Perceptions of Instructor Caring Behaviors, Self-Esteem, and Perceived Clinical Competence: A Model of the Attitudinal Component of Professional Nurse Autonomy in Female Baccalaureate Nursing Students

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In Partial Fulfillment of the Requirements for the Degree Doctor of Nursing Science

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Submitted in partial fulfillment of the requirements for the Degree of Doctor of Nursing Science.
DEDICATION

I wish to dedicate this dissertation to the memory of my mother, Elinor Moyer Holland, who was the first person to teach me about caring. Her love, support, and encouragement were with me throughout my doctoral studies. Although she is no longer physically in this world, her spiritual presence gave me the strength and the will to complete this dissertation. I know she is proud of my accomplishment.
ACKNOWLEDGMENTS

The completion of this dissertation would not have been possible without the support, guidance, and encouragement of many individuals. A research grant, awarded by the Beta Xi chapter of Sigma Theta Tau, provided the financial support needed to process the study questionnaires and analyze the data.

Dr. Karen Morin, the chair of my dissertation committee, was always available to help me understand many of the complex statistical analyses associated with this study. Not only did Dr. Morin share her research expertise with me, she also communicated her confidence in my abilities. Through my many personal hardships, Dr. Morin truly exemplified the caring professional.

I also wish to acknowledge and thank the members of my dissertation committee. Dr. Bette Bayley provided a pragmatic balance for the process. When the theoretical and statistical aspects of the study became overwhelming, Dr. Bayley always suggested a clear and practical approach. Dr. Mary Lou Nicholson shared her expertise in theory development. Her enthusiasm about theory related to caring reinforced my belief in its importance to nursing.

Last, but certainly not least, I wish to acknowledge my family. Kevin, my husband, provided encouragement and emotional support as well as the technical support needed to develop the path models. My daughter, Lauren, endured the frequent interruption of our normal family routines. Her sense of humor provided relief from the drudgery of writing and a sense of perspective.
ABSTRACT

This model testing correlational study was designed to specify a model of predictors of the attitudinal component of professional nurse autonomy and to test three carative factors embedded in Watson's Theory of Transpersonal Caring. The carative factors tested were: transpersonal teaching-learning, sensitivity to self and others, and creative problem solving process. These factors were operationalized as perceptions of instructor caring, self-esteem and perceived clinical competence.

Proportional quota sampling was used to collect data from a national sample of 317 second semester senior nursing students from 20 generic NLNAC accredited BSN programs. Data were collected using the Autonomy, the Caring Perspective (ACP) instrument, Perceptions of Instructor Caring Behaviors (PICB) semantic differential scale, the Perceived Clinical Competency Scale (PCCS), Rosenberg's Self-Esteem Scale (RSES), and a researcher designed demographic data form. Alpha coefficients ranged from .77 to .94.

Model testing, using hierarchial multiple regression, was performed after determining that age significantly influenced study scores. With age added to the fourth step of the regression equation, self-esteem \( R^2 = .071, p < .0001 \), perceived clinical competence \( R^2 = .050, p < .0001 \), and age \( R^2 = .021, p < .011 \) together explained 14.2% of the variance in the attitudinal component of professional nurse autonomy. Initial path analysis of the hypothesized model revealed that it was just-identified. By removing the nonsignificant paths, findings from the trimmed over-identified model

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indicated that 19.1% of the variance in perceived clinical competence was explained by self-esteem and perceptions of instructor caring behaviors. Perceptions of instructor caring behaviors, self-esteem, and perceived clinical competence, however, only contributed 11.1% to the variance in the attitudinal component of professional nurse autonomy.

Although the revised model of the attitudinal component of professional nurse autonomy was testable, its relationship to Watson's Theory of Transpersonal Caring was not supported. Findings provide a baseline for understanding the development of the attitudinal component of professional nurse autonomy. A large percentage of the variance in the attitudinal component of professional nurse autonomy remains unexplained suggesting the need to study other possible contributing variables.
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CHAPTER I
INTRODUCTION

For many years, the nursing profession has been striving for full professional status (Bixler & Bixler, 1945; Moloney, 1992; Schutzenhofer, 1988). Although there is lack of agreement on what constitutes full professional status, nursing professionals and others concur that professional status cannot be attained without professional autonomy (Engel, 1970; Freidson, 1971; Hall, 1968; Porter, 1992; Schutzenhofer, 1988).

Professional autonomy exists on two separate but related levels, that of the individual and that of the group (Engel, 1970; Hall, 1968). Furthermore, the concept has both attitudinal and behavioral dimensions. Although this study addressed only the attitudinal dimension of professional nurse autonomy, both the attitudinal and behavioral components of professional nurse autonomy should be evident in the professionhood of individual nurses (Styles, 1982).

Progress toward recognition of professional nurse autonomy in individual nurses may be hampered by the apparent contradictory ideals of autonomy and the value of caring in nursing (Gardner, 1992). Throughout the history of nursing, caring has been recognized as a central focus of nursing. Several nurse theorists claim that caring is the essence of nursing and should be the focus of nursing education, practice, and research (Benner & Wrubel, 1989; Leininger & Watson, 1990). Watson (1988a) claims that the human science of nursing "requires its own description, possesses its own phenomena, and needs its own method for clarification of its own concepts and their
meanings, relationships, and context" (p. 8). Professional nurse autonomy is a concept that is unique to nursing and different from the professional autonomy defined by other predominantly male professions (Wade, 1999).

Evidence in the sociology and psychology literature indicates that the development of autonomy, in general, differs for men and women. Women develop autonomy within the context of relationships and the ethics of caring, whereas autonomy in men is associated with achievement orientation and interpersonal aggressiveness (Boughn, 1995; Coser, 1991; Gilligan, 1982; Kurtines, 1978; Schutzenhofer, 1988). The basis for many definitions of professional autonomy, however, is grounded in traditional male definitions of autonomy in general (Engel, 1970; Kurtines, 1978). Definitions of professional autonomy that focus on interpersonal aggressiveness, control and separation are not consistent with the focus of nursing (Boughn, 1995). Furthermore, the increasing complexity of the health care system and the inherent need to relate interdependently challenge traditional male definitions of professional autonomy (Grinnell, 1989; McKay, 1983; Scearse, 1989; Watson, 1990; Wilkinson, 1997).

Current research about professional nurse autonomy is hampered by definitions of the attribute that are ambiguous and often conflict with the affiliative and caring focus of a primarily female profession (Boughn, 1995). Furthermore, professional nurse autonomy is often confused with personal autonomy, work autonomy, or aggregate professional autonomy (Engel, 1970; Lach, 1992; Styles, 1982). Recent research suggests that the development of professional autonomy in nurses is never absolute and may exist on a continuum with varying amounts, levels, and stages (Dempster, 1994; Wilkinson, 1997).
In a research-generated model, Dempster (1994) identified valuation of autonomy as a necessary precursor to the development of autonomy in practice. Unless autonomy is viewed as having worth, merit, or usefulness, the practice of professional autonomy is not possible.

The value of autonomy to beginning professional nurses can be determined by identifying the attitudinal component of professional nurse autonomy in female baccalaureate nursing students prior to entry into practice. By linking professional nurse autonomy with a theory of caring, the attitudinal component of professional nurse autonomy that reflects a caring ideology of nursing was empirically studied. This study used a definition of the attitudinal component of professional nurse autonomy that reflected Watson’s (1988a) Theory of Transpersonal Caring. The attitudinal component of professional nurse autonomy involves recognition of one’s own needs and rights and values connectedness and responsibility for others (Boughn, 1995). Before research on professional nurse autonomy can progress, knowledge of factors associated with the attitudinal component of professional nurse autonomy is needed.

Statement of the Problem

Although attainment of professional nurse autonomy has been a goal of the profession for over 50 years, nurses’ ability to exercise professional nurse autonomy continues to be questioned (Batey & Lewis, 1982; Bixler & Bixler, 1945; Boughn, 1995; Dempster, 1994; McKay, 1983; Schutzenhofer, 1983). Changes in the health care system demand that professional nurses be highly competent and able to function autonomously.
in a variety of settings. Several authors suggest that the inability to function as a competent nurse is related to inadequate socialization to the professional role (Clayton, Broome, & Ellis, 1989; Dufault, 1990; Itano, Warren, & Ishida, 1987; Scheetz, 1989). Although professional nurse autonomy is viewed as an essential component of the professional role, current research has failed to isolate professional nurse autonomy as an outcome of the professional socialization process (Boughn, 1995; Moloney, 1992; Schutzenhofer, 1988).

Furthermore, past attempts to study professional nurse autonomy have been limited by conceptions of the attribute that conflict with the caring attitudes and values of the profession (Batey & Lewis, 1982; Boughn, 1988; Boughn, personal communication, November 1997; Dempster, 1994; Katims, 1995; Scarse, 1989; McKay, 1983; Schutzenhofer, 1983). The caring dimension of nursing helps define nursing's unique area of practice and may provide direction for growth as a profession (Gardner, 1992). The caring practices of nurses must be made visible to nursing students, other members of the health care team, and consumers of health care so that the unique contributions of the nursing profession are recognized and valued (Lynaugh & Fagin, 1988). If caring is the central focus of nursing, then attention should focus on the practice, study, and teaching of caring. The attitudinal component of professional nurse autonomy, therefore, was studied within the context of caring.

Professional attitudes may precede the development of professional behaviors (Hall, 1968). Therefore, a precursor to the exercise of professional nurse autonomy may be the attitudinal component of professional nurse autonomy. During the socialization
process in nursing education, professional nurse autonomy attitudes evolve (Boughn, 1995; Schutzenhofer, 1987). Factors that predict the attitudinal component of professional nurse autonomy as well as unclear definitions of the concept, however, make research related to the concept difficult. Both the theoretical and research literature were unclear about the factors associated with the development of professional nurse autonomy attitudes. Before interventions for promoting the development of professional nurse autonomy attitudes in nursing students can be studied empirically, clarification of factors that influence its development is needed.

Although there are numerous quantitative descriptive studies on professional nurse autonomy in staff nurses and students, past studies focused on the educational characteristics associated with professional nurse autonomy and not factors related to development of attitudes (Hallsworth, 1993; Lach, 1992; Schutzenhofer & Musser, 1994). With student populations, most studies compare the relationship between type of educational program and professional nurse autonomy. Nursing student studies used instruments designed to measure professional autonomy behaviors of practicing nurses (Boughn, 1988; Pankratz & Pankratz, 1974; Schutzenhofer, 1987). If professional nurse autonomy follows a developmental sequence, then only measures of the attitudinal component should be used with nursing student populations (Boughn, personal communication, November 14, 1997; Dempster, 1994).

Because research on the multiple factors that may influence the attitudinal component of professional nurse autonomy is limited and not consistent with the caring ideology of nursing, predictor variables for this study were derived from Watson's
(1988a) Theory of Transpersonal Caring and a concept analysis of professional nurse autonomy (Wade, 1999). Predictor variables that may be theoretically interrelated include: perceptions of instructor caring behaviors, self-esteem, and perceived clinical competence.

To develop positive attitudes of professional nurse autonomy, nursing students must learn to adapt their self-perceptions to those associated with being a professional nurse (Phil, 1995). During the socialization process in nursing education, nursing students are exposed to and often adopt the professional attitudes and caring values of their faculty (Moloney, 1992; Schutzenhofer, 1988; Sheston, 1992). If the adoption of attitudes and values related to professional nurse autonomy reflects a caring ideology, then these attitudes may evolve in part from a caring teacher-student relationship. For this study, student perceptions of instructor's caring behaviors measured the caring interactions between teacher and student.

Aspects of the self may also be associated with the development of the attitudinal component of professional nurse autonomy (Wade, 1999; Watson, 1988a). Self-esteem is one of the most important aspects of the self that influences attitudes and behaviors (Combs, Blume, Newman, & Wass, 1974; Rosenberg, 1979). As an evaluative measure of the self, the concept includes a synthesis of experiences that occur in the individual's phenomenal field. The nursing student's phenomenal field includes the educational environment.

Perceived clinical competence may evolve from caring relationships within the educational environment as well as self-esteem (Wade, 1999; Watson, 1988b).
Competition is not only knowing, but involves confidence, pride, and a correspondingly high valuation of self relative to the knowledge and skills (Kramer & Schmalenberg, 1993). Perceived clinical competence, therefore, was hypothesized as a necessary precursor to professional nurse autonomy.

In summary, professional nurse autonomy continues to be an essential aspect for achieving professional status. Yet, there is limited knowledge and empirical evidence of the factors that influence the attitudinal component of professional nurse autonomy and precede the exercise of professional nurse autonomy. This study used a caring framework to test factors that may influence the attitudinal component of professional nurse autonomy.

**Purposes of the Study**

The primary purpose of this research was to test a model of the attitudinal component of professional nurse autonomy that was based on Watson’s (1988a) Theory of Transpersonal Caring. By examining the relationships between perceptions of instructor caring behaviors, self-esteem, perceived clinical competence and the attitudinal component of professional nurse autonomy, a causal model for predicting the attitudinal component of professional nurse autonomy in female baccalaureate nursing students was specified. A secondary aim of this study was to test three carative factors embedded in Watson’s Theory of Transpersonal Caring. The carative factors that served as broad abstract concepts for this study were transpersonal teaching-learning, sensitivity to self and others, and creative problem solving process.
Theoretical Framework

To understand the unique nature of professional nurse autonomy and unify nursing knowledge about the attribute, Watson’s (1988a) Theory of Transpersonal Caring provided the theoretical basis for the study. Caring nurses perform their professional role with individuals, groups, and society in a way that differentiates them from other health providers (Boughn, 1995; Schutzenhofer, 1987). Nursing is not a traditional science but a human science that requires its own descriptions of phenomena relevant to nursing (Cody, 1994; Gortner & Schultz, 1988; Watson, 1988a).

The guiding value of Watson’s (1988a) theory is that caring is the moral compass or consciousness that guides nurses. Caring, a humanistic and interpersonal process that forms the basis for therapeutic relationships between human beings, is embedded in a world view that is transpersonal, evolving, and dynamic. Through caring, nurses assist persons to reach greater harmony among the mind, body, and spirit. The theory, based on nonpaternalistic values that honor another’s becoming, autonomy, and freedom of choice, serves as a guide to both the discipline and the professional development of nurses (Watson, 1996). Autonomy in females, and consequently nurses, is viewed as a complex phenomenon that is characterized by mutual interdependence and creative ambiguity (Watson, 1990). In nursing education, caring is viewed as an evolutionary, transpersonal caring process between the nursing educator and the nursing student (Bevis & Watson, 1989). Transpersonal caring in nursing education occurs when the nurse educator uses teaching moments as caring occasions (Watson, 1989).
Transpersonal caring is realized through 10 carative factors that characterize human-to-human caring (Watson, 1996). The carative factors, which are the core of nursing and the primary ingredients of effective nursing practice, provide a language, structure, and order for studying and understanding nursing education and practice (Table 1). Although the factors are hierarchical in nature, they are also an interrelated cluster of characteristics that lead to the holistic development of human caring (Watson, 1979).

Three carative factors were hypothesized to be associated with the development of the attitudinal component of professional nurse autonomy. The carative factors that served as broad abstract concepts for this study were transpersonal teaching-learning, sensitivity to self and others, and creative problem-solving caring process. Sub-concepts or predictor variables that relate to the more abstract carative factors were perceptions of instructor caring, self-esteem, and perceived clinical competence. A description of the relationship between the variables and Watson's theoretical constructs follows.

For this study, the carative factor, transpersonal teaching-learning, was linked to perceptions of instructor caring. Transpersonal teaching-learning is a "distinctly alive anticipatory human process" (Watson, 1989a, p. 41) that enhances knowledge development through participative and interactive activities. The reciprocity that occurs between the student and the educator enhances the interconnection between the two (Watson, 1996). Human-to-human care transactions associated with transpersonal teaching-learning enable both individuals to explore the meaning of their experiences and grow. As individuals find meaning in their existence and experience, they discover inner power and control. Through the growth process, transcendence, self-healing, and
### Table 1

**Watson's (1996) Carative Factors**

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<tr>
<th>Carative Factors</th>
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<tr>
<td>1.</td>
<td>Forming a humanistic-altruistic system of values.</td>
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<tr>
<td>2.</td>
<td>Enabling and sustaining faith-hope.</td>
</tr>
<tr>
<td>3.</td>
<td>Being sensitive to self and others.*</td>
</tr>
<tr>
<td>4.</td>
<td>Developing a helping-trusting, caring relationship (seeking transpersonal connection).</td>
</tr>
<tr>
<td>5.</td>
<td>Promoting and accepting the expression of positive and negative feelings and emotions.</td>
</tr>
<tr>
<td>7.</td>
<td>Promoting transpersonal teaching-learning.*</td>
</tr>
<tr>
<td>8.</td>
<td>Attending to supportive, protective, and/or corrective mental, physical, societal, and spiritual environments.</td>
</tr>
<tr>
<td>9.</td>
<td>Assistance with gratification of basic human needs while preserving human dignity and wholeness.</td>
</tr>
<tr>
<td>10.</td>
<td>Allowing for, and being open to, existential-phenomenological and spiritual dimensions of caring and healing that cannot be fully explained scientifically through modern Western medicine.</td>
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*Carative factors tested in this study.
transformation may occur. In nursing education, transpersonal teaching-learning is realized through the relationship that develops between the nursing educator and student and can be reflected in students' perceptions of caring instructors. When nursing educators are perceived as caring, students appreciate them, desire to model their behaviors, and feel gratitude and respect toward them (Halldorsdottir, 1990; Miller, Haber & Bryne, 1990; Sheston, 1990).

The carative factor, sensitivity to self and others, is basic to the practice of nursing and relates closely to the transpersonal teaching-learning carative factor (Watson, 1979; 1996). Individuals come to know who they are through interactions with others. Nursing educators who model caring encourage self-affirmation and self-discovery in their students (Watson, 1989a). Transpersonal caring links the self as perceived with the self as experienced (Watson, 1988a). Knowledge of self is gained as individuals synthesize experiences and transform perceptions of these experiences into knowledge. Sensitivity to self and others involves recognition and acknowledgment of feelings in self and others as well as acceptance of self and others (Watson, 1996). Self-acceptance, an aspect of sensitivity to self, forms the foundation for one's ability to recognize and develop feelings and strive toward self-actualization.

Self-esteem, the variable related to sensitivity to self and others, involves self-acceptance, self-respect, and feelings of self-worth (Rosenberg, 1979). As an evaluative component of the self-concept, self-esteem reflects global self attitudes at a particular point in time (Rosenberg, 1979). When individuals possess self-esteem they are satisfied with themselves and can acknowledge their failures. Individuals with high self-esteem
feel they are active agents in their lives. Similarly, Watson (1979) supports the belief that individuals who strive toward self-actualization are ruled by their own characters rather than the rules imposed by society. There is an inner freedom and control over one's life. Watson (1979) believes that a nurse must be genuine and authentic before engaging in helping-trust relationships. Furthermore, individuals must first care and love themselves before they can care for others (Watson, 1988a). Based on this assumption, it follows that individuals with low self-esteem may not be able to develop caring relationships with others nor experience professional nurse autonomy.

The carative factor, creative problem solving caring process, is closely linked to both transpersonal teaching-learning and sensitivity to self and others. The creative problem solving caring process includes all domains of knowledge, imagination, clinical judgment, creative use of the nursing process and involves the full use of self in understanding the whole person (Watson, 1979; 1989b; 1996). Watson (1988a) contends that nurses must possess a strong knowledge base and clinical competence to provide human care. Although Watson does not distinguish between actual and perceived clinical competence, she claims that competence is closely associated with achievement. The human need for achievement involves self-approval, positive recognition from others, social acknowledgment of skills, and an internal sense of satisfaction (Watson, 1979). A nursing student's identity as a competent nurse is dependent upon a self-perception of competence (Loving, 1993). Self-doubt may lead to problems with analytic thinking and limit the student's ability to focus on the client. Murray (1989) further claims that caring interactions may be associated with intellectual competence, a sense of competence, and
autonomy. Faculty who communicate a willingness to help students think through patient
problems without the threat of evaluation promote the development of perceived clinical
competence (Loving, 1993). According to Hanson and Smith (1996), a caring connection
between nursing students and nursing educators enhances students feelings of comfort,
confidence, competence, and motivation. These feelings, in turn, motivate students to
study harder. Therefore, perceptions of instructor caring was linked to perceived clinical
competence of nursing students as well as to self-esteem.

Transformation, a process of evolutionary change and self-actualization, occurs
during the human caring experience (Sheston, 1990). As the nursing educator and nursing
student interrelate through caring, transformation of each person occurs. During the
transformative process, both learn and develop an increased awareness of their caring
potential and relatedness to others (Sheston, 1990; Watson, 1988a). For this study the
attitudinal component of professional nurse autonomy, which is based on the nurse’s
caring potential and relatedness to others, is an outcome of the transformation process.
The attitudinal component of professional nurse autonomy involves recognition of one’s
own needs and rights and values connectedness and responsibility for others (Boughn,
1995). The outcome variable reflects interaction of all the study variables through
transpersonal caring. Theoretical substruction links the theoretical and operational
components of the study (Figure 1).
Figure 1.

Theoretical Substruction Linking the Model for Predicting the Attitudinal Component of Professional Nurse Autonomy with Watson's Theory of Transpersonal Caring

Theory of Transpersonal Caring

\[ \text{Carative Factors} \]

Theoretical Constructs

Sensitivity to Self and Others

Transpersonal Teaching Learning

Creative Problem Solving Caring Process

Predictor Variables

Self-Esteem

Perceptions of Instructor Caring

Perceived Clinical Competence

Transpersonal Caring

Outcome Variable

Attitudinal Component of Professional Nurse Autonomy

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Hypotheses

The following hypotheses, based on both research and theory, were used to estimate a model for predicting the attitudinal component of professional nurse autonomy.

1. Nursing students' perceptions of instructors' caring behaviors have a direct positive effect on their self-esteem.
2. Nursing students' perceptions of instructors' caring behaviors have a direct and indirect positive effect on their perceived clinical competence.
3. Nursing students' perceptions of instructors' caring behaviors have a direct and indirect positive effect on the attitudinal component of professional nurse autonomy.
4. Nursing students' self-esteem has a direct positive effect on their perceived clinical competence.
5. Nursing students' self-esteem has a direct and indirect positive effect on the attitudinal component of professional nurse autonomy.
6. Nursing students' perceived clinical competence has a direct positive effect on the attitudinal component of professional nurse autonomy.
7. Nursing students' perceptions of instructor caring behaviors, self-esteem, and perceived clinical competence together are better predictors of the attitudinal component of professional nurse autonomy than any one variable alone.
8. Transpersonal teaching-learning carative factor (perceptions of instructor caring behaviors) interacts with sensitivity to self and others (self-esteem) and creative problem-solving caring process (perceived clinical competence) to influence transpersonal caring (attitudinal component of professional nurse autonomy).

These hypotheses proposed the direct and indirect effects of the predictor variables on each other and on the criterion variable, the attitudinal component of professional nurse autonomy. Hypothesis eight, derived from Watson’s (1988a) Theory of Transpersonal Caring, was formulated to test three of Watson’s carative factors. The initial model for predicting the attitudinal component of professional nurse autonomy reflected the interaction of the hypotheses to form hypothesis eight (Figure 2).

Theoretical and Operational Definitions

The variables for this study were the attitudinal component of professional nurse autonomy, perceived clinical competence, perceptions of instructor’s caring behaviors, and self esteem. The following theoretical and operational definitions were employed in this study.

**Attitudinal Component of Professional Nurse Autonomy:** The attitudinal component of professional nurse autonomy, an outcome of the student’s transformation process, involves recognition of one’s own needs and rights and values connectedness and responsibility for others (Boughn, 1995). The variable was measured using the total score on Boughn’s (1995) Autonomy, the Caring Perspective (ACP) instrument (Appendix A).
Figure 2.

Initial Path Analytic Model: Attitudinal Component of Professional Nurse Autonomy (Hypothesis 8)

Perceptions of Instructor Caring (Direct & Indirect)

$H_1$

$H_2$

$H_3$

Perceived Clinical Competence (Direct)

Attitudinal Component Professional Nurse Autonomy (criterion)

$H_6$

Self-esteem (Direct & Indirect)

$H_4$

$H_5$

$H_7$

Single Lined Arrow: Linear Regression Equation

Bold Arrow: Multiple Regression Equation

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Perceived Clinical Competence: Perceived clinical competence is nursing students’ confidence and pride in their knowledge and skills (Kramer & Schmalenberg, 1993). This variable was measured by the total score on Mozingo and Thomas’ (1995) Perceived Clinical Competence (PCCS) Scale (Appendix B).

Perceptions of Instructors’ Caring Behaviors: Students’ perceptions of instructors’ caring behaviors is the communication between the educator and student of a holistic concern for the student. This concern involves the educator’s professional caring approach, mutual trust, a professional teacher-student working relationship, and student responses to the caring encounter (Halldorsdottir, 1990; Miller, Haber, & Byrne, 1990). The total score on Golden’s (1993) semantic differential instrument was used to measure student perceptions of instructor caring behaviors (PICB) (Appendix C). The instrument, which includes aspects of care derived from Leininger (1986) and Watson’s (1988a) theories of caring, was validated by Watson (personal communication, February 4, 1999) as measuring perceptions of instructor caring.

Self-Esteem: Self-esteem, the evaluative component of the self-concept, encompasses self-acceptance, self-respect, and feelings of self-worth (Rosenberg, 1979). These aspects of self provide a foundation for one’s ability to recognize and develop feelings and instill harmony between the self as perceived and the self as experienced (Watson, 1988a; 1996). Self-esteem was measured using the total score on Rosenberg’s (1965) Self-Esteem Scale (RSES) (Appendix D).
Assumptions

The basic assumptions for the study were:

1. Human caring is relational, connected, transpersonal, and intersubjective (Watson, 1988a).

2. Individuals must first care and love themselves before they can care for others (Watson, 1988a).

3. Human caring is learned through the experience of caring between teachers and students (Tanner, 1990a; Watson, 1988b).

4. Caring is the most basic mode of being and is central to the practice of professional nursing (Benner & Wrubel, 1989).

5. Professional nurse autonomy, a critical attribute for achieving full professional status, is evident in the caring behaviors and attitudes of individual nurses (Boughn, 1995; Moloney, 1992; Schutzenhofer, 1988; Styles, 1982).

6. Attitudes influence how professionals view their work and reflect the way they are socialized to the profession (Hall, 1968).

