts less than five, the researcher collapsed cells in order to conduct the analysis to determine if the variables years in nursing and study group were independent. The researcher divided the data into “1 – 5 years” and “6 or more” years. Table 10 reflects cross tabulation of the number of years in nursing using the combined categories and study groups.

**Table 10**  
Comparison of Number of Years in Nursing (Grouped Data) of Registered Nurses by Whether or Not They Received Empathy Training

Number of Years	Control Group		Experimental Group <sup>a</sup>		Combined Groups	
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%
1 - 5	8	42.1	20	76.9	28	63.6
6 or more	11	57.9	6	23.1	17	36.4
Total	19 <sup>b</sup>	100	26	100	45	100

Note.  $\chi^2(1, N = 44) = 5.662, p = .017$

<sup>a</sup> Participated in Empathy Training Program

<sup>b</sup> One study participant did not provide number of years in nursing data

The chi-square test of independence value ( $\chi^2(1, N = 44) = 5.662, p = .017$ ) was significant at the .05 alpha level indicating that the variables number of years in nursing and study groups were not independent. The nature of the association between these variables was such that a larger percentage of the experimental group ( $n = 20, 76.9\%$ ) marked the “1 – 5 years” category when compared to the control group ( $n = 8, 42.1\%$ ). In the control group, a larger percent ( $n = 11, 57.9\%$ ) selected the “6 or more” category when compared to the experimental group ( $n = 6, 23.1\%$ ).

## Undergraduate Nursing Degree/Diploma

Nurses participating in the study were asked to report the undergraduate nursing degree or diploma by checking one of three options on the demographic survey: associate degree; diploma; or bachelor's degree. Of the 44 participants who completed the demographic survey, 18 (40.9%) were from the control group (with one of the control participant's data missing) and 26 (59.1%) were from the experimental group.

Among the members of the control group, the category of undergraduate degree or diploma reported by the largest number was "bachelor's" ( $n = 12$ , 66.7%). The "bachelor's" category was also reported by the largest number of the experimental group members ( $n = 12$ , 46.2%) with a close second noting associate degree ( $n = 11$ , 42.3%) (see Table 11).

**Table 11**  
Comparison of Undergraduate Nursing Degree/Diploma of Registered Nurses by Whether or Not They Received Empathy Training

Undergraduate Degree	Control Group		Experimental Group <sup>a</sup>		Combined Groups	
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%
Associate	4	22.2	11	42.3	15	34.1
Diploma	2	11.1	3	11.5	5	11.4
Bachelor's	12	66.7	12	46.2	24	54.5
Total	18 <sup>b</sup>	100	26	100	44 <sup>c</sup>	100

Note.  $\chi^2(2, N = 44) = 2.081, p = .353$

<sup>a</sup> Participated in Empathy Training Program

<sup>b</sup> One study participant did not provide undergraduate nursing degree/diploma data

<sup>c</sup> Combined group ( $N = 44, M = 2.20, SD = .93, Min = 1, Max = 3$ )

Measures of central tendency were determined for the combined control and experimental groups ( $M = 2.20, SD = .93$ ). The mean for the control group was 2.44 ( $SD = .86$ ) and the experimental group, 2.04 ( $SD = .96$ ). The categories were scored based on the interpretive scale: 1 = associate degree, 2 = diploma and 3 = bachelor's degree.

The next step was to compare the control group with the experimental group data. To accomplish this component of the objective, the researcher utilized the chi-square test of independence. To provide adequate numbers within each cell, the associate and diploma categories were combined and the bachelor's degree category was maintained. The chi-square test of independence value ( $\chi^2 (1, N = 44) = 2.082, p = .353$ ) was not significant at the .05 alpha level indicating that the variables undergraduate nursing degree and study group of the registered nurses in the research were independent.

Location of Undergraduate Nursing Education

Nurses participating in the study were asked to report the location of their undergraduate nursing education by checking one of two options on the demographic survey: Louisiana; or other. Of the 44 participants who completed the demographic survey, 18 (40.9%) were from the control group participants (with one of the control participant's data missing) and 26 (59.1%) were from the experimental group.

The majority ( $n = 37, 84.1%$ ) of the participants in the combined groups identified Louisiana as the location of their undergraduate nursing education. The majority in both the control ( $n = 14, 77.8%$ ) and experimental ( $n = 23, 88.5%$ ) groups reported Louisiana (see Table 12).

**Table 12**  
Comparison of Location of Undergraduate Nursing Degree/Diploma of Registered Nurses by Whether or Not They Received Empathy Training

Location	Control Group		Experimental Group <sup>a</sup>		Combined Groups	
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%
Louisiana	14	77.8	23	88.5	37	84.1
Other	4	22.2	3	11.5	7	15.9
Total	18 <sup>b</sup>	100	26	100	44	100

Note.  $\chi^2 (1, N = 44) = .908, p = .341$

<sup>a</sup> Participated in Empathy Training Program

<sup>b</sup> One study participant did not provide location of undergraduate nursing degree/diploma data

The next step was to compare the control group with the experimental group data. To accomplish this, the researcher utilized the chi-square test of independence. The chi-square test value ( $\chi^2 (1, N = 44) = .908, p = .341$ ) was not significant indicating that the variables location of nursing education and the study group were independent.

### Highest Level of Education Attained

Nurses participating in the study were asked to report their highest level of education attained by checking one of six options on the demographic survey: associate; diploma; bachelor's; master's; doctorate; or other. Of the 44 participants who completed the demographic survey, 18 (40.9%) were from the control group participants (with one of the control participant's data missing) and 26 (59.1%) were from the experimental group.

The majority ( $n = 29, 65.9\%$ ) of participants in the combined groups identified bachelor's degree as their highest level of education attained. The majority in both the control ( $n = 12, 66.7\%$ ) and experimental ( $n = 17, 65.4\%$ ) groups reported bachelor's degree (see Table 13).

**Table 13**  
Comparison of Highest Level of Education Attained of Registered Nurses by Whether or Not They Received Empathy Training

Highest Level Education	Control Group		Experimental Group <sup>a</sup>		Combined Groups	
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%
Associate	4	22.2	8	30.8	12	27.3
Diploma	1	5.6	1	3.8	2	4.5
Bachelor's	12	66.7	17	65.4	29	65.9
Master's	1	5.6	0	0	1	2.3
Doctorate	0	0	0	0	0	0
Total	18 <sup>b</sup>	100	26	100	44	100

Note.  $\chi^2 (1, N = 44) = .229, p = .632$

<sup>a</sup> Participated in Empathy Training Program

<sup>b</sup> One study participant did not provide level of education data

The next step was to compare the control group with the experimental group data. To accomplish this component of the objective, the researcher utilized the chi-square test of independence.

In order to provide adequate numbers in each chi-square cell, the highest level of education data were divided into “less than bachelor’s degree” and “bachelor’s degree or more.” The chi-square test of independence value ( $\chi^2 (1, N = 44) = .229, p = .632$ ) was not significant at the .05 alpha level indicating that the variables highest level of nursing education attained and study group were independent.

### Previous Experience

Nurses participating in the study were asked to report their previous experience attained by checking all the boxes that applied out of 10 options on the demographic survey: hospital; OR/PACU; psychiatry; medical-surgical (med-surg); oncology; critical care; emergency; pediatrics; community/home health; or other. Each participant could mark multiple answers if applicable. Of the 44 participants who completed the demographic survey, 18 (40.9%) were from the control group participants (with one of the control participant’s data missing) and 26 (59.1%) were from the experimental group.

The majority of the participants in the combined data identified hospital experience ( $n = 28, 63\%$ ) with a substantial number noting medical-surgical ( $n = 15, 34.4\%$ ) and other ( $n = 15, 34.4\%$ ) experience. Similar findings were seen in the control group, with the majority noting hospital ( $n = 14, 77.8\%$ ) and medical-surgical ( $n = 10, 55.6\%$ ) experience. Among the nurses in the experimental group, a majority noted hospital ( $n = 14, 53.8\%$ ) and a substantial number noted other ( $n = 10, 38.5\%$ ) experience (see Table 14).

The next step was to compare the control group with the experimental group on previous experience data. To accomplish this component of the objective, the researcher utilized the chi-

square test of independence for each of the comparisons of the control and experimental groups on experience categories. For example, the control and experimental groups were compared in regards to whether or not they reported that they had overall hospital experience. The same analysis was done for operating room/post anesthesia care unit (PACU) experience and so on

**Table 14**  
Comparison of Previous Experience of Registered Nurses by Whether or Not They Received Empathy Training

Previous Experience	Control Group		Experimental Group <sup>a</sup>		Combined Groups	
	n	% <sup>c</sup>	N	% <sup>c</sup>	N	% <sup>c</sup>
Hospital (Overall)	14 <sup>b</sup>	77.8	14	53.8	28	63.9
OR/PACU	2	11.1	2	7.7	4	9.1
Psychiatry	2	11.1	1	3.8	3	6.8
Med-Surg	10	55.6	5	19.2	15	34.1
Oncology	2	11.1	1	3.8	3	6.8
Critical Care	5	27.8	4	15.4	9	20.5
Emergency	2	11.1	1	3.8	3	6.8
Pediatrics	1	5.6	1	3.8	2	4.5
Community/HH	5	27.8	3	11.5	8	18.2
Other	5	27.8	10	38.5	15	34.1

<sup>a</sup> Participated in Empathy Training Program

<sup>b</sup> One study participant did not provide previous experience data

<sup>c</sup> Percentages do not add to 100% since subjects were asked to mark all that apply

until all variables were compared to determine independence. The results of the comparative tests are presented in Table 15.

Six of the chi-square analyses revealed unacceptable expected cell counts as noted in Table 15; therefore the analyses were not used. Of the chi-square analyses for which adequate data were available, only one was found to be significant ( $p < .05$ ). The chi-square test was used to determine if the variables, whether or not the nurse had medical-surgical experience and study

group were independent. The chi-square test was significant indicating that the variables were not independent ( $\chi^2(1, N = 44) = 6.246, p = .012$ ).

The nature of the association between these variables is such that the majority of nurses in the control group (53.6%) reported “some experience” as compared to the experimental group in which the majority (80.8%) reported “no experience” (see Table 16).

**Table 15**  
Comparison of Registered Nurses Who Received Empathy Training with Those Who Did Not on Selected Experiential Measures

Previous Experience	Value	df	Asymp. Sig (2-sided)
Hospital (overall)	2.632	1	.105
OR/PACU <sup>a</sup>			.
Psychiatry <sup>a</sup>			
Med-Surg	6.246	1	<b>.012</b>
Oncology <sup>a</sup>			
Critical Care	1.004	1	.316
Emergency <sup>a</sup>			
Pediatrics <sup>a</sup>			
Community/HH <sup>a</sup>			

<sup>a</sup> Two cells (50%) have expected count less than 5, therefore the X2 was not computed.

**Table 16**  
Comparison of Medical-Surgical Experience of Registered Nurses by Whether or Not They Received Empathy Training

Med-Surg Experience Reported	Control Group		Experimental Group <sup>a</sup>		Combined Groups	
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%
No	8	44.4	21	80.8	29	65.9
Yes	10	55.6	5	19.2	15	34.1
Total	18 <sup>b</sup>	100	26	100	44	100

Note. ( $\chi^2(1, N = 44) = 6.246, p = .012$ )

<sup>a</sup> Participated in Empathy Training Program

<sup>b</sup> One study participant did not provide marital status data

On further review, the researcher found that a majority of the control group indicated “Yes” they had (medical - surgical) experience ( $n = 10, 55.6\%$ ) as compared to the experimental group ( $n = 5, 19.2\%$ ). The majority of the experimental group ( $n = 21, 80.8\%$ ) selected “No” in the experience category as compared to the control group ( $n = 8, 44.4\%$ ).

### Reading Practices

Nurses participating in the study were asked to report their reading practices by checking one of five options on the demographic survey related to the number of books they read each year: 0; 1-5; 6-10; 11-20; or 21 or more. Of the 44 participants who completed the demographic survey, 18 (40.9%) were from the control group participants (with one of the control participant’s data missing) and 26 (59.1%) were from the experimental group.

The majority of the participants in the combined group data selected 1-5 books per year ( $n = 23, 52.3\%$ ). The majority of the control group selected 1-5 books per year ( $n = 10, 55.6\%$ ) as did the experimental group ( $n = 13, 50\%$ ) (see Table 17).

**Table 17**  
Comparison of Reading Practices of Registered Nurses by Whether or Not They Received Empathy Training

Books Read/Year	Control Group		Experimental Group <sup>a</sup>		Combined Groups	
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%
0	2	11.1	2	7.7	4	9.1
1-5	10	55.6	13	50	23	52.3
6-10	2	11.1	6	23.1	8	18.2
11-20	1	5.6	4	15.4	5	11.4
21 or more	3	16.7	1	3.8	4	9.1
Total	18 <sup>b</sup>	100	26	100	44	100

Note.  $\chi^2(1, N = 44) = .273^a, p = .601$

<sup>a</sup> Participated in Empathy Training Program

<sup>b</sup> One study participant did not provide reading practices data

The next step was to compare the control group with the experimental group data. To accomplish this component of the objective, the researcher utilized the chi-square test of independence.

In order to provide adequate numbers in each chi-square cell, the reading practice data were divided into “five or less” (books per year) and “six or more.” The chi-square test of independence value ( $\chi^2 (1, N = 44) = .273, p = .601$ ) was not significant at the .05 alpha level indicating that the variables reading practices and study group were independent.