7. Perceptions are derived from social interactions and influence attitude development, performance, achievement and one’s view of the world (Arthur, 1992; Fawcett, 1989; Watson, 1988a).

8. Perceptions and attitudes are amenable to measurement (Burns & Grove, 1997)
9. Professional nurse autonomy is an expectation of baccalaureate nursing education (Boughn, 1995; Schutzenhofer, 1988).

Significance

If professional nurse autonomy is an important aspect of professional practice, then it is critical to identify predictors of this attribute in nursing students. To insure that nursing students complete their basic education programs with the confidence needed to practice in the 21st century, faculty need to critically examine essential attributes such as professional nurse autonomy (Schutzenhofer, 1992). Attitudes influence how professionals view their work and reflect the way they are socialized to the profession (Hall, 1968). This study tested factors that may effect the attitudinal component of professional nurse autonomy. By identifying factors that effect the attitudinal component of professional nurse autonomy, faculty may be able to nurture its development in their students. An understanding of the attitudinal component of professional nurse autonomy prior to entry into practice also provides a baseline for designing and empirically testing approaches to promote the attribute.

The nursing education environment is where nursing students learn to “think nursing” (Perry, 1985, p. 31). In a sense, the personhood of the becoming nurse is the core of nursing education (Berman, 1988). Therefore, the development of professional attitudes and values that are crucial to the nursing profession should be considered within the context of nursing education (Perry, 1985). The attitudinal component of professional nurse autonomy is nurtured during the socialization process in nursing education and is
the basis for autonomy related behaviors in practice (Boughn, 1995; Schutzenhofer, 1987).

To reflect the core of nursing, professional practice behaviors should be consistent with a caring ideology (Benner & Wrubel, 1989; Watson, 1988a). By acknowledging the complex and dynamic relationship between autonomy in nurses and caring, the nursing profession can move forward into the 21st century (Watson, 1990). Both the National League of Nursing (NLN) and the American Association of Colleges of Nursing (AACN) have endorsed caring as a core value in nursing education and practice (AACN, 1998; Tanner, 1990b). The AACN acknowledged autonomy as a professional behavior that epitomizes the caring professional nurse. The centrality of caring-healing relationships as a basis for all health professional’s education was also recognized by the Pew-Fester task force report (1995). By uniting the seemingly contradictory values of autonomy and caring in this study, an empirical basis for future studies on professional nurse autonomy is provided.

Although caring and autonomy are viewed as core values for the professional nurse, the study of these values is often difficult. The knowledge and techniques embedded in the practice of caring are often invisible (Swanson, 1991; Tanner, 1990b). Even though caring is essential to the teaching-learning process, research on caring in nursing education is inconclusive (Berman, 1988; Kosowski, 1995; Miller, Haber, & Byrne, 1990). It is the subtle socialization that occurs between nursing educators and students that illuminates how students learn to care (Tanner, 1990b). To make visible the invisible practices of caring, nursing educators and students must be involved in an
ongoing process of developing self-awareness as caring persons. Nurse educators must seek ways to construct and transmit knowledge about human caring (Watson, 1989a). In order to provide appropriate educational experiences related to caring, research to determine how students perceive caring in nursing education is needed. This study provides clues about the inculcation of professional nurse autonomy attitudes and caring as learned during the educational process.

By using Watson's (1988a) Theory of Transpersonal Caring as the theoretical framework, concepts related to caring in nursing education were linked with professional nurse autonomy and tested. According to Fawcett (1993), the theory is testable. Although Watson (1989b) encouraged the use of qualitative methods that are consistent with human science, she did not exclude other methods. She agreed that the factors associated with caring need to be further delineated, operationalized, expanded, and researched. To study human caring empirically, operational definitions of the 10 carative factors are needed (Fawcett, 1993). This study links three of the carative factors to operational definitions that were used to test the theory.

Predictors of the attitudinal component of professional nurse autonomy for this study were: perceptions of instructor caring behaviors, self-esteem, and perceived clinical competence. Based on Watson's (1988a) Theory of Transpersonal Caring, transpersonal caring and consequently the attitudinal component of professional nurse autonomy may be nurtured through the interactions that occur between a caring nursing educator and student. Caring can only be viewed through the eyes of the one caring and the one receiving the care. Rather than the legitimate curriculum, the hidden curriculum
reveals the true nature of the student-teacher relationship and may be the most important aspect of how students learn to care (Tanner, 1990a). Watson (1996) places a high value on the subjectivity-intersubjectivity as evidenced by perceptions of relationships between the nurse and others. Hence, perceptions of instructor’s caring behaviors reveal the often invisible dimensions of how nursing students learn to care.

Watson (1988a) claims that the self forms the basis for all caring relationships. When there is disharmony between the real and ideal self, individuals may become dissatisfied and maladjusted. In nursing education, a dilemma emerges for nursing students who attempt to provide care when their self-images are relatively fragile and vulnerable (Berman, 1988). Although the concept of self has profound consequences and ramifications for both the individual, nursing and society, most scholars have not reached consensus on what the “self” entails (Rosenberg, 1979). Furthermore, the number and abstractions of related concepts has made the study of the self even more difficult (Wylie, 1989). Although numerous nursing studies use various abstractions of the “self” to explain the development of the nurse’s professional role, the findings are often inconsistent. Arthur (1992) attempted to resolve the confusion by developing an instrument to measure the professional self-concept. He recognized that additional study was needed to determine the relationship between the personal self and the professional self. This study adds to the body of knowledge about the relationship between personal self views or self-esteem and the development of professional attitudes such as professional nurse autonomy.
Several authors suggest that the inability to function as a competent nurse is a result of inadequate socialization to the professional role (Clayton, Broome, & Ellis, 1989; Dufault, 1990; Itano, Warren, & Ishida, 1987; Scheetz, 1989). Before nursing students can practice competently, they must have confidence and pride in their knowledge (Kramer & Schmalenberg, 1993). A high valuation of self related to the knowledge and skills associated with practice is needed before one can exhibit professional nurse autonomy. Although nursing students may have the desire to care, their perceived clinical competence may limit their ability to care (Berman, 1988). As an antecedent of professional nurse autonomy, perceived clinical competence may also be a precursor to actual competence. This study provides evidence of the influence of perceived clinical competence on caring and the attitudinal component of professional nurse autonomy.

To measure the attitudinal component of professional nurse autonomy in a student population, Boughn’s (1995) Autonomy, the Caring Perspective (ACP) instrument was employed. Prior use of this instrument with a nursing student population is limited. This study adds to a developing knowledge of the attitudinal component of professional nurse autonomy in female baccalaureate nursing students. Boughn (1995) claims that her instrument evaluates the efficacy of the educational process by measuring the attitudinal component of professional nurse autonomy in nursing students. This study offers insight about use of the ACP to measure an outcome of baccalaureate nursing education.

Although the focus of this study is on the attitudinal component of professional nurse autonomy in nursing students, the significance of this study to nursing practice...
cannot be ignored. Today, more than ever, changes in the health care system demand that nurses be more autonomous (Schutzenhofer, 1992; Watts, 1990). An electronic mail message received from a nursing administrator through the Nurse Research list discussion group illustrates the importance of this attribute to current nursing practice. L. J. Burke (personal communication, June 20, 1997) stated “professional nursing autonomy is VERY valued, as research has supported that in hospitals where nurses practice autonomously, the patients have lower morbidity and mortality rates...autonomy is something our administration is very interested in teaching, promoting, mentoring, etc...”

This study provides a baseline for future studies of the relationship between professional nurse autonomy and patient outcomes.

Professional nurse autonomy is recognized as an essential skill that supports professional practice for nurses in the 21st century (Schutzenhofer, 1992). Already the nurse’s role is changing from one that emphasizes technical skills to a role involving greater autonomy and decision making (Bevis & Watson, 1989; Rideout, 1994). In the current era of health care reform, it is important to educate nurses as full health care professionals instead of preparing them to be institutional employees (Watson, 1988b). As the health care system of the future continues to evolve, nurses need to take a proactive role in identifying the elements of health care that are unique to nursing and of value to the consumer (Gardner, 1992; Parse, 1993). To become an integral part of the health care system of the 21st century, nurses must identify the value of their caring to the consumer (Gardner, 1992; Watson, 1996). This study recognizes and links two core values of nursing, caring and professional nurse autonomy. Evidence of how these values...
are nurtured during the educational process provides a foundation for future studies.

Chapter Summary

The attitudinal component of professional nurse autonomy constitutes part of the foundation toward the achievement of full professional status (Moloney, 1992; Porter, 1992; Schutzenhofer, 1988). Recent research suggests that there are stages in the development of professional nurse autonomy (Dempster, 1994). The attitudinal component of professional nurse autonomy is conceived during the nursing education process. Unless these attitudes are positive, professional nurse autonomy behaviors may not be realized in practice.

Several authors suggest that autonomy in women is developed within the context of relationships and the ethics of caring (Boughn, 1992; Gadow, 1995; Gardner, 1992; Gilligan, 1982; Schutzenhofer, 1983; Watson, 1990). Problems with the study of the attitudinal component of professional nurse autonomy may be related to definitions of professional autonomy that reflect interpersonal aggressiveness and an achievement orientation and not the affiliative and caring ideology of the profession (Boughn, 1995; Grinnell, 1989; McKay, 1983). Watson's (1988a) Theory of Transpersonal Caring provided the theoretical framework for linking caring with professional nurse autonomy. This study used a theoretical and operational definition of the attitudinal component of professional nurse autonomy that reflected Watson (1988a) and Benner and Wrubel's (1989) theories of caring.
The primary purpose of the study was to specify a model for predicting the attitudinal component of professional nurse autonomy in female baccalaureate nursing students. A secondary aim was to test three carative factors derived from Watson's Theory of Transpersonal Caring. Based on Watson's Theory and a concept analysis of professional nurse autonomy (Wade, 1999), perceptions of instructor caring behaviors, self-esteem, and perceived clinical competence were hypothesized as predictors of the attitudinal component of professional nurse autonomy.

To develop a model for predicting the attitudinal component of professional nurse autonomy in female baccalaureate nursing students, eight hypotheses were proposed. The first six hypotheses were designed to test relationships between each of the predictor variables as a preliminary step to the final model and theory testing hypotheses. The theory testing hypothesis, derived from propositions in Watson's (1979) Theory was: Transpersonal teaching-learning carative factor (perceptions of instructor caring behaviors), interacts with sensitivity to self and others (self-esteem) and creative problem-solving caring process (perceived clinical competence) to promote transpersonal caring (attitudinal component of professional nurse autonomy).

This study was significant in that it provided insight into the factors that effect the development of the attitudinal component of professional nurse autonomy in female baccalaureate nursing students. To nurture the development of the attitudinal component of professional nurse autonomy, faculty need to consider these factors. Nursing education has been criticized for failing to support the development of professional autonomy among nursing students. Yet, most studies have failed to isolate professional nurse
autonomy as an essential outcome of the educational process. Past studies have used the same instrument to study educational characteristics associated with autonomy in both practicing nurses and nursing students. Before professional nurse autonomy can be taught, promoted, or mentored and used to predict patient outcomes, research about factors associated with development of the attitudinal component is needed. Except for Boughn's (1995) study, research has not linked professional nurse autonomy to a nursing theory of caring. By using Watson's (1988a) Theory of Transpersonal Caring to link the study concepts, this study also contributed to the expansion of knowledge on caring in nursing education.
CHAPTER II
REVIEW OF THE LITERATURE

The purpose of this study was to test a model for predicting the attitudinal component of professional nurse autonomy in female senior baccalaureate nursing students. The criterion variable, the attitudinal component of professional nurse autonomy, was based on a nursing caring philosophy (Boughn, 1995). Watson's (1988a) Theory of Transpersonal Caring, therefore, provided the theoretical framework for this study. Following a description of Watson's Theory of Transpersonal Caring, a rationale for using Watson's Theory instead of other related theories of caring is provided. Research used to empirically test Watson's Theory provides additional support for use of her theory. The theoretical and research literature addressing the predictor variables, perceptions of instructor caring behaviors, self-esteem, and perceived clinical competence are reviewed in the next three sections. To establish a foundation for understanding the study definition of professional nurse autonomy, the final section includes theoretical and research literature on professional nurse autonomy.

Theoretical Framework

Watson's Theory of Transpersonal Caring

A philosophy of moral commitment to protect human dignity and preserve humanity forms the foundation of Watson's (1988a) Theory of Transpersonal Caring. Based on a unitary consciousness between the carer and the other, humans cannot be treated as objects that are separate from self, others, nature, and the entire universe.
(Watson, 1996). Hence, the theory acknowledges a unity between the mindbodyspirit/nature that encompasses connectiveness between and among persons, environments and the universe. Watson emphasizes the importance of the inner self of both the carer and the other. The self continuously strives for self-actualization as individuals question their own essence and moral behavior toward others. The relationship between the care giver and care recipient promotes growth as experiences add to the unique phenomenal field of each individual.

Although Watson claims that the theory can be used to explain the whole of nursing, the major focus of the theory is on the human component of caring and the interpersonal process that occurs between the care giver and care recipient (Fawcett, 1993). Care givers help others to resolve illness or disharmony and find meaning through the inner self (Watson, 1988a). The assumptions of the theory are related to human care values for nursing and are accepted as valid by those who subscribe to the theory (Morris, 1996). Watson’s (1988a) 11 assumptions are listed in Table 2.

The major conceptual elements of the theory are: transpersonal caring relationship, carative factors, and caring occasion/moment (Watson, 1996). Latent dimensions of the theory that are still evolving include a caring (healing) consciousness and connections which encompass a caring-healing consciousness and energy.

A transpersonal caring relationship is a specific type of professional human-to-human contact that enhances the self knowledge of the carer and the other to restore inner harmony. The nurse, as carer, uses every dimension of the self as a resource for the
Table 2

Assumptions: Watson’s Theory of Transpersonal Caring (1988a, p. 32-33)

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1. Care and love are universal and mysterious cosmic forces that are comprised of primal and universal psychic energy.</td>
<td></td>
</tr>
<tr>
<td>2. To nourish and sustain our humanity and evolve as a civilization, individuals must recognize that people need love and care.</td>
<td></td>
</tr>
<tr>
<td>3. Nursing is a caring profession. As such, the ability to sustain a caring ideology in practice will influence the development of civilization and determine the profession’s contribution to society.</td>
<td></td>
</tr>
<tr>
<td>4. Individuals must first care and love themselves before they can respect and care for others.</td>
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</tr>
<tr>
<td>5. Since the beginning of nursing’s history, human care and caring for people with health and illness concerns has been a focus of the profession.</td>
<td></td>
</tr>
<tr>
<td>6. Caring is the essence of nursing and the unifying force within nursing practice.</td>
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<tr>
<td>7. Human care, which can occur at both the individual and group level, is complementary to the science of curing.</td>
<td></td>
</tr>
<tr>
<td>8. Because the quality of caring has been threatened by an increased emphasis on technology and bureaucratic constraints, sustaining a caring ideology in nursing is critical.</td>
<td></td>
</tr>
<tr>
<td>9. Preservation and advancement of the human care ideology is both a current and future epistemic and practice issue.</td>
<td></td>
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<tr>
<td>10. Human caring can only be effectively demonstrated and practiced interpersonally.</td>
<td></td>
</tr>
<tr>
<td>11. The commitment to human care ideals in theory, practice, and research are the profession’s social, moral, and scientific contributions to humanity.</td>
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professional relationship. Therefore, self-knowledge of the carer is an essential aspect of the professional relationship.

Transpersonal caring is realized through the utilization of 10 carative factors (Watson, 1996). As nursing interventions associated with transpersonal caring, the carative factors are the core of nursing and the primary ingredients of effective nursing practice (refer to Table 1, page 10). Although not new to nursing, they provide a language, structure and order for nursing education and practice. As such, the factors help define the elements of nursing and are associated with a nursing caring transaction within a given caring occasion/moment.

A caring occasion/moment is a particular type of event that evolves from the transpersonal caring relationship (Watson, 1996). When two people with their unique histories and phenomenal fields choose to engage in a human-to-human care transaction, a caring occasion/moment occurs. A person’s phenomenal field includes all of the person’s subjective experiences and provides a frame of reference for the individual that can only be accessed indirectly by others through empathetic understanding. The phenomenal field of the caring occasion is unique to the event and greater than the actual time-bound occasion. When a caring relationship between the carer and the other develops, both individuals are able to disclose their inner self to each other. Through self-disclosure each person discovers more about self and the humanity of each other. In essence, each learns how to be more human and consequently more caring.

Fawcett (1993) described the definitions and descriptions of the transpersonal caring dimensions and the carative factors as nonrelational propositions. However,
Watson (1989b) linked transpersonal caring to the carative factors with one relational proposition, stating that “Transpersonal caring is the full actualization of the carative factors in a human-to-human transaction” (p. 232).

**Competing Theoretical Perspective**

Caring is recognized as the central focus and unifying domain of nursing and has been depicted as a human trait, a moral imperative or ideal, an interpersonal relationship, and a therapeutic intervention (Leininger, 1988; Morse, Solberg, Neander, Bottorff, & Johnson, 1990). Although nurse theorists have identified caring as a paradigm unique to nursing, the lack of consensus and the elusiveness of the concept make the study of caring difficult (Morse et al., 1990). Therefore, researchers must be clear on the rationale for selecting a particular theory of caring for the study of related variables. The operational definition of the attitudinal component of professional nurse autonomy was based on Watson’s (1988a) and Benner and Wrubel’s (1989) caring theories. Noddings’, however, has proposed a theory that is specific to caring in education. Following is a brief overview of Benner and Wrubel’s (1989) Theory of Caring and Noddings’ (1988) Theory of Caring in Education with rationale for selecting Watson’s (1988a) Theory of Transpersonal Caring.

Benner and Wrubel (1989) believe that caring is the foundation from which all nursing practice evolves. In their theory of caring, Benner and Wrubel concur that new knowledge is derived from the study of expert nurses. Their theory is based upon the Heidegger view that theory about humans is interpretive, not mechanistic or causal. This
study was designed to test a causal model of the attitudinal component of professional nurse autonomy in nursing students. Because the population was students, not expert nurses, and the study design was quantitative, use of Benner and Wrubel's theory would not be appropriate.

Another theory that is relevant to the study of caring in education is Noddings' Theory. Noddings (1988) asserts that caring occurs in an educational environment that promotes modeling, dialogue, practice, and confirmation. Just as Watson's transpersonal caring relationship involves the communication of caring behaviors from one individual to another, Noddings labeled the process as modeling. To facilitate expression of caring, interactions between students and teachers require open dialogue that is mutual and reciprocal. Through dialogue, shaping and confirmation of the individual's ethical self evolves. To learn caring, modeling and dialogue must emerge together in the practice setting. According to Noddings (1984), the most important aspect of a curriculum that endorses caring is the process of confirmation. Confirmation, which is dependent upon modeling, dialogue, and practice experiences, helps to shape and confirm the individual's ethical ideal.

Noddings' (1984) theory is consistent with Watson's (1988a) theory of Transpersonal Caring. In fact, Watson claimed (personal communication July 22, 1998) that Noddings has cited her theory. Teaching moments as described by Noddings are consistent with Watson's (1988a) "caring occasions" as nurse educators respond to the subjective meanings of students' behavior. One major difference in Noddings' theory is that caring requires a putting aside of the self in order to be receptive and responsive to
the experiences of the other (Kuhse, 1997). In contrast, Watson (1988a) emphasizes the importance of self in any relationship. Total engrossment with the other by setting aside the self may not be an appropriate position to take in nursing or realistic with every nurse-client encounter (Kuhse, 1997). Watson (1988a) mediates this stance by commenting that caring can begin when the carer enters the life space of the other.

Watson’s (1988a) emphasis on the relationship-centered focus of nursing also explains the relationship that occurs between nursing students and instructors. Learning to become a professional is enhanced by a refocusing of the teaching learning process from doing to being in a relationship (Watson, 1989a). Just as caring relationships between the client and nurse are vibrant human processes, “knowledge development and teaching-learning processes are distinctly alive anticipatory human processes” (Watson, 1989a, p.41). Watson (1989a) defined curriculum as “those transactions and interactions that take place between students and teachers and among students with the intent that learning takes place” (p. 72).

The major reason for using Watson’s theory for this study is that Nodding’s theory emerges from education. While Nodding’s work is relevant to nursing education, Watson’s theory contributes to the body of knowledge in nursing and may explain the transformation that occurs in nursing education. By using a nursing theoretical basis for this study, nursing theory is strengthened (Watson, personal communication, July 22, 1998). If caring is an essential paradigm unique to nursing, then use of a nursing theory in the study of nursing phenomenon is essential. A caring teaching-learning process that is based on a nursing perspective also enhances students’ ability to care as nurses (Cohen,
Although most students enter nursing with a basic propensity for caring, learning to care as a professional nurse must be affirmed and enriched by the educational environment (Beck, 1991; Dillon & Stines, 1996; Higgins, 1996; Tanner, 1990b). Watson’s theory also supports the study’s definition of professional nurse autonomy by offering a foundation for the development of the professional self (Boughn, 1995; Watson, 1989a; Watson, 1997).

**Research Testing Watson’s Theory**

Most of the current research on Watson’s theory used her proposed phenomenological-existential methodology to provide support for her theory. Watson (1989b) recognized that factors associated with caring may need to be further delineated, operationalized, expanded, and researched. Methods for empirically measuring the concepts and propositions of the theory are beginning to emerge (Fawcett, 1993; Stanfield, 1991). Fawcett (1993) claims that Watson’s theory is testable. Theories are testable if concepts can be empirically observed and propositions measured (Fawcett, 1995).

Silva and Sorrell (1992) contend that theory can also be tested through approaches other than empirical testing. Philosophy and epistemology are integral to the testing of nursing theory. Many of the solved and unsolved problems of epistemology influence the methods used to test, interpret, and apply nursing theory to practice. As a theory based on a philosophy of moral reasoning, Watson (1996) claims that transpersonal caring is actualized through the ten carative factors that are associated with
a human-to-human caring transaction within a given caring occasion. The carative factors as the primary ingredients of nursing practice help define nursing knowledge within its own paradigm. Therefore, the following review is limited to those quantitative and qualitative studies that were designed to test the carative factors.

One of the earliest studies to test Watson's carative factors was conducted by Cronin and Harrison (1988). The Caring Behaviors Assessment (CBA) instrument, which incorporated Watson's carative factors, was used with myocardial infarction patients to identify nursing behaviors perceived as caring. Cronin and Harrison omitted the problem solving carative factor because of their belief that problem solving is inherent in all of nursing practice. The first three carative factors were combined into one subscale while the other six factors were each represented by separate subscales. Content validity was established by a review of four experts familiar with Watson's theory. Items were reviewed for congruence with its particular subscale. The final instrument, consisting of 63 items, was administered to a sample of 17 men and five women hospitalized following a myocardial infarction. Cronbach's alpha for each of the subscales ranged from .66 to .90. Although the researchers established the instrument's reliability, the small sample size precluded performance of factor analysis. Other studies with the same instrument have yielded more trustworthy results (Huggins, Gandy, & Kohut, 1993; Parsons, Kee, & Gray, 1993; Stanfield, 1991).

In an attempt to validate the carative factors of Watson's theory and to determine the reliability and validity of the CBA, Stanfield (1991) studied patients' perceptions of caring behaviors with a sample of 50 men and 54 women hospitalized on a medical-
surgical unit. With this sample, the Cronbach's coefficient alpha of the CBA was .96 with subscale ranges from .76 to .89. Only two of the 63 items had item-total correlations of less than .3. Exploratory factor analysis yielded 16 factors with eigenvalues ranging from 1.6 to 29.9, accounting for 80% of the variance. Using varimax rotation, however, only four factors had three or more items loading at the .4 level or greater, accounting for 50.4% of the explained variance. Fifty-six of the items loaded on factor 1 while only three items loaded on factor 2. Except for three items that did not load on any of the four factors, the remaining 23 items loaded on more than one factor.

Based on these findings, Stanfield (1991) concluded that caring is a broad concept that cannot be supported by Watson's (1979) discreet carative factors. According to Watson (1979), however, the carative factors interact in a holistic manner. Therefore, Stanfield's (1991) contention that the carative factors are not supported empirically may not be justified. The CBA has only been used to measure patients' perceptions of nurse caring behaviors. Based on a review of literature, Stanfield (1991) claimed that patient perceptions of nurse caring are different than those of nurses.

Another instrument designed to measure patient perceptions of nurse caring, the Caring Assessment Tool (CAT) (Duffy, 1992), was amended to include items specific to nurse caring. Duffy (1993) claimed that the amended CAT-A was based on Watson's Carative Factors. Using the CAT-A, the impact of nurse manager's caring behaviors on staff nurse satisfaction and retention was studied. The CAT-A, a 94-item Likert type scale, purported to measure low to high caring. Duffy employed a descriptive correlational design with a sample (N = 56) of male (7.1%) and female (92.9%) staff...
nurses. A significant but weak positive relationship ($r = .36, p < .007$) between nurse manager caring behaviors and staff nurse job satisfaction explained 13% of the variance in staff nurse job satisfaction. An inverse relationship between nurse manager caring behaviors and nursing turnover was not supported. Duffy claimed that the findings supported Watson's proposition that caring interactions promote satisfaction and growth. Although the study instrument yielded a Cronbach Alpha of .98, the researcher did not report a factor analysis or relate the findings to Watson's carative factor. Furthermore, content validity was not assessed. Content analysis of qualitative responses to the question, “If you were asked to advise nursing coordinators on what they need to do differently, what would you advise?” provided some interesting responses (Duffy, 1993, p. 372). Responses were divided into the following four themes: communication, open, trusting unit culture, investment in staff, and sharing oneself. Again, however, Duffy did not relate these findings to Watson's theory.

Another instrument, the Caring Behaviors Inventory (CBI), was originally designed to identify words and phrases used by registered nurses that represented nurse caring with patients (Wolf, 1981). Wolf developed the CBI by selecting 75 caring words and phrases from the literature. The items on the CBI, arranged in a 4-point Likert scale, were strongly influenced by Watson's Theory with specific reference to the 10 carative factors. Although reliability testing was not conducted, Wolf claimed that content validity was established by the linkage of the items to the nursing, sociological, psychological, and philosophical literature on caring.
In a pilot study, 97 nurses ranked the items on the CBI (Wolf, 1986). Factor analysis of the 75 caring words did not reveal a pattern. Therefore, Wolf decided to retain the 10 highest ranked items for the scale. No attempt was made to relate the 10 highest ranked items on the scale to Watson’s Carative Factors. Wolf also found that 60% of the items on the CBI were correlated at the .05 level of significance. The strength of the relationships, however, was not published. According to Wolf, the findings confirmed the notion that caring is a complex multidimensional concept.