### Social Conversation Practices

Nurses participating in the study were asked to report their social practices by checking one of five options on the demographic survey related to the number of conversations each day they engaged in excluding conversing with family or colleagues: 1-10; 11-20; 21-30; 31-40; or 41 or more). Of the 44 participants who completed the demographic survey, 18 (40.9%) were from the control group participants (with one of the control participant’s data missing) and 26 (59.1%) were from the experimental group.

The largest number of participants in the combined data identified they socially conversed 1 – 10 times per day ( $n = 21, 46.7%$ ) with individuals outside of their family and work. Similar findings were seen in the control group, with the majority noting 1 – 10 times per day ( $n = 12, 66.7%$ ). The largest portion of the experimental group indicated a response in the 11 – 20 category ( $n = 10, 38.5%$ ) but many selected 1 – 10 ( $n = 9, 34.6%$ ) (see Table 18).

The next step was to compare the control group with the experimental group data. To accomplish this component of the objective, the researcher utilized the chi-square test of independence. In order to provide adequate numbers in each cell, the social practice

data were divided into “10 or less” (conversations per day) and “11 or more” (conversations per day) (see Table 19).

**Table 18**  
Comparison of Social (Conversation) Practices of Registered Nurses by Whether or Not They Received Empathy Training

Social Conversations	Control Group		Experimental Group <sup>a</sup>		Combined Groups	
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%
1 – 10	12	66.7	9	34.6	21	47.7
11 – 20	3	16.7	10	38.5	13	29.5
21 – 30	1	5.6	5	19.2	6	13.6
31 – 40	0	0	2	7.7	2	4.5
41 or more	2	11.1	0	0	2	4.5
Total	18 <sup>b</sup>	100	26	100	44	100

<sup>a</sup> Participated in Empathy Training Program

<sup>b</sup> One study participant did not provide social conversation practice data

**Table 19**  
Comparison of Social (Conversation) Practices (Grouped data) of Registered Nurses by Whether or Not They Received Empathy Training

Conversations/day	Control Group		Experimental Group		Combined Groups	
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%
10 or less	12	66.7	9	34.6	21	47.7
11 or more	6	33.3	17	65.4	23	52.3
Total	18	100	26	100	44	100

Note  $\chi^2 (1, N = 44) = .273^a, p = .601$

The chi-square test of independence value ( $\chi^2 (1, N = 44) = 4.380, p = .036$ ) was significant at the .05 alpha level indicating that the variables *social practices* and *study group* were not independent. The nature of the association was such that the majority ( $n = 12, 66.7\%$ ) of the control group reported 10 or less conversations per day while the majority of the experimental group reported 11 or more ( $n = 17, 65.4\%$ ) conversations per day.

## Effect of Technology on Nurse-Patient Relationships

Nurses participating in the study were asked to report their thoughts on how technology affects the nurse's ability to effectively connect with patients by checking one of five options on the demographic survey: 1 (very little) to 5 (very much). Of the 44 participants who completed the demographic survey, 18 (40.9%) were from the control group (with one of the control participant's data missing) and 26 (59.1%) were from the experimental group.

A large number of the participants in the combined groups marked four ( $n = 15$ , 34.1%) on the demographic survey. Similar findings were seen in the control and experimental groups, with the larger number of participants selecting four (control,  $n = 6$ , 33.3%; experimental,  $n = 9$ , 34.6%) (see Table 20).

**Table 20**

Comparison of the Perception of Registered Nurses Regarding the Effect Technology Has on Engagement with Patients by Whether or Not They Received Empathy Training

Technology Influence	Control Group		Experimental Group		Combined Groups	
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%
1 (very little)	3	11.1	1	3.8	3	6.8
2	1	5.6	3	11.5	4	9.1
3	5	27.8	8	30.8	13	29.5
4	6	33.3	9	34.6	15	34.1
5 (very much)	4	22.2	5	19.2	9	20.5
Total	18	100	26	100	44	100

Note  $t(42) = -.110^a$ ,  $p = .913$

<sup>a</sup> One study participant did not provide technology data

<sup>b</sup> Combined Groups ( $N = 44$ ,  $M = 3.52$ ,  $SD = 1.131$ ,  $Min = 1$ ,  $Max = 5$ )

The researcher first reviewed the mean scores of the control group ( $M = 3.5$ ), the experimental group ( $M = 2.0$ ) and the two groups combined ( $M = 3.5$ ). The next step was to further compare the control group with the experimental group. To accomplish this component of the objective, the researcher utilized the independent t-test. The independent t-test value

( $t(42) = -.110, p = .913$ ) was not significant at the .05 alpha level indicating that no difference existed in the nurses' perceptions regarding how technology affected their ability to effectively connect with patients by study group.

### Objective Three

The third objective was to compare pre-training empathy scores for the experimental and control registered nurse groups to determine group equivalency. Some participants were asked to complete a Balanced Emotional Empathy (BEES) assessment prior to the beginning of the educational presentations. All participants were asked to complete a BEES assessment after the educational program was completed.

Initially the researcher computed empathy scores utilizing the guidelines established in the Mehrabian Manual for the BEES (2000). Measures of central tendency were then reviewed (see Table 21). The mean empathy (BEES) score of the control group was 47 ( $SD 18.37$ ), and the mean empathy score of the experimental group was 63 ( $SD 17.56$ ). The independent t-test statistic was utilized to determine if there was a difference between the control and experimental groups in regards to pre-training empathy scores in order to determine equivalency of the two groups.

**Table 21**  
Comparison of Pre-empathy Training Scores of Registered Nurses by Whether or Not They Received Empathy Training

	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
Control	47.0000	4	18.3666	9.1833
Experimental	63.0000	14	17.5631	4.6939
Total		18		

Note  $t(16) = -1.1593^a, p = .131$

Findings of the independent t-test proved not significant ( $t(16) = -1.593, p = .131$ ) at the .05 alpha level demonstrating the two groups were not significantly different prior to the

beginning of the treatment supporting group equivalency in regards to empathy scores. Of some concern to the researcher was the small number of participants in the control group who actually completed and submitted a pre-training empathy assessment.

#### **Objective Four**

The fourth objective was to compare post-empathy levels for the experimental and control registered nurse groups to determine if pretesting affected post-test scores. All participants were asked to complete a post-training BEES assessment. Some of the participants completed a pre-training empathy assessment. The post-training empathy scores for those who did complete pre-training empathy assessments (BEES) were compared to the post-training empathy scores for those who did not complete the pre-training empathy assessment. The statistical test utilized to analyze the data related to this objective was the independent t-test. The findings are noted in Table 22.

**Table 22**  
Comparison of Post-empathy Training Scores of Registered Nurses Who Did Complete Pre-training Empathy Assessments (BEES) and Those Who Did Not Complete Pre-training Empathy Assessments

	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
No Pretest	57.5714	21	25.7615	5.6216
Pretest	62.5000	6	22.4655	9.1715
Total		27		

Note  $t(25) = -.424, p = .676$

The independent t-test finding was not significant at the .05 alpha level ( $t(25) = -.424, p = .676$ ) indicating there was no pretesting effect on post-test scores.

#### **Objective Five**

The fifth objective was to determine whether or not nurses who received instruction on the development of effective empathy (experimental group) would

demonstrate a positive improvement of scores from pre to post-training as measured by the Balanced Emotional Empathy Scale (BEES). The objective was designed as a directional hypothesis since the literature suggested that empathy training can increase empathy levels. The hypothesis was organized in the following format:

$$\begin{aligned} H_o & \quad \mu = 0 \\ H_a & \quad \mu > 0 \end{aligned}$$

The null hypothesis said there will be no change in post-test empathy scores after empathy training when compared to pretest scores. The alternative hypothesis said there will be an increase in post-test scores after empathy training when compared to pretest scores.

Six paired groups of data from the experimental group were captured to analyze whether or not empathy training affected post-test scores utilizing the paired t-test (see Table 23).

**Table 23**  
Comparison of Pre and Post-empathy Training Scores (BEES) of Registered Nurses Who Completed Empathy Training

	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
Pre-BEES	69.1667	6	16.9283	6.9109
Post-BEES	62.5000	6	22.4655	9.1715
Total		6		

Note ( $t(5) = 1.890, p = .117$ )

The paired t-test finding was not significant at the .05 alpha level ( $t(5) = 1.890, p = .117$ ) indicating there was no effect of empathy training on post-test scores, thus supporting the null hypothesis.

## Objective Six

The sixth objective was to determine whether nurses who received instruction on the development of effective empathy (experimental group) would demonstrate higher post-training levels of empathy as measured by the Balanced Emotional Empathy Scale (BEES) when compared to those who did not receive effective empathy instruction (control group).

The objective was designed as a directional hypothesis since the literature suggested that empathy training can increase empathy levels. The hypothesis was organized in the following format:

$$\begin{array}{ll} H_o & \mu = 0 \\ H_a & \mu > 0 \end{array}$$

The null hypothesis said there will be no difference in post-test empathy scores for those who completed empathy training when compared to post-test scores of those who did not receive training. The alternative hypothesis said there will be a positive difference in post-test scores for those who completed empathy training when compared to post-test scores of those who did not receive training.

All participants were asked to complete a BEES post-training empathy questionnaire. The results of the post-test scores of the control and experimental groups were analyzed for measures of central tendency (see Table 24).

**Table 24**  
Comparison of Post-test Empathy Scores of Registered Nurses by Whether or Not They Received Empathy Training

	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
Control	56.8462	13	25.8323	7.1646
Experimental	60.3571	14	24.5251	6.5546
Total		27		

Note  $t(25) = -.362, p = .720$

The independent t-test was the statistical test utilized to determine if a difference existed between post test empathy scores and empathy training. The independent t-test finding was not significant at the .05 alpha level ( $t(25) = -.362, p = .720$ ), therefore no difference existed between the variables post-test empathy scores for those who completed empathy training when compared to post-test scores of those who did not complete training.

### **Objective Seven**

The seventh objective was to determine if a relationship existed between pre-study empathy levels for both experimental and control groups who received a pretest and the demographic variables identified and collected including: gender; marital status; number of children; number of years in nursing; undergraduate nursing degree/diploma; location of undergraduate nursing education; highest level of education attained; previous experience; reading and social conversation practices; and the effect technology has on nurse-patient relationships at the bedside. Data were collected on the demographic survey relative to each variable as described previously and compared to the participants pre-training empathy (BEES) scores. To determine whether a relationship existed between the pre-training empathy scores and various demographic variables, each variable was analyzed independently.

#### Gender

Due to the small number of males in the pre-empathy score category, statistical analysis of gender was not possible. Table 25 provides some measures of central tendency for descriptive purposes. Pre-empathy training scores were similar for males and females. However, caution should be taken in this interpretation as only one male responded.

**Table 25**

Comparison of the Empathy Pretest Scores of Registered Nurses by Gender

	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
Male	59.0000	1		
Female	59.4706	17	19.0693	4.625
Total		18		

**Marital Status**

Another variable that was examined to determine if it was related to the pretest empathy scores of the registered nurses was marital status. Due to the small numbers of subjects in some of the categories of marital status, the researcher collapsed the responses to this variable into two categories: “married” and “not married.” This restructured variable was then examined for relationship to the pretest empathy scores. The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “married” and the “not married” groups (see Table 26).

**Table 26**

Comparison of the Empathy Pretest Scores of Registered Nurses by Marital Status

	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
Married	61.1111	9	21.7223	7.2408
Not Married	57.7778	9	15.7859	5.2620
Total		18		

Note  $t(16) = .372, p = .714$

The independent t-test was not significant ( $t(16) = .372, p = .714$ ), therefore no difference existed between the variables marital status and pretest empathy scores.

### Number of Children

Another variable that was examined to determine if it was related to the pretest empathy scores of the registered nurses was the number of children residing in the household. A Pearson correlation coefficient statistic was utilized to analyze whether there was a statistically significant relationship between participant's pre-training empathy scores and the number of children the participant had living in his or her household. The correlation coefficient was not significant ( $r = -.03$ ,  $p = .914$ ), therefore no relationship was found between pre-training empathy scores and the number of children in the household.

### Number of Years in Nursing

A fourth variable that was examined to determine if it was related to the pretest empathy scores of the registered nurses was the number of years in nursing. A Pearson Correlation statistic was utilized to analyze whether or not there was a statistically significant relationship between participants pre-training empathy scores and the participants number of years in nursing. The correlation coefficient was not significant ( $r = -.410$ ,  $p = .091$ ), therefore no relationship was found between pre-training empathy scores and the number of years in nursing.

### Undergraduate Nursing Degree/Diploma

A fifth variable that was examined to determine if it was related to the pretest empathy scores of the registered nurses was the undergraduate nursing degree or diploma. Measures of central tendency were initially reviewed.

Due to the small numbers of subjects in some of the categories of undergraduate nursing degree/diploma, the researcher collapsed the responses to this variable into two categories: "associate/diploma" and "bachelor's." This restructured variable was then examined for relationship to the pretest empathy scores. Findings are noted in Table 27.

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the married and the not married groups. This analysis was not significant ( $t(16) = -.628, p = .539$ ), therefore no difference existed between the variables undergraduate nursing degree/diploma and pretest empathy scores.