In a more recent study, Wolf, Giardino, Osborne, and Ambrose (1994) tested a revised CBI with a sample of 278 nurses and 263 patients. The revised instrument contained 43 items instead of the 75 items included on the original tool. With the nurse sample, test-retest reliability ($r = .96, p = .000$; $\rho = .88, p = .000$) and internal consistency (Cronbach's alpha = .83) were established. The combined nurse and patient sample yielded an alpha coefficient of .96. Although Wolf et al. (1994) claimed that a panel of four nurse experts established content validity, the nature of their expertise or a content validity index were not reported.

Using contrasted groups to establish construct validity, the total scores of both patients and nurses were compared. T-test results indicated that the groups were significantly different ($t(539) = 3.01, p = .003$). Because mean scores were not reported, the nature of the difference was not evident. An exploratory factor analysis using the principal components method with varimax rotation revealed a five dimension solution as determined by eigenvalues greater than one and factor loadings greater than .40. The five dimensions of caring behaviors identified included: respectful deference to the other,
assurance of human presence; positive connectedness; professional knowledge and skill; and attentiveness to the other's experience.

Although Wolf et al. (1994) did not link the carative factors to the dimensions, they concluded that the findings complemented those from other interpretive studies of Watson's Theory. Their claim that the five factors related to Watson's Transpersonal Caring Theory was based on the contention that nurse caring exists in the consciousness. However, the findings did not confirm that the dimensions reflect the interconnectedness and intersubjectivity of Watson's vision of the human-caring consciousness and relationships (Wolf et al., 1994). A significant finding, however, was the difference in views of nurse caring behaviors of nurses and patients.

Attributes of nurse caring, based on Watson's carative factors, were studied with a random sample of 135 nurses from various levels of practice (Nyberg, 1990). Using Nyberg's Caring Attributes scale and Larson's (1984) Care-Q instrument, human care and economics in the hospital nursing environment was examined. Nyberg's scale, based on Watson's carative factors, was pilot tested with an unspecified number of graduate students. The Cronbach alpha coefficients for the pilot test yielded subscale scores ranging from .87 to .98. Larson's (1984) Care-Q instrument was used to study specific nurse caring behaviors. According to Peeters, (personal communication, August 12, 1998) a colleague of Watson's from the Center for Human Caring, the Care-Q may be associated with Watson's theory. Study participants were asked to indicate the importance of caring (ideal), actual caring practices (actual), change in practice of caring from five years ago (five year), and perceptions of supervisor caring (supervisor) on
Nyberg’s scale and to complete the Care-Q instrument. Each of the categories on Nyberg’s scale were subscales measuring human caring and the economic environment.

Results indicated that nurses viewed caring as “very important”, they used the attributes “often”, they practiced the attributes “about the same” as five years ago, and that supervisors scored lower than nurses on caring attributes. Although the researcher did not relate findings to Watson’s carative factors, inspection of Nyberg’s instrument indicates that the statements are very similar to the carative factors. Peeters (personal communication, August 12, 1998) also claimed that Nyberg’s Attribute’s of Caring Scale was derived from Watson’s carative factors. Cronbach alpha coefficient of the instrument yielded results similar to the pilot study, ranging from .85 to .97. Validity indices, however, were not reported. Although analysis of variance was used to determine any significant differences between the sub-scales of Nyberg’s instrument, the statistical findings were not published. Instead, only mean scores and standard deviations were reported. Findings associated with the use of the Care-Q were also not reported. Therefore, conclusions about whether the study findings support the theory cannot be made.

Swanson (1991) developed a middle range theory of caring in a series of three qualitative phenomenological investigations. A definition of caring and five components was derived from a study of 20 women who had recently miscarried, another study of 19 care providers in the newborn intensive care unit, and a third study of 8 young mothers who had been the recipients of a long-term public health nursing intervention. The five components of the caring process were: knowing, being with, doing for, enabling, and
maintaining belief. Following a description with anecdotes from participant interviews, Swanson related each of the components to Watson's (1985) carative factors and Benner's (1984) helping role of nursing. By demonstrating congruence between the caring processes associated with Watson's carative factors and Benner's description of the nurse's helping role, Swanson claimed that her theory had validity beyond the perinatal context of practice. Cross-validation of Swanson's theory with Watson's carative factors provided a basis for understanding why the carative factors may be perceived as helpful by clients. In addition, support for caring as a central and unifying nursing phenomenon was offered.

Using a qualitative, phenomenological methodology, Lenihan (1995) studied the meaning of nurse caring in seven hospitalized medical surgical patients. Tape recorded semi-structured interviews were transcribed and analyzed using a modification of the Giorgi (1985) phenomenological method. The modified version provided a general structural description of nurse caring with two major dimensions of nurse caring identified: meeting human needs with vigilance, knowledge, and competency; and the relational style of the nurse relative to the patient and the nurse's work style. The researcher related the first dimension to the carative factors sensitivity to self and others, creative problem solving caring process, transpersonal teaching-learning, supportive, protective, and/or corrective mental, physical, societal, and spiritual environment, and assistance in meeting human needs. The relational style of the nurse was found to be consistent with the carative factors humanistic/altruistic system of values, instillation of faith and hope, development of a helping-trusting human care relationship, promotion
and acceptance of positive and negative feelings, and recognition of existential and phenomenological needs. To establish the credibility of her findings, Lenihan (1995) provided detailed excerpts of the interviews. The findings were further validated by Dr. Jean Watson as providing support for the ten carative factors and transpersonal caring.

**Summary.** Six quantitative and two qualitative studies that are purported to provide support for Watson’s 10 carative factors were examined. Several instruments have been designed for empirically measuring the carative factors. Cronin and Harrison’s (1988) CBA instrument was used in two studies of patient perceptions of nurse caring behaviors (Cronin & Harrison, 1988; Stanfield, 1991). The CBI has been used with both nurse and patient populations (Wolf, 1981, 1986; Wolf et al., 1994). Two instruments, Nyberg’s (1990) Caring Attributes scale and Duffy’s (1993) CAT-A, were designed to measure staff nurse’s perceptions of their manager’s caring behaviors. Findings regarding validity of the CBA for measuring the carative factors were mixed (Cronin & Harrison, 1988; Stanfield, 1991). Stanfield (1991), the only quantitative researcher who claimed to test Watson’s carative factors, found that the factor structure of the CBA did not provide support for the carative factors as separate phenomenon. However, Stanfield failed to consider the holistic nature of the carative factors in her analysis. The reported findings based on using Wolf’s (1986) Caring Behavior Inventory (CBI) complemented Watson’s theory. Specific connections with the carative factors, however, were not described. Statements on Nyberg’s (1990) Caring Attributes instrument were clearly based on the carative factors. However, study results did not link
the findings with Watson's theory. Duffy (1992) claimed that the CAT-A was based on the carative factors, but also did not link the factors with the study findings. These quantitative studies provide tentative support that caring behaviors can be measured and are perceived differently by patients and nurses (Cronin & Harrison, 1988; Duffy, 1992; Stanfield, 1991). The holistic nature of caring may make it difficult to provide clear factor structures of the variables (Stanfield, 1991).

Both qualitative studies provided initial support for the carative factors by linking statements obtained from interviews with the factors (Lenihan, 1995; Swanson, 1991). Swanson (1991) linked concepts derived from her Theory of Caring with Watson's (1985) carative factors, while Lenihan (1995) provided rich excerpts from the interviews and validated findings with Watson.

Students' Perceptions of Instructor Caring

There are numerous studies on caring in practice and education. According to Watson (1988a), transpersonal caring occasions emerge from caring interactions that are perceived as relational and reciprocal. Caring interactions between faculty and students that are perceived as relational and reciprocal reflect the nature of the professional-client relationship itself (Watson, 1988b). When the climate of nursing education is perceived as caring, students learn a professional way of being. The following literature review, therefore, is limited to studies of caring that reflect the caring climate and relationship between students and faculty as perceived by students.
Teaching-Learning Climate

Miller, Haber, and Bryne's research (1990) explored the experience of caring in a phenomenological study of the teaching-learning process. Using open ended interviews with a convenience sample of six senior nursing students and six nursing faculty, teaching and learning from the teacher and student perspective were compared. Following six interviews with each of the students and faculty, four parallel themes emerged. The investigators concluded that the experience of caring in an educational environment involves a holistic philosophy, teacher ways of being, mutual simultaneous dimensions, and student ways of being. Teacher and student ways of being were described as a climate of support that led to student empowerment, growth, and hope for the future. Mutual simultaneous dimensions referred to the ongoing caring in teaching-learning encounters. Trust, sharing, and respect were expressed by both students and faculty.

The findings were consistent with Watson's (1988a) and Leininger's (1981) theories of caring and Mayeroff's (1971) perspective of caring in education. However, the researchers did not address the trustworthiness of the data. Although descriptions of the themes were provided and validated by informants, actual anecdotes from the interviews were not given as evidence. Nonetheless, the findings did provide preliminary evidence that the educational caring experiences of both faculty and students were similar.

A caring "way of being" was also noted in Kosowski's (1995, p. 238) study of how nursing students learn professional nurse caring during their clinical experiences. Using a
phenomenological design combined with a feminist perspective, Kosowid asked 18 female junior and senior baccalaureate nursing students to describe clinical situations where they learned professional nurse caring. The findings, defined as embodied caring knowledge, were analyzed using the constant comparative method. Two patterns of knowledge, creative caring and learning caring, emerged. Themes relative to creative caring were connecting, sharing, being holistic, touching, advocating, being competent, and feeling good. Patterns related to learning caring revealed themes of how caring is learned. The five themes were role modeling, reversing, imagining, sensing, and constructing. Role modeling, the most frequently cited theme, revealed that students observed and imitated nursing instructors and staff nurses interactions with clients. Particularly noteworthy was the finding that the most caring role models embodied a "caring way of being" that communicated caring to students as well as patients. The theme reversing revealed the learning of positive caring by noticing and reversing the noncaring behaviors of others. Students also learned positive caring behaviors by imagining that their clients were close family members. The personal and intimate process of responding to feelings, emotions and sentiments that occurred during interactions with clients was labeled as sensing. Finally, students constructed caring knowledge by building on past caring experiences in their personal lives.

The study revealed several findings that are relevant to this study. Being competent and feeling good are similar to the study variables of perceived clinical competence and self-esteem. Feeling good, a theme the researcher claimed was not described explicitly in other nursing literature, imbued a sense of well-being and a
positive self-perception (Kosowski, 1995). Being competent emerged from the pattern of creating caring. Role modeling and reversing, two themes related to learning caring, reflect the importance of the relationship between the clinical instructor and student. Although the researcher did not provide excerpts of the interviews, clear descriptions of the data analysis process were provided. In addition, two peer debriefers with expertise in critical phenomenological research were consulted. Follow-up interviews were conducted to clarify data input and findings were reviewed with participants. Authenticity was confirmed by asking participants to attest to the congruence of the themes with the data.

To determine whether caring is learned through role modeling and faculty student interactions, Nelms, Jones, and Gray (1993) employed a descriptive qualitative design to examine students’ responses to a 10 minute videotape of a nursing student clinical experience. Bandura’s (1969) Social Learning Theory provided the theoretical basis for the study. The sample included 60 BSN and 77 ADN students from four state nursing programs with at least one quarter of clinical experience. Using the constant comparative method, the researchers identified themes reflected on a two page questionnaire administered after the videotape was viewed. Results revealed that students learned caring through faculty role modeling in the clinical and classroom setting as well as from other health care personnel. The paradoxical nature of caring was also evident. Learning to care was influenced by caring experiences as well as by behaviors and events that were experienced as non caring. Connection, relationships with self and others including faculty and peers, and caring were the three central themes that emerged. Although the themes were consistent with those reported in other studies of caring in nursing.
education, the study methodology was questionable. The type of qualitative study design was not specified. The researchers also did not distinguish between responses from the various levels of students and the amounts of clinical experience. It is unclear whether the responses to the questionnaires were influenced by the videotape or past experiences in the clinical setting. The researchers noted that caring may be difficult to depict on a video tape. Although the researchers provided a detailed description of the constant comparative method, the process of actual data interpretation was not validated.

In a descriptive qualitative study of student's perceptions of a caring educational climate, Hughes (1992) conducted open-ended interviews with a purposive sample of 10 junior nursing students from five baccalaureate schools of nursing. After using a line-by-line approach to identify meaningful statements, Hughes determined that the themes could be guided by Noddings’ (1984) conceptualization of a moral education. The themes were categorized as modeling, dialogue, practice, and confirmation or affirmation. Use of Noddings’ framework to provide data examples of subcategories for each of the major themes may have biased the findings. However, the framework did provide a means for interpreting the phenomenon. Credibility was based on validation by eight of the study participants who reviewed a written summary of the findings. Reliability was established using Cohen’s Kappa. Intra-coder and inter-coder reliability estimates by two nurse educators two weeks after coding by the researcher yielded a K of .96 and .83. Other measures of data trustworthiness were not identified. Based on the study findings, the researcher concluded that a caring educational climate is one in which individuals respond and acknowledge feelings of stress and anxiety, provide opportunities to express
opinions and concerns without fear of reprisal, and emphasize the importance of meeting the needs of individuals.

In order to extend theory on caring in nursing education, Sheston (1990; 1992) developed a model for describing the relationship between interpersonal caring processes of nursing educators and nursing students and transformation of the student. Transformation of the student was viewed as the process of evolutionary growth, change and self-actualization experienced relative to the interactions and transactions in the educational environment. The study also investigated the academic milieu as a contextual correlate of the model constructs. Using a comparative correlational design, a purposive sample of 79 senior nursing students from two baccalaureate schools of nursing was selected. Senior students at the conclusion of the first semester of the senior year were chosen as subjects because they had at least three semesters of interpersonal contact with nursing faculty. A population of senior nursing students in a baccalaureate program that formally incorporated caring in the curriculum was compared with a population that did not formally use a caring curriculum.

The Barrett-Lennard Relationship Inventory (1978) (BLRI) was used to measure interpersonal caring processes. Transformation was measured using Shostrom’s Personal Orientation Inventory (1964) (POI). Study findings revealed a significant positive partial correlation ($r = .255, p < .05$) between POI and BLRI scores. Although the relationship was weak and only explained 6% of the variance, Sheston concluded that the findings provided support for a direct relationship between students’ transformation as carers and their experiences of caring interactions and transactions with nursing educators. When
scores on the POI of students in an academic milieu that supported a caring ideology were compared with students' scores in a school that did not support caring. Significant differences were found between the two groups of students ($t(78.71) = 1.84$, $p < .05$). Students in the school that supported a caring ideology had higher mean scores ($M = 92.3$) than did students in the other school ($M = 85.0$). A difference between type of school curriculum and nursing students' perceptions of interpersonal caring processes as measured by the BLRI was also supported by the study findings ($t(77.01) = 2.16$, $p < .05$). Sheston concluded that a formalized caring academic milieu promoted nursing students' transformation as carers.

Using forward stepwise multiple regression, Sheston found that nursing students' perceptions of interpersonal caring processes were better predictors of their transformation as caring persons than was the academic milieu ($R^2 = .064$, $F(1, 77) = 5.29$, $p < .05$). Academic milieu contributed to the explained variance but was not significant. The two predictors together, however, only explained 8.6% of the variance. Although the finding was statistically significant, the substantive value of this finding is questionable. Clearly, other variables contribute to the transformation of students as caring nurses.

**Caring Relationships**

Instead of focusing on the caring educational climate, Beck (1991) addressed the caring relationship between faculty and student. With a sample of 43 women and 4 men, Beck (1991) used Colaizzi's (1978) phenomenological methodology to study the essence
of a caring nursing student-faculty experience. Caring was defined as "a mutual human process in which the nurse artistically responds with authentic presence to a call from the client" (p. 19). Participants were asked to describe in writing all of their thoughts, feelings, and perceptions of a situation with a caring faculty member. Caring experiences occurred during academic advisement (n=19), addressed the student's personal problems (n=12) and occurred in either the clinical (n=8) or the classroom (n=8) setting. After the meanings of significant statements were clarified, three clusters of themes were validated. The themes included: attentive presence, sharing of selves, and consequences. An exhaustive description of nursing student-faculty member caring experiences that incorporated the three themes was validated with the nursing students. This study provided a baseline for understanding the type of faculty behaviors which students' perceived as caring.

A year later, Beck (1992) studied the caring experiences that occur among students. The basic premise of this study was that nursing students must develop insight about themselves as caring persons before they can care for others. Using Van Kaam's (1966) phenomenological methodology, Beck analyzed the written descriptions of a caring experience between undergraduate nursing students (N=53) and found that caring between nursing students occurs under an umbrella of authentic presencing and is very similar to caring between faculty and students. Authentic presencing, evident through listening, was the sense that a fellow student had about another student's need for caring. Selfless sharing and fortifying support led to enriching effects. Through selfless sharing of the student's precious time without expectations of reciprocity, encouragement and
assistance or fortifying support was given to another student. In turn, nursing students involved in the caring experience felt good and were enriched which led to further learning to care. The additional theme with the student population was fortifying support. Beck (1992) provided rich descriptions of the data to support these themes. In addition, she established trustworthiness of the data using Lincoln and Guba's (1985) criteria for qualitative research.

**Caring Versus Non-Caring Behaviors**

Other studies have examined the faculty student relationship through student perceptions of instructor caring and noncaring behaviors. One of the most frequently cited studies of student's perceptions of instructor caring and noncaring behaviors is Halldorsdottir's (1990) phenomenological study. Using symbolic interactionism as the theoretical framework, the phenomenon of caring and uncaring in nursing education as perceived by former students was explored. Theoretical sampling was used to obtain a sample of nine former baccalaureate students. Halldorsdottir did not indicate the length of time since the students had completed the program. However, four of the students had a master's degree in nursing and one student was working on a doctorate. The methodological approach involved intensive unstructured interviews that were analyzed by the constant comparative method.

The analysis revealed the essential structure of a caring and uncaring student-teacher encounter from the student's perspective. The core of a caring student-teacher encounter involved four components: professional caring teacher approach, mutual trust,
professional student-teacher working relationship, and positive student responses to
caring encounters. From each of the components, patterns of behavior were revealed. The
caring teacher is professionally competent, genuinely concerned for the student, has a
positive personality and is committed to the profession. Mutual trust was revealed as a
necessary foundation for the professional teacher-student working relationship. In her
description of the professional teacher-student relationship, Halldorsdottir identified six
phases that started with attachment while keeping a respectful distance from the student.

Analysis of the essential structure of an uncaring student-teacher encounter
yielded four opposing themes. The first theme, lack of professional caring was described
as lack of professional competence, lack of concern, a demand for power and control, and
destructive behavior. Secondly, uncaring student-teacher encounters resulted in a lack of
trust by students which led to the third theme, student-teacher detachment and distancing.
The final theme revealed general and specific negative reactions of students to lack of
professional caring. General affective reactions were varied. Students used coping
strategies and other resources to deal with their reactions. Despite these strategies,
students held some negative feelings and memories of uncaring encounters. Students
reacted specifically to lack of faculty professional competence with feelings of wasted
time and energy. Teachers lack of concern produced feelings of discouragement and
uneasiness. Students felt vulnerable to teachers who demanded control and power.
Reactions to teachers’ destructive behavior also produced feelings of uneasiness along
with a negative self-image and despair and helplessness. Halldorsdottir (1990) did not
provide any statements from the transcripts to validate the meaning of these reactions.
Although Halldorsdottir concluded that the study provided support for the essential structure of a caring and uncaring encounter between teacher and student, no validation of the study's credibility was given.

More recently, Hanson and Smith (1996) studied the meaning of baccalaureate nursing students' lived experience of caring and not-so-caring interactions with instructors. This phenomenological study involved a sample of 17 baccalaureate nursing students from a private liberal arts college and 15 from a public university. After extracting statements from taped interviews, meaning units and themes were developed. The researchers found no differences in statements and meanings between students from the two types of educational program. All informants' statements about caring behaviors were organized into seven themes: attending, initiating, responding, connecting, empathizing, affirming, and motivating. These themes were then further categorized as recognition, connection, and confirmation/affirmation. The researchers proposed that recognition led to a connection between faculty and students yielding a positive outcome or consequence of affirmation/confirmation.

Hanson and Smith (1996) did not provide the same detail for reporting not-so-caring themes. Instead they reported statements that they considered indicative of a not-so-caring interaction. Their descriptions of students' responses and teachers' behaviors were explained as opposite ends of the continuum. They identified a continuum of student responses to faculty caring and not-so-caring interactions in terms of student feelings and learning behaviors. The continuum of faculty behaviors included caring and not-so-caring personal and teaching behaviors.
Using Giorgi's (1985) technique for analysis of qualitative researcher, Hanson and Smith (1996) provided an audit trail and established the dependability and confirmability of the data. Findings from the study were also related to several theories of caring (Gaut, 1983; Leininger, 1981; Noddings, 1984; Watson, 1979). Several of the statements about caring interactions provided support for Watson's (1979) carative factors. This study provided additional support that the recognition of faculty caring behaviors is an important component in the teaching of caring.

Summary of Literature on Perceptions of Instructor Caring

There is theoretical agreement that caring is learned by experiencing caring interactions with faculty in an environment supported by caring faculty-to-student relationships (Gaines & Barnes, 1996; Tanner, 1990b). Yet, the elusive nature of caring makes it difficult to make visible to students the caring practices of nurses who are faculty (Tanner, 1990b). The hidden curriculum reveals the teacher's relationships with students and may be the most important influence on students learning to care. Within the hidden curriculum, the caring practices of faculty are communicated by the way they teach, their priorities and methods, and the way they interact with students.

The research literature indicated that learning to care as a professional nurse requires caring relationships between students and faculty that are relational and reciprocal (Beck, 1991; 1992; Halldorsdottir, 1990; Hanson & Smith, 1996; Hughes, 1992; Kelly, 1992; Miller et al., 1990; Sheston, 1990; 1992). Caring is learned through interactions with others, including peers (Beck, 1991; Kosowski, 1995; Nelms et al.,...
Although all studies supported the interactive nature of caring in nursing education, some studies approached the concept from the climate of caring perspective (Hughes, 1992; Kosowski, 1995; Miller et al., 1990; Nelms et al., 1991; Sheston, 1990; 1992) while others examined the caring relationship between faculty and student and specific caring and uncaring instructor behaviors as perceived by students (Beck, 1991; Halldorsdottir, 1990; Hanson & Smith, 1996; Kosowski, 1995; Nelms et al., 1993). The majority of the studies were qualitative and revealed similar themes associated with caring experiences in nursing education.

The reciprocal and relational nature of student-to-teacher interactions was revealed in the ways of being between students and teachers (Kosowski, 1995; Miller et al., 1990). This theme was consistent with Watson’s (1988a) ways of being in a relationship. Trust, sharing, and respect between teachers and students were common themes in several studies (Halldorsdottir, 1990; Beck, 1991; Miller et al., 1990). Halldorsdottir (1990) related perceptions of caring and non-caring instructor behaviors to the self-concept. Others established a process of learning to care that was similar to Noddings’s (1984) model which emphasizes the importance of role modeling (Hanson & Smith, 1996; Hughes, 1992; Kosowski, 1995; Nelms et al., 1993). Only Kosowski’s research (1995) supported the premise that self-esteem and perceived clinical competence may lead to caring.

The only quantitative study reviewed suggested that students’ transformation as carers was weakly correlated with caring instructor experiences (Sheston, 1992). Significant differences in students’ transformation as carers were found with schools that
supported a caring curriculum when compared with those that did not. Although the study examined educational climate and perceptions of caring, the researcher concluded that perceptions were better predictors of caring behaviors in students than academic milieu. The weak, but significant positive correlations suggest that other variables are associated with students learning to care.

These studies provide a foundation for the current quantitative study. The researcher proposed that students’ perceptions of instructor caring behavior influences their self-esteem and perceived clinical competence which in turn effects the attitudinal component of professional nurse autonomy.

Self-Esteem

Although self-esteem is considered to be very important in understanding human behavior, there are a wide array of variables associated with the concept and much confusion about the definition of the concept (Addeo, Greene, & Geisser, 1994; Wylie, 1989). According to Kaplan (1995), the National Council of Self-Esteem polled hundreds of educators and found 27 distinctly different definitions for self-esteem. With such variability in the definition, it is no wonder that research on self-esteem has been strongly criticized for the lack of construct validity. Much of the literature, including the nursing literature, uses the terms self-concept and self-esteem interchangeably (Shavelson, Hubner, & Stanton, 1976; Stein, 1995). For research on self-esteem to be valid, there must be a clear distinction between self-esteem and the self-concept (Addeo, Greene, & Geisser, 1994). For this study, self-concept is a description of the self and self-
esteem is the global evaluative component of the self-concept (Rosenberg, 1979). To clarify the study's theoretical perspective, literature on the self and self-esteem and research related to self-esteem in college students and nurses were examined.

**Theoretical Literature on Self-Esteem**

There are diverse theoretical orientations toward the concept of self and its various components (Fleming & Courtney, 1984; Gates, 1989; Stein, 1995). The self was viewed as either a component of one's genetic endowment or as a result of one's interaction with the environment (Gates, 1989; Mead, 1934; Popper & Eccles, 1977). The latter perspective recognizes the reflective quality of the self which enables individuals to evaluate self and develop a set of attitudes toward self. The self was also conceived as having parts: self image, or the way an individual views self, and self-esteem, or the value a person places on self (Argyle, 1969). Burns (1979) depicted the components of the global self as comprised of the self as knower or "I" and the self image as one aspect and the self as known or "me" and self-esteem or self evaluation as another major component. Both of these perspectives lead to self attitudes. Regardless of the theoretical position, the self-concept was a broader more general construct which subsumes self-esteem (Fleming & Courtney, 1984).

To complicate matters, experts do not agree on the components of self-esteem (Fleming & Courtney, 1984). Self-esteem was viewed as either a central concept with dimensions or as a global aspect of the self-concept. Following an extensive review of self-esteem literature, Shavelson et al. (1976) developed a hierarchical, multifaceted
model of self-esteem. These theorists used the terms self-concept and self-esteem interchangeably claiming that the distinction between the two concepts is not clear conceptually and has not been demonstrated empirically. This argument dates back to at least the turn of the century (Fleming & Courtney, 1984). Shavelson et al. (1976) proposed that self-esteem was composed of emotional, social, physical, and academic components. Each of these components represented specific competencies. The apex of the model was general, or global self-esteem which they viewed as determined by the lower order components. In a later review, Fleming and Watts (1980) supported the hierarchial model by identifying three oblique factors associated with self-esteem. The three factors, self-regard, social confidence, and school abilities, paralleled the emotional, social, and academic components proposed by Shavelson and others (1976).