**Table 27**  
Comparison of the Pretest Empathy Scores of Registered Nurses by Undergraduate Nursing Degree/Diploma

Original degree	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
Assoc/Diploma	55.5000	6	18.5876	7.5884
Bachelor's	61.4167	12	18.9519	5.4709
Total		18		

Note  $t(16) = -.628, p = .539$

#### Location of Undergraduate Nursing Education

A sixth variable that was examined to determine if it was related to the pretest empathy scores of the registered nurses was the location of undergraduate nursing education. Measures of central tendency were initially reviewed. Findings are noted in Table 28.

**Table 28**  
Comparison of Pretest Empathy Scores of Registered Nurses by Location of Undergraduate Nursing Education

Location of degree	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
Louisiana	55.0000	14	18.6217	4.9769
Other	75.0000	4	4.6904	
Total		18		

Note  $t(16) = 2.0868, p = .053$

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “Louisiana”

and “Other” categories. This analysis was not significant ( $t(16) = 2.0868, p = .053$ ), therefore no difference existed between the variables location of undergraduate education and pretest empathy scores.

Highest Level of Education Attained

A seventh variable that was examined to determine if it was related to the pretest empathy scores of the registered nurses was the highest level of education attained.

Measures of central tendency were initially reviewed. Findings are noted in Table 29.

**Table 29**  
Comparison of the Pretest Empathy Scores of Registered Nurses by Highest Level of Education Attained

Highest Level of Education	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
Less than BS	57.2500	4	23.0416	11.5208
BS or more	60.0714	14	17.9763	4.8044
Total		18		

Note  $t(16) = -.262, p = .797$

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “Less than BS” and “BS or more.” This analysis was not significant ( $t(16) = -.262, p = .797$ ), therefore no difference existed between the variables highest level of education attained and pretest empathy scores.

Total Previous Experience

An eighth variable that was examined to determine if it was related to the pretest empathy scores of the registered nurses was the total previous experience. A Pearson Correlation statistic was utilized to analyze whether or not there was a statistically significant relationship between participants pre-training empathy scores and the participants’ total previous experience in nursing. The correlation coefficient was not significant ( $r(18) = .068, p = .790$ ), therefore no

relationship was found between pre-training empathy scores and the participant’s total previous experience in nursing.

Hospital Experience

A ninth variable that was examined to determine if it was related to the pretest empathy scores of the registered nurses was the hospital experience of the nurse.

Measures of central tendency were initially reviewed as noted in Table 30.

**Table 30**  
Comparison of Pretest Empathy Scores of Registered Nurses by Whether or Not They Had Hospital Experience

Hospital Experience	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
No Experience	63.3333	6	9.4587	3.8615
Some Experience	57.5000	12	21.8153	6.2976
Total		18		

Note  $t(16) = .619, p = .545$

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no (hospital) experience” and “some (hospital) experience.” This analysis was not significant ( $t(16) = .619, p = .545$ ), therefore no difference existed between the hospital experience of the nurse and pretest empathy scores.

Operating Room Experience

A tenth variable that was examined to determine if it was related to the pretest empathy scores of the registered nurses was the operating room experience of the nurse.

Measures of central tendency were initially reviewed. Findings are noted in Table 31.

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no

**Table 31**

Comparison of Pretest Empathy Scores of Registered Nurses by Whether or Not They Had Operating (OR) Room Experience

OR Experience	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
No experience	64.4000	15	14.8603	3.8639
Some experience	34.6667	3	16.0728	9.2796
Total		18		

Note  $t(16) = 1.131, p = .006$

(operating room) experience” and “some (operating room) experience.” This analysis was significant ( $t(16) = 3.131, p = .006$ ), therefore a difference did exist between operating room experience of the nurse and pretest empathy scores.

On further review, participants who had no operating room experience scored significantly higher on the BEES than those with operating room experience. Interpretation of the findings should be viewed with caution however due to the small number of participants with operating room experience.

### Psychiatric Experience

An eleventh variable that was examined to determine if it was related to the pretest empathy scores of the registered nurses was psychiatric experience of the nurse. Due to the small numbers of subjects in some of the categories of psychiatric experience, the researcher collapsed the responses to this variable into two categories: “no (psychiatric) experience” and “some (psychiatric) experience.” This restructured variable was then examined for relationship to the pretest empathy scores. Measures of central tendency were initially reviewed. Due to only one participant having psychiatric experience, a full set of central measures could not be assessed. Findings are noted in Table 32.

**Table 32**

Comparison of Pretest Empathy Scores of Registered Nurses by Whether or Not They Had Psychiatric Experience

Psychiatric Experience	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
No experience	58.6471	17	18.7481	4.5471
Some experience	73.0000	1		
Total		18		

Note  $t(16) = -.744, p = .468$

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no (psychiatric) experience” and “some (psychiatric) experience” groups. This analysis was not significant ( $t(16) = -.744, p = .468$ ), therefore no difference existed between psychiatric experience and pretest empathy scores. Interpretation of the findings should be viewed with caution however due to the single participant with psychiatric experience.

#### Medical – Surgical Experience

A twelfth variable that was examined to determine if it was related to the pretest empathy scores of the registered nurses was medical-surgical experience of the nurse. Measures of central tendency were initially reviewed. Findings are noted in Table 33.

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no (medical- surgical) experience” and “some (medical-surgical) experience.” This analysis was not significant ( $t(16) = -.277, p = .786$ ), therefore no difference existed between medical-surgical experience of the nurse and pretest empathy scores.

**Table 33**

Comparison of Pretest Empathy Scores of Registered Nurses by Whether or Not They Had Medical-Surgical Experience

Med-Surg Experience	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
No experience	58.4545	11	18.8752	5.6911
Some experience	61.0000	7	19.2700	7.2834
Total		18		

Note  $t(16) = -.277, p = .786$

### Oncology Experience

Another variable that was examined to determine if it was related to the pretest empathy scores of the registered nurses was oncology experience of the nurse. Measures of central tendency were initially reviewed. Due to only one participant having oncology experience, a full set of central measures could not be assessed. Findings are noted in

Table 34.

**Table 34**

Comparison of Pretest Empathy Scores of Registered Nurses by Whether or Not They Had Oncology Experience

Oncology Experience	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
No experience	58.6471	17	18.7481	4.5471
Some experience	73.0000	1		
Total		18		

Note  $t(16) = -.744, p = .468$

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no (oncology) experience” and “some (oncology) experience.” This analysis was not significant ( $t(16) = -.744, p = .468$ ), therefore no difference existed between oncology experience of the nurse and pretest empathy scores. Interpretation of the findings should be viewed with caution however due to the single participant with oncology experience.

### Critical Care Experience

Another variable that was examined to determine if it was related to the pretest empathy scores of the registered nurses was critical care experience of the nurse.

Measures of central tendency were initially reviewed. Findings are noted in Table 35.

**Table 35**

Comparison of Pretest Empathy Scores of Registered Nurses by Whether or Not They Had Critical Care Experience

Critical Care Experience	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
No experience	60.1429	14	19.1948	5.1300
Some experience	57.0000	4	18.2392	9.1196
Total		18		

Note  $t(16) = .291, p = .774$

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no (critical care) experience” and “some (critical care) experience.” This analysis was not significant ( $t(16) = .291, p = .774$ ), therefore no difference existed between critical care experience of the nurse and pretest empathy scores.

### Emergency Experience

Another variable that was examined to determine if it was related to the pretest empathy scores of the registered nurses was emergency experience of the nurse. Measures of central tendency were initially reviewed. Findings are noted in Table 36.

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no

**Table 36**

Comparison of Pretest Empathy Scores of Registered Nurses by Whether or Not They Had Emergency Experience

Emergency Experience	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
No experience	60.9375	16	19.0385	4.7596
Some experience	47.5000	2	7.7782	5.5000
Total		18		

Note  $t(16) = .967, p = .348$

(emergency) experience” and “some (emergency) experience.” This analysis was not significant ( $t(16) = .967, p = .348$ ), therefore no difference existed between emergency experience of the nurse and pretest empathy scores.

#### Pediatric Experience

Another variable that was examined to determine if it was related to the pretest empathy scores of the registered nurses was pediatric experience of the nurse. Measures of central tendency were initially reviewed. Due to only one participant having pediatric experience, a full set of central measures could not be assessed. Findings are noted in Table 37.

**Table 37**

Comparison of Pretest Empathy Scores of Registered Nurses by Whether or Not They Had Pediatric Experience

Pediatric Experience	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
No experience	59.8235	17	18.9975	4.6076
Some experience	53.0000	1		
Total		18		

Note  $t(16) = .349, p = .732$

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no (pediatric) experience” and “some (pediatric) experience.” This analysis was not significant

$t(16) = .349, p = .732$ ), therefore no difference existed between pediatric experience of the nurse and pretest empathy scores. Interpretation of the findings should be viewed with caution however due to the single participant with pediatric experience.

#### Community/Home Health Experience

Another variable examined to determine if it was related to the pretest empathy scores of the registered nurses was community/home health experience.

Measures of central tendency were initially reviewed. Findings are noted in Table 38.

**Table 38**

Comparison of Pretest Empathy Scores of Registered Nurses by Whether or Not They Had Community/Home Health Experience

Community Experience	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
No experience	60.0714	14	17.4332	4.6592
Some experience	57.2500	4	24.7841	12.3920
Total		18		

Note  $t(16) = .262, p = .797$

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no (community/home health) experience” and “some (community/home health) experience.” This analysis was not significant ( $t(16) = .262, p = .797$ ), therefore no difference existed between community/home health experience of the nurse and pretest empathy scores.

#### Other Experience

Another variable examined to determine if it was related to the pretest empathy scores of the registered nurses was other nursing experience. Measures of central tendency were initially reviewed. Findings are noted in Table 39.

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no (other

**Table 39**

Comparison of Pretest Empathy Scores of Registered Nurses by Whether or Not They Had Other Experience

Other Nursing Experience	<i>M</i>	<i>N</i>	<i>SD</i>	<i>SE</i>
No experience	53.2727	11	14.9137	4.4967
Some experience	69.1429	7	20.4811	7.7411
Total		18		

Note  $t(16) = 1.907, p = .075$

nursing) experience” and “some (other nursing) experience.” This analysis was not significant ( $t(16) = -1.907, p = .075$ ), therefore no difference existed between other nursing experience and pretest empathy scores.

#### Reading Practices

Another variable examined to determine if it was related to the pretest empathy scores of the registered nurses was reading practices. A Pearson correlation coefficient statistic was utilized to analyze whether or not there was a statistically significant relationship between participants pre-training empathy scores and the participants reading practices. The correlation coefficient was not significant ( $r(18) = -.011, p = .965$ ), therefore no relationship was found between pre-training empathy scores and the participants reading practices.

#### Social Conversation Practices

Another variable examined to determine if it was related to the pretest empathy scores of the registered nurses was social conversation practices. A Pearson correlation coefficient statistic was utilized to analyze whether or not there was a statistically significant relationship between participant’s pre-training empathy scores and the participants social conversation practices. The correlation coefficient was not significant

( $r(18) = .077, p = .762$ ), therefore no relationship was found between pre-training empathy scores and the participants social conversation practices.

#### Effect of Technology on Patient Relationships

The last variable examined to determine if it was related to the pretest empathy scores of the registered nurses was the effect of technology on patient relationships. A Pearson correlation coefficient statistic was utilized to analyze whether or not there was a statistically significant relationship between participants pre-training empathy scores and the effect of technology on patient relationships. The correlation coefficient was not significant ( $r(18) = .151, p = .550$ ), therefore no relationship was found between pre-training empathy scores and the effect of technology on patient relationships.

## CHAPTER 5

### SUMMARY AND CONCLUSIONS

Empathy is critical to establishing a supportive, trusting relationship between a nurse and a patient. A basic human need is to be cared for and cared about. To be understood by others is critical to a sense of peace and wellbeing. As noted by Henderson (1978), “Nurses must, in a sense, get ‘into the skin’ of each patient to know what help he or she needs from them” (p. 35).

Empathy has been identified as a crucial component of caring (Caine, 1991 & Leininger, 1988). There is a growing theoretical consensus that in order for a nurse to individualize care for a patient, the nurse must understand the patient from his or her perspective (Pike, 1990).

Empathy is not clearly understood by professionals in the healthcare community. Although most agree empathy is essential for an effective patient and caregiver connection, research is just beginning to demonstrate the benefits associated with an empathic relationship in the healthcare environment.

Empathy is present in all of us but more strongly observed in some individuals. The researcher has long been interested in determining if empathy can be learned through an educational process. The study focuses on empathy and one approach to teaching empathy to nurses.

#### **Study Purpose**

The primary purpose of this quasi-experimental study was to compare the level of empathy of registered nurses who received instruction on the development of effective empathy with nurses who did not receive this instruction at a hospital in a metropolitan area of Louisiana. The dependent variable was defined as the level of empathy score achieved by the registered nurses and the primary independent variable was whether or not the registered nurses received

the empathy educational course (treatment). Several additional objectives were developed to guide the study as noted below.

### **Objectives of the Study**

The objectives of the study included the following:

1. Describe and compare the registered nurse experimental and control groups to the overall hospital registered nurse population on selected personal and demographic characteristics to include:
  - Age
  - Gender
  - Years as a nurse
  - Educational level
  
2. Describe and compare the registered nurse experimental and control groups in terms of:
  - Gender
  - Marital status
  - Number of children
  - Number of years in nursing
  - Undergraduate nursing degree/diploma
  - Location of undergraduate nursing education
  - Highest level of education attained
  - Previous experience
  - Reading and social conversation practices
  - The effect technology has on nurse-patient relationships at the bedside
  
3. Compare pre-empathy levels for the experimental and control groups to determine group equivalency.

Experimental Group

Control Group

Pretest Empathy Scores



Pretest Empathy Scores

4. Compare post-empathy levels for the experimental and control groups to determine if pretesting affected post-test scores.