Others believe that self-esteem is a multi-faceted concept that is a function of mastery and included a combination of self-respect, self-confidence, and competence (Kaplan, 1995). Kaplan defined self-esteem as "the belief that what we do, think, feel, and believe matters" (p. 342). This definition implied that individuals can have an effect on their own lives, others, and on their environment. Self-esteem included the views and feelings about one's value as a competent, responsible, and successful individual in the world. As a dynamic process, Kaplan believed that self-esteem was learned through an interactive process and was influenced by life experiences. Associated with mastery, self-esteem evolves through the struggle and perseverance of solving a difficult problem while being able to accept mistakes and disappointments. Individuals with self-esteem believe that they have the ability to perform. Consequently, self-confidence and
meaningful achievement interact in a reciprocal way. Success was both the source and the outcome of self-esteem. According to Kaplan (1995), competence increases self-esteem, which in turn increases competence.

The opposing view of self-esteem is that separate dimensions are unimportant (Fleming & Courtney, 1984). Only global self-esteem is significant. Proponents of the global view claim that a lack of discriminant validity exists for the multi-faceted perspective (Marx & Winne, 1978, 1980; Winne, Marx, & Taylor, 1977). The global view defined self-esteem as a relatively enduring affective and evaluative belief about the self that leads individuals to respond to phenomenon with some degree of predictability (Arthur, 1992; Burns, 1979; Pelham & Swan, 1989).

Rosenberg (1979) recognized both the centrality and dimensionality of the self-concept. The self-concept was viewed as an organization of parts that are interrelated in complex ways. He supported research on either the global or component aspects of the self. According to Rosenberg (1979), both global self attitudes and component aspects of the self exist within the individual’s phenomenal field as separate and distinguishable entities. Specific behaviors, however, are more likely to be predicted by specific self-attitudes. Self-esteem was viewed as a global evaluation of the self-concept which includes dimensions that are valued by the person being assessed.

Watson’s view of the self is most consistent with the interactionalist and global perspective of self-esteem. When caring relationships exist, there is a reciprocal human quest to become the best ethical self (Watson, 1988a). Caring relationships promote an individual’s sense of strength, power, and human capacity. The importance of self is
made explicit in Watson’s contention that “humans cannot be treated as objects, that humans cannot be separated from self, other, nature, and the larger universe” (Watson, 1997, p. 50). The self, composed of both personal perceptions and perceptions of relationships with others, is always changing. By developing an awareness of self, the individual is better able to use the self as a tool of caring (Gaines & Baldwin, 1996). Although Watson clearly recognized the centrality of self in regulating behavior, Stein (1995) argued that the broad focus of Watson’s theory does not provide sufficient detail to link the self with behavior.

Research on Self-Esteem

Research on self-esteem is complicated by inconsistencies with the definition and imprecise measurement instruments (Addeo, Greene, & Geisser, 1994; Stein, 1995). For this study, an awareness of self reflects the individual’s self evaluation or global self-esteem. The global perspective of self-esteem is a more measurable aspect of the self (Stein, 1995). Research has suggested that an awareness of self provides internal sources of information about attitudes that exert a primary influence on one’s behavior. Developmental research has also demonstrated that self-views can change from infancy through adolescence (Damon & Hart, 1982; Tafarodi & Swann, 1995). Therefore, only studies of college and nursing students that reflect the global perspective of self-esteem were reviewed.
Self-Esteem in College Students

To support the construct validity of an instrument to measure self-esteem, Addeo et al. (1994) employed the Robson (1989) Self-Esteem Questionnaire (RSEQ) to determine if a multi-dimensional definition of self-esteem was related to global self-esteem, global and social self-efficacy or competence, and healthy curiosity in a college population. The study sample included 307 undergraduate college students who were enrolled in an introductory psychology course. Rosenberg's (1979) Self-Esteem Scale (RSES), the Self-Efficacy Scale (Sherer & Maddux, 1982), and the 10-item Trait Anger, Trait Anxiety, and Trait Curiosity subscales of the State Trait Personality Inventory (Spielberger et al., 1983) were used to evaluate the hypothesis that the RSEQ has a reliable multidimensional structure.

The findings suggested that the construct supports both a global and multidimensional interpretation. The RSEQ correlated the highest with the RSES (r = .84, p < .001) which measures global self-esteem. From the multidimensional perspective, self-deprecation (r = -.75), attractiveness (r = .25), and self-respect (r = .72) were significantly (p < .001) related to the RSES. The stronger correlations, self-deprecation and self-respect, were interpreted as negative and positive self-esteem. Although attractiveness was statistically significant, the weak relationship did not support inclusion as part of global self-esteem. Other findings, relevant to the proposed study, also demonstrated the negative and positive dimensions of self-esteem. Global self-efficacy (r = .71), social self-efficacy (r = .47), trait curiosity (r = .50), trait anxiety (r = -.80), depression (r = -.60), and anger (r = -.35) were significantly (p = .001) related to
self-esteem. Based on the study findings, the RSEQ was deemed a reliable ($\alpha = .90$) instrument for measuring both unidimensional and multi-dimensional self-esteem.

Tafarodi and Swann (1995) conducted a series of three studies to validate that global self-esteem consists of two dimensions: a sense of social worth, or self-liking, and a sense of personal efficacy, or self-competence. In the first study, the structure of the Self-Liking/Self-Competence Scale (SLCS) was tested with a sample of 1053 undergraduate college students enrolled in an introductory psychology course. Confirmatory factor analysis was used to test the predicted structure and to evaluate it against the Marlowe-Crowne Social Desirability Scale, a model representing an alternative conceptualization of global self-esteem. Goodness-of-fit indices ($NFI = .99$, $CFI = .99$) provided validation that the SLCS measured two correlated but distinct dimensions of self-esteem for both males and females ($\chi^2 (3, N = 1053) = 35.41$). After confirming that the SLCS represented the dichotomy of self-liking and self-competence, the researchers tested the dimensionality of Rosenberg's (1979) RSES in a second study. A sample of 835 college students completed six items from the RSES that were deemed parallel to self-liking and self-competence along with the SLCS. Goodness-of-fit indices were high ($NFI = .94$, $CFI = .94$) suggesting that the RSES may have a two-factor structure comprised of self-liking and self-competence.

To confirm the importance of studying self-esteem as a dichotomous variable, the final study sought to confirm several theoretically based predictions about the relationship between self-liking and self-competence. Subjects included 844 (391 women and 453 men) undergraduate college students. Each participant completed the
SLCS, the Beck Depression Inventory (BDI) (Beck, 1972), the short form of the Self-Attributes Questionnaire (SAQ) (Pelham & Swann, 1989), and the Parental Treatment Questionnaire (PTQ) (Swann & Tafarodi, 1992). Significant negative correlations between self-liking and depression for men ($r = -.30, p = .0001$) and women ($r = -.34, p = .0001$) were found. Weaker, but significant negative correlations were also found between self-competence and depression for men ($r = -.20, p = .01$) and women ($r = -.14, p = .04$). A non-significant relationship between the total SLCS score and the PTQ may reflect the lack of parental influence on the developmental age of the respondents.

The researchers concluded that the three studies provided initial validation of an instrument to measure two dimensions of global self-esteem (Tafarodi & Swann, 1995). Although the researchers did not use Rosenberg’s complete RSES, they claimed that the second study provided evidence of a parallel structure between the SLCS and the RSES. They were careful to conclude that the findings apply only to students at the end of adolescence to support the theoretical position that the self changes dramatically from infancy through adolescence. The findings suggested that global self-esteem may be composed of both self-liking and self-competence.

Another study also recognized the confusion associated with defining self-esteem by examining social context differences between self-esteem and self-concept (Greene & Reed, 1992). The researchers argued that self-esteem and the self-concept are distinct, but related aspects of self-perception. Integrating dynamic interactionism and life course institutionalization theory, Greene and Reed used Rosenberg’s Self-Esteem Scale (1979) and Monge’s (1973) semantic differential Self-Concept scale with a sample of 17 male
and 22 female college students enrolled in an introductory psychology course and 22 male and 21 female noncollege youths.

MANOVA of the self-esteem and self-concept measures revealed that college youths were higher than noncollege youths in self-esteem ($F (1, 80) = 8.38, p < .01$), adjustment ($F (1, 80) = 4.08, p < .05$), achievement ($F (1, 80) = 11.06, p < .001$), and masculinity/femininity ($F (1, 80) = 6.59, p < .01$). Further analysis with the Bartlett-Box univariate homogeneity of variance test indicated that college youth were also more homogeneous than noncollege youths in self-esteem ($F (1, 16142) = 4.11, p < .05$), adjustment ($F (1, 16142) = 4.77, p < .05$), and achievement ($F (1, 16142) = 10.07, p < .002$). These findings suggested that social context distinguished self-esteem and three of the four self-concept dimensions.

To further determine if social context differentiated the relationship between self-concept and self-esteem, separate multiple regression analyses of self-esteem were performed for both groups, using the four dimensions of the self-concept as predictors. For the college sample, only masculinity/femininity ($R^2 = .30, p < .001$) contributed significantly to the total variance ($R^2 = .36$). Both achievement ($R^2 = .41$) and adjustment ($R^2 = .28$) contributed significantly ($p < .001$) to the variance in self-esteem ($R^2 = .49$) in the noncollege sample. The researchers interpreted the masculinity/femininity finding to reflect personal agency in the college sample. Extensive theoretical support indicated that masculinity/femininity measures were reflective of the current perspective of non gender specific instrumentality and expressivity. The study findings provided support for distinguishing self-esteem from the self-concept. The importance of distinguishing the
two concepts was most apparent when the context was considered. Based on this study, personal agency was the strongest predictor of self-esteem in college students.

The importance of the psychological centrality of self-esteem was studied to support Rosenberg's (1979) premise that self-esteem and the self-concept are personal, phenomenological, and idiosyncratic constructs (Rentsch & Heffner, 1992). Subjects included 240 (147 females and 90 males) introductory psychology undergraduate students. A secondary focus of the study was to develop and validate a new scoring technique for the "Who Am I?" measure (Bugental & Zelen, 1950; Kuhn & McPartland, 1954) of self-esteem. Individually defined self-concept elements were ranked to determine if those elements most important to individuals' perceptions of themselves (highly psychologically central) were more highly related to self-esteem than were elements ranked as least important (less psychologically central). Self-esteem was measured using Rosenberg's (1979) Self-Esteem Scale (RSES), the Self-Assurance Scale (SA) from the Self-Description Inventory (Ghiselli, 1971), and the "Who Am I?" (WAI). Discriminant validity was tested using the Private-Public Self-Consciousness Scale (PPSC) (Fengenstein, Scheier, & Buss, 1975) and the Tolerance scale (TO) from the Psychological Inventory (Gough, 1987).

Findings revealed intercorrelations between the measures. The summed WAI satisfaction ratings correlated significantly with RSES (r = .66, p < .001), SA (r = .22, p < .001), the Social Anxiety subscale of the PPSC (r = -.26, p < .001), and the TO (r = .17, p < .01). The moderately high positive correlations between the RSES and the WAI suggest that they are similar measures of self-esteem. The weak relationships between the other
variables and the RSES and WAI indicate that the other variables may be correlates of self-esteem rather than self-esteem measures. Moderate support was found for a relationship between psychological centrality and self-esteem. When each ranking on the WAI was correlated with the RSES significant (p < .001) but weak relationships ranging from .24 to .40 were found for the first 18 elements. Stronger evidence of psychological centrality was found between RSES and satisfaction rankings (r = -.43, p < .05). Because the researchers did not adjust for multiple testing, the reported correlations may be inflated (Tabachnick & Fidell, 1996). This study, however, provided a unique approach to testing the relationship between psychological centrality and self-esteem. Subjects defined their own self-concept elements, evaluated and ranked each element by its importance. Thus, support that self-esteem may be individually defined was provided.

A person-oriented approach was used to study the types of achievement strategies university students employ and the relationship of these strategies to academic achievement (Eronen, Nurmi, & Salmela-Aro, 1998). Academic achievement was defined as academic success, satisfaction and overall well-being. Based on the work of several cognitive and behavioral theorists, the researchers used a longitudinal design with a sample of 65 male and 189 female undergraduate students. At the beginning of their academic studies and two years later, students completed the Cartoon-Attribution-Strategy Test (CAST) (Nurmi, Haavisto, & Salmela-Aro, 1997), the Strategy and Attribution Questionnaire (SAQ) (Nurmi, Salmela-Aro, & Haavisto, 1995), Rosenberg’s Self-Esteem Scale (RSES) (1979) and the revised Beck’s Depression Inventory (BDI) (Beck, Rush, Shaw, & Emory, 1979). Academic success was based on grade point
averages obtained from students' university records. Satisfaction was rated according to responses to a four item satisfaction questionnaire designed by the researchers.

A clustering-by-cases approach to data analysis revealed descriptions of different types of achievement strategies. The types of achievement strategies used by university students were optimistic, defensive-pessimistic, impulsive and self-handicapping. ANOVA was used to compare the four strategy groups to the independent variable strategies. Of relevance to the proposed study are the findings related to differences in well-being for each strategy group as measured by the RSES and the BDI. There was a significant mean difference in self-esteem ($F(3, 250) = 2.9$, $p = .05$) for the optimism strategy group ($M = 3.27$), the defensive-pessimism strategy group ($M = 3.04$), the impulsive strategy group ($M = 3.19$), and the self-handicapping group ($M = 3.13$) in the first and second year of the study. Differences were not significant for depression. During the third and fourth year of the study, however, mean differences were even greater for self-esteem ($F(3, 250) = 6.60$, $p = .001$) and depression ($F(3, 250) = 4.79$, $p = .01$).

Overall results indicated that students who used optimism or defensive-pessimism strategies had higher levels of well-being than the other two groups. For all measurement periods, optimistic strategy users reported higher well being than the other groups. Users of a defensive-pessimistic strategy showed a high level of well-being only during the final measurement periods. Defensive-pessimistic strategies positively influenced well-being in students who easily become anxious with academic demands. These findings suggested that there may be a relationship between optimistic and defensive-pessimistic learning strategies and a sense of well-being.
Using Josephs, Markus, and Tafarodi's (1992) study as a theoretical basis, Huguet, Charbonnier and Monteil (1995) studied the influence of private versus public individuation on self-esteem of 756 undergraduate students enrolled in an introductory psychology course. Private individuation, an individual's awareness of unique personal qualities that are not recognized by others, was measured by Josephs et al.'s (1992) Social Comparison Task. Public individuation, a person's uniqueness that can be evaluated by others, was measured using Maslach, Stapp, and Santee's (1985) Public Individuation Scale (PIS). Rosenberg's Self-Esteem Scale (RSES) (1979) measured self-esteem.

The random sample included 44 males and 44 females whose scores on the RSES were between the bottom 10th and 20th or between the top 10th and 20th percentiles of the larger subject pool (N = 756). Although slightly higher for males, the difference between the mean self-esteem scores for the males (M = 27.09) and females (M = 26.68) was not significant. For private individuation, the only significant main effect was for the Ability domain (F (4, 336) = 9.870, p < .0001). When the larger sample (N = 756) was tested with uniqueness as the predictor and self-esteem as the dependent variable, the findings were also not significant. For public individuation and self-esteem, however, ANOVA revealed a significant main effect of self-esteem (F(1, 84) = 7.356, p < .0001). Willingness to engage in public individuation was higher for the high self-esteem group than for the low self-esteem group. Simple linear regression performed on scores of the large sample revealed that willingness to engage in public individuation was a significant predictor of self-esteem for both males (r = .281, p <.004) and females (r = .256,
Generally, the effects for private individuation were weak and not significant for high and low self-esteem males and females. Therefore, this study did not yield a gender and self-esteem interaction for private individuation. The researchers claimed that these results may be related to the use of univariate tests that ignored the potential correlations between the dependent variables. Although results for public individuation were significant, public individuation explained only 7% of the variance in self-esteem. Therefore, other variables in addition to public individuation may be better predictors of self-esteem in both males and females. According to the researchers, this study suggested that there may be both common and different origins for self-esteem in both males and females (Huguet et al., 1995).

Osecka' and Blatny’ (1993) examined whether self-esteem in men and women was associated with other aspects of the self-concept. With a sample of 72 male and 116 female university students, the researchers used Rosenberg’s (1979) Self-Esteem Scale (RSES) with a semantic differential scale for rating the self. Analysis revealed a significant and strong correlation for men ($r = .91$) and women ($r = .87$) between self-esteem and the descriptors identified on the semantic differential scale. The descriptors, however, were different for men and women. For men, 55% of the variance in self-esteem was explained by the following descriptors in ascending order: perfect, worthy, strong, straight, and successful. In contrast, 54% of the variance in women was defined by the descriptors: interesting, strong, correct, conspicuous, and callous. The researchers concluded that men’s self-esteem is based on their capability of self-assertion,
experienced as a general feeling of competence as well as a view of oneself as a moral individual. In contrast, the source of self-esteem in women was viewed as a mixture of traditional feminine characteristics and a blend of typical masculine characteristics.

Although Osecka' and Blatny' (1993) related their conclusions to Joseph et al.'s (1992) earlier study, the theoretical linkages derived from the research were not clear. Of interest was the differences in sources of self-esteem for men and women.

Self-Esteem in Nursing Students

One of the first studies addressing self-esteem in nursing students was Burgess's (1980) study of the self-concept of 101 sophomore nursing students. The study purpose was to determine the self-concept of undergraduate nursing students and the relationship to clinical performance, attrition, marital status, self-reported grade point average (GPA), and ACT scores. Although the major focus was on the overall self-concept, the Tennessee Self-Concept Scale (TSCS) (Fitts, 1965) yields a self-esteem score. Prior to this study norms for the nursing student population had not been established. Study findings revealed that the mean scores for scale items were very similar to the normative sample. Mean self-esteem scores were 346.6 compared to a mean score of 345.57 for the normative sample. Using the Pearson correlation, Burgess (1980) did not find a significant relationship between age, ACT scores, GPA, and clinical grades, and self-esteem. A statistically significant, but weak relationship, was found between self-esteem and marital status ($r = .27, p < .05$). This finding was questionable, however, as the methods for coding this nominal data were not specified. According to Burgess (1980),
the failure to establish noteworthy results may be related to the study sample. Beginning nursing students have not had the opportunity to internalize aspects of the self that are important to personal and professional growth. Although the study findings were unremarkable, the importance of self-esteem as a variable for study with nursing students was recognized.

Without distinguishing the self-esteem findings, the Tennessee Self-Concept Scale was used in a study of the effects of an undergraduate clinical internship on the self-concept and professional role mastery of baccalaureate nursing students (Olson, Gresley, & Heater, 1984). Professional role mastery was measured with Schwerian's (1978) Six Dimensional Scale of Nursing Performance. A three-group pretest-posttest design was employed with a sample of 49 baccalaureate nursing students at the end of their junior year. Groups included eight students enrolled in a clinical and didactic internship, five students who took the didactic course only, and a control group of 36 students. ANOVA revealed no significant differences between all groups for the Tennessee Self-Concept measure and the Schwerian Six Dimensional Scale of Nursing Performance. The findings should be interpreted with caution. Although support for the internship program was not provided, the small sample and disproportionate group sizes limited the findings. Nonetheless, this study recognized the possible relationship between aspects of the self and role mastery.

More recently, Hughes, Wade, and Peters (1991) used the Tennessee Self-Concept Scale (TSCS) (Fitts, 1965) to examine the effects of a synthesis of nursing practice course on senior nursing students' self-concept and role perception. The Slater
Nursing Competencies Rating Scale (Wandelt & Stewart, 1975) (SLNR) measured students' perceived role competencies. Theoretical perspectives on the relationship between perceptions and behavior formed the study framework. A person's concept of self was viewed as influencing behavior as well as personality and state of mental health.

A one-group, pretest-posttest research design with 70 senior nursing students enrolled in the synthesis course was used to determine the effect of the course on self-concept and perceived role competency. Although posttest self-concept scores were higher than pretest scores, the differences were not statistically significant. There was, however, a significant ($p = .001$) increase in their perceptions of role competency upon completion of the course. The role competency pretest group mean was 317.35 ($SD = 42.23$) while the posttest group mean was 346.07 ($SD = 43.91$) yielding a t-value of -7.79 with 69 degrees of freedom. Although the researchers did not report a self-esteem subscale score, they claimed that the study supported the relationship between learning opportunities and experiences and greater self-confidence and a more positive self-concept. Details of the course and other variables that may have influenced these findings and provided information about mental health were not supplied.

Instead of examining the relationship between a specific course and self-esteem, Collins (1994) employed a descriptive correlational design to study the relationship between senior nursing students’ ($N = 43$) perceptions of positive and negative student/teacher interactions in the clinical setting and self-esteem. Based on Imogene King’s Interactional Framework (1981), the researcher designed the instrument to measure student/teacher interactions. A researcher designed shortened version of the
Coopersmith (1981) Self-Esteem Inventory measured students' self-esteem and self-worth in the clinical setting. Analysis using Pearson's Product Moment statistic revealed a positive relationship between student/teacher interactions and self-esteem ($r = .50$). The researcher did not report the level of significance. The alpha reliability coefficient (0.95) for the student/teacher interaction instrument and the shortened version of the Coopersmith Self-Esteem Inventory (0.83) were acceptable (Burns & Grove, 1997).

Although the study findings were in the expected direction, Collins (1994) recognized the simplistic nature of the study. Self-esteem is most likely influenced by other intervening variables that were not examined.

A preliminary study of differences in levels of self-esteem and depression between nursing students who reported incidents of sexual exploitation during childhood attempted to establish the importance of mental health to positive views of self (Rew, 1989). Using Rosenberg's (1979) Self-Esteem Scale (RSES) and Beck's (1972) Depression Inventory (BDI) with 21 junior and 34 senior nursing students, Rew found a significant difference between groups in self-esteem ($F (1, 53) = 4.387, p = .041$) and levels of depression ($F (1, 53) = 8.015, p = .007$). Students who reported incidents of childhood sexual exploitation had lower levels of self-esteem and higher levels of depression than the comparison group. The study findings should be viewed with caution as the groups were self-selected. These findings suggested that there may be a bipolar relationship between self-esteem and depression. Although Rew did not indicate the reliability of the RSES for measuring global self-esteem in nursing students, the findings suggested that the instrument can be used with this sample.
Instead of examining depression as an indicator of positive self views, Jaradat (1995) used a correlational design to study the relationship between stress and self-esteem among a sample of 121 baccalaureate nursing students. Roy’s adaptation model provided the study’s theoretical framework. Stress was measured with the Derogatis Stress Profile (DSP), an interactional Likert stress instrument derived from stress theory. The Culture-free Self-Esteem Inventory (CFSEI), a nominal scale that includes general, social, personal and lie subscales and measures individuals’ overall perception of their worth, was also employed. Analysis using Pearson’s correlation revealed that there was a statistically significant negative relationship ($p = .05$, $r = -0.66$) between stress level and self-esteem. Except for ethnic background and the social self-esteem subscale, there were no significant relationships between stress and self-esteem and age, sex, marital status, number of children, job description, and number of current course hours for the total sample. Any significant findings are questionable as the researcher used ANOVA and Pearson’s correlation statistics for analysis of nominal level data (Burns & Grove, 1997). Furthermore, the general self-esteem subscale only had an internal consistency reliability of .78 in past studies and was not reported in the current study.

**Summary of Self-Esteem Literature**

Despite differing views about whether self-esteem was a global or multidimensional concept, there was general agreement that self-esteem was a component of the self-concept that is genetically endowed or evolves through interactions with others (Addeo et al., 1989; Eronen et al., 1998; Greene & Reed, 1992;
Kaplan, 1995; Rentsch & Heffner, 1992; Stein, 1995). As an evolving phenomenon, self-esteem is influenced by development and may change throughout one's life (Damon & Hart, 1982; Tafarodi & Swan, 1995). Furthermore, self-esteem may be related to the self-concept in terms of context (Greene & Reed, 1992).

Proponents of the multidimensional perspective claimed that emotional, social, physical, and academic competencies determine global self-esteem (Shavelson et al., 1976). More specifically, these dimensions have been labeled by others as self-regard, social confidence, school abilities, self-respect, self-confidence and competence (Fleming & Watts, 1980; Kaplan, 1995). Opponents of this view claimed a lack of discriminant validity for the multidimensional perspective (Marx & Winne, 1978, 1980; Winne, Marx, & Taylor, 1977). The global view defined self-esteem as a relatively enduring affective and evaluative belief about the self that enables individuals to respond to phenomenon with some degree of predictability (Arthur, 1992; Burns, 1979).

Research on self-esteem in college and nursing students suggests that self-esteem may be both global and multidimensional with extremes of negative and positive elements (Addeo et al., 1994; Eronen et al., 1998; Greene & Reed, 1992; Rentsch & Heffner, 1992; Rew, 1989; Tafarodi & Swan, 1995). Negative dimensions related to self-esteem included anxiety, depression and stress (Eronen et al., 1998; Jaradat, 1995; Rew, 1989; Tafarodi & Swan, 1995). Many of the positive dimensions of self-esteem were related to achievement or ability (Eronen et al., 1998; Huguet et al., 1995; Osecka’ & Blatny’, 1993; Tafarodi & Swan, 1995). Terms associated with achievement or ability and self-esteem included global self-efficacy, self-competence, role mastery, and
academic success (Olson et al., 1984; Osecka' & Blatny', 1993; Tafarodi & Swan, 1995).

Studies focusing on achievement included two nursing studies (Hughes et al., 1991; Olson et al., 1984) and one study with a college sample (Eronen et al., 1998). For the nursing studies, no significant relationships were found between the course and self-esteem (Hughes et al., 1991; Olson et al., 1984). Failure to establish significant findings may have been limited by the sample size and study instruments. In the college sample, self-esteem was associated with either an optimistic or defensive-pessimistic achievement strategy (Eronen et al., 1998).