### **Summary of Methodology**

The target population for the study was currently employed licensed registered nurses who practiced direct patient care at the bedside in metropolitan area hospitals in Louisiana. The accessible population from which the sample was drawn was currently employed licensed registered nurses who practiced direct patient care at the bedside of one metropolitan area hospital in South Louisiana. Information relative to the accessible population was obtained from the Human Resources Department of the hospital utilized in the study. The accessible population included nurses who practiced direct patient care at the hospital in all clinical areas.

The sample utilized for the study included registered nurses who provided direct patient care on two telemetry units (one on the main and one on the satellite campus) because of the similarities of the units both in terms of the types of patients served as well as the characteristics of nurses employed to care for these patients. Registered nurses on the telemetry unit of one campus served as the control group, while registered nurses on the telemetry unit of the second campus served as the experimental group.

The treatment provided for the experimental group consisted of four educational sessions targeted toward enhancing their awareness and understanding of the concept of empathy (See Empathy Teaching Plan in Appendix A). Participants were invited to attend one session per week for a total of four sessions over a five-week period with multiple sessions offered each week for the convenience of the participants (See Educational Plan Schedule in Appendix C).

The treatment provided for the control group was three educational sessions over a three-week period the content of which was related to the cardiac service. Multiple sessions were also provided for the convenience of the participants.

The instruments utilized to collect data included a demographic questionnaire (see Appendix B) developed by the researcher and the Balanced Emotional Empathy Scale (BEES)

developed by Mehrabian (1996). The 30-item BEES questionnaire was utilized because of its strong focus on the emotional component of empathy and its relationship with a healthy, adjusted functional personality state and interpersonal positiveness. The tool used a nine-point answer scale (with -4 representing very strong disagreement to +4 representing very strong agreement) to assess the degree to which the participant agrees or disagrees with the statement. Mehrabian granted permission for use of the BEES instrument in the study.

Data were collected prior to the beginning of the first educational session for both groups. Participants were given a letter from the researchers providing an overview of the research project, a face sheet explaining the details of the study and that their voluntary participation served as giving consent. The demographic questionnaire was also included. In addition, some participants were asked to complete a pre-training empathy (BEES) assessment while others were not. During the final sessions of the course, all participants completed a post-training empathy (BEES) assessment. Data were collected in a confidential manner with the researcher allowing the participants to complete the documents and place in a sealed envelope which was sent to the person inputting data without being seen by the researcher. Once the data were entered into an excel spreadsheet, all names were removed to provide confidentiality for the participants. After the names were removed, the data were provided to the researchers for analysis.

The specific statistical testing strategy was based on the particular data being reviewed. In general, for nominal and ordinal categorical data, frequencies and percentages were presented. For interval or higher level scales, measures of central tendency (means, frequencies, standard deviation, and standard error of the mean) were presented. Either the chi-square test of independence or the chi-square test for homogeneity (goodness of fit) was utilized for variables that were measured on a categorical (nominal or ordinal) scale of measurement. The t-test for

equality of means or the matched pair's t-test was utilized for variables that were measured on an interval or higher scale of measurement. The significance level of  $p < .05$  was used to determine significance of the research finding as established a priori in the study.

Permission for this study was requested and granted by the researcher's dissertation committee, the Louisiana State University administration, the hospital involved in the study's Internal Review Board (IRB) and hospital administration. Completion of the pre-course document (demographic survey) by the participant served as subject consent for participation in the study.

### **Summary of Major Findings**

The major findings of the study have been organized and discussed by objective.

#### **Objective One**

The first objective was to describe and compare the registered nurse experimental and control groups to the overall hospital registered nurse population on selected demographic characteristics.

#### **Age**

When the data were reviewed for the nurse population, the age category most frequently selected was the "25 – 34" group ( $n = 251, 37.9\%$ ). The age category that included the smallest number of the nurse population was the "19 – 24" group ( $n = 43, 6.5\%$ ).

The "25-34" age category was reported by the largest number of respondents from the control and experimental groups ( $n = 15, 34.1\%$ ). The category that received the smallest number of respondents among the participants was the "55 or more" category ( $n = 4, 9.1\%$ ).

The computed chi-square goodness of fit value ( $\chi^2 (4, N = 44) = 19.526, p < .01$ ) was significant indicating that the study participant group did not have the same age characteristics as the overall nurse population. The nature of the difference between the age distributions of the

groups was such that the study participant group had a higher percentage of individuals in the youngest age category (22.7%) than the overall nurse population group (6.5%). Additionally, the overall nurse population group had a higher percentage in the “35 – 44” age category (28.7%) and the “45 – 54” age category (18.1%) than the study participant group (20.5% and 13.6% respectively). To summarize, the control and experimental groups demonstrated a younger age in general when compared to the overall population.

### Gender

The majority of the nurses participating in the study ( $n = 39$ , 88.6%) reported their gender as female. Gender of the overall nurse population of the study hospital revealed that the majority was female ( $n = 592$ , 89.6%). Both the study participant groups and the overall nurse population group demonstrated fewer males than females ( $n = 5$  (11.4%) and  $n = 69$  (10.4%) respectively). The computed chi-square value ( $\chi^2 (1, N = 44) = .044, p > .05$ ) was not significant indicating that the study group had the same *gender* characteristics as the hospital registered nurse population.

### Years as a Nurse

The “1-5” years as a nurse category was reported by the largest number of study group respondents ( $n = 28$ , 63.6%). The category that received the smallest number of respondents among the participants was the “31 or more” category ( $n = 2$ , 4.5%).

The years as a nurse category that included the largest number of the nurse population was the “1-5” group ( $n = 292$ , 44.1%). The category that included the smallest number of the nurse population was the “31 or more” group ( $n = 28$ , 4.2%).

The computed chi-square analysis was not significant ( $\chi^2 (4, N = 44) = 8.524, p > .05$ ) indicating that the study group had the same years as a nurse characteristics as the hospital registered nurse population.

### Educational Level

The “Bachelor’s Degree” category was reported by the largest number of study group participants ( $n = 30$ , 68.2%). The category that received the smallest number of respondents was the “Diploma” category ( $n = 2$ , 4.5%).

The educational level category that included the largest number of the nurse population was the “Bachelor’s Degree” group ( $n = 337$ , 50.9%). The category that included the smallest number of nurse population was the “Diploma” group ( $n = 135$ , 20.4%).

In order to provide adequate numbers for each chi-square cell, associate degree and diploma numbers were combined as one group. Therefore, in the analysis subjects were grouped into two categories, “bachelor’s” degree and “other than bachelor’s” degree participants.

The computed chi-square value ( $\chi^2 (1, N = 44) = 5.258, p < .05$ ) was significant indicating that the study participant group did not have the same educational level characteristics as the overall nurse population. The nature of the difference between the educational level distributions of the groups was such that the study participant group had a higher percentage of individuals in the “Bachelor’s Degree” category (68.2%) than the overall nurse population group (50.9%). Additionally, the overall nurse population group had a higher percentage in the “Associate” and “Diploma” combined levels (49.1%) as compared to the study group (31.8%). In summary, the control and experimental groups demonstrated a higher basic nursing educational preparation than the hospital nursing population.

## Objective Two

The second objective was to describe and compare the registered nurse experimental and control groups in terms of various personal and demographic variables.

### Gender

One male (5.6%) was listed in the control group along with 17 females (94.4%). The experimental group had four males (15.4%) and 22 females (84.6%). The computed chi-square value ( $\chi^2 (1, N = 44) = 1.020^b, p = .312$ ) was not significant at the .05 alpha level indicating that the variables gender and study group were independent.

### Marital Status

When the study groups were examined on the variable marital status, the majority of the control group ( $n = 11, 61.1%$ ) indicated that they were married. Additionally, three (16.7%) of the members of the control group reported they were single. In contrast, half ( $n = 13, 50%$ ) of the nurses in the experimental group reported they were single, and five (19.2%) indicated that they were divorced. In order to provide adequate numbers for computation of the chi-square test of independence, the categories were reduced to either “married” or “not married” which included all options other than married. The computed chi-square value ( $\chi^2 (1, N = 44) = 3.311, p = .069$ ) was not significant at the .05 alpha level indicating that the variables marital status and study group were independent.

### Number of Children

The majority ( $n = 21, 47.7%$ ) of the participants in the combined control and experimental group data noted on the survey that no children were living in the household. In the control group, the majority ( $n = 7, 38.9%$ ) noted one child. The experimental group demonstrated a majority ( $n = 16, 61.5%$ ) noted zero children. The computed independent t-test value ( $t (42, N = 44) = 1.089, p = .283$ ) was not significant at

the .05 alpha level indicating that the variables number of children and study group were independent.

#### Number of Years in Nursing

Among the members of the control group, the category of years as a nurse reported by the largest number was “1 – 5 years” ( $n = 8, 44\%$ ). The “1 – 5 years” category was also reported by the largest number of the experimental group members ( $n = 20, 76.9\%$ ). Due to the number of cells with counts less than five, the researcher needed to collapse cells to conduct the analysis to determine if the variables years in nursing and study groups were independent. The researcher divided the data into 1 – 5 years and 6 or more years. The chi-square ooindependence value ( $\chi^2(1, N = 44) = 5.662, p = .017$ ) was significant at the .05 alpha level indicating that the variables number of years in nursing and study groups were not independent. The nature of the association between the variables was such that the experimental group had fewer years in nursing with a majority ( $n = 20, 76.9\%$ ) noting “1 – 5” when compared to the control group ( $n = 8, 42.1\%$ ). The control group participants showed a majority ( $n = 11, 57.9\%$ ) selected the “6 or more” years in nursing category when compared to the experimental group ( $n = 6, 23.1\%$ ). The experimental group demonstrated a more novice group of nurses with concentration of participants in the lower category (1 – 5) of years in nursing.

#### Undergraduate Nursing Degree/Diploma

Among the members of the control group, the category of undergraduate degree or diploma reported by the largest number was “bachelor’s” ( $n = 12, 66.7\%$ ). The “bachelor’s” category was also reported by the largest number of the experimental group members ( $n = 12, 46.2\%$ ) with a close second noting associate degree ( $n = 11, 42.3\%$ ).

The chi-square test of independence value ( $\chi^2 (1, N = 44) = 2.082, p = .353$ ) was not significant at the .05 alpha level indicating that the variables undergraduate nursing degree and study group of the registered nurses in the research were independent.

#### Location of Undergraduate Nursing Education

The majority ( $n = 37, 84.1\%$ ) of the participants in the combined data identified Louisiana as the location of their nursing education. In the control group, the majority ( $n = 14, 77.8\%$ ) noted Louisiana and the experimental group demonstrated a majority ( $n = 23, 88.5\%$ ) noted Louisiana. The chi-square test of independence value ( $\chi^2 (1, N = 44) = .908, p = .341$ ) was not significant at the .05 alpha level indicating that the variables location of nursing education and study groups were independent.

#### Highest Level of Education Attained

The majority ( $n = 29, 65.9\%$ ) of the participants in the combined data identified bachelor's degree as their highest level of nursing education. In the control group, the majority ( $n = 12, 66.7\%$ ) noted bachelor's degree and the experimental group demonstrated that a majority ( $n = 17, 65.4\%$ ) noted bachelor's degree.

In order to provide adequate numbers in each chi-square cell, the highest level of education data were divided into less than bachelor's degree and bachelor's degree or more. The chi-square test of independence value ( $\chi^2 (1, N = 44) = .229, p = .632$ ) was not significant at the .05 alpha level indicating that the variables highest level of nursing education and study groups were independent.

#### Previous Experience

The majority of the participants in the combined data identified hospital experience ( $n = 28, 63\%$ ) with a substantial number noting medical-surgical ( $n = 15, 34.4\%$ ) and other ( $n = 15, 34.4\%$ ) experience. Similar findings were seen in the control group, with the majority noting

hospital ( $n = 14$ , 77.8%) and medical-surgical ( $n = 10$ , 55.6%) experience. Among the nurses in the experimental group, a majority noted hospital ( $n = 14$ , 53.8%) and a substantial number noted other ( $n = 10$ , 38.5%) experience.

The chi-square test of independence values for those categories with acceptable cell counts revealed all to be not significant at the .05 alpha level except for the medical-surgical experience category which did prove significant ( $\chi^2 (1, N = 44) = 6.246, p = .012$ ). To summarize, of all the categories capable of review, only the medical-surgical experience data proved significant indicating that the variables of medical-surgical experience and study group were not independent. The nature of the association between these two variables was such that the majority of nurses in the control group (55.6%) reported “some (med-surg) experience” as compared to the experimental group in which the majority (80.8%) reported “no (med-surg) experience.”

### Reading Practices

The majority of the participants in the combined data identified they read “1 – 5” books per year ( $n = 23$ , 52.3%). Similar findings were seen in the control group, with the majority noting “1 – 5” books per year ( $n = 10$ , 55.6%) and the experimental group ( $n = 13$ , 50%).

In order to provide adequate numbers in each chi-square cell, the reading practice data were divided into “five or less” (books per year) and “six or more.” The chi-square test of independence value ( $\chi^2 (1, N = 44) = .273, p = .601$ ) was not significant at the .05 alpha level indicating that the variables reading practices and study group were independent.

### Social Conversation Practices

The largest number of participants in the combined data identified they socially conversed “1 – 10” times per day ( $n = 21, 46.7\%$ ) with individuals outside of their family and work. Similar findings were seen in the control group, with the majority noting “1 – 10” times per day ( $n = 12, 63.2\%$ ). The experimental group noted a large percentage in the “11 – 20” category ( $n = 10, 38.5\%$ ) but also many selected “1 – 10” ( $n = 9, 34.6\%$ ).

In order to provide adequate numbers in each cell, the social practice data were divided into “10 or less” (conversations per day) and “11 or more.” The chi-square test of independence value ( $\chi^2 (1, N = 44) = 4.380, p = .036$ ) was significant at the .05 alpha level indicating that the variables social practices and study groups were not independent. The nature of this association was such that the majority ( $n = 12, 66.7\%$ ) of the control group reported “10 or less” conversations per day while the majority of the experimental group reported “11 or more” ( $n = 17, 65.4\%$ ) conversations per day. The experimental group demonstrated an increased social conversation practice.

### Effect Technology Has on Patient Relationships

A large number of the participants in the combined groups marked four ( $n = 15, 34.1\%$ ) on the demographic survey. Similar findings were seen in the control and experimental groups, with the majority selecting four (control,  $n = 6, 33.3\%$ ; experimental,  $n = 9, 34.6\%$ ).

The t-test for equal means value ( $t (42, N = 44) = -.110, p = .913$ ) was not significant at the .05 alpha level indicating that no difference existed in the nurses’ perception regarding how technology affects their ability to effectively connect with patients by study group.

### **Objective Three**

The third objective was to compare pre-training empathy scores for the experimental and control registered nurse groups to determine group equivalency. Initially the researcher assessed

measures of central tendency. Although the mean empathy (BEES) score of the control group (47,  $SD = 18.37$ ) seemed to vary widely from the mean empathy score of the experimental group (63,  $SD = 17.56$ ), further review was required. Findings of the independent t-test proved not significant ( $t(16) = -1.593, p = .131$ ) at the .05 alpha level demonstrating the two groups were not significantly different prior to the beginning of the treatment supporting group equivalency in regards to empathy scores. Of some concern to the researcher was the small number of participants in the control group who actually completed and submitted a pre-training empathy assessment.

#### **Objective Four**

The fourth objective was to compare post-empathy levels for the experimental and control registered nurse groups to determine if pretesting affected post-test scores. Some participants completed pre-training (BEES) empathy assessments, and all participants completed the post-training BEES. The post-training empathy scores of those who did complete pre-training BEES were compared to post-training empathy scores of those who did not complete the pre-training BEES.

The statistical test utilized to analyze the data related to this objective was the independent t-test. The t-test finding was not significant at the .05 alpha level ( $t(25) = -.424, p = .676$ ) suggesting there was no pretesting effect on post-test scores.

#### **Objective Five**

The fifth objective was to determine whether nurses who received instruction on the development of effective empathy (experimental group) would demonstrate a positive improvement of scores from pre to post-training as measured by the Balanced Emotional Empathy Scale (BEES).

Six paired groups of data from the experimental group were captured to analyze whether or not empathy training affected post-test scores. A paired sample t-test was utilized to assess the paired differences of the means. The paired t-test finding was not significant at the .05 alpha level ( $t(5) = 1.890, p = .117$ ) suggesting there was no effect of empathy training on post-test scores. This finding supported the null hypothesis ( $H_0 \mu = 0$ ) of no difference in the pre-training and post-training BEES mean scores.

### **Objective Six**

The sixth objective was to determine whether nurses who received instruction on the development of effective empathy (experimental group) would demonstrate higher post-training levels of empathy as measured by the Balanced Emotional Empathy Scale (BEES) when compared to those who did not (control group).

The results of the post-test scores of the control and experimental groups were analyzed for measures of central tendency. The mean score of the control group was 56.85 ( $SD = 25.83$ ) and the experimental group was 60.36 ( $SD = 24.53$ ).

The independent t-test demonstrated no significance in relation to the scores of the two groups ( $t(25) = -.362, p = .720$ ) at the .05 alpha level, therefore no difference existed between the variables post-test empathy scores for those who completed empathy training when compared to post-test scores of those who did not complete training.

### **Objective Seven**

The seventh objective was to determine if a relationship existed between pre-study empathy levels for both experimental and control groups who received a pretest and the demographic variables identified and collected including: gender; marital status; number of children; number of years in nursing; undergraduate nursing degree/diploma; location of undergraduate nursing education; highest level of education attained; previous experience;

reading and social conversation practices; and the effect technology has on nurse-patient relationships at the bedside.

### Gender

Due to the small number of males in the pre-empathy score category, statistical analysis of gender was not possible. Measures of central tendency were provided and the mean pre-training score for the one male was 59 and for the 17 females was 59.47 ( $SD = 19.07$ ).

Pre-empathy training scores were similar for males and females. However, caution should be taken in this interpretation as only one male responded.

### Marital Status

Measures of central tendency were initially reviewed demonstrating similar pre-training mean scores for the married (61,  $SD = 21.72$ ) and the not married (58,  $SD = 15.79$ ) groups. Findings, utilizing an independent t-test, established no significance between pre-training empathy scores and marital status ( $t(16) = .372, p = .714$ ) at the .05 alpha level indicating that no difference existed between the variables marital status and pretest empathy scores.

### Number of Children

A Pearson correlation coefficient statistic was utilized to analyze whether there was a statistically significant relationship between participants pre-training empathy scores and the number of children the participant had living in his or her household. The correlation coefficient was not significant ( $r = -.03, p = .914$ ), therefore no relationship was found between pre-training empathy scores and the number of children in the household.

### Number of Years in Nursing

A Pearson Correlation statistic was utilized to analyze whether or not there was a statistically significant relationship between participants pre-training empathy scores and the participant's number of years in nursing. The correlation coefficient was not significant ( $r = -$

.410,  $p = .091$ ), therefore no relationship was found between pre-training empathy scores and the number of years in nursing.

#### Undergraduate Nursing Degree/Diploma

For analysis of undergraduate nursing degree/diploma and pre-training empathy scores, measures of central tendency were initially reviewed. The associate and diploma graduates demonstrated a BEES mean score of 55.5 ( $SD = 18.59$ ) as compared to the bachelor's degree participants who showed a mean score of 61.42 ( $SD = 18.95$ ).

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the married and the not married groups. This analysis was not significant ( $t(16) = -.628, p = .539$ ), therefore no difference existed between the variables undergraduate nursing degree/diploma and pretest empathy scores.

#### Location of Undergraduate Nursing Education

Measures of central tendency were initially reviewed which demonstrated a mean score of 55 ( $SD = 18.62$ ) for Louisiana educated nurses when compared to nurses trained outside of Louisiana who showed a mean of 75 ( $SD = 4.69$ ).

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the "Louisiana" and "Other" categories. This analysis was not significant ( $t(16) = 2.0868, p = .053$ ), therefore no difference existed between the variables location of undergraduate education and pretest empathy scores. . Interestingly, the data proved close to being statistically significant suggesting that out of state undergraduate nurse training yielded higher participant pre-training empathy scores.

### Highest Level of Education

Measures of central tendency were initially reviewed demonstrating a pre-empathy training score mean of 57.25 ( $SD = 23.04$ ) for less than bachelor's degree participants. For the bachelor's degree or more participants, the mean pre-empathy training score was 60.07 ( $SD = 17.98$ ).

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the "Less than BS" and "BS or more." This analysis was not significant ( $t(16) = -.262, p = .797$ ), therefore no difference existed between the variables highest level of education attained and pretest empathy scores.

### Total Previous Experience

A Pearson Correlation statistic was utilized to analyze whether or not there was a statistically significant relationship between participant's pre-training empathy scores and the participant's (total) previous experience. The Pearson Correlation findings showed no significance at the .05 alpha level ( $r(N = 18) = .068, p = .790$ ). Thus indicating there is no relationship between pre-training empathy scores and the participant's (total) previous experience.

### Hospital Experience

Measures of central tendency were initially reviewed in relation to hospital experience and pre-empathy training scores. For participants noting some hospital experience, their pre-training empathy mean score was 63.33 ( $SD = 9.46$ ). For participants with no hospital experience, their pre-training empathy mean score was 57.5 ( $SD = 21.82$ ).

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no (hospital) experience” and “some (hospital) experience.” This analysis was not significant ( $t(16) = .619, p = .545$ ), therefore no difference existed between the hospital experience of the nurse and pretest empathy scores.

#### Operating Room (OR) Experience

Measures of central tendency were initially reviewed. The mean score of those answering “no (OR) experience” was 64 ( $SD 14.86$ ), and the mean score for those “with (OR) experience” was 34.67 ( $SD 16.07$ ).

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no (operating room) experience” and “some (operating room) experience.” This analysis was significant ( $t(16) = 3.131, p = .006$ ), therefore a difference did exist between operating room experience of the nurse and pretest empathy scores.

On further review, participants who had no operating room experience scored significantly higher on the BEES than those with operating room experience. Interpretation of the findings should be viewed with caution however due to the small number of participants with operating room experience.

#### Psychiatric Experience

Measures of central tendency were initially reviewed. The mean score of those answering “no (psychiatric) experience” was 58.65 ( $SD 18.75$ ), and the score for the one participant marking “some (psychiatric) experience” was 73.

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no

(psychiatric) experience” and “some (psychiatric) experience” groups. This analysis was not significant ( $t(16) = -.744, p = .468$ ), therefore no difference existed between psychiatric experience and pretest empathy scores. Interpretation of the findings should be viewed with caution however due to the single participant with psychiatric experience.

#### Medical – Surgical (Med-Surg) Experience

Measures of central tendency were initially reviewed. The mean score of those answering “no (med-surg) experience” was 58.45 ( $SD 18.88$ ), and the mean score for the participants marking “some (med-surg) experience” was 61 ( $SD 19.27$ ).

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no (medical-surgical) experience” and “some (medical-surgical) experience.” This analysis was not significant ( $t(16) = -.277, p = .786$ ), therefore no difference existed between medical-surgical experience of the nurse and pretest empathy scores.

#### Oncology Experience

Measures of central tendency were initially reviewed. The mean score of those answering “no (oncology) experience” was 58.64 ( $SD 18.75$ ), and the score for the one participant marking “some (oncology) experience” was 73.

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no (oncology) experience” and “some (oncology) experience.” This analysis was not significant ( $t(16) = -.744, p = .468$ ), therefore no difference existed between oncology experience of the nurse and pretest empathy scores. Interpretation of the findings should be viewed with caution however due to the single participant with oncology experience.

### Critical Care Experience

Measures of central tendency were initially reviewed. The mean score of those answering “no (critical care) experience” was 60.14 (*SD* 19.19), and the mean score for the participants marking “some (critical care) experience” was 57 (*SD* 18.24).

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no (critical care) experience” and “some (critical care) experience.” This analysis was not significant ( $t(16) = .291, p = .774$ ), therefore no difference existed between critical care experience of the nurse and pretest empathy scores.

### Emergency Experience

Measures of central tendency were initially reviewed. The mean score of those answering “no (emergency) experience” was 60.94 (*SD* 19.04), and the mean score for the participants marking “some (emergency) experience” was 47.5 (*SD* 7.78).

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no (emergency) experience” and “some (emergency) experience.” This analysis was not significant ( $t(16) = .967, p = .348$ ), therefore no difference existed between emergency experience of the nurse and pretest empathy scores.

### Pediatric Experience

Measures of central tendency were initially reviewed. The mean score of those answering “no (pediatric) experience” was 59.82 (*SD* 19.00), and the mean score for the single participant marking “some (pediatric) experience” was 53.

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no

(pediatric) experience” and “some (pediatric) experience.” This analysis was not significant ( $t(16) = .349, p = .732$ ), therefore no difference existed between pediatric experience of the nurse and pretest empathy scores. Interpretation of the findings should be viewed with caution however due to the single participant with pediatric experience.

#### Community/Home Health Experience

Measures of central tendency were initially reviewed. The mean score of those answering “no (community) experience” was 60.07 ( $SD 17.43$ ), and the mean score for participants marking “some (community) experience” was 57.25 ( $SD 24.78$ ).

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no (community/home health) experience” and “some (community/home health) experience.” This analysis was not significant ( $t(16) = .262, p = .797$ ), therefore no difference existed between community/home health experience of the nurse and pretest empathy scores.

#### Other Experience

Measures of central tendency were initially reviewed. The mean score of those answering “no (other) experience” was 53.27 ( $SD 14.91$ ), and the mean score for participants marking “some (other) experience” was 69.14 ( $SD 20.48$ ).

The statistical procedure that was judged to be the most appropriate for accomplishing this portion of the objective was the independent t-test to compare the means of the “no (other nursing) experience” and “some (other nursing) experience.” This analysis was not significant ( $t(16) = -1.907, p = .075$ ), therefore no difference existed between other nursing experience and pretest empathy scores.

### Reading Practices

A Pearson correlation coefficient statistic was utilized to analyze whether or not there was a statistically significant relationship between participant's pre- training empathy scores and the participant's reading practices. The correlation coefficient was not significant ( $r(18) = -.011, p = .965$ ), therefore no relationship was found between pre-training empathy scores and the participant's reading practices.