Personal characteristics were also associated with positive self-esteem. These characteristics included: adjustment, well-being, social self-efficacy, personal agency, curiosity, and self-liking (Addeo et al., 1994; Eronen et al., 1998; Greene & Reed, 1992; Tafarodi & Swan, 1995). No relationships were found between gender, age, ACT scores, GPA, and clinical grades in nursing (Burgess, 1980; Jaradat, 1995; Hughes et al., 1995; Osecka' & Blatny', 1993) in college and nursing student samples. A weak positive relationship between self-esteem and marital status was found in only one of the earlier nursing studies (Burgess, 1980). Although no differences in gender were found in the studies reviewed, Osecka' and Blatny' (1993) found both common and different origins of self-esteem in males and females. Both Osecka' and Blatny' (1993) and Rentsch and Heffner (1992) suggested that self-esteem may be related to the importance of individually defined elements of the self-concept. Rentsch and Heffner (1992) also concluded that many of the variables associated with self-esteem may not be dimensions of self-esteem but correlates. This finding may explain the weak, but significant
relationships between many of the variables associated with self-esteem.

A major problem with the study of self-esteem was the use of inappropriate measures of self-esteem and sample size. All of the college studies used Rosenberg's (1979) self-esteem scale with acceptable samples. The nursing studies, however, frequently used instruments measuring the self-concept to explain self-esteem with small samples. Instruments used in the nursing studies included the Tennessee Self-Concept Scale (Burgess, 1980; Hughes et al., 1991; Olson et al., 1984), the Culture-Free-Self-Esteem Inventory (Jaradat, 1995) and Coopersmith's Self-Esteem Scale (Collins, 1994). It was unclear, therefore, if these studies were measuring global self-esteem. Only Rew (1989) employed Rosenberg's Self-Esteem Scale with a sample of nursing students.

The theoretical and research literature failed to establish whether self-esteem is a global or multidimensional phenomenon. The perspective of self-esteem as a global evaluation of the self-concept endorsed by Rosenberg (1979) was most consistent with Watson's (1988a) view about the centrality of self. The Theory of Transpersonal Caring (Watson, 1988a) emphasizes the importance of the self in the development of professional relationships.

**Perceived Clinical Competence**

For this study, perceived clinical competence was nursing students' confidence and pride in their knowledge and skills (Kramer & Schmalenberg, 1993). To support the notion that perceived clinical competence is an essential aspect of the attitudinal component of professional nurse autonomy, only research related to perceived clinical
competence in nursing students was examined.

To describe the process whereby nursing students establish an identity as a competent nurse, Loving (1993) employed grounded theory to design a theoretical model of competence validation. Using purposive sampling, informants were selected from both a small private university and a public university located in a Midwestern state. The sample included 22 junior and senior nursing students and five recent graduates. Unstructured individual and group interviews and participant observation of a clinical group were used to collect the data.

Data were analyzed using methodological triangulation with theoretical sampling. Competence validation, the core category of Loving's theoretical model, was based on students' perceptions of whether the educational context was learning or evaluative. The evaluative context, influenced by the faculty's evaluative affect or students' perceptions of their interactions with faculty, motivated students to externally validate their competence in the form of a grade or faculty approval and often led to students' feelings of incompetence. In contrast, a perceived learning context was based on trusting, nonthreatening relationships with faculty that motivated students to acquire skills and knowledge necessary to provide competent, patient-centered nursing care. Feelings of success within this context promoted the development of an identity as a competent beginning nurse.

Cognitive flexibility, an outcome of the learning context, enabled students to find and apply relevant information for solving patient problems. Loving (1993) identified habituation and patient-centeredness as two dimensions of cognitive flexibility that are
related to perceived clinical competence. With habituation, skills became habits and
students felt they had technical competence. Analysis of the data revealed that students' perceptions of their technical competence influenced their ability to be patient-centered and enhanced their perceptions of competence.

Although Loving (1993) provided excerpts from the interviews to support the theoretical model, the rigor of this qualitative study was questionable. The process of data analysis and validation of the credibility of the study findings was not explained. The researcher acknowledged that the model was tentative and needed further development. The theoretical discussion of the findings, however, provided support for the relationship between faculty and student interactions and perceived clinical competence.

Perceived clinical competence was associated with role mastery in a correlational quantitative study of 75 newly hired novice nurses (Dufault, 1990). The majority of the nurses (n = 68) were recent graduates of generic baccalaureate programs and had experience as nurse's aides (n = 56). The study's purpose was to explore the relative contribution of eight independent variables in explaining novices' perceived variation in role mastery upon completion of their formal orientation period. Role mastery theory was the implied framework. Predictor variables for role mastery included novice pretest role mastery, nursing unit group role socialization, role mastery and job satisfaction, preceptor's role mastery, head nurse's role mastery, previous work experience as an aide, and participation in a bicultural training program. Schwerian's (1978) Six-Dimensional Scale of Nursing Performance was employed to measure role mastery.
Stepwise multiple regression analysis revealed that novice pretest role mastery was the most significant predictor of role mastery ($R^2 = .25, p < .001$). The nursing unit's group role socialization ($R^2 = .06; p < .046$), role mastery ($R^2 = .05; p < .048$), and job satisfaction ($R^2 = .04; p < .05$) accounted for an additional 15% of the total variance (40%). The preceptors' and head nurses' perceived role mastery, the novices' previous work experience, and participation in bicultural training groups did not enter into the regression equation. According to Dufault (1990), however, these data suggested that specific competency weaknesses in the novices paralleled those of their preceptors. Based on these findings, 60% of the variance was not explained by the study variables. The most relevant finding from this study was the novices' perceptions of their competencies upon entry into professional practice. Because Dufault (1990) did not report findings from the various subscales of the Schwerian Six-Dimensional Scale of Nursing Performance, areas of perceived competence cannot be described. The researcher, however, concluded that role mastery was most evident in the problem-solving skills of novice nurses. Behaviors associated with performing technical skills were perceived by novice nurses as weak.

In a more recent study, Moyer (1996) hypothesized that sense of coherence and self-esteem would explain self-perceived clinical competence better than any one variable alone. Using a descriptive correlational design, the relationships among sense of coherence, self-esteem, and perceived clinical competence in junior ($n = 108$) and senior ($n = 139$) generic baccalaureate students were examined at the beginning and end of the semester. The theoretical framework was a synthesis of Adler’s (1982) essential elements.

Findings revealed that sense of coherence and self-esteem together did not explain self-perceived clinical competence. Although Moyer claimed that multicollinearity between sense of coherence and self-esteem accounted for a lack of support for the hypothesis, a correlation matrix was not provided. Moyer also hypothesized that there would be differences in sense of coherence, self-esteem, and self-perceived clinical competence at the beginning and end of the semester for junior and senior students.

Using paired t-tests, Moyer found that students improved significantly ($p < .001$) between the beginning and end of the semester in sense of coherence ($t (246) = -3.83$) and all six areas of the Six-D (leadership - $t (218) = -5.40$; teaching - $t (218) = -7.52$; planning - $t (229) = -6.52$; interpersonal relations and communication - $t (222) = -5.48$; critical care - $t (219) = -5.75$; professional development - $t (246) = -5.67$). At the beginning of the semester, seniors scored higher than juniors on all competency subscales except professional development. Post semester scores, however, indicated that seniors scored significantly ($p < .001$) higher than juniors on only the leadership ($t (245) = -3.97$)
and teaching ($t(245) = -4.88$) subscales. To decrease the possibility of a type I error, Moyer applied the Bonferroni correction to the multiple t-tests (Tabachnick & Fidell, 1996). No differences were found in self-esteem between juniors and seniors. Because factor analysis of the self-esteem scale revealed a five-factor solution which did not support the proposed factor structure of the instrument, Moyer suggested that additional research was needed to clarify the conceptualization of self-esteem.

Mozingo, Thomas, and Brooks (1995) designed the Perceived Competency Scale (PCS) to measure perceived clinical competency in baccalaureate nursing students. The researchers intentionally left the definition of perceived clinical competence open for interpretation by the subjects. A theoretical framework was also not discussed. Factors hypothesized to be associated with perceived clinical competency in graduating senior baccalaureate nursing students ($N = 204$), based on a review of related literature and the researchers' educational experiences, included: externship participation, employment in a health care setting, trait anxiety, and social support.

Pearson product-moment correlational analysis revealed that employment in a health care setting during the academic program was significantly ($r = .26, p = .0001$) related to perceived competency. Feelings of competency increased significantly ($r = .21, p = .01$) with the length of time the student was employed. Other statistically significant correlates of perceived competency included affect-support ($r = .18, p = .01$), trait anxiety ($r = -.31, p = .0001$), high school and college GPAs ($r = -.17, p = .02$). Although these findings were statistically significant, the weak relationships between the variables negates the practical significance of the findings.
When high scorers (upper 25%) on the Perceived Competency Scale were compared with low scorers (lower 25%) using t-tests and chi square, significant differences were found. Groups with low perceived competency had significantly higher GPAs ($M_1 = 3.15$) than the high perceived competency group ($M_2 = 2.93$) ($t = -2.89, p = .005$) suggesting that competent students tend to underrate their own performance. Although statistically significant, the relatively small difference between the mean scores render the utility of the finding questionable. Additionally, the researchers did not report degrees of freedom for any of the group comparisons. Groups also differed significantly in affect support ($t = 3.07; p = .002$) and trait anxiety ($t = 5.43; p = .0001$). The study yielded no significant relationships between perceived competency and demographic variables, NCLEX performance or participation in an externship program. The investigators concluded that the quantitative results were limited by the use of subjects from only one university, administration of a new instrument, and the rather modest correlations. Although the quantitative study findings were not impressive, analysis of qualitative data revealed that a majority of the students (75%) felt they lacked technical skills. Students also identified a need for more positive feedback from faculty to promote their self-confidence. Finally, students expressed a need for curricular changes that would help them to apply theory into practice.

In a more recent study, Eberhard (1998) employed Mozingo et al.’s (1995) Perceived Competency Scale (PCS) to compare Tyler’s (1949) traditional behavioral model of education with Nodding’s (1984) theory of caring in education with respect to organizational climate for caring, student self-concept, student perception of competency,
and program NCLEX-RN pass rates. The Organizational Climate for Caring Questionnaire (OCCQ) (Hughes, 1993) and the Six-Factor Self-Concept Scale (SFSCS) (Stake, 1991, unpublished manuscript) were used to measure organizational climate for caring and student self-concept, respectively. Another study purpose was to test Noddings (1984) Theory of Caring in Education.

Using a comparative correlation design, Eberhard (1998) compared senior female Caucasian students (n = 70) from 10 programs with a caring organizational framework with similar students (n = 148) from 21 programs based on a traditional behavioral framework. Because there were significant differences in age (t (216) = 2.37, p = .019) by program type, analysis was conducted using ANCOVA with age as a covariate.

Findings revealed no differences in the perceived organizational climate for caring related to the type of pedagogical model studied. Comparison of NCLEX-RN pass rates by program type also indicated no significant differences. Eberhard (1998) found that Noddings' model did not explain the self-concept of nursing students but the dialogue and confirmation components of the model did explain 27% of the variance in perceived competence. Using the Pearson's correlation statistic, Eberhard found a significant positive relationship (r = .50, p < .0001) between perceived competency and a caring climate. The Perceived Competency Scale yielded a Cronbach Alpha score of .76 for the current study, an acceptable reliability score for a new instrument (Burns & Grove, 1997). Students' self-concept, however, was not shown to be related to their perceptions of a climate for caring as defined by Noddings. Eberhard suggested that measures of the professional self instead of the personal self-concept may be a more
appropriate measure of the self in nursing students.

**Summary of Research on Perceived Clinical Competence**

One qualitative and four quantitative studies related to perceived clinical competence were reviewed. Two of the quantitative studies used Schwerian's Six-Dimension Scale of Nursing Performance (Dufault, 1990; Moyer, 1996) and two employed Mozingo et al.'s Perceived Competency Scale (Eberhard, 1998; Mozingo et al., 1995). Although significant findings from the quantitative studies were weak, there was some consistency among the findings.

Nursing students believed that a trusting non-threatening relationship with faculty promoted their feelings of competence (Eberhard, 1998; Loving, 1993; Mozingo et al., 1995). Dufault (1990) also provided support for this theme by suggesting that the competence of the preceptor may parallel that of the novice nurse. In three of the studies, technical competence was associated with perceived clinical competence (Dufault, 1990; Loving, 1993; Mozingo et al., 1995). Only one study examined the relationship between grade point average (GPA) and perceived competency and found that students with higher GPA's tended to underrate their competency (Mozingo et al., 1995). Two of the studies suggested that personal variables such as stress, self-esteem, and trait anxiety may be associated with perceived clinical competency (Moyer, 1996; Mozingo et al., 1995). Eberhard (1998) found no relationship between perceived clinical competence and the self-concept. These findings may be related to the use of inappropriate instruments to measure self variables. Past research has suggested that self-esteem, anxiety and stress,
academic experiences, and role models may influence the clinical competency of students (Mozingo et al., 1995).

These limited research findings lend tentative support to the hypothesis that perceived clinical competence may be an outcome of caring student-teacher relationships and be influenced by students' self-esteem. In turn, perceptions of their clinical competence may influence their judgments, actions and relationships with others. Thus, nursing students who perceive that they are clinically competent may be better able to develop caring relationships with their clients. The development of caring relationships and positive perceptions of clinical competence may be precursors to professional nurse autonomy (Wade, 1999; Watson, 1988a). Therefore, nursing students must view themselves as clinically competent before they can develop positive professional nurse autonomy attitudes (Kramer & Schmalenberg, 1993; McKay, 1983; Styles, 1982; Schutzenhofer, 1992).

Professional Nurse Autonomy

Over 50 years ago, Bixler and Bixler (1945) noted that obstacles to overcome in achieving professional nurse autonomy are grounded in traditional conceptions of the term. To clarify the attitudinal component of professional nurse autonomy as defined in this study, theoretical literature related to the concept is addressed first. Included in the theoretical literature is a discussion of autonomy in females, definitions of professional autonomy, and core ideas about professional nurse autonomy. The research literature which follows begins with a review of research instruments relevant to the attitudinal
component of professional nurse autonomy and concludes with a discussion of current research using the instruments.

Theoretical Literature

Autonomy in Females

Most theories of autonomy are based on male prototypes (Belenky, Clinchy, Goldberger, & Tarule, 1986; Katz, 1979; Schutzenhofer, 1988; Watson, 1990). Women value personal relationships and gain power from relationships as compared to the male view of power through separation (Chodorow, 1978; Campbell & Bunting, 1991). Caring, or the ability to be “other-centered”, influences the way women value and view relationships (Gilligan, 1982; Chodorow, 1978). Not only do women define themselves and their autonomy within the context of human relationships, they also judge themselves relative to their ability to care (Gilligan, 1982). Hence, there may be a conflict between compassion and autonomy as women strive to solve moral problems.

Traditional views, based on a male model of autonomy through control and separation, devalue the professional nurse’s relationship with the client and the attitudes and behaviors of a primarily female profession (Boughn, 1995; Schutzenhofer, 1987; Watson, 1990). Furthermore, traditional conceptions of autonomy are contrary to the relational world view of nursing that strongly supports the caring ideology. For women and nurses, interdependence and relationships are inseparable from life and the context of human existence (Watson, 1990). Caring as a moral imperative demands engrossment with the other in order to be attentive to care. Yet, deeply held beliefs of personal
autonomy, privacy, self-determination, and self-responsibility, provide the foundation for the individual’s personhood, nursing’s ethics, and societal views of the professions. When struggling to reconcile the conflict between caring and autonomy, many nurses may abandon nursing or the effort to care. A balance is needed between the tenets of autonomy that support individualism and the value of caring (Katims, 1995; Reverby, 1987).

Bishop and Scudder (1987) claimed that the conflict can be resolved by promoting a moral autonomy within the individual. This perspective, however, creates a dichotomy between autonomy and caring and fails to explain the nature of professional nurse autonomy. Conflict between the two realms is based on opposing views of the self. To reconcile the conflict, Gadow (1995) proposed that the self must be reinterpreted in existential terms. Rational autonomy, which follows Kant’s philosophical perspective of noninterference, is based on universal respect for individuals. From an existential philosophical stance, caring is practiced with attentive discernment by valuing the unique and evolving nature of the whole individual. When caring is integrated with respect for the existential self, individuals are valued and ethical choices affirm the individual’s uniqueness. Gadow’s (1995) perspective emphasizes relational ethics as opposed to the universal domain proposed by rational ethics. Her perspective is consistent with Gilligan’s (1982) and Watson’s (1990) view that females develop autonomy within the context of relationships and the ethics of caring. The theoretical and operational definitions of the attitudinal component of professional nurse autonomy for this study are supported by Gilligan’s (1982) theory of female moral development. Further support for
reconceptualizing professional nurse autonomy is evident in the nursing and psychology literature that follows.

**Definitions of Professional Autonomy**

Definitions of professional nurse autonomy have their roots in the sociology and psychology literature. To understand the study definition, contemporary definitions of professional autonomy used by a variety of disciplines are followed by definitions of professional nurse autonomy found in the nursing literature.

**Contemporary definitions of professional autonomy.** The term professional autonomy was often used synonymously with personal autonomy, work autonomy, and aggregate professional autonomy (Batey & Lewis, 1982; Lach, 1992; McKay, 1983). Autonomy, a complex, multidimensional phenomenon, was derived from the Greek words autos and nomos, meaning self and to rule or hold sway (Curtin, 1982; Dempster, 1994). The dictionary defines autonomy as “the right to self-government; personal freedom; freedom of will; and a self-governing community” (Fowler & Fowler, 1995, p. 85). Synonyms include independence, freedom, liberty, self-determination, self-government, self-rule, and sovereignty (Kipper, 1992). These definitions do not address the phenomenon of professional nurse autonomy as it relates to the individual nurse. To distinguish the concept of interest from related terms, the various types of autonomy are explained.

Hall (1968) classifies autonomy as either a structural or attitudinal attribute. This classification forms the foundation for definitions of professional autonomy cited by
many disciplines. Structural autonomy, referred to as work autonomy by some authors, is the worker’s freedom to make decisions based on job requirements. Responsibility and authority are dictated by the bureaucratic hierarchy rather than the individual. Attitudinal autonomy is the belief that one is free to exercise judgment in decision making. Despite organizational or bureaucratic constraints, individuals may exhibit attitudinal autonomy and influence structural autonomy (Batey & Lewis, 1982; Engel, 1970; Hall, 1968; McKay, 1983).

Another type of autonomy frequently cited in the professional literature was aggregate professional autonomy. Aggregate professional autonomy is the socially and legally granted freedom of self-governance and control of the profession’s activities without influence from external forces. Because of the growing involvement of government agencies regulating professional practice and health care, absolute aggregate professional autonomy is unrealistic (Cherow, 1988; Chitty, 1993; Curtin, 1982; Dempster, 1994; McKay, 1983).

Nursing definitions of professional autonomy. Over 20 years ago, Pankratz and Pankratz (1974) recognized the unique nature of professional nurse autonomy by linking the concept of advocacy to it. Professional nurse autonomy, defined as the nurse’s perceived latitude or willingness to act as a responsible professional, also emphasized the dependence and independence of both nurses and patients. The nurse’s primary area of responsibility was advocacy of patient rights. Others have also acknowledged the association between advocacy and autonomy (Cassidy & Oddi, 1988, 1991; Curtin, 1982;
Pinch, 1985).

Although Batey and Lewis's (1982) definition of autonomy was frequently cited in the nursing literature, the definition does not address the centrality of the client or the nurse's advocacy role. Autonomy, the "freedom to make discretionary and binding decisions consistent with one's scope of practice and freedom to act on those decisions" (p. 15), could be applied to any profession. Gonzalez (1989) augmented this definition by including the freedom to act within the context of responsibility and caring for others. Lach (1992) added that decisions may involve interdependence with other members of the health care team.

Although Schutzenhofer (1987) claimed that her definition was based on feminist theories that reflected contemporary views of the profession, the definition was similar to the earlier one proposed by Batey and Lewis. Professional nurse autonomy is "the practice of one's occupation in accordance with one's education, with members of that occupation governing, defining, and controlling their own activities in the absence of external controls" (Schutzenhofer, 1987, p. 278). More recently, Boughn (1995) based her definition of professional nurse autonomy on Gilligan's (1982) female model of moral development. Professional nurse autonomy evolves from the capacity for advocacy and activism for self to endorsement of advocacy and activism for others. This definition was based on contemporary theories of caring in nursing.

Finally, Dempster's (1994) comprehensive definition encompassed self, other, or a joint locus of control. Autonomy is "a dynamic process demonstrating varying amounts of independent, self-governed, not controlled, or not subordinate behaviors and
sentiments related to readiness, empowerment, actualization, and valuation for autonomous performance” (Dempster, 1994, p. 227). Although her work primarily focused on advanced practice nurses, the definition suggested that there are levels of professional nurse autonomy. The attitudinal component of professional nurse autonomy may precede behavioral aspects of the construct.

**Relationship of study definition to other definitions of professional autonomy.**

Attitudinal autonomy, as classified by Hall (1968), reflects the professional autonomy of the individual nurse and is consistent with the study’s definition of professional nurse autonomy. The focus of this study was on variables that influence the attitudinal component of professional autonomy in the individual nursing student. The attitudinal component of professional nurse autonomy is recognition of one’s own needs and rights and values connectedness and responsibility for others (Boughn, 1995). The study definition was theoretically consistent with attitudinal autonomy and was supported by the framework for this study. The study definition was also similar to definitions of professional nurse autonomy cited in the nursing literature. Core ideas about professional nurse autonomy provide additional support for the study definition.

**Core Ideas About Professional Nurse Autonomy**

The evolving perspective of shared control and interdependence was a central theme of contemporary views of professional nurse autonomy. To achieve positive client outcomes in a complex health care system, professionals must engage in a collective enterprise and make both independent and interdependent decisions based on a complex
body of knowledge and skill (Curtin, 1982; Grinnell, 1989; Kramer & Schmalenberg, 1993; McKay, 1983). While making decisions, professional nurses must communicate both intra and inter-professional respect and trust. Coser (1991), a sociologist, supported interdependence as an essential attribute of professional nurse autonomy and acknowledged the centrality of the client. Autonomous nurses include clients in decision making. Because of the interrelationships between nurses and clients, the nursing role is complex. Nurses must continually articulate their role to other health care professionals who may have incompatible, and conflicting expectations.

Competence and a unique body of knowledge, necessary precursors to autonomy, are not minimized by interdependence. Instead, interdependence stimulates and challenges individual opinion, guides and augments initiative, and demands individual responsibility and accountability. Furthermore, nurses must perceive that they are competent and be aware of the boundaries dictated by the scope of practice (Grinnell, 1989; Kramer & Schmalenberg, 1993; McKay, 1983; Styles, 1982; Schutzenhofer, 1992).

Competent nurses exercise discretionary decision making by using the critical conscience to select a course of action consistent with the client's needs. Discretionary decision making is crucial to autonomous practice and does not involve the exercise of routine tasks or the unquestioning enactment of physician orders. Instead, self-direction and intellectual flexibility are required to negotiate and compromise (Batey & Lewis, 1982; Benner, 1984; Coser, 1991; Holden, 1991; Kramer & Schmalenberg, 1993).

Individuals who exhibit professional nurse autonomy also have the courage to make choices and assume responsibility for their actions. A precursor to responsibility
for others, however, is self-responsibility. Self-responsibility requires individuals to examine their ethical values and endorse ethical conduct. Decisions reflect values, are based on appropriate information, and determined through reasoning and deliberation. Responsibility for self and others does not involve emotional attachments or ownership of the client's problems (Boughn, 1995; Chally, 1993; Cherow, 1994; Holden, 1991; Pinch, 1985).

Outcomes of professional nurse autonomy are accountability and empowerment. Accountability is often used interchangeably with the term responsibility. Being answerable for one's decisions and actions, implies disclosure to self, to the client, to the employing agency, and to the profession (Batey & Lewis, 1982; Chitty, 1993). Empowerment, a feeling of personal efficacy, is enhanced with professional nurse autonomy. Feelings of empowerment positively influence job satisfaction and commitment to the profession (Alexander, Weisman, & Chase, 1982; Blegan, 1993; Dempster, 1994; Dwyer, Schwartz, & Fox, 1992; Kramer & Schmalenberg, 1993; Pearson, 1995).

In summary, professional nurse autonomy is a unique phenomenon that involves affiliative relationships with clients and collegial relationships with others (Boughn, 1995; Dempster, 1994; Lach, 1992; Pankratz & Pankratz, 1974; Wade, 1999). Nurses, who have a strong sense of self and perceive that they are competent, exercise their autonomy by making discretionary decisions that are based on nursing knowledge and the needs of the client (Batey & Lewis, 1982; Schutzenhofer, 1987). Autonomous nurses are accountable for their practice decisions, feel empowered, and can empower others.
Instruments to Measure the Attitudinal Component of Professional Nurse Autonomy

Instruments designed to measure professional nurse autonomy that were similar to the study definition include Pankratz and Pankratz’s (1974) Nursing Attitude Scale (PNAS), the Nursing Activity Scale (NAS) (Schutzenhofer, 1987), and Autonomy, the Caring Perspective (ACP) instrument (Boughn, 1995). An autonomy sub-scale of the Quality of Employment Survey (Quinn & Shepard, 1974) and the Edwards (1959) Personal Preference Schedules (EPPS) have also been used to measure professional nurse autonomy. These instruments, however, represent work autonomy and personal autonomy respectively (Lach, 1992).

The PNAS contains three sub-scales: (a) Nurse autonomy and patient advocacy, (b) patient’s rights, and (c) rejection of nurse’s traditional role limitations. Although Pankrantz and Pankrantz (1974) did not specify a theoretical framework, the instrument focused on attitudes of nurses toward dependence and independence for both nurses and patients. Nursing autonomy was linked with the nursing role of patient advocate.

The instrument has been criticized for concurrently measuring interrelated variables associated with nurse autonomy and containing several ambiguous items (Lach, 1992; Schutzenhofer & Musser, 1994). Content and construct validity were also questionable because the instrument may be outdated and the expertise of the persons developing the items was never reported. Furthermore, the instrument has been used to study student and community nurse populations when the original intent was for hospital
nurses. Despite these weaknesses, Collins and Henderson (1991) found that sub-scale means in their study of nurses' \((N=208)\) perceptions of autonomy were similar to those in Pankratz and Pankratz's (1974) original study. For the Nurses' Rights and Responsibilities subscales, Collins and Henderson reported a mean or 86.88 which is comparable to the mean range of 73.9 - 102 in Pankratz and Pankratz's (1974) original research. Patient Advocacy subscale \((M = 59.82)\) and Rejection of Traditional Role Limitations subscale \((M = 50.88)\) means were similar to the respective mean ranges of 53.8 to 61.3 and 45.8 to 56.1 in the original study. Nurses scoring the highest on autonomy were female, held a master's degree, had an administrative role in emergency services, and perceived that autonomous practice was expected (Collins & Henderson, 1991).

The NAS measures the registered nurses exercise of autonomy in clinical situations and not the attitudinal component of professional nurse autonomy (Schutzenhofer, 1987). The instrument was based on developmental theory of women as defined by Gilligan (1982). A recent factor analysis with a sample of 354 home health and hospital nurses revealed that two factors explain 30\% of the variance (Lach, 1992). Simple-independent autonomous decisions require basic knowledge about specific aspects of client care. Global-interdependent autonomous decisions are based on a broader knowledge base, require input from other disciplines, and affect wider areas of practice. Content validity was based on a review of current nursing literature and a survey of deans, directors of nursing service, and clinical specialists at major hospitals in a large metropolitan area. Reliability analysis from the initial two stage instrument

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development study and more recent studies has yielded alphas of .81 to .92 (Schutzenhofer & Musser, 1994).

The ACP measures autonomy-related attitudes and behaviors of nursing students (Boughn, 1995). Subscales include: regard for self, regard for others, advocacy and activism for self, and advocacy and activism for others. The author clearly stated that the instrument was based on Gilligan's (1982) developmental theory and caring models of nursing as proposed by Benner and Wrubel (1989), Bevis and Watson (1989), and Watson (1988a; 1988b). Reliability and validity was established over a three year period with a sample of 400 baccalaureate nursing students and is detailed in chapter three. Although the ACP has not been used in other studies, reliability and validity were well supported.

In summary, two instruments measure the attitudinal component and/or behaviors of professional nurse autonomy in practicing nurses. The ACP, designed specifically for use with students, was theoretically consistent with the construct measured by the NAS. The attitudinal component of professional nurse autonomy is a construct that is based on the unique development of autonomy in female nurses. Common sub-concepts in all of these instruments are independent and interdependent decision making, and advocacy and caring. Because Boughn’s instrument was designed to measure the attitudinal component of professional nurse autonomy in nursing students and was theoretically consistent with contemporary definitions of professional nurse autonomy, the instrument was the most appropriate one for measuring this study’s criterion variable.
Research Concerning Professional Nurse Autonomy

Although there was extensive research on autonomy in nursing, only studies frequently cited and recent dissertations that relate specifically to the attitudinal component of professional nurse autonomy as defined for this study were examined. Most of the reported research was descriptive, examining relationships between the concept and personal or work-related characteristics of students and nurses. Research on professional nurse autonomy in nursing students primarily compared differences in the attribute between diploma, associate degree, and baccalaureate degree nursing students. Therefore, relevant studies on professional nurse autonomy in professional nurses was also included in the following review.

The research literature on the effects of basic education on professional nurse autonomy for both student and registered nurse (RN) samples was inconclusive (Table 2). Although Langston (1990) and Murray and Morris (1982) reported significantly higher ($p = .001$) autonomy scores for baccalaureate (BS) students when compared to associate degree students (AD), others found no significant difference for student or RN samples (Akoma, 1993; Hallsworth, 1993; Schutzenhofer & Musser, 1994). Degrees of freedom were not reported in any of these studies.

Others studied the attitudinal component of professional nurse autonomy in both students and registered nurses at various time intervals. Rhorer’s (1989) cross sectional simulated time series study examined the relationship between education, work experience, and the attitudinal component of professional nurse autonomy with a convenience sample of 213 entry level AD and BS students and a random sample of 102
Table 3

Summary of Research on Effect of Basic Education on Professional Nurse Autonomy

<table>
<thead>
<tr>
<th>AUTHOR/YEAR</th>
<th>SAMPLE</th>
<th>INSTRUMENT</th>
<th>RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hallsworth, 1993</td>
<td>Convenience</td>
<td>NAS</td>
<td>Not Significant</td>
</tr>
<tr>
<td></td>
<td>AD (N=191)</td>
<td></td>
<td>AD (M=199.4)</td>
</tr>
<tr>
<td></td>
<td>BS (N=115)</td>
<td></td>
<td>BS (M=197.2)</td>
</tr>
<tr>
<td>Langston, 1990</td>
<td>Convenience</td>
<td>PNAS (Autonomy subscale)</td>
<td>T = 13.31; p &lt; .000</td>
</tr>
<tr>
<td></td>
<td>AD (N=224)</td>
<td></td>
<td>AD (M = 85.9)</td>
</tr>
<tr>
<td></td>
<td>BS (N=291)</td>
<td></td>
<td>BS (M = 96.2)</td>
</tr>
<tr>
<td>Murray &amp; Morris, 1982</td>
<td>Convenience</td>
<td>PNAS</td>
<td>ANOVA (F = 19.22; p = .001)</td>
</tr>
<tr>
<td></td>
<td>AD (N = 80)</td>
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<td>AD (M = 82.73)</td>
</tr>
<tr>
<td></td>
<td>Diploma (N = 85)</td>
<td></td>
<td>Diploma (M = 86.95)</td>
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<tr>
<td></td>
<td>BS (N = 59)</td>
<td></td>
<td>BS (M = 92.83)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Scheffe Test (BS, p &gt; .01 for AD &amp; Diploma groups)</td>
</tr>
<tr>
<td>Akoma, 1993</td>
<td>Convenience</td>
<td>NAS</td>
<td>Kruskal-Wallis</td>
</tr>
<tr>
<td></td>
<td>Hospital RNs (N = 90)</td>
<td></td>
<td>(KW = .039, p = .8226)</td>
</tr>
<tr>
<td>Schutzenhofer &amp; Musser, 1994</td>
<td>Random from various settings RNs (N = 542)</td>
<td>NAS</td>
<td>ANOVA (F = .26, p = .90)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>AD (M = 193.5)</td>
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<td></td>
<td></td>
<td></td>
<td>BS (M = 193.5)</td>
</tr>
</tbody>
</table>
new graduates and 123 experienced RNs. Although the researcher did not specify a theoretical framework, the study was based on established criteria that distinguish an occupation from a profession. Using two-way analysis of covariance (ANCOVA), Rhorer found no significant difference related to basic education as measured by the Pankratz (1974) Nursing Attitude Scale (PNAS). A statistically significant ($F_{(2, 428)} = 45.17, p = .000$) main effect due to work experience, however, was moderated by a statistically significant interaction effect between basic education and experience ($F_{(2, 428)} = 4.6; p = .010$). Post hoc comparison using the Dunn-Sidak procedure revealed that AD students had significantly ($p<.05$) higher mean autonomy scores ($M = 80, SD = 9.4$) than did BS students ($M = 75.5, SD = 12.5$). Examination of the mean scores of students with scores of experienced RN's from both educational groups, however, revealed a greater increase in autonomy scores for the experienced BS group. Study findings suggested that education at the baccalaureate level reinforced by practice experience may lead to professional nurse autonomy. Use of the Pankratz and Pankratz (1974) instrument which was designed for hospital nurses and may be outdated was an area of concern.

Another cross-sectional study, however, yielded similar results using Schultzenhofer's (1987) Nursing Activity Scale (NAS). Keely (1990) focused on whether RN students from nontraditional nursing programs were as sufficiently socialized to their professional roles as RN students from traditional programs. Pavalko's theory of professional socialization provided the framework for the study. The sample included Associate Degree nursing students ($N = 170$) and graduates and RN students and graduates enrolled in traditional ($N = 168$) and non-traditional ($N = 262$)
baccalaureate programs. Data were collected at 10 different points in time from entry into the program to 10 years post graduation. A one-way analysis of variance (ANOVA) and post hoc analysis, revealed that AD students scored significantly higher than BS students ($F = 7.696, p < .01$). Degrees of freedom were not specified in the results. When the post graduation scores of AD students were compared with those of BS alumni, however, the alumni scored significantly higher. Findings from both Keely’s (1990) and Rhorer’s (1989) studies indicated the possibility of other intervening variables. The studies also suggested that the foundation for professional nurse autonomy may be established during baccalaureate education.

Instead of examining differences in professional nurse autonomy related to level of education, Husted (1991) considered the possibility of intervening variables by focusing on the relationship of ego development to both personal and professional autonomy. Loevinger’s (1966, 1980) concept of ego development provided the study’s framework. With a convenience sample of 100 BS students, one month prior to graduation, Husted (1991) found a statistically significant but weak relationship ($r = .29; p = .003$) between personal autonomy using Kurtines’ (1978) Autonomy Scale and professional nurse autonomy as measured by the NAS. Regression analysis revealed that 8% of the variance in professional nurse autonomy was associated with personal autonomy. Using the Washington University Sentence Completion Test (WUSCT) to measure ego development, Husted found no significant relationship between ego development and personal or professional autonomy.
Husted's (1991) findings, although statistically significant, were not strong. The researcher concluded that the NAS required further validation for reliability and that the concepts of personal and professional autonomy needed clarification. Again, the NAS, designed to measure the exercise of professional nurse autonomy in practicing nurses, may have been inappropriate for a student population.

Also interested in the influence of intervening variables related to autonomy, Boughn's (1992) comparative descriptive study examined the influence of gender traits on the development of individual or personal autonomy with a sample of baccalaureate nursing students (N = 53) and baccalaureate students (N = 166) from other academic programs. Larson's (1977) theory was used to link individual autonomy to professional status. Based on the theory, Boughn proposed that the degree of individual autonomy possessed by nurses determines subsequent professional status. Boughn assumed that students would be relatively free of the influence of intervening variables associated with nursing education and practice. Using a demographic data tool, a modified version of Kurtine's Autonomy Scale, a shortened version of the Bem Sex-Role Inventory (BSRI), and 10 questions from the Caring, Affiliation, and Power (CAP) questionnaire, Boughn compared the relative capacity for professional autonomy of nursing students and female students in other disciplines. The CAP, a precursor to the ACP, was designed by the researcher to measure autonomy-related attitudes and behaviors in women students.

Using ANOVA, Boughn found no significant differences in mean autonomy scores (F (3,215) = 1.54, p = .20) and mean masculinity scores (F (3, 215) = 1.84, p = .14) between nursing students and females from any of the other disciplines. Although
nursing students did not differ significantly on femininity scores from students in education and business, they did score significantly ($F (3, 215) = 11.48$, $p = .0001$) higher than female students from the schools of technology and arts and sciences. Scores on the CAP revealed that nursing students differed significantly ($F (3, 215) = 16.0$, $p = .0001$) from all other students on 5 of the 10 items.

Caution should be taken in interpreting this finding as the items may have been more appropriate for nursing students. The most significant responses of the nursing students were for questions addressing advocacy and activism for patients. Boughn supported earlier research suggesting that autonomy in nursing may be manifested through advocacy and caring and recognized the need to develop an instrument for measuring the attitudinal component of professional nurse autonomy in female nursing students. As in Husted's (1991) study, use of Kurtine’s Autonomy Scale may not have been an appropriate instrument for measuring personal autonomy in female students.

The issue of professional nurse autonomy was also of concern with the registered nurse population. Thompson (1998) used Bough’s (1995) ACP instrument to investigate professional nurse autonomy and learner autonomy with a sample ($n = 33$) of female registered nurses enrolled in distance education and another group ($n = 55$) enrolled in traditional baccalaureate programs. To compare relationships, Thompson employed a comparative correlational design and a theoretical framework that integrated a distance education theory of learner autonomy with a feminist, caring model of autonomy. Learner autonomy was measured using Baynton’s (1989, 1992) Learner Control (BLC) instrument. The BLC was a Likert-type questionnaire measuring the extent to which
learners experienced independence, competence, and teacher support upon completion on an undergraduate course.

Findings revealed no significant differences in professional nurse autonomy and learner autonomy between students enrolled in distance education and traditional baccalaureate programs. Using Pearson's correlation statistic, statistically significant, but weak correlations were found between student competence in learner autonomy and professional nurse autonomy (τ = .28, p = .01). In addition, a moderately strong and statistically significant relationship was found between teacher support and competence subscales on the BLC (τ = .61, p < .0001). Moderate relationships were also found between the subscales advocacy for self and regard for others (τ = .45, p < .0001), advocacy for self and advocacy for others (τ = .56, p < .0001), and regard for others and advocacy for others (τ = .40, p < .0001) on the ACP.

When demographic data were related to the learner autonomy variable, statistically significant (p < .05), but weak relationships (τ = .22 to .28) were found between competence and age, competence and years worked, independence and years worked, and learner autonomy and years worked. No significant relationships between demographic data and the professional nurse autonomy variable were found. Furthermore, basic education was not significant for any of the autonomy variables. Because the statistical assumptions for use of the ANCOVA procedure were not met, the researcher was not able to compute the demographic variables as covariates. Also, no adjustments were made for the use of multiple tests which may have greatly increased the possibility of a Type I error (Burns & Grove, 1997; Tabachnick & Fidell, 1996).
This study was the only one to date using Boughn's (1995) ACP instrument. The significant relationship of perceived competence and teacher support to professional nurse autonomy lend tentative support that the attitudinal component of professional nurse autonomy may be predicted from students' perceived clinical competence and perceptions of instructor's caring behaviors. Because these findings were related to a registered nurse sample, however, they must be viewed with caution.

To clarify the relationship between personal, work, and professional nurse autonomy, Lach (1992) used the NAS to study a random sample of 239 hospital and 115 home health nurses. Role theory provided the study framework. The primary purpose of the research was to statistically analyze the Nursing Activity Scale (NAS). Secondly, the researcher examined predictors of professional nurse autonomy. Proposed predictors included: Nursing education (non-BSN versus BSN or higher education); total registered nurse experience; current agency experience; employment setting (hospital versus home health agency); personal autonomy scores; and work autonomy scores. The third purpose was to determine differences in mean professional nurse autonomy scores between home health and hospital nurses.

Stepwise regression analysis indicated that personal autonomy ($R^2 = .25$, $p < .001$) accounted for 25% of the variance in professional nurse autonomy, while employment setting and work autonomy respectively accounted for 7% and 2% of the variance. The other proposed predictor variables did not enter into the equation. A comparison of personal, work, and professional autonomy scores between hospital and home health nurses revealed that home health nurses had significantly higher personal ($t (260) = -3.08$, $p < .001$).
work ($t(352) = -11.88, p < .001$), and professional autonomy ($t(352) = -6.63, p < .001$) scores. The stronger relationship between personal and professional autonomy in Lach’s (1992) study when compared to Husted’s (1991) findings may reflect differences between the registered nurse and students populations.

Schutzenhofer and Musser’s (1994) descriptive study of a random sample of 542 registered nurses (RN) examined characteristics associated with professional nurse autonomy in the practicing nurse. Although the study employed a RN sample, some of the findings may be relevant to a student population. The researchers did not specify a theoretical framework. The primary emphasis of the study was to further test the Nursing Activity Scale (NAS) originally designed by Schutzenhofer (1987). The Scale was based on theories related to the development of women. Using the NAS, a demographic questionnaire, and the Personal Attributes Questionnaire (Spence, Helmreich, & Stapp, 1974) (PAS), Schultzenhofer and Musser studied relationships among autonomy and nursing education, practice setting, clinical specialty, functional role, membership in professional organizations, and gender stereotyped personality traits.

One-way analysis of variance (ANOVA) followed by post hoc analysis with the Tukey-B and Least-Significant Difference (LSD) tests revealed no significant differences on mean NAS scores among RNs from the three basic educational programs. There were, however, significant differences ($F(4, 537) = 2.00, p = .04$) when NAS scores were compared with the highest level of educational achievement. Nurses with a master’s degree in nursing (MSN) had significantly higher mean scores ($M = 212.6, p = .05$) than those with a diploma ($M = 192.43$), an associate degree ($M = 191.41$), or a BSN...
(M = 192.52). It was interesting to note that mean scores for all entry level education were very similar. Further analysis revealed a significantly higher mean NAS score (M = 221) for nurses who obtained a MSN or a doctorate regardless of their basic educational program. These findings suggested that education above the basic level may strongly influence the exercise of professional nurse autonomy.

Although regression analysis revealed no significant relationship between autonomy and age or years of nursing experience, scores on the instrument to measure gender-related traits (PAQ) revealed significant variance with the NAS scores (p = .001). Masculine traits explained 13%, feminine traits explained 6%, and a combination of masculine and feminine traits explained 2% of the variance in the NAS scores. These findings suggested that gender traits typically associated with males may be associated with a higher sense of professional nurse autonomy.

**Summary of research on professional nurse autonomy.** The research literature revealed inconclusive findings on the relationship between basic education and professional nurse autonomy (Akoma, 1993; Hallsworth, 1993; Langston, 1990; Murray & Morris, 1982; Rhorer, 1989; Schutzenhofer & Musser, 1994; Thompson, 1998). Advanced education, however, was strongly associated with the exercise of professional nurse autonomy (Schutzenhofer & Musser, 1994). When basic educational level was combined with type of experience, there was a significant relationship between basic education level and professional nurse autonomy (Rhorer, 1989; Keely, 1990). Therefore, a baccalaureate education may provide a foundation for professional nurse autonomy.
Personal autonomy and work autonomy were also associated with the exercise of professional nurse autonomy (Husted, 1991; Lach, 1992; Schutzenhofer & Musser, 1994). Any direct relationship between these variables may be obscured by the fact that individuals with high needs for achievement and autonomy tend to seek higher education and environments that are conducive to using their skills (Pankratz & Pankratz, 1974).

Studies suggested that there may be a relationship between personal autonomy, gender traits, and professional nurse autonomy (Boughn, 1988; Husted, 1991; Lach, 1992; Schutzenhofer & Musser, 1994). The weak relationships, however, may be related to the use of instruments that have primarily been validated with male populations. Findings from studies that examined intervening variables indicated that other variables may influence professional nurse autonomy. Only one researcher examined the relationship between learner characteristics and professional nurse autonomy (Thompson, 1998). Study findings suggested a possible connection between perceived competence, faculty support, and professional nurse autonomy. Not only were the variables similar to those used in this study, but Thompson (1998) was also the only researcher to use Boughn’s instrument.

Although most of the studies did not specify a theoretical framework, those that did primarily used theories of professionalism (Boughn, 1992; Lach, 1992) or developmental theory (Husted, 1991). Only Thompson’s (1998) study integrated a caring theory with a learning autonomy theory. Boughn (1995) and Thompson (1998) were the only researchers to incorporate any type of nursing theoretical basis for their research.
Current research on professional nurse autonomy in nursing education primarily addressed gender traits and levels of education. Weak, but statistically significant findings suggested that other variables may influence professional nurse autonomy. Furthermore, instruments designed for practicing nurses have been used without proper validation with student populations. Instruments designed for practicing nurses may be measuring the exercise of professional nurse autonomy and not the attitudinal component (Boughn, 1995; Schutzenhofer & Musser, 1994). Until nursing students actually enter the practice world it may not be appropriate to measure the exercise of professional nurse autonomy.

Chapter Summary

The theoretical and research literature was reviewed to understand more fully those factors influencing the attitudinal component of professional nurse autonomy in baccalaureate nursing students and to establish the state of theory testing related to Watson's (1988a) Theory of Transpersonal Caring. Following a review of Watson's Theory of Transpersonal Caring and supporting research, literature on the three predictor variables, perceptions of instructor caring behaviors, self-esteem and perceived clinical competence, was examined. The final section contained theoretical and research literature on professional nurse autonomy in general and the outcome variable, the attitudinal component of professional nurse autonomy.

The carative factors of Watson's theory were primarily supported by qualitative research (Lenihan, 1995). Findings associated with the use of instruments to test the
carative factors were inconclusive. One consistent finding, however, was that patient and nurse perceptions of caring are different (Stanfield, 1991; Wolf et al., 1994).

Theoretical and research literature on perceptions of instructor caring suggested that learning to care requires caring relationships between students and faculty. Most of the research was primarily qualitative. A consistent finding was that students can describe instructors as either caring or uncaring (Beck, 1991; Halldorsdottir, 1990; Hanson & Smith, 1996; Kosowski, 1995; Nelms et al., 1993).

Although the self-esteem theoretical and research literature failed to establish self-esteem as a unidimensional or multidimensional construct, there was general agreement that self-esteem was a component of the self-concept (Fleming & Courtney, 1984). Research with college students used large samples and a variety of instruments to study self-esteem. Nursing student studies were limited by sample size and unclear operational definitions of the construct. A variety of different attributes possibly associated with self-esteem have been studied. Self-esteem was positively associated with ability, achievement, and well-being and negatively associated with anxiety, depression, and stress (Addeo et al., 1994; Eronen et al., 1998; Rew, 1989; Tafarodi & Swann, 1995). Recent research suggested both common and different origins of self-esteem in males and females (Osecka’ & Blatny’, 1993; Rentsch & Heffner, 1992). Weak, but significant findings for variables associated with self-esteem suggested that there may be multiple correlates of self-esteem.

Research on perceived clinical competence provided tentative support for a connection between perceived clinical competence and the other study variables. A
trusting, non-threatening relationship with faculty promoted feelings of competence (Eberhard, 1998; Loving, 1993; Mozingo et al., 1995). Lack of perceived technical competence was frequently cited as a concern. Stress, self-esteem and anxiety were also possible correlates.

The outcome variable, attitudinal component of professional nurse autonomy, has been studied in both student and nurse populations using primarily three instruments. Only one study employed Boughn’s (1995) instrument which was designed solely for student populations (Thompson, 1998). The researcher, however, used the instrument with RN students returning for a bachelor’s degree. Only Thompson’s (1998) and Boughn’s (1995) research considered caring as the theoretical basis for their studies. Most of the research on professional nurse autonomy in nursing education focused on gender traits and levels of education (Akoma, 1993; Hallsworth, 1993; Langston, 1990; Murray & Morris, 1982; Schutzenhofer & Musser, 1994). Although the studies did not establish a relationship between basic education and the attitudinal component of professional nurse autonomy, findings suggested that a baccalaureate education may provide a foundation for the attitudinal component of professional nurse autonomy (Keely, 1990; Rhorer, 1989). Weak, but statistically significant findings suggested that other variables may influence the attitudinal component of professional nurse autonomy.
CHAPTER III

METHODOLOGY

The literature review revealed that nurses, as predominantly female professionals, express their autonomy in a unique way. Watson's (1988a) Theory of Transpersonal Caring provided the framework for understanding the development of the attitudinal component of professional nurse autonomy in females. Variables associated with the attitudinal component of professional nurse autonomy, derived from Watson's theory and supported by a concept analysis of professional nurse autonomy and the review of the literature, included perceptions of instructor caring behaviors, self-esteem, and perceived clinical competence. The problem for investigation was to test the influence of these variables on the attitudinal component of professional nurse autonomy. This study proposed to specify a model for predicting the attitudinal component of professional nurse autonomy that was based on the data and reflected Watson's (1988a) Theory of Transpersonal Caring.

This chapter describes the design of this investigation developed to test the hypothesized model of the attitudinal component of professional nurse autonomy. Sampling and data collection procedures, instruments to measure the variables, and procedures for data analysis are discussed. Results from a pre-test of the study instruments are also addressed.
Research Design

A model testing correlational design was employed to explore the relationships among nursing students' perceptions of instructor caring behaviors, self-esteem, perceived clinical competence and the attitudinal component of professional nurse autonomy. This design is appropriate for theory testing and provides stronger evidence for causality than other types of non-experimental designs (Burns & Grove, 1997; Munro, 1997; Wasserbauer & Abraham, 1995). Since this was a non-experimental design, however, there was no manipulation of variables. The theory-based model was tested to determine whether it was supported or not supported by the data.

Although causal models are implied, predictor variables are viewed as influencing rather than causing the dependent variable (Munro, 1997). The predictor variables, perceptions of instructor caring behaviors, self-esteem, and perceived clinical competence, were hypothesized to influence the attitudinal component of professional nurse autonomy. Based on Watson's (1988a) Theory of Transpersonal Caring and a concept analysis of professional nurse autonomy, there is a hypothesized relationship between the predictor and outcome variables that is temporal and nonspurious. The model shows the hypothesized causal direction of the predictor variables on the criteria or outcome variable (refer to Figure 2, page 17).

In path analysis models, variables are either exogenous, endogenous, or residual (Burns & Grove, 1997; Pedhazer, 1997). In any theory, there are variables external to the theory that may be related to variables within the theory. These external variables, referred to as exogenous variables, may account for some of the variance within the
theory but are explained by factors outside the model. Exogenous variables effect, but are not influenced by other variables in the model (Hayduk, 1987; Pedhazer, 1997).

Fluctuations in exogenous variables are not explained by the model but may be used to explain variations in the endogenous variables. In contrast, endogenous variables are influenced by other variables within the model. Residual variables are not explained by the model but introduce a source of error into the analysis (Hayduk, 1987; Pedhazer, 1997).

In the present study, the exogenous variable, perceptions of instructor caring, was hypothesized as influencing the endogenous variables but may be explained by factors outside the model. Self-esteem, an endogenous variable, was theoretically proposed to be influenced by perceptions of instructor caring behaviors. Another endogenous variable, perceived clinical competence, may be influenced by both perceptions of instructor caring behavior and self-esteem. The outcome variable, attitudinal component of professional nurse autonomy, is an endogenous variable that may be influenced by a combination of all the predictor variables. Any variance not accounted for in the model is attributed to residual variables not included in the analysis.

Watson (1979) claimed that all the carative factors interact holistically and provide a way of studying and understanding nursing care. Use of a model testing correlational design reveals the direct and indirect effects of the predictor variables on the attitudinal component of professional nurse autonomy. The Theory of Transpersonal Caring was tested to determine the direct, indirect, and total effects of the predictors, the amount of variance explained by the model, and the fit between the data and the model.
Variance not explained by the model was indicative of the effect of variables not included in the hypothesized model. The path coefficients suggest the effect of the predictor variables on the criterion variable. The fit between the data and the model was an indicator of the accuracy of the theory (Burns & Grove, 1997).

Four separate instruments were used to measure the variables of perceptions of instructor caring, self-esteem, perceived clinical competence, and the attitudinal component of professional nurse autonomy. A summary of the predictor variables and the criterion variable with the identified instruments is listed in Table 4.

Sample

The population consisted of female baccalaureate nursing students completing their last semester. Students enrolled in generic baccalaureate nursing programs accredited by the National League for Nursing Accrediting Commission (NLNAC) were asked to participate in the study. Any registered or licensed practical nurse enrolled in the program was excluded.