### Social Practices

A Pearson correlation coefficient statistic was utilized to analyze whether or not there was a statistically significant relationship between participant's pre- training empathy scores and the participant's social conversation practices. The correlation coefficient was not significant ( $r(18) = .077, p = .762$ ), therefore no relationship was found between pre-training empathy scores and the participant's social conversation practices.

### Effect Technology has on Patient Relationships

The Pearson correlation coefficient statistic was utilized to analyze whether or not there was a statistically significant relationship between participant's pre-training empathy scores and the effect of technology on patient relationships. The correlation coefficient was not significant ( $r(18) = .151, p = .550$ ), therefore no relationship was found between pre-training empathy scores and the participant's social conversation practices.

### **Conclusions, Implications and Recommendations**

Based on the study findings, the researcher offers the following conclusions, implications and recommendations:

## Conclusion One

1. The empathy level of registered nurses in the study groups was higher prior to treatment than the general population empathy level as noted by Mehrabian (2000).

The sample in this particular study demonstrated an above average empathy score ( $M = 69$ ,  $SD = 16.93$ ) prior to empathy training as compared to the average empathy score of the general population ( $M = 45$ ,  $SD = 24$ ) as noted by Mehrabian (2000). The sample's post-training empathy scores ( $M = 62.5$ ,  $SD = 22.47$ ) although somewhat lower than the study groups pre-training scores, were also higher than the population average of 45 as noted by Mehrabian (see Table 23). According to Mehrabian (2000), individuals scoring 69% on the BEES were categorized as "slightly above average" (p. 4) as compared to those who scored 50%, who were categorized as "average" (p. 4).

Many reasons could explain the difference in empathy (BEES) scores between the general population and the targeted population of this study, one of which is gender. According to Mehrabian (2000), males tend to score lower ( $M = 29$ ,  $SD = 28$ ) than females ( $M = 60$ ,  $SD = 21$ ) on the BEES. Nursing is a predominately female occupation as confirmed in the study sample groups ( $n = 39$ , 88.6%) and in the targeted study population ( $N = 592$ , 89.6%) (see Table 2).

The subjects under study, nurses, could also naturally demonstrate a higher than average BEES score based on the idea that nurturing individuals tend to pursue a career in nursing. Empathy and a caring nature have frequently been associated with the profession of nursing particularly as they relate to direct patient care which was a requirement of the participants in the study groups. Empathy has been described as being directly associated with the nurse-patient caring relationship (Allgood, 1992, Kalisch, 1971a & 1971b, La Monica, 1979, & Olsen, 1991). Nurses utilize empathy in assessing patients. Williams (1990) stated that empathy could "be an instrument whereby the nurse can apprehend the patient's world" (p. 168).

Further research relative to the empathy levels of nurses and empathy levels of individuals interested in nursing as a career at the high school level would be of value to nursing leaders and educators. Career counselors could utilize empathy level information to direct individuals with certain character traits into specific roles within the nursing profession that would fit with their emotional sensitivity level. Conversely, individuals with lower empathy scores could be directed into nursing roles that are more technological or procedural in nature thus matching characteristics of the person with requirements of the role. More objective career counseling techniques might encourage a better fit for individuals who pursue a nursing career and ultimately increase the number of nurses available to address the ongoing nursing shortage.

### **Conclusion Two**

2. The empathy treatment was not effective in increasing levels of empathy among the nurses.

This conclusion is based on the findings related to study objective five, that post-empathy training scores did not increase when compared to pre-empathy training scores. The paired t-test finding was not significant at the .05 alpha level ( $t(5) = 1.890, p = .117$ ) suggesting there was no effect of empathy training on post-test scores. A relatively small number (6) of paired groups of data from the experimental group were captured to analyze whether or not empathy training affected post-test scores so caution must be taken by the reader regarding interpretation of these findings.

In addition, when the research question in study objective six was analyzed as to whether nurses who received instruction on the development of effective empathy (experimental group) would demonstrate higher post-training levels of empathy as measured by the Balanced Emotional Empathy Scale (BEES) when compared to those who did not (control group), the findings were not significant. The independent t-test finding was not significant at the .05 alpha

level ( $t(25) = -.362, p = .720$ ) therefore, no difference existed between the variables post-test empathy scores for those who completed empathy training when compared to post-test scores of those who did not complete training.

Although the empathy score did not increase for the study sample after treatment (empathy training) was provided, the sample demonstrated a higher than average pre-training empathy score overall for both the control and experimental groups of registered nurses so a ceiling effect of scores could have been achieved prior to the study thus affecting study outcomes.

The outcome in this study differed from some findings in the literature. Several studies demonstrated that empathy levels could be increased through education (Burnard, 1987, Cox, 1989, Herbek and Yammarino, 1990, Layton, 1979, Morath, 1989, Shapiro et al., 2004 & Tshuldm, 1989). Herbek and Yammarino (1990) found that empathy training did enhance empathy levels in hospital nursing staff. Their training program included six (1 hour) training sessions over a seven-week period. Shapiro et al. (2004) demonstrated that empathy levels of medical students were increased after an eight-session course involving multi-sensory techniques, reading and poetry.

The outcome in this study was similar to some research noted in the literature. LaMonica et al. (1987) found no improvement in empathy scores of nurses in the experimental group after empathy training was provided to the nurses in the study regarding nursing care outcomes. Interestingly, they did find that patients cared for by nurses in the experimental group demonstrated less anxiety and hostility when compared to the control group.

The training program presented by this researcher was different than the ones noted in the literature. The educational plan in this research outlined a four-week course and the data analyzed incorporated findings from participants who attended a minimum of two sessions which

is much less than was expected in the Herbek and Yammarino (1990) and Shapiro et al. (2004) study. Perhaps the length of the current researcher's program and the attendance expectations affected the outcomes found in this study.

In addition, the educational programs published in the literature did not describe the environment in which the sessions were conducted. In retrospect, this researcher found the educational environment within the hospital to be distracting for both the participants and course instructor. In addition, the fact that the nurses were on duty, but away from the unit for the class, did not fully relieve the nurse from work-related obligations thus, interfering with the participant's ability to fully concentrate on the educational topic of empathy.

Further studies on empathy training should include various educational and environmental factors as research variables. This would enable the nursing educators and leaders to incorporate effective settings into empathy educational plans. Conversely, those items which are determined to detract from increasing learner empathy levels should also be presented so that educators and leaders could eliminate those factors in the educational plan.

To summarize, the educational strategies and settings associated with teaching empathy should be studied and more clearly reported in the literature to establish an effective approach to increase registered nurse empathy levels. Thus far, no documented effective and conclusive strategy to teach empathy to nurses has yet been comprehensively identified.

### **Conclusion Three**

- 3.** Pre-treatment empathy levels were found to be lower in nurses with operating room experience.

This conclusion is based on the findings for objective seven which noted significance at the  $< .01$  alpha level in pre-training empathy scores by whether or not the nurse had operating room experience ( $t(16) = 3.131, p = .006$ ). Participants who had no operating room experience

scored significantly higher ( $M = 64.4$ ,  $SD = 14.86$ ) on the BEES than those with operating room experience ( $M = 34.67$ ,  $SD = 16.07$ ).

Typically nurses who migrate to the operating room to work are highly skilled in technology and procedures. The data in this study showed that participants with operating room experience scored lower on the empathy assessment suggesting they are less oriented toward the humanistic component of nursing. Interpretation of the findings should be viewed with caution however due to the small number of participants with operating room experience versus those without operating room experience ( $n = 3$  and  $n = 15$  respectively).

Nursing roles in healthcare are numerous and diverse. Nurses can work at the bedside or elect to become educators, nursing leaders, information technologists, pharmaceutical sales representatives, legal advisors, insurance agents, advanced nurse practitioners and more. Each role requires a different set of talents to achieve overall success in the role. Nurses who might not fit into one role could very well be successful in another.

This researcher recommends further study to determine if a correlation exists between the empathy levels of operating room nurses as compared to nurses working in other hospital units in the general nursing population. Creating a body of knowledge relative to these findings could assist nursing leaders and educators in directing those individuals who are less empathetic but more oriented toward skills and technology into the operating room setting. By facilitating a better fit between talents and role expectations, longevity of employment could be enhanced and healthcare costs reduced.

#### **Conclusion Four**

- 4.** The targeted hospital nursing population utilized in this study was younger than the nursing population as reported in national findings.

Based on the study findings, the difference in age of hospital nurses when compared to nurses in general was of interest to the researcher. The age category that included the largest number of the targeted nurse population was the “25 – 34” group ( $n = 251, 37.9\%$ ). The age category that included the smallest number of the targeted nurse population was the “19 – 24” group ( $n = 43, 6.5\%$ ). The nursing population for this study demonstrated a majority of nurses in the “44 years of age or less” ( $n = 484, 73.1\%$ ) (see Table 1).

This varies from recent findings in the literature. The National Sample Survey of Registered Nurses (2004), found the average age of a nurse to be 46.5 with over 40 % at the 50 years of age mark or older. This finding suggests that the targeted hospital nursing population studied was younger when compared to national findings.

In reviewing the literature related to teaching and learning empathy, age was not mentioned. The researcher questions if age affects an individual’s empathy level and tendency to learn empathy. Although this study did not review the correlation between age and empathy scores, the question might be worth exploring in future research studies and helpful in designing an empathy course that is age-sensitive.

Implications related to the study finding that the targeted nurse population in this study is younger when compared to the average age of nurses overall is also of interest to the researcher. The targeted population for this study was nurses employed in direct patient care positions within the hospital. Due to the fact that nurses assume many different roles in healthcare, the findings support the fact the age characteristic of hospital nurses is different from the age characteristic of nurses in general.

The finding that nurses were younger in the study’s targeted population when compared to the overall nursing population is worthy of exploration. When nurses graduate from nursing school, typically the first job they assume is in a hospital setting. It is in the hospital where

nurses learn the basics of practice that reinforce the theoretical concepts learned in nursing school. Nursing leaders and educators encourage nurses to work as a floor nurse in a hospital for at least a year after graduation before entering a specialized role whether that future role is inside or outside the hospital setting. Once the nurse has gained hospital experience, opportunities present themselves that offer the individual advancement in their careers. In addition, because the nature of hospital work for nurses can be physically and emotionally taxing, most mature nurses migrate into roles that are less stressful. Many of these roles are found outside the hospital.

The reason this finding is important is because it speaks to the professional and generational characteristics of nurses working at the bedside in a hospital. They tend to be younger in years and in terms of their careers. Some are more novice practitioners while others are rapidly achieving a more sophisticated level of clinical expertise. These nurses are typically fast learners and quick to adapt to new environments and technology. The personal nature of this nursing employee is he or she may be newly married, perhaps starting a family, and values time for themselves and their families. All of these findings have implications for nursing leaders. Strategies for leading and managing a younger hospital nursing workforce with these characteristics will differ when compared to leadership strategies utilized in other healthcare organizations. Leadership strategies should be generationally sensitive in understanding the personal, professional and educational needs of a particular organizational population.

### **Conclusion Five**

- 5.** Nurses in the study indicated that technology affects their ability to connect and engage with patients at the bedside.

Based on the findings that the participants in the study groups, when asked how do you think technology affects your ability as a nurse to connect and engage with patients at the

bedside on the demographic survey, responded positively ( $M = 3.5$ ) on a 1 (very little) to 5 (very much) scale. In the healthcare arena, increasing availability and use of technology such as computers and other equipment tends to get between patients and nurses both physically and relationally. Computers distract nurses and patients and inhibit communications and mutual understanding. Nurses who possess higher levels of empathy as measured by the BEES instrument are not immune to these distractions on the frontline. Therefore, to ensure an effective empathic nurse-patient relationship, more is required than simply a higher nurse empathy level. An empathic oriented care environment is also critical to providing one-on-one, uninterrupted times for nurses and patients to interact and connect.

As the cyber era evolves, nurses must continuously focus on maintaining a caring environment where patients feel the connection and outcomes are enhanced because the nurse better understands and addresses the needs of his or her patient. The researcher recommends further studies relative to empathy and technology to assist the care providers and nursing leaders in strategizing how to minimize the distractions associated with technology and maximize the opportunity for nurses to connect and relate to patients. Another opportunity is to design technology that works around the patient-nurse interface versus serving as a barrier between the nurse and patient. In addition, communication strategies could be modified to facilitate better interactions and connections between patients and nurses.

### **Conclusion Six**

- 6.** Personal and demographic characteristics of nurses in the study groups varied from unit to unit.

From many years of hospital experience, the researcher knew that each hospital unit has its own personality and culture. This study, however, revealed the extent that personal and demographic characteristics varied from unit to unit. In objective two, the control and

experimental groups were compared on 10 personal and demographic characteristics. The three characteristics that demonstrated the study groups were different from each other included the participants number of years in nursing, previous nursing experience (specifically related to medical-surgical experience), and social conversation practices. As the data were reviewed, it was apparent that the experimental group was younger, had more novice practitioners and enjoyed an increased tendency to socialize with others outside of work and family.

Given the different demographics and cultures of various hospital units, the researcher considers the challenge of teaching empathy to nurses at the bedside on diverse units. One strategy for teaching empathy might work well for one unit, but not so well on another. Implications for enhancing nurse-patient relationships by teaching empathy might be developed in consideration of the culture of the members of that particular unit.

The researcher recommends further research in assessing unit cultures and the effectiveness of empathy education. A different educational strategy might be more effective given a particular unit's culture. The approach in teaching operating room nurses how to effectively utilize empathic techniques might be organized differently when compared to a similar educational program for pediatric nurses. Understanding unit cultures would enhance the educational strategy of teaching empathy to nurses.

### **Conclusion Seven**

7. Training programs for nurses within a hospital setting should be organized to maximize learning and measure outcomes.

The empathy treatment (education) was not effective in increasing levels of empathy among nurses in this study. Based on these findings, the researcher considered the possible reasons learning did not take place as measured by an increase in empathy scores.

Before discussing possible reasons, it is logical to explore some of the dynamics associated with the provision of educational programs in hospitals. Economics in healthcare has a direct influence on all operations within a healthcare organization. With reductions in reimbursement, hospitals are required to be frugal in spending educational dollars. In addition, salaries, particularly of registered nurses, have escalated over the years. The cost to take nurses away from the bedside to learn has increased significantly due to the increase in salaries. For longer courses where nurses are taken away for a day or more to be educated, the institution must not only pay the nurses being educated, but also the nurses who take care of patients while those nurses are away from the bedside. This backfill process doubles the costs for longer educational programs from a registered nurse perspective.

In order to remain financially viable, hospital administrators are promoting the on-duty educational approach to reduce associated costs. This was the strategy utilized in this study. On duty nurses were asked to attend a one hour class during the course of their workday, thus being away from the patients for whom they are responsible. In so doing, the researcher found the nurses to be frequently distracted in order to check on their patients. In some cases, they remained in class but the researcher suspected, their thoughts were still with their patients. The educational environment in which empathy was taught in this study could have been a deterrent to learning.

Another reason that post-training empathy scores did not increase could have been the timing of the course presentations. The four-week course was conducted over the Christmas and New Years holiday weeks. Many nurses were on vacation, and most were distracted by the events of the season. In addition, bedside nurses typically work three 12-hour shifts each week. Although the course schedule was designed to give the nurse several opportunities each week to attend, consistency in attendance was an issue in that all nurses did not attend all sessions.

Another possible reason that learning did not take place could have been the educational plan utilized to present the material. The educational plan was developed based on the literature review and information gained from course development references. A number of techniques were incorporated as were adult learning strategies. Nevertheless, perhaps the educational plan was not effective.

A fourth reason could have been the readiness of the participants to learn. Most nurses perceive themselves to be naturally caring and humanistic. Perhaps nurses did not feel a need to enhance these characteristics or thought the course to be unnecessary.

Education is an ongoing process for registered nurses. New discoveries that occur in medicine result in changes in treatment, technology and practice. Nursing staff must professionally stay abreast of the literature and published evidence on which their practice is based. The individual registered nurse has an obligation to learn, and hospitals must constantly support the education of staff as well.

So the dilemma is not whether or not to educate, the dilemma is how to educate most effectively and economically. Further studies exploring how to provide an effective, economically sound empathy program would address some of the areas noted in this study. In addition, noting those approaches that did not contribute to learning must also be explored so that future courses can avoid such strategies.

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## APPENDIX A

### EMPATHY TEACHING PLAN FOR HOSPITAL NURSES

Course Objective: To increase the level of empathy of the hospital registered nurse (RN).

Pre-course Assessment: Participants will be contacted and informed of the course schedule, time and location of sessions.  
Each participant will complete a pre-program assessment of his or her individual level of empathy prior to the beginning of the course.

Reference: Wlodkowski and Ginsberg's Motivational Framework for Culturally Responsive Teaching (1995)

Major Motivation Condition	Motivational Purpose	Motivational Strategy	Learning Activities	Activities
<b>Inclusion</b>				
Session 1 (1 hour)	To engender feelings of connection and a climate of respect.	Participant and instructor introductions	<p>Introductions and completion of pre-course documents</p> <p>Opening exercise ----- Opening exercise will include a video and follow-up discussions related to the concept of empathy and the role of the registered nurse.</p>	<p>All participants will introduce themselves; complete the demographic questionnaire and empathy pretest.</p> <p>Individuals will be asked to share with the group an experience where they accomplished a great feat and felt very proud of themselves.</p> <p>After introductions, show a video entitled: <b><i>Katrina - Nature at its Worst, Nursing at its Best</i></b> (by Johnson and Johnson)</p> <p><a href="http://www.youtube.com/watch?v=JPSbDq2NjDg&amp;NR=1">http://www.youtube.com/watch?v=JPSbDq2NjDg&amp;NR=1</a></p> <p>The following questions will be posed to spur interactions: -How did this video make you feel? -How do you think the hospital staff felt? -How do you think the patients felt? -What made you feel good when viewing this video?</p>

Major Motivation Condition	Motivational Purpose	Motivational Strategy	Learning Activities	Activities
		Share intentions regarding transfer of learning	Share patient experiences that demonstrate the positive results of the RNs expressions of empathy. ----- Encourage participants to share personal experiences where patients have shared similar feelings.	Patient experiences will be discussed. Session will end on a positive note with a viewing of the following video: <b>Patient Perspectives 1 - Nurses</b> (Johnson & Johnson) <a href="http://www.youtube.com/watch?v=jSHijzyM&amp;feature=pyv&amp;glid=CIj2oJvJmZoCFRIhnAodvmKE9w">http://www.youtube.com/watch?v=jSHijzyM&amp;feature=pyv&amp;glid=CIj2oJvJmZoCFRIhnAodvmKE9w</a>
		Outline homework assignment	Ask each participant to record one patient care situation where empathy was observed and the patient benefited. Will be shared with group in Session 2. ----- Will encourage the participant to look for empathic behaviors in the clinical setting thus enhancing their awareness and understanding of the behavior.	Focus on the feelings that sparked the interest of the participant in the situation observed.
<b>Attitude</b>				
Session 2 (1 hour)	Build a positive attitude toward the subject of empathy	Utilize various learning strategies to enhance successful learning of new content.	Review homework by utilizing inclusive discussions surrounding each scenario.	Discuss all scenarios and identify which scenario presented was most realistic in the day-to-day work life of a nurse?
			Provide basic concepts associated with empathy and its importance to clinical care.	Instructor slides defining empathy, sharing nursing research pertaining to empathy and discussing the outcomes possible with increased levels of bedside nurse empathy.
	Develop self-efficacy for learning	Promote participant's personal control of learning	Utilize video to allow participants to identify opportunities for <i>empathic</i> versus <i>non-empathic</i> responses ----- Video and role play with an emphasis on communications (verbal and non-verbal responses)	Prior to showing video, instruct participants to closely observe the communications and note specific examples of where the nurse demonstrates empathic and non-empathic behavior.  Show video entitled: <b>Enhancing Communication – Attending and Listening</b> <a href="http://www.youtube.com/watch">http://www.youtube.com/watch</a>

Major Motivation Condition	Motivational Purpose	Motivational Strategy	Learning Activities	Activities
				?=9E49T5s02MtY
<b>Meaning</b>				
Session 3 (1 hour)	Maintain learners attention	Provide frequent responses to all learners on an equitable, non-judgmental basis	Review concepts learned thus far; include all participants in discussions.  Show video and follow with discussions. Discuss the fact that <u>illness does not define you as a person.</u>	Show brief video: <b><i>From Nurse to Patient</i></b>  <a href="http://www.youtube.com/watch?v=hcHfEz-pC6s">http://www.youtube.com/watch?v=hcHfEz-pC6s</a>
		Help learners to assume ownership and realize accountability for what they are learning	Provide literature support for using empathic techniques with patients. ----- Encourage participants to give examples of situations that are congruent with research findings.	Instructor slide presentation.
	Evoke and maintain learner's interest	Selectively use examples, analogies, metaphors, and stories	Utilize vignettes to demonstrate positive and negative modeling of empathy with discussions following each vignette. ----- Modeling encourages the participants' to engage in the empathic scenarios and identify opportunities to strengthen empathic behaviors.	Show video <b><i>What's Your Listening Level</i></b>  <a href="http://www.youtube.com/watch?v=uv6wov8xoMo">http://www.youtube.com/watch?v=uv6wov8xoMo</a>  Show video <b><i>Enhancing Communications &amp; Counseling Skills – Attending &amp; Listening.</i></b>  <a href="http://www.youtube.com/watch?v=9E49TsO2MtY">http://www.youtube.com/watch?v=9E49TsO2MtY</a>  Show video <b><i>How To Be A Good Listener</i></b>  <a href="http://www.youtube.com/watch?v=tO68uTk-T_E">http://www.youtube.com/watch?v=tO68uTk-T_E</a>
	Further deepen participants' engagement and challenge	Use relevant literature and scenarios to facilitate learning	Provide article related to empathy and nursing for review and discussion. ----- To maintain the interest of the learner and relevancy of the concept of empathy to nursing.	Article to be reviewed is  Sitzman, K.L. (2007). Teaching - learning professional caring based on Jean Watson's theory of human caring. <i>International Journal for Human Caring</i> , 11 (4): 8-16.

<b>Major Motivation Condition</b>	<b>Motivational Purpose</b>	<b>Motivational Strategy</b>	<b>Learning Activities</b>	<b>Activities</b>
	Enhance the learners' engagement, challenge, and adaptive decision making	Use simulations to embody learning and incorporate real-life context	Ask participants' to share experiences where they personally experienced non-empathic scenarios. A reflective review; discuss alternatives that would have changed the scenario.	
Session 4 (1 hour)	To engender competence with assessment	Provide effective feedback	Have participants respond to a videotape of a nurse talking about the relationships between patients and nurses.	Show video <i>Meet Sekou: Jenny Hengle, RN talks about the bond that forms between a patient and a nurse.</i>  <a href="http://www.youtube.com/watch?v=K3zKuBB5dzU">http://www.youtube.com/watch?v=K3zKuBB5dzU</a>
	Engender competence with learning transfer	Clarify the intention and capacity to transfer learning	Review the importance of a continuing practice of expressing empathy with patients and colleagues ----- Focus on the understanding of others before addressing their concerns	Show video <i>Barack Obama and Empathy</i>  <a href="http://www.youtube.com/watch?v=KcvNqTThhzw">http://www.youtube.com/watch?v=KcvNqTThhzw</a>
	Engender competence with communications and rewards	Clarify natural consequences of the frequent use of empathy at the bedside	Focus on the personal rewards of demonstrating empathic behaviors as it relates to their work and their personal life	Show video <i>Attaining Excellence in Patient Relations</i>  <a href="http://www.youtube.com/watch?v=K39BmFUyumI">http://www.youtube.com/watch?v=K39BmFUyumI</a>
		Effectively praise and reward learning	Review program learning and capitalize on the positive learning experiences. ----- Congratulate those who demonstrated positive learning behaviors.	
		Provide effective feedback	Ask each participant to complete an empathy assessment questionnaire. Provide feedback post course to each participant regarding the results.	Complete empathy post-test.
		Provide positive closure at the end of the program	Celebrate completion, award certificates and offer future sessions to facilitate the maintenance of increased levels of empathy	

**APPENDIX B**

**PARTICIPANT PACKET**

Letter to Participants  
Face Sheet  
Demographic Survey  
(excludes the BEES survey instrument)

## Letter to Participants

# LOUISIANA STATE UNIVERSITY

Human Resource Education and Workforce Development Program of the College of Agriculture

November 30, 2009

Dear Participant,

Nurses touch the lives of millions of people on a daily basis and frequently at their most vulnerable moments. The nurse is the primary health care provider in hospitals who spends hours at the patient's bedside and develops strong bonds with both patient and family. The registered nurse is critical to achieving excellent patient outcomes and service satisfaction.

I am requesting that you participate in an educational course and research study related to nursing practice. Your input is critical to providing accurate feedback to the researcher. Findings from this study will assist in developing a better understanding of how nurses might be more effective in caring for patients.

You were selected to participate because of your professional expertise and understanding of nursing practice at the bedside. You are one of a small study group of registered nurses identified to help us recognize opportunities to improve patient care at the bedside. The course you will be participating in focuses on nursing practice *on the frontline* (at the bedside). The questionnaires you complete as part of this program will provide feedback that will be useful in improving patient care.

The feedback you provide will be held in the strictest of confidence. Your name on the documents you complete and submit will be removed from the data once entered into a spreadsheet by an unbiased person. Your name and associated answers will not be seen by the researchers to further protect your anonymity.

Should you desire to be informed of the results of this study, please put your name and address on the back of the demographic questionnaire and the researcher will send you a summary of the study results once completed. If you find you will be unable to participate, please let me know at your earliest convenience.

Thank you for your time and I hope you enjoy the course.