Proportional quota sampling was used to select a sample of baccalaureate programs from each of the four NLNAC accrediting regions (D. Caggiano, NLNAC, personal communication, July 22, 1999). This approach provided a national representative sample and helped to minimize potential bias (Burns & Grove, 1997). To obtain an equal proportion of programs from each region and a sample size that was representative and sufficient for an acceptable level of power, the proportion of programs sampled was based on the sample size required for this study.
Table 4

Summary of variables and instruments.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PREDICTORS</strong></td>
<td></td>
</tr>
<tr>
<td>Perception of Instructor Caring</td>
<td>Perception of Instructor Caring (PIC)</td>
</tr>
<tr>
<td>(exogenous)</td>
<td></td>
</tr>
<tr>
<td>Self-Esteem</td>
<td>Rosenberg Self-Esteem Scale (RSES)</td>
</tr>
<tr>
<td>(endogenous)</td>
<td></td>
</tr>
<tr>
<td>Perceived Clinical Competency</td>
<td>Perceived Competency Scale (PCS)</td>
</tr>
<tr>
<td>(endogenous)</td>
<td></td>
</tr>
<tr>
<td><strong>CRITERION</strong></td>
<td></td>
</tr>
<tr>
<td>Attitudinal Components of Professional Nurse Autonomy</td>
<td>Autonomy, The Caring Perspective (ACP)</td>
</tr>
<tr>
<td>(endogenous)</td>
<td></td>
</tr>
</tbody>
</table>

According to Nunnally and Bernstein (1994), path analysis requires at least 30 subjects for each variable. Based on this criterion, the minimum sample size for this study would be 120. Specific ratio estimates of sample size to number of parameters within the model should be higher, however, than the number suggested by Nunnally and Bernstein (Mueller, 1996). The ratio should be at least 5:1. To trust statistical significance tests, the ratio of sample to predictor variables should be 10:1 to as high as 50:1 (Mueller, 1996). Based on the 50:1 criteria, a sample of at least 150 was needed. According to Tabachnick and Fidell (1996), sample size determined by cases-to-independent variable ratios must be substantial or the solution will be meaningless.
Suggested criteria for identifying an appropriate sample size included the desired power, alpha level, number of predictors, and expected effect sizes (Tabachnick & Fidell, 1996).

Power was the primary factor for determining sample size for this study. Power is influenced by effect size, significance level and sample size. Effect size (ES), the extent to which the presence of a phenomenon exists in the population, is dependent on the population being studied and the sensitivity of the study instruments (Burns & Grove, 1997). Although the standardization studies produced adequate reliability and validity indices for the perceived clinical competence and professional nurse autonomy instruments, results from use of these instruments in other studies have not been published. Only face validity was reported for the perceptions of instructor caring behavior's instrument. Rosenberg’s (1965) Self-Esteem Scale, however, has been widely used with college student populations and deemed valid and reliable (Wylie, 1989).

Because of the newness of research on the attitudinal component of professional nurse autonomy, population data on effect size were not available. Therefore, the estimated effect size was assumed to be small (Burns & Grove, 1997).

For regression analysis, small effect size values range from an $R^2$ of .02 to .13 for a moderate effect size (Cohen, 1987). Based on Cohen’s formula for regression analysis, a power of .80 with a small effect size (.03), an effect size index of 10.90, and an alpha level of $p = .05$, the minimum sample size required for this study was 357. Assuming that at least 15 students would be recruited from each selected school, participation of at least 24 schools was needed. This number, however, did not allow for attrition or refusal rates. According to Light, Singer, and Willet (1990), there is no single rule for predicting
attrition and refusal rates. For educational studies lasting one semester, researchers have been able to successfully contact and retain over 90 percent of the respondents (Light et al., 1990). Assuming a conservative response rate of 70%, it was determined that an additional 107 subjects would be recruited from a total of 31 schools, yielding an accessible sample size of 464.

Thirty-one schools comprised 5% of the total number (N = 606) of NLN accredited schools (NLNAC, 1999). To obtain a proportional quota from each NLN accredited region, 5% of the total number of programs in each region were randomly selected (Table S). All of the baccalaureate programs listed in the 1999 NLNAC booklet were numbered from 1 to 606 starting with the first program and ending with the last. Programs from each region were selected from a table of random numbers until 5% of the programs were identified.

Letters were sent to each of the 31 selected schools, inviting them to participate and to identify the number of student questionnaires needed. Because the response rate to the initial mailing was only 45% (N = 14), an additional 24 randomly selected schools were sent the same letter a month later. Of the 55 schools contacted, 22 schools agreed to participate for an overall response rate of 40%. Reasons given for declining to participate included students not being on campus, being registered nurses, or the semester was ending.

Twenty of the 22 schools agreeing to participate returned a total of 400 questionnaires of which 317 were usable. The resulting sample size (N = 317) was large enough to achieve a power of .80 and an alpha level of .05 for all hypotheses. The actual
Table 5

**NLN-Accredited Regions, States and Baccalaureate Nursing (BSN) Programs.**

(N = Number of Schools Selected)

<table>
<thead>
<tr>
<th>Region</th>
<th>States</th>
<th>N/Total BSN Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midland</td>
<td>IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, OK, SD, WI</td>
<td>10/199</td>
</tr>
<tr>
<td>Northeast</td>
<td>CT, DE, MD, ME, MA, NH, NJ, NY, PA, RI, VT, Puerto Rico, Virgin Islands</td>
<td>8/161</td>
</tr>
<tr>
<td>Southern</td>
<td>AL, AR, DC, FL, GA, KY, LA, MS, NC, SC, TN, TX, VA, WV</td>
<td>9/174</td>
</tr>
<tr>
<td>Western</td>
<td>AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA, WY, Quam</td>
<td>4/72</td>
</tr>
</tbody>
</table>

Sample size was also larger than the suggested sample size for path analysis determined by the case-to-independent variable method (Hayduk, 1987; Mueller, 1996; Nunnally & Bernstein, 1994).

**Instrumentation**

Four instruments and one demographic data form were used in this study. The research instruments in order of administration included: (a) an investigator designed student demographic data form (Appendix E), (b) Autonomy, the Caring Perspective instrument (ACP) (Appendix A), (c) Perceived Clinical Competency Scale (PCCS) (Appendix B), (d) Perceptions of Instructor Caring Behaviors (PICB) (Appendix C), and
Reliability and validity of the study instruments are critical with model testing research. When reliability of the measures of variables is less than perfect, the correlation between the variables is lower than it would be with true scores (Pedhazur, 1997). With the exception of the Rosenberg (1979) Self-Esteem Scale, all of the study instruments were relatively new. Therefore, all the instruments were tested with a sample of 43 senior baccalaureate nursing students. Findings from the instrument pre-tests follow a description of the study instruments.

**Perceptions of Instructor Caring Behaviors**

**Description.** Golden's (1993) instrument to measure Student Perceptions of Instructor Caring is a 16 item, 7-point semantic differential scale. Semantic differential scales are designed to distinguish varying degrees of positive and negative attitudes toward a concept (Burns & Grove, 1997). Students are asked to evaluate their instructors' caring qualities on a scale with opposite adjectives connoting instructor caring behaviors.

Aspects of caring behaviors were derived from Watson's (1988a) and Leininger's (1986) theories as well as Halldorsdottir's (1990) and Miller, Haber, and Bryne's (1990) research on instructors' caring and non-caring behaviors (Golden, 1993). Perceptions, attitudes, and beliefs evolve from interactions with others and are important determinants of an individual's behavior (Fawcett, 1989). Perceptions influence the actions and reactions of individuals and in turn affect others (Wheeler, 1994). This instrument is
conceptually congruent with Watson's Theory (1988a) in that caring can be approached by the method of contrast. Watson (1988a) claimed that there is a dual relationship between caring and noncaring. Nurses and society can distinguish between caring and noncaring. Perceptible characteristics of caring and noncaring are somewhat revealed in the attitudes and actions of nurses and provide a way to understand caring. Furthermore, Watson (personal communication, July 20, 1998) supported the use of any instrument that was based on Halldorsdottir's study of nursing students' perspectives on caring and noncaring encounters with instructors.

**Validity.** The items selected for the semantic differential instrument were derived from Watson's (1988a) and Leininger's (1986) theories as well as Halldorsdottir's (1990) and Miller et al's (1990) research on instructors' caring and non-caring behaviors (Golden, 1993). Only face validity was established with the researcher's initial study. Content validity was further established by Watson's (personal communication, January 9, 1999) rating of four (very relevant) for all items on a scale of one to four. Factor analysis, performed on data from the current study, revealed a two factor solution. Factor 1 items were interpreted as teacher caring qualities and factor 2 items as personal caring qualities.

**Reliability.** Psychometric data on the reliability of this instrument have not been published. The Cronbach alpha score for both the pre-test and the current study was .92. Thus, internal consistency reliability of a measure of perceptions of instructor caring behaviors for this study was supported (Burns & Grove, 1997).
Scoring. Values were assigned to each of the seven spaces on the semantic differential scale with one (1) being the most negative and seven (7) the most positive. To obtain a score, the values of each scale were summed. Therefore, total scores can range from 16 to 112, with a higher score indicating more positive perceptions of instructor caring behaviors. Negatively worded items 2, 4, 6, 8, 10, 12, 14, and 16 were reverse scored prior to data analysis.

Rosenberg Self-Esteem Scale (RSES)

Description. The Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965) was used to measure self-esteem of senior baccalaureate nursing students. Self-esteem, the evaluative component of the self-concept, encompasses self-acceptance, self-respect, and feelings of self-worth (Rosenberg, 1979). The instrument, consisting of a 10 item 4-point Likert scale, measures global self-esteem (Rosenberg, 1979). Global self-esteem is based on the assumption that individuals consciously and unconsciously consider and weigh a unique set of attributes of varying personal importance.

The RSES appears to be conceptually congruent with Watson's (1988a) Theory of Transpersonal Caring. In a personal communication (July 20, 1998) Dr. Watson stated, "as long as you can make a conceptual case for these relationships and how these specific tools help to operationalize this phenomenon (or these phenomena) then you are on the right track. Clarity of relationships and making a case for tools are the trick here."

According to Watson (1996), self-acceptance provides a foundation for one's ability to recognize and develop feelings. Self acceptance instills harmony between the self as
perceived and the self as experienced (Watson, 1988a). Just as Rosenberg (1979) claims that self-esteem is a complex synthesis of elements and attributes within the individual's phenomenal field, so too does Watson (1988a) claim that the phenomenal field is the totality of the individual's experience at any given moment and is the individual's frame of reference. The phenomenal field, as perceived and experienced, encompasses subjective internal relations as well as the meanings of objects and subjects from the past, present and into the future.

**Validity.** Since standardization with a sample of 5,024 high school students, the RSES has been widely used in research with a broad range of nationalities, age groups from high school to adulthood, socioeconomic levels, ethnicity, and psychiatric conditions (Wylie, 1989). A variety of indices have been used to measure the instrument's construct validity. O'Brien (1985) provided strong support for the unidimensionality of the tool. A single factor with an eigenvalue of 5.28 accounted for 52.8% of the variance. No other factor had an eigenvalue of one or greater. For the 10 items, factor loadings ranged from .57 to .81. Guttman scaling, which consistently yields a Coefficient of Reproducibility of .92 or more, also supported the instrument's unidimensionality (Wylie, 1989). Recently, Shevlin, Bunting, and Lewis (1995) applied a unidimensional confirmatory factor analytic model to data collected from 202 undergraduate psychology students and found results that validated the unidimensionality of the instrument.
Despite strong support for the unidimensionality of the instrument, mixed results from eight factor analyses suggest that the instrument may contain two factors (Wylie, 1989). Several researchers have argued that the variations may represent some kind of response set bias and that the scale is basically unidimensional (Wylie, 1989). Recently, however, Taforodi and Swann (1995) performed three studies with 1,053, 835, and 844 college students and found that global self-esteem consisted of two dimensions: a sense of social worth, or self-liking and a sense of personal efficacy, self-competence. Although Rosenberg (1979) claimed that his instrument measured global self-esteem, study findings continue to be mixed. Factor analysis with data from the current study revealed a two factor solution. Factor one related to perceptions of self and factor two to perceptions of self in comparison to others.

Reliability. Reliability has been established through internal consistency and test-retest scores. Cronbach alpha scores for seven substantive studies ranged from .72 to .87 (Wylie, 1989). The alpha coefficients in the .70 range were from studies of persons who were 60 years of age or older. The higher coefficients were reported in studies of high school and college students. Test-retest coefficients at a 2-week and 7-month interval with college students and high school students yielded scores of .85 and .63, respectively (Wylie, 1989). Recently, Dean (1997) claimed that the instrument consistently produces high reliability values ranging from .83 to .92. The type of reliability, however, was not specified. Internal consistency reliability for the current study was .84, supporting its reliability as a measure of self-esteem for this study.
Scoring. The 10 item instrument, which yields a unidimensional global self-esteem score, contains no subscales. Scores were determined by summing the scores for each of the 10 items. Responses to each item were recorded on a 4-point Likert scale with answers ranging from strongly agree (4) to strongly disagree (1). Therefore, total scores can range from 10 to 40, with a higher score indicating more positive self-esteem. Items 3, 5, 8, 9, and 10 are negatively worded and were reverse scored.

Perceived Competency Scale (PCCS)

Description. The PCCS, a 12-item 5-point Likert scale, measures nursing students’ individual perceptions of their competency (Mozingo et al., 1995). Positive perceptions correspond to a high valuation of self relative to the associated knowledge and skills. Nursing students who experience success when providing patient care develop an identity as a competent beginning nurse (Kramer & Schmalenberg, 1993; Loving, 1993). The PCCS does not contain subscales.

Although the authors did not identify a theoretical framework for the instrument items, they claimed that the behaviors were derived from their extensive experience in nursing education and a review of literature. Beck’s (1991), Halldorsdottir’s (1990), and Miller et al.’s (1990) research findings on the powerful impact of caring instructors were considered when explaining the study findings. In addition, the inclusion of items related to social support and feelings of anxiety about knowledge and skills are consistent with this study’s definition of perceived clinical competence and Watson’s (1988a) Theory of Transpersonal Caring. The term competency was purposely not defined to allow
individuals to provide their own perceptions (Mozingo et al., 1995). Similarly, Watson (1979) claimed that competency is an individual perception that is closely associated with the achievement need and involves self-approval, positive recognition from others, social acknowledgment of skills and an internal sense of satisfaction.

Validity. Content validity was established by a committee of nationally prominent experts in performance evaluation. Although a content validity index was not provided, further validation procedures are in process (J. N. Mozingo, personal communication, February 9, 1998). A factor analysis on data from the current study revealed a three factor solution. Factor one focused on confidence. Factor two addressed the program influence. Factor three concerned clinical practice fears.

Reliability. Following the initial administration of the PCCS with a sample of 204 senior baccalaureate nursing students, the alpha coefficient was .83. In a recent study the alpha coefficient was .76 (Eberhard, 1998). For the current study, the alpha coefficient was .77. As a new instrument, the PCCS was reliable as a measure of perceived clinical competence (Pierce, 1995).

Scoring. Responses to each item were rated on a 5-point Likert scale with answers ranging from low (1) to high (5). Scoring involved summing the responses for each of the 12 items on the PCCS to obtain a perceived competency score. The possible range of scores was from 12 to 60, with higher scores indicating more positive perceived clinical competency. Because items 5, 8 and 12 are negatively worded, reverse scoring of these items was required.
Autonomy, the Caring Perspective Instrument (ACP)

Description. Autonomy, the Caring Perspective instrument (ACP) measures autonomy-related attitudes of female baccalaureate nursing students (S. Boughn, personal communication, December 6, 1999). Autonomy is demonstrated through regard for self, regard for others, advocacy and activism for self, and advocacy and activism for others (Boughn, 1995). Therefore, the instrument contains four sub-scales. The items are designed to contrast the respondents' attitudes toward self with those pertaining to others. The ACP is based on the caring theories of Watson (1988a) and Benner and Wrubel (1989). Boughn's (1995) definition of professional autonomy integrates the four sub-concepts, regard for self, regard for others, advocacy and activism for self, and advocacy and activism for others, which is consistent with Watson's beliefs about the interrelationship between self and others.

The 50 item instrument contains two parts. The first part contains 45 items on a Likert scale with item scores ranging from 0 to 4. Respondents indicate on the scale whether the item is never true (0) to always true (4). The remaining 5 items offer a selection of five choices to determine how the student feels, thinks, or would behave in a particular situation. These five responses are rated from 0 to 4, with 4 being the highest level of autonomy attitudes.

The ACP is the only instrument that addresses the attitudinal component of professional nurse autonomy in a nursing student population. Boughn (personal communication, November 14, 1997) claims that the attitudes of nursing students may be
quite different from those of practicing nurses. Dempster (1994) also suggested that professional nurse autonomy may involve a developmental process. One of the instrument's limitations is that it was designed only for female nursing students.

Validity. This 50 item instrument was standardized over a period of three years with a sample of 400 female baccalaureate nursing students. A content validity index of .76 was established by the ratings of four faculty experts who had been involved in the development of a curriculum that focused on the concepts of caring and empowerment. Although the index was low, other methods of determining validity were also used.

Construct validity was established using factor analysis, contrasted groups, experimental manipulation and convergent validity (Boughn, 1995). Factor analysis by the method of principal components was followed by a varimax rotation. The principal components procedure yielded a five factor solution. The first factor, advocacy and activism, accounted for 14.2% of the variance and included 30 of the 50 items. The loading of the total score for this factor was .96, indicating that the total score was an excellent measure of this factor (Boughn, 1995). The next four factors accounted for an additional 18% of the variance. The items reflective of “regard for women” and “regard for self” loaded on the second and third factor respectively. The dominant loading for the fourth factor was “regard for nurse”. Because the factor loadings for the remaining factor were small, a fifth subscale was not identified. An orthogonal varimax rotation revealed that the strongest factor accounted for 12% of the variance and the remaining four factors only accounted for an additional 5% of the variance. Principal components analysis with
varimax rotation on data from the current study revealed that variables on the ACP were not well defined by the factor solution.

The contrasted groups approach was used to compare scores of a group of freshman and sophomore nursing students (N = 232) with a group of junior and senior nursing students (N = 168). The freshman-sophomore group had a lower mean score (M = 136; SD = 15.2) but a similar standard deviation when compared with the junior-senior group (M = 141.2; SD = 15.3). ANOVA was used to determine any significant difference between the two groups. The results (F (1, 398) = 9.46, p < .002) indicated that the instrument distinguishes between contrasted groups. Post hoc analysis was not reported.

Another approach for determining validity was experimental manipulation by comparing scores on the ACP of a group of nursing students (n = 44) and non-nursing students (n = 19) who participated in a women's health course with the scores of students (nursing, n = 56; non-nursing, n = 44) who did not participate in the course. With the pretest scores of the experimental and control group taken as a covariate, the findings indicated that participation in the course increased autonomy related attitudes significantly (F (3, 159) = 66.6, p < .0001). Convergent validity was also considered with the women's health course sample. Completion of both the ACP and a qualitative questionnaire by 22 participants showed significant increases in the posttest scores as well as narrative responses that revealed increased esteem for self, women, and nurses and increased beliefs in their ability to effect change in their lives and the lives of others.

Convergent validity was also tested by comparing results from a 30 item version of the ACP with the Schutzenhofer (1987) scale for autonomy. Schutzenhofer's scale is
based on a similar definition of autonomy. The shortened version of the ACP correlates
highly with the 50-item ACP instrument. A comparison of mean scores for the shortened
version of the ACP with Schutzenhofer’s scale resulted in a moderately strong correlation
\( r = .56, p < .01 \). Based on this finding, the attitudinal component of professional nurse
autonomy in nursing students may be related to professional nurse autonomy in
practicing nurses (Boughn, 1995).

**Reliability.** Several methods were used to determine reliability. The
test-retest method with a sample of 275 nursing students two weeks after the initial
testing, yielded a high correlation \( r = .90 \). Individual item correlations ranged from .46
to .85. Although the correlation statistics were impressive, the statistical significance of
these findings was not reported. Reliability was also established using the Cronbach
alpha coefficient. The Cronbach’s alpha coefficient for the sample was .84 and the
correlation of the individual item scores to the total scores ranged from a low of .05 to
.64. The majority of the items (\( n = 44 \)) had correlations above .20. In a recent study,
Cronbach’s alpha estimate of reliability was .82 with subscale estimates ranging from .51
to .70 (Thompson, 1998). For the current study the alpha coefficient was .79. Internal
consistency reliability was acceptable for this study (Pierce, 1995).

**Scoring.** Scoring is based on summing the responses to each of the 50 items.
Total scores can range from 0 to 200, with higher scores representing more positive
attitudes. Although the intent of the instrument is to obtain a total autonomy-related
attitude score, scores for each of the subscales can be computed. For this study, only the
total score was computed. The 11 items that are negatively worded, items 4, 7, 11, 13, 16, 25, 28, 32, 37, 41, and 44, were reverse scored.

**Demographic Data Form**

The student demographic data form (Appendix E), developed by the investigator, contained seven categories of data for describing sample characteristics. The form contained blank spaces for checking the relevant item or providing a number where appropriate. Items were selected based on the review of literature. Items selected as variables included: work experience in nursing or health related field, participation in preceptored courses, grade point average, previous non-nursing degree, age, race, gender, and marital status.

The elusive nature of caring makes it difficult to quantify how students learn to care (Tanner, 1990). Caring is learned through interactions with others including role models (Beck, 1991; Hanson & Smith, 1996; Hughes, 1992; Kosowski, 1995; Nelms et al., 1993). Work experience in nursing or a health related field and participation in a preceptored course were selected to address this relationship. Role models may also influence the student’s perceived clinical competency (Dufault, 1990; Mozingo et al., 1995).

A relationship has also been found between perceived competency and grade point average (Mozingo et al., 1995). Several researchers have suggested a relationship between academic competency or achievement and self-esteem (Eronen et al., 1998; Huguet et al., 1995; Osecka & Blatney', 1993; Shavelson et al., 1976). Most of the
research on professional nurse autonomy and levels of education suggested that higher levels of education may be positively related to professional nurse autonomy (Akoma, 1993; Hallsworth, 1993; Schutzenhofer & Musser, 1994). None of these studies, however, addressed the student who has a degree in a field other than nursing. Therefore, the variable previous non-nursing degree was further investigated. In past studies, other variables such as age, race, gender, marital status, and number of children have yielded mixed findings warranting further investigation. Although gender was not investigated, inclusion of this item was to insure that only data from female nursing students were analyzed.

Pre-testing of Study Instruments

The primary reasons for the pre-test was to determine the amount of time needed to complete the instruments, to examine reliability data, and to ascertain if changes were needed on any of the questionnaires. Clarity of items on the demographic data form was also reviewed. The pre-test was administered during the first semester of the senior year to 43 nursing students from a baccalaureate nursing program located in the mid-Atlantic region of the United States. All students were enrolled in a professional nursing practice course. Before administering the study instruments, students were given time to review the explanation of the study form (Appendix G) and ask questions about the study. Administration of all the study instruments took 30 minutes.

Although the sample size was small, sample characteristics were similar to those of the larger study. The majority of subjects (58.1%) were between 20 and 22 years of
age, Caucasian (74.4%), and single (86.6%). Most of the participants (86%) reported no previous degree. Nursing related experience was reported by 69.8% of the subjects. The majority of subjects (55.8%) had GPA's between 2.40 and 3.0. Because the sample size was very small, conclusions about the skewed distributions of the demographic and study variables were not made.

Reliability for all instruments ranged from $\alpha = .80$ for the ACP and the RSES to $\alpha = .84$ for the PCCS and $\alpha = .92$ for the PICB. This finding indicated that the internal consistency of the study instruments was adequate for both new and established instruments (Pierce, 1995). Although there was concern about the negative item-to-total correlations on two items of the ACP, Boughn (1995) provided supportive data for the items with much larger samples. Therefore, no changes were made to the items. Only minor editorial changes were made to the instrument design of the ACP and the PICB. Rating scales were placed at the top of each page. To emphasize the importance of completing every item, specific written directions for administration of the instruments were developed.

Procedures for Data Collection

Data collection was initiated following approval of the study for protection of human subjects by the Nursing Research Committee of the Widener University School of Nursing (Appendix H). Minimal risk research requires only an informal review to insure that subjects are informed and that their rights to privacy, confidentiality, anonymity, self-determination, and fair treatment are not violated. Although Institutional Review
Board (IRB) approval generally is not required for most low risk educational research (Tanner, 1991), the study was submitted for approval by only one of the randomly selected educational institutions.

To insure an adequate response rate, steps in the data collection process included Dillman's (1978) recommendations for follow-up. After randomly selecting schools from each NLNAC accreditation region, letters were sent to the Dean or Director of the programs explaining the study and inviting the school to participate (Appendix I). The Dean or Director was asked to respond via a post card with the name, telephone number, and electronic mail (e-mail) address of an interested faculty member who teaches the final senior clinical course (Appendix J). If a response was not received within three weeks, follow-up was made by electronic mail (e-mail) or telephone.

Once an affirmative response was received, a letter explaining the study (Appendix K) and copies of the study instruments, color coded by region, were sent to the identified faculty. Specific instructions for administering the study instruments were also provided (Appendix L). As a small token of appreciation, a nursing poem published by the American Nurses' Association was given to faculty who assisted with data collection. The researcher answered faculty members questions and maintained communication via e-mail or telephone.

Faculty collected data from senior baccalaureate students during the spring semester. Faculty were asked to give each student an explanation of the study form (Appendix G). Although the explanation form identified that consent was implied by participation in the study, faculty were asked to reinforce that course grades would not be
influenced by their decision to participate or not participate. Students were also informed that information provided was voluntary and for research purposes only. Because names were not required on the data collection forms, privacy, anonymity, and confidentiality was protected. Also, students were asked to seal the questionnaires in an envelope that was provided before returning them to the faculty member. Only the researcher and dissertation committee chairperson had access to the raw data. To the best of the researcher's knowledge, students were given the research questionnaires for completion during class time. After students completed and sealed the questionnaires in the envelope, the questionnaires were given to the responsible faculty member. Faculty returned the competed questionnaires to the researcher in a self-addressed stamped envelope.

Data Analysis

For this model testing correlational study, a variety of descriptive and inferential statistical procedures were employed to analyze sample characteristics and test the study hypotheses. Data were evaluated for completeness by examining each questionnaire submitted. All data were statistically analyzed using the microcomputer Statistical Package for the Social Sciences (SPSS 9.1) or Amos 4.0 (Arbuckle & Wothke, 1999). Significance for hypotheses testing was set at the .05 level of acceptance.