Sincerely,



Deborah K. Charnley, RN, MN, PhD(c)  
Research Associate



Michael F. Burnett, PhD  
Professor, School of Human Resource,  
Education and Workforce Development  
Louisiana State University

## Face Sheet

- Investigators: The following investigators are available for questions about this study.  
Monday – Friday 8:00 a. m. – 4:30 p. m.  
Dr. Michael F. Burnett, Adviser 578-5748  
Deborah K. Charnley, Doctoral Student 603-6210
- Purpose of the Study: The primary purpose of this study is to determine if empathy can be effectively taught. This is a study for a dissertation in the School of Human Resource Education and Workforce Development.
- Subject Inclusion: Registered Nurses working at the bedside on 2 telemetry units in a metropolitan hospital in Southeast Louisiana.
- Study Procedures: The subjects in both the control and experimental groups will complete a demographic questionnaire and an empathy measurement tool prior to the beginning of a 4 hour (1 hour per week over a 4 week period) empathy course. The course will then be provided to the experimental group by the researcher. Subjects in both groups will also complete the empathy measurement tool at the end of the course provided.
- Benefits:  
Risks: The study will ascertain whether empathy can be effectively taught. The only study risk is the inadvertent release of data provided by the subjects. Every effort will be made to maintain anonymity regarding individual responses. Confidentiality of the study records will be maintained with files being kept in secure cabinets to which only the investigators have access.
- Right to Refuse: Subjects may choose not to participate as this is a voluntary involvement.
- Privacy: Results of the study may be published, but no names or identifying information will be included in the publication. Subject identity will remain confidential unless disclosure is required by law. Subject responses on the questionnaires or instruments will be anonymous.
- Consent: I have read and understand the above description of this study and all questions have been answered. I may direct additional questions regarding study specifics to the investigators. If I have questions about subjects' rights or concerns, I can contact Dr. Robert C. Mathews, Institutional Review Board at (225) 578-8692. I agree to participate in the study described above and my participation serves as giving consent.

### INSTRUCTIONS:

Read and complete the demographic questionnaire and BEES questionnaire as directed by the researcher.

## Demographic Questionnaire

Name \_\_\_\_\_ Unit \_\_\_\_\_

Please answer the following questions by checking the appropriate box:

1. Age at last birthday (in years)	<input type="checkbox"/> 19 – 24 years <input type="checkbox"/> 25 - 34 years <input type="checkbox"/> 35 – 44 years	<input type="checkbox"/> 45 – 54 years <input type="checkbox"/> 55 years or greater
2. Gender	<input type="checkbox"/> Male	<input type="checkbox"/> Female
3. Current marital status	<input type="checkbox"/> Married <input type="checkbox"/> Separated <input type="checkbox"/> Other (please specify)	<input type="checkbox"/> Divorced <input type="checkbox"/> Single <input type="checkbox"/> Widowed
4. Number of children currently living with you (yours or others)	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 4 <input type="checkbox"/> 5 or more
5. Type of original or <u>first</u> RN degree or diploma completed	<input type="checkbox"/> Associate Degree <input type="checkbox"/> Diploma	<input type="checkbox"/> Bachelor's Degree
6. Location of undergraduate nursing education	<input type="checkbox"/> Louisiana	<input type="checkbox"/> Other state or country (please specify)
7. Highest level of education attained	<input type="checkbox"/> Associate <input type="checkbox"/> Diploma <input type="checkbox"/> Bachelor's <input type="checkbox"/> Master's	<input type="checkbox"/> Doctorate <input type="checkbox"/> Other (please specify)
8. Number of years in nursing	<input type="checkbox"/> 1 - 5 <input type="checkbox"/> 6 - 10 <input type="checkbox"/> 11 - 20	<input type="checkbox"/> 21 - 30 <input type="checkbox"/> 31 or more
9. Previous experience – please select your previous experience as a registered nurse (check all that apply).	<input type="checkbox"/> Hospital <input type="checkbox"/> OR/PACU <input type="checkbox"/> Psychiatry <input type="checkbox"/> Med-Surg <input type="checkbox"/> Oncology <input type="checkbox"/> Critical Care	<input type="checkbox"/> Emergency <input type="checkbox"/> Pediatrics <input type="checkbox"/> Community /Home Health <input type="checkbox"/> Other (please specify)
10. I read approximately ___ books each year.	<input type="checkbox"/> 0 <input type="checkbox"/> 1 - 5 <input type="checkbox"/> 6 - 10	<input type="checkbox"/> 11 - 20 <input type="checkbox"/> 21 or more
11. I engage in social (not family or work related) conversations on an average of ___ times each day.	<input type="checkbox"/> 1 - 10 <input type="checkbox"/> 11 - 20 <input type="checkbox"/> 21 - 30	<input type="checkbox"/> 31 - 40 <input type="checkbox"/> 41 or more
12. On a scale of 1 to 5 (1 being very little and 5 being very much), how do you think technology (such as computers) affects your ability as a nurse to connect and engage with patients at the bedside.	<input type="checkbox"/> 1 very little <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 4 <input type="checkbox"/> 5 very much

## APPENDIX C

### EDUCATIONAL PLAN SCHEDULE

Educational Series for A2 RN staff



## *“Understanding the Patient’s Perspective”*

The purpose of this educational program is to sensitize registered nurses at the bedside to the unique and challenging needs of patients. The program includes 4 (1 hour) sessions over a 4 to 5 week period as outlined below. Meals will be provided at each session so please try to attend one of the times scheduled for each session. The class will be held in one of the back (vacant) patient rooms on A2. Look forward to seeing you there...Deb Charnley

### Session I

November 30	11:30 AM	12:45 PM
December 1	2:00 AM	3:15 AM
December 2	11:30 AM	12:45 PM
December 3	2:00 AM	3:15 AM

### Session II

December 7	11:30 AM	12:45 PM
December 8	2:00 AM	3:15 AM
December 9	11:30 AM	12:45 PM
December 10	2:00 AM	3:15 AM

### Session III

December 14	11:30 AM	12:45 PM
December 15	2:00 AM	3:15 AM
December 16	11:30 AM	12:45 PM
December 17	2:00 AM	3:15 AM

### Session IV

December 28	11:30 AM	12:45 PM
December 29	2:00 AM	3:15 AM
December 30	11:30 AM	12:45 PM
December 31	2:00 AM	3:15 AM

## APPENDIX D

### HOSPITAL INSTITUTIONAL REVIEW BOARD APPROVAL DOCUMENT

TO: Deborah Charnley, RN, MN, PhD (c)

FROM: Michelle Brignac, IRB Coordinator

RE: 2009-RP019 - The Effects of A Planned Instructional Program on the Empathy Levels of Registered Nurses at a Metropolitan Hospital in Southern Louisiana

DATE: November 23, 2009

#### IRB APPROVAL DOCUMENT

On behalf of Baton Rouge General Medical Center Institutional Review Board, Richard Burroughs, MD, IRB Chairman has received and reviewed the Letter to Participants, Face Sheet (with information pertaining to consent), Nursing License of investigator, IRB Initial Application, Fee Waiver Document, Conflict of Interest/Financial Disclosure Form for 2009-RP019 - The Effects of A Planned Instructional Program on the Empathy Levels of Registered Nurses at a Metropolitan Hospital in Southern Louisiana for expedited review.

Dr. Burroughs has determined that this study does meet the requirements for expedited review. The study involves no more than minimal risk and the only involvement of human subjects falls in the following category:

Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Approval was granted on November 23, 2009 for eleven months. You are granted permission to conduct your study as described in your application effective immediately. The IRB will be notified of this approved expedited review at the December 8, 2009 meeting.

**The study is subject to continuing review on or before October 31, 2010.** We recommend that it be presented one month prior to this date to avoid a delay in enrollment in the case of unforeseen circumstances.

Please note that changes to the study as approved must be promptly reported and approved. Some changes may be approved by expedited review; others require full board review. Contact Michelle Brignac, at (225) 387-7112 if you have any questions or require further information.

Sincerely,



Michelle Brignac  
IRB Coordinator

Note:

1. The IRB complies with the requirements found in Part 56 of the Code of Federal Regulations and Part 46 of Federal Regulations
2. Re-Review of this proposal is necessary if:
  - Any significant alterations or additions are made to the protocol/proposal
  - You wish to continue beyond the continuing review date assigned to the study.
3. It is required that all IRB approved consent forms be retained in your files. Patients are to initial each page of the IRB approved consent.
4. In addition to the study consent form, the Baton Rouge General may require execution of standard hospital and/or surgical consent forms for any invasive procedures.

## APPENDIX E

# LOUISIANA STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD APPROVAL FOR EXEMPTION

### Application for Exemption from Institutional Oversight

Unless qualified as meeting the specific criteria for exemption from Institutional Review Board (IRB) oversight, ALL LSU research/projects using living humans as subjects, or samples or data obtained from humans, directly or indirectly, with or without their consent, must be approved or exempted in advance by the LSU IRB. This Form helps the PI determine if a project may be exempted, and is used to request an exemption.



Institutional Review Board  
 Dr. Robert Mathews, Chair  
 203 B-1 David Boyd Hall  
 Baton Rouge, LA 70803  
 P: 225.578.8692  
 F: 225.578.6792  
 irb@lsu.edu | lsu.edu/irb

- Applicant, Please fill out the application in its entirety and include the completed application as well as parts A-E, listed below, when submitting to the IRB. Once the application is completed, please submit two copies of the completed application to the IRB Office or to a member of the Human Subjects Screening Committee. Members of this committee can be found at <http://www.lsu.edu/irb/screeningmembers.shtml>
- A Complete Application Includes All of the Following:
  - (A) Two copies of this completed form and two copies of parts B thru E.
  - (B) A brief project description (adequate to evaluate risks to subjects and to explain your responses to Parts 1 & 2)
  - (C) Copies of all instruments to be used.
    - If this proposal is part of a grant proposal, include a copy of the proposal and all recruitment material.
  - (D) The consent form that you will use in the study (see part 3 for more information.)
  - (E) Certificate of Completion of Human Subjects Protection Training for all personnel involved in the project, including students who are involved with testing or handling data, unless already on file with the IRB.  
 Training link: ( <http://phrp.nihtraining.com/users/login.php>.)

1) Principal Investigator: Deborah K. Charnley Rank: \_\_\_\_\_  
 Dept.: School of HREWD Ph: 225-603-6210 E-mail: dcharn1@lsu.edu

2) Co Investigator(s): please include department, rank, phone and e-mail for each  
 \* If student, please identify and name supervising professor in this space  
Michael F. Burnett, Professor  
School of HREWD  
225-578-5748 vocbur@lsu.edu

*Michael F. Burnett*

3) Project Title: One Approach to Increasing Registered Nurse Empathy Levels

4) LSU Proposal?(yes or no) No If Yes, LSU Proposal Number \_\_\_\_\_  
 Also, if YES, either  This application completely matches the scope of work in the grant  
 OR  More IRB Applications will be filed later

5) Subject pool (e.g. Psychology Students) Registered Nurses  
 • Circle any "vulnerable populations" to be used: (children <18; the mentally impaired, pregnant women, the aged, other). Projects with incarcerated persons cannot be exempted.

6) PI Signature Deborah K. Charnley Date 10/15/09 (no per signatures)  
 \*\*I certify my responses are accurate and complete. If the project scope or design is later changed I will resubmit for review. I will obtain written approval from the Authorized Representative of all non-LSU institutions in which the study is conducted. I also understand that it is my responsibility to maintain copies of all consent forms at LSU for three years after completion of the study. If I leave LSU before that time the consent forms should be preserved in the Departmental Office.

Student?  N  
 Study Exempted By: Dr. Robert C. Mathews, Chairman  
 Institutional Review Board  
 Louisiana State University  
 203 B-1 David Boyd Hall  
 225-578-8692 | [www.lsu.edu/irb](http://www.lsu.edu/irb)  
 Exemption Expires: 11-2-2012

IRB# 11709 (LSU) Proposal# \_\_\_\_\_  
 Complete Application  
 Human Subjects Training

Screening Committee Action: Exempted  Not Exempted \_\_\_\_\_ Category/Paragraph 2  
 Reviewer Mathews Signature Robert Mathews Date 11/9/09

## VITA

Deborah K. Charnley (Deb) was born in Spartanburg, South Carolina, in 1950, to the late Orville Robert Kirby and Dorothy Elizabeth (Hodge) Kirby. Ms. Charnley was previously married to Danny B. Peeler who passed away in November 2009. They had two daughters, Anita and Farrah, and two grandsons, Kaelan and Easton, who currently live in South Carolina. More recently, she was married to the late Richard J. Charnley who passed away in July 2001. Richard was English and had four children and nine grandchildren who currently reside in England. In addition, Ms. Charnley's mother, two brothers, and a sister reside in upstate South Carolina.

She graduated from Landrum High School in 1968 and received an Associate Degree in Nursing in 1970 from the University of South Carolina, Spartanburg. While working as a registered nurse at Spartanburg Regional Medical Center, Ms. Charnley completed both her bachelor's (1982) and her master's (1987) degrees in nursing from the University of South Carolina in Columbia, South Carolina. She is a 2007 graduate of the nursing leadership program at the Wharton Business School in Philadelphia, Pennsylvania.

Ms. Charnley has served in many capacities within various healthcare organizations some of which include registered (staff) nurse, nurse educator, consultant, manager, director, and chief nursing officer. She enjoys transcultural nursing and has worked abroad in Saudi Arabia, England, Ukraine and the Czech Republic.

Her goal of completing her doctorate began in 1999 while she was the chief nursing officer at Rochester General Hospital in Rochester, New York. Ms. Charnley's husband succumbed to cancer while in Rochester, delaying the completion of her doctorate until she came to Louisiana as the chief nursing officer at Baton Rouge General Medical Center. In 2007, she

enrolled in the Louisiana State University School of Human Resource Education and Workforce Development's doctoral program.

Ms. Charnley is active in the American Organization of Nurse Executives where she serves on the International and Nursing Institute committees. She is also a member of the local Rho Zeta Chapter of Sigma Theta Tau International and the University of South Carolina Alumni Association. Ms. Charnley is a member of St. Andrews Methodist Church in Baton Rouge where she teaches Sunday school to kindergarten and first grade children.