The accuracy of data analysis is dependent on a systematic plan for organization of the data prior to entering it into the computer (Burns & Grove, 1997; Tabachnick & Fidell, 1996). A code book with explicit instructions about the coding of each variable was maintained. Prior to psychometric testing, the data were evaluated for integrity,
accuracy, and completeness (Pranulis, 1995; Tabachnick & Fidell, 1996). The integrity and accuracy of the data entry process was validated by the researcher and the research committee chairperson. Descriptive statistics with frequency distributions for all the variables were examined for data entry errors, outliers, and missing values (Tabachnick & Fidell, 1996).

**Missing Data**

To avoid problems with missing data, the researcher provided clear instructions on completion of the instrument and examined the frequency distributions for each item. Missing data were evaluated to determine whether the subject’s responses could be included in the analysis. Although deletion of subjects because of incomplete instruments could result in the loss of valuable data (Knapp, 1998), the large sample size made it possible to delete subjects without adversely affecting the regression analysis. Regression analysis requires a full set of data for every subject (Knapp, 1998). Those questionnaires that did not include demographic data forms or had more than one section of missing data were not included in the data analysis. Of the 400 questionnaires returned, only nine questionnaires were excluded from the data analysis for this reason. In situations where study responses were indicated by two points on the scale or between two options, the researcher selected the lower option.

The authors of each of the study instruments have not specified what constitutes an adequate level of completion. Furthermore, there are no firm guidelines on how much missing data can be tolerated for a given sample size (Tabachnick & Fidell, 1996).
Therefore, the few questionnaires with random missing items were included in the analysis. Patterns of missing data were evaluated to identify any nonrandom patterns that could influence the generalizability of the results (Tabachnick & Fidell, 1996). When analysis of complete data sets was compared with analysis of data sets with missing items, results were similar indicating that the missing data did not seriously influence the findings.

**Instrument Reliability**

The internal consistency of each instrument was determined using Cronbach's coefficient alpha (CA). CA provides an indicator that all items on the scale are related to a single concept (Pranulis, 1995). Items on each instrument were evaluated to determine if the item was correlated with other items on the scale and the total scale. Any items with a correlation coefficient of less than .20 or that were negatively related to the total scale were carefully considered for inclusion in the analysis. A CA of .70 or above for new instruments and .80 for established instruments was the criterion for determining acceptability of the instrument (Pierce, 1995).

**Descriptive Data Analysis**

The first stage of data analysis was descriptive. Frequency distributions of the demographic and criterion and predictor variables were compared with subgroups of the sample described in the literature (Akoma, 1993; Beck, 1991; Dufault, 1990; Eronen et al., 1998; Hanson & Smith, 1996; Huguet et al., 1995; Hughes, 1992; Kosowski, 1995; Mozingo et al., 1995; Nelms et al., 1993; Osecka’ & Blatney’, 1993; Schutzenhofer &
Musser, 1994). Descriptive statistics, including means, standard deviations, medians, modes, range and skewness, were used to describe age and grade point average. Other categorical data from the demographic variables were analyzed using percentages and the ANOVA statistic. To identify data patterns and distribution of the study variables, each study variable was examined using measures of central tendency and dispersion.

**Inferential Data Analysis**

Regression analysis and path analysis are appropriate inferential statistics for use with model testing correlational designs (Burns & Grove, 1997; Munro, 1997; Pedhazer, 1997; Tabacknick & Fidell, 1996). With regression analysis, a prediction equation is developed to test hypothesized relationships between a predictor or set of predictor variables and an outcome or criterion variable. For this study, the criterion variable was the attitudinal component of professional nurse autonomy. Predictor variables were perceptions of instructor caring behaviors, self-esteem, and perceived clinical competence. Path analysis, which consists of a series of regression equations, extends beyond regression analysis to examine the direct, indirect and total effects of these relationships (Mueller, 1996; Munro, 1997; Pedhazer, 1997). This multivariate statistical technique uses empirical evidence to estimate the strengths of a priori hypothesized structural relationship within the theory derived model (Mueller, 1996; Munro, 1997).

Prior to performing regression analysis and testing the hypotheses, statistical assumptions related to regression and path analysis were examined (Munro, 1997; Pedhazer, 1997). To test for normal distribution and homoscedasticity, frequency

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distributions of all the variables were assessed for outliers and violation of normality of distribution. A correlation matrix was generated to examine the possible problem of multicollinearity. With regression analysis, correlations between the predictor variables that are greater than .85 indicate that the variables provide very similar information and multicollinearity is present (Munro, 1997). For this study, the range of statistically significant correlations between the predictor variables was $r = .276$ to $.361$.

The primary purpose of this study was to test a model of the attitudinal component of professional nurse autonomy. The statistical analyses were designed to confirm the theoretical positions that were based on a concept analysis of professional nurse autonomy (Wade, 1999) and Watson's (1988a) Theory of Transpersonal Caring (Burns & Grove, 1997). Before subjecting the variables to path analysis, the extent of a linear relationship between the predictor variables was analyzed for multicollinearity and tolerance. To check for tolerance, each independent or predictor variable was treated as a dependent or outcome variable and regressed on each other using simple linear regression (Munro, 1997). Therefore, results of testing the first six hypotheses provided evidence of the feasibility of performing path analysis. Hierarchical multiple regression was employed to test the seventh hypothesis. Based on the a priori theoretical position, the order of entry of the predictor variables was forced (Munro, 1997; Pedhazer, 1997). Testing of these preliminary hypotheses provided the foundation for testing the path model. Each hypothesis was tested as follows.
Hypothesis 1

Nursing students' perceptions of instructor caring behaviors have a direct positive effect on their self-esteem. Simple linear regression was used to test the relationship between the predictor variables perceptions of instructor caring behaviors and self-esteem. This statistical procedure was appropriate because it was used to develop the prediction equation and to determine if multicollinearity existed between the independent variables (Munro, 1997). To obtain measures of tolerance, the variable self-esteem was treated as the outcome variable and regressed on the predictor variable, perceptions of instructor caring behaviors. The simple linear regression equation for prediction of self-esteem was:

\[ Y^* = a + bX \]

- \( Y^* \): self-esteem
- \( a \): intercept constant
- \( b \): regression coefficient
- \( X \): perceptions of instructor caring behaviors

The effect of perceptions of instructor caring behaviors (\( X \)) on self-esteem (\( Y^* \)) was predicted based on the intercept constant (\( a \)) and the regression coefficient (\( b \)). The intercept constant is the value of \( Y \) when \( X \) equals 0 (Munro, 1997). The regression coefficient, a measure of the slope of the regression line, is the rate of change in \( Y \) for each unit of change in \( X \).
Hypothesis 2

Nursing students' perceptions of instructor caring behaviors have a direct positive effect on their perceived clinical competence. As with hypothesis one, the relationship between the predictor variable perceptions of instructor caring behaviors and perceived clinical competence as an outcome variable were analyzed using simple linear regression. The simple linear regression equation was:

\[ Y^2 = a + bX \]

- \( Y^2 \): perceived clinical competence
- \( a \): intercept constant
- \( b \): regression coefficient
- \( X \): perceptions of instructor caring behaviors

Hypothesis 3

Nursing students' perceptions of instructors' caring behaviors have a direct positive effect on the attitudinal component of professional nurse autonomy. The relationship between the predictor variable, perceptions of instructor caring behaviors and the outcome variable, attitudinal component of professional nurse autonomy was analyzed using simple linear regression. The simple linear regression equation was:

\[ Y^3 = a + bX \]

- \( Y^3 \): attitudinal component of professional nurse autonomy
- \( a \): intercept constant
- \( b \): regression coefficient
- \( X \): perceptions of instructor caring behaviors
Hypothesis 4

Nursing students’ self-esteem has a direct positive effect on their perceived clinical competence. Again, the relationship between the predictor variable self-esteem and perceived clinical competence as the outcome variable was analyzed using simple linear regression to reveal level of tolerance and possible multicollinearity. The simple linear regression equation was:

\[ Y^4 = a + bX \]

\( Y^4 \): perceived clinical competence

\( a \): intercept constant

\( b \): regression coefficient

\( X \): self-esteem

Hypothesis 5

Nursing students’ self-esteem has a direct positive effect on the attitudinal component of professional nurse autonomy. The relationship between the predictor variable, self-esteem and the outcome variable, attitudinal component of professional nurse autonomy were analyzed using simple linear regression. The simple linear regression equation was:

\[ Y^5 = a + bX \]

\( Y^5 \): attitudinal component of professional nurse autonomy

\( a \): intercept constant

\( b \): regression coefficient

\( X \): self-esteem
Hypothesis 6

Nursing students’ perceived clinical competence has a direct positive effect on the attitudinal component of professional nurse autonomy. The relationship between the predictor variable, perceived clinical competence and the outcome variable, attitudinal component of professional nurse autonomy was analyzed using simple linear regression. The simple linear regression equation was:

\[ Y^6 = a + bX \]

- \( Y^6 \): attitudinal component of professional nurse autonomy
- \( a \): intercept constant
- \( b \): regression coefficient
- \( X \): self-esteem

Hypothesis 7

Nursing students’ perceptions of instructor caring behaviors, self-esteem, and perceived clinical competence together are better predictors of the attitudinal component of professional nurse autonomy than any one variable alone. Hierarchical multiple regression was used to determine how well the combination of predictor variables explained the variance in the attitudinal component of professional nurse autonomy score. Using hierarchical multiple regression, the temporal relationships between perceptions of instructor caring behaviors, self-esteem, perceived clinical competence and the attitudinal component of professional nurse autonomy were analyzed in the hypothesized order. By force entering each of the variables based on the theoretical
rationale provided by the study's theoretical framework, the foundation for the path model was established (Pedhazer, 1997). The basic multiple regression formula for predicting the attitudinal component of professional nurse autonomy was:

\[ Y_1 = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + u \]

- \( Y_1 \): attitudinal component of professional nurse autonomy
- \( a \): intercept constant
- \( b \): regression coefficient
- \( X_1 \): perceptions of instructor caring behaviors
- \( X_2 \): self-esteem
- \( X_3 \): perceived clinical competence
- \( u \): random error associated with \( Y_1 \)

Data analysis involved examination of the adjusted R-square, level of significance, and the regression coefficients or beta weights (Munro, 1997; Pedhazer, 1997). The adjusted R-square statistic provides the amount of variance in the criterion variable that is explained by the independent variables. Unexplained variance is associated with random error and residuals. The beta weights were inspected to interpret the magnitude and significance of the contribution of each independent variable to the prediction of the dependent variable (Davis & Robinson, 1995; Munro, 1997).

Hypothesis 8

Transpersonal teaching-learning carative factor (perceptions of instructor caring) interacts with sensitivity to self and others (self-esteem) and creative problem-solving
caring process (perceived clinical competence) to influence human caring (attitudinal component of professional nurse autonomy). To test the hypothesized model, path analysis was employed. Path analysis is a method of studying the direct and indirect effects of the three predictor variables that were hypothesized as causes of the attitudinal component of professional nurse autonomy (Pedhazer, 1997).

Path analysis, which requires that there be only one criterion and several predictor variables, enables researchers to distinguish between latent concepts and observed indicators (Hayduk, 1987; Munro, 1997). The carative factors, which are latent concepts, were operationalized for testing. The hypothesis stated according to the study’s operational variables was: Perceptions of instructor caring behaviors interacts with self-esteem and perceived clinical competence to directly and indirectly influence the attitudinal component of professional nurse autonomy in female baccalaureate nursing students. Testing of the hypothesized model combined quantitative with qualitative information that was based on theoretical considerations to give a quantitative interpretation (Pedhazer, 1997). Path analysis tested the a priori hypothesized relationships derived from Watson’s Theory and a concept analysis of professional nurse autonomy (Mueller, 1996; Munro, 1997).

The path model (refer to Figure 2, page 17) displays the a priori hypothesized structure among the variables in the model. The model, which includes both exogenous and endogenous variables, is recursive indicating that the relationships are unidirectional (Mueller, 1996; Munro, 1997; Pedhazer, 1997). Exogenous variables are explained by factors outside the model and influence other variables in the model (Hayduk, 1987;
Pedhazer, 1997). Fluctuations in exogenous variables are not explained by the model but may be used to explain variations in the endogenous variables. The path diagram represents a set of structural equations of the paths that were hypothesized to influence the attitudinal component of professional nurse autonomy (Figure 3) (Pedhazer, 1997). The exogenous variable in the model, perceptions of instructor caring behaviors (X), was hypothesized to be influenced by factors outside the model. In contrast, endogenous variables are influenced by other variables within the model (Pedhazer, 1997). Endogenous variables were self-esteem ($Y_1$), perceived clinical competence ($Y_2$), and the attitudinal component of professional nurse autonomy ($Y_3$). Residual variables are not explained by the model but introduce a source of error into the analysis (Hayduk, 1987). Analysis of the structural equations revealed the structural effects of the exogenous on the endogenous variables and the endogenous on other endogenous variables (Mueller, 1996). The structural effects of endogenous on other endogenous variables are identified by $\beta$ and the structural effects of the exogenous on the endogenous variables by $\gamma$.

Amos (4.0), which denotes analysis of moment structures, was the statistical software program that was used to specify and examine the fit between the hypothesized model and the data (Arbuckle & Wothke, 1999). The indirect, direct, and total effects of perceptions of instructor caring behaviors, self-esteem, and perceived clinical competence on the attitudinal component of professional nurse autonomy were estimated and tested. The program interprets parameter estimates as the effect of a change of one standard deviation in the independent variable on the estimated standard deviation.
Figure 3.

Initial Path Diagram: Attitudinal Component of Professional Nurse Autonomy

X: Perceptions of Instructor Caring Behavior

Y₁: Self-Esteem

Y₂: Perceived Clinical Competence

Y₃: Attitudinal Component of Professional Nurse Autonomy

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change in the dependent variable. The parameter estimates reflect the influence of all the causal variables on each other and indicate the magnitude, level of significance for each parameter, and the amount of variance explained by the model. With Amos, the model’s fit can be assessed and any needed modifications made (Arbuckle & Wothke, 1999).

Goodness of fit statistics indicate whether the model is testable and if modification of the model is needed (Munro, 1997). If necessary, paths can be freed and the model redesigned. Decisions to modify the model were based on the significance of the paths and the meaningfulness in terms of the theoretical basis for the model (Pedhazur, 1997).

In summary, Amos enables researchers to test the model’s goodness of fit, to diagnose problems with the model and make adjustments, and to distinguish between latent concepts and observed indicators (Arbuckle & Wothke, 1999). The initial model was tested and modified to improve the goodness-of-fit. Use of this method of data analysis provided results on the indirect, direct, and total effects of perceptions of instructor caring behaviors, self-esteem, and perceived clinical competence on the attitudinal component of professional nurse autonomy in female senior baccalaureate nursing students. The analysis also provided information about the fit of the data to the theorized path model (Pedhazer, 1997). Instead of discovering causes, path analysis clarified the causal model that was based on Watson’s (1988a) Theory and a concept analysis of professional nurse autonomy (Wade, 1999). By examining the relationships among variables theoretically determined to predict the attitudinal component of professional nurse autonomy, a fuller understanding of the phenomenon was gained.
Chapter Summary

A model testing correlational design was employed to investigate factors associated with the attitudinal component of professional nurse autonomy in female baccalaureate nursing students. The national sample included female students in the final semester of their nursing program. Data were collected using a combination of five study instruments: Perceptions of Instructor Caring Behaviors (PICB); Rosenberg's Self-Esteem Scale (RSES); Perceived Clinical Competency Scale (PCCS); Autonomy, the Caring Perspective (ACP); and a researcher designed demographic data form. Theoretical justification for use of these instruments to test Watson's Theory of Transpersonal Caring was provided in the description of the instruments and in the theoretical framework described in chapter one. Before initiation of the study, the study instruments were pre-tested with a sample of 43 senior baccalaureate nursing students. All study instruments had acceptable alpha coefficients.

Methods for data collection and analysis were described. An explanation of the rationale for using linear and hierarchical multiple regression and path analysis for this model testing design were provided. The order of entry of the predictor variables was explained relative to Watson's Theory of Transpersonal Caring.
CHAPTER IV

RESULTS

The primary purpose of this study was to test a model for predicting the attitudinal component of professional nurse autonomy in female baccalaureate nursing students. The model was based on Watson's (1988a) Theory of Transpersonal Caring. Therefore, a secondary aim was to test three carative factors embedded in Watson's Theory. The carative factors tested were transpersonal teaching-learning, sensitivity to self and others, and creative problem solving process. For this study, these broad abstract carative factors were operationalized as perceptions of instructor caring, self-esteem, and perceived clinical competence.

The results are described in this chapter. The initial section includes a description of the sample with descriptive data for each of the study instruments. Next, results related to the study hypotheses are presented. Results on the reliability of the study instruments are then presented. The final section contains ancillary data analysis.

Characteristics of the Study Sample

Sample selection for this study was conducted on two levels. Random quota sampling was used to select a proportional sample of baccalaureate programs from each of the four NLNAC accrediting regions; convenience sampling was used for the student participants. The randomly selected nursing programs are discussed first, followed by descriptive data about the students who participated in the study.
Baccalaureate Nursing Programs

The requested number of questionnaires was sent to each of the 22 schools that agreed to participate (Table 6). Two schools did not return any questionnaires. Of the 590 questionnaires requested, 400 were returned for a response rate of 67.8%. Once the questionnaires were returned, they were counted and reviewed to determine whether they were usable. Questionnaires from male subjects, LPNs, RNs, and those missing demographic data or more than one section of the questionnaire were excluded (N = 83). Therefore, the percent of usable questionnaires relative to the number of questionnaires returned was 79.3% yielding a study sample of 317 female baccalaureate nursing students.

Table 6

Number of Questionnaires Sent, Returned and Used by Region

<table>
<thead>
<tr>
<th>Region</th>
<th>Number Sent</th>
<th>N (% Returned)</th>
<th>N (% Used)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern</td>
<td>193</td>
<td>133 (68.9%)</td>
<td>107 (80.5%)</td>
</tr>
<tr>
<td>Midland</td>
<td>168</td>
<td>132 (78.6%)</td>
<td>101 (73.2%)</td>
</tr>
<tr>
<td>Northeast</td>
<td>140</td>
<td>82 (58.6%)</td>
<td>66 (80.5%)</td>
</tr>
<tr>
<td>West</td>
<td>89</td>
<td>53 (59.6%)</td>
<td>43 (81.1%)</td>
</tr>
<tr>
<td>Totals</td>
<td>590</td>
<td>400 (67.8%)</td>
<td>317 (79.3%)</td>
</tr>
</tbody>
</table>
Student Participants

Preamble

Prior to describing the personal and educational characteristics of the sample, student responses to the study instruments were summarized. Measures of central tendency, variability, and skewness were obtained for the total scores on each study instrument (Table 7). Findings revealed that all scores were significantly skewed. On inspection of the histogram of the Autonomy, the Caring Perspective (ACP) scores, the distribution appeared normal with a few outliers on the positive end of the scale. Further inspection of scores on the Perceptions of Instructor Caring Behaviors (PICB), Rosenberg’s Self Esteem Scale (RSES), and the Perceived Clinical Competence Scale (PCCS) revealed that the majority of scores were above the mean. Even though the mean was lower than the median and mode for most instruments, the range was wide, accounting for the extreme scores. Outliers for all scores were determined and scores were analyzed with outliers removed. Except for the PCCS scores, the distribution continued to be significantly skewed. Regression analysis is generally robust to departures from the assumption of normality (Pedhazur, 1997). Therefore, the decision was made to retain all participant responses.
<table>
<thead>
<tr>
<th>Instrument</th>
<th>Actual Score Range</th>
<th>Mean/SD</th>
<th>Median</th>
<th>Mode</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACP</td>
<td>0 - 200</td>
<td>100-190</td>
<td>136.9/14.07</td>
<td>136.50</td>
<td>132.00</td>
</tr>
<tr>
<td>PICB</td>
<td>16 - 112</td>
<td>18-112</td>
<td>80.34/18.30</td>
<td>82.00</td>
<td>90.00</td>
</tr>
<tr>
<td>RSES</td>
<td>10 - 40</td>
<td>18 - 40</td>
<td>34.69/4.46</td>
<td>35.00</td>
<td>40.00</td>
</tr>
<tr>
<td>PCCS</td>
<td>12 - 60</td>
<td>23 - 58</td>
<td>43.62/6.44</td>
<td>44.00</td>
<td>43.00</td>
</tr>
</tbody>
</table>

*p ≤ .05
Description of Participants

The sample was limited to female baccalaureate students in their final semester of a basic baccalaureate nursing programs. Students ranged in age from 21 to 53. Although the mean age was 26.04 (SD = 5.94), 20% of the students were 22 years old. The wide range of ages is reflected in the significantly positively skewed distribution. The diversity of this sample is also evident in other personal characteristics (Table 8). The majority of the sample was Caucasian (76.8%), single (65.5%), and did not have any children.

Sample characteristics related to education and experience were also examined. Grade point average (GPA) ranged from 2.20 to 4.00 with a mean of 3.28 (SD = .348). Ten students did not report their GPA. Although 66.9% of the sample reported no previous degree, 31.5% had at least an Associate degree.

Another characteristic examined was type and length of nursing related experience. A variety of nursing related experiences was reported by 65.6% of the subjects (Table 9). Length of experience ranged from one to 204 months with a mean of 25.87 (SD = 25.94) and a median of 18. These findings were extremely skewed. Most subjects reported 12 months of nursing related experience. The majority of subjects (90.2%) also reported experience with a staff nurse preceptor during their clinical experiences.
Table 8

Category, Number, and Valid Percent for Race, Marital Status, and Number of Children of Study Participants. (N = 317)

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African-American</td>
<td>23</td>
<td>7.3%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>242</td>
<td>76.8%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>19</td>
<td>6.0%</td>
</tr>
<tr>
<td>Asian</td>
<td>18</td>
<td>5.7%</td>
</tr>
<tr>
<td>Native American</td>
<td>4</td>
<td>1.3%</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td>2.8%</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>207</td>
<td>65.5%</td>
</tr>
<tr>
<td>Married</td>
<td>99</td>
<td>31.2%</td>
</tr>
<tr>
<td>Divorced</td>
<td>8</td>
<td>2.5%</td>
</tr>
<tr>
<td>Widowed</td>
<td>1</td>
<td>0.3%</td>
</tr>
<tr>
<td>Separated</td>
<td>1</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

(continues)
### Table 8

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>251</td>
<td>79.2%</td>
</tr>
<tr>
<td>One</td>
<td>26</td>
<td>8.2%</td>
</tr>
<tr>
<td>Two</td>
<td>30</td>
<td>9.5%</td>
</tr>
<tr>
<td>Three</td>
<td>6</td>
<td>1.9%</td>
</tr>
<tr>
<td>Four</td>
<td>4</td>
<td>1.3%</td>
</tr>
</tbody>
</table>

### Influence of Other Variables

Prior to testing the hypotheses, the data were examined to determine whether the over-all sample was comparable by region. Although schools were randomly selected by region, participants were self-selected, raising the possibility of sample bias (Burns & Grove, 1997). Additionally, some recent studies (Akoma, 1993; Dufault, 1990; Eronen et al., 1998; Hallsworth, 1993; Huguet et al., 1995; Mozingo et al., 1995; Osecka & Blatney, 1993; Schutzenhofer & Musser, 1994) suggested that some of the demographic variables may influence the results.

Using one-way analysis of variance (ANOVA), mean differences in scores on each of the study instruments were compared by region. Significant differences in mean
Table 9

**Frequency and Valid Percent for Type of Nursing Related Experience (N = 208)**

<table>
<thead>
<tr>
<th>Type Experience</th>
<th>Frequency</th>
<th>Valid Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse Aide</td>
<td>94</td>
<td>29.7%</td>
</tr>
<tr>
<td>Nurse Extern</td>
<td>55</td>
<td>17.4%</td>
</tr>
<tr>
<td>Nurse Aide/Extern</td>
<td>24</td>
<td>7.6%</td>
</tr>
<tr>
<td>Technician</td>
<td>10</td>
<td>3.2%</td>
</tr>
<tr>
<td>Medical Assistant</td>
<td>7</td>
<td>2.2%</td>
</tr>
<tr>
<td>Aide/EMS</td>
<td>5</td>
<td>1.6%</td>
</tr>
<tr>
<td>Army Medic</td>
<td>3</td>
<td>0.9%</td>
</tr>
<tr>
<td>Nurse Aide/Extern/Tech</td>
<td>2</td>
<td>0.6%</td>
</tr>
<tr>
<td>Aide/Office Assistant</td>
<td>2</td>
<td>0.6%</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

scores by region were found on the Perceived Clinical Competence Scale (PCCS) $F (3, 311) = 4.92$, $p = .002$ and Perceptions of Instructor Caring Behaviors (PICB) $F (3, 306) = 5.18$, $p = .002$. Post hoc analysis with the Scheffe’ test revealed that participants from the Midland region had significantly higher mean scores ($M = 45.55$, $SD = 5.87$) than those from the West ($M = 42.28$, $SD = 8.53$) and South ($M = 41.97$, $SD = 6.02$) on the PCCS. On the PICB, participants from the Northeast scored significantly lower ($M = 73.18$, $SD = 18.07$) than those from the Midland ($M = 83.90$, $SD = 18.18$) and Southern regions ($M = 82.25$, $SD = 14.74$). Tests of normality revealed that the PICB scores were
not normally distributed. Examination of the histogram revealed several outliers accounting for these differences.

Based on these findings, the demographic variables were analyzed to ascertain whether regional differences were related to characteristics of the participants. To determine whether differences in scores were related to marital status, race, previous degree, and nursing related experience, data were analyzed using one-way ANOVA. With ANOVA, discrepant group size can effect homogeneity of variance (Tabachnick & Fidell, 1996). Therefore, marital status, race, and previous degree were each recoded into two groups. Marital status was recoded into a never married group and married at some time. The never married group included all single respondents. The married at one time was comprised of respondents who checked married, divorced, widowed or separated on the student demographic data form. Race was compressed into Caucasian and Non-Caucasian and previous degree into no prior education and associate degree or higher education. The assumption of homogeneity of variance was met for all variables. For this sample, there were no significant differences in scores related to marital status, race, previous degree, and nursing related experience. Therefore, differences in scores by region were not related to these variables.

The relationships between grade point average (GPA), length of nursing related experience, and age to study variables were analyzed using the Pearson's correlation statistic. For this sample, no significant relationships were found between length of nursing related experience and scores on the study instruments. There was a significant, but weak negative relationship ($r = -.13, p = .027$) between GPA and scores on the PICB.
However, no significant relationships were found between GPA and scores on the other study instruments. Weak ($r = .113$ to .215), but significant ($p < .05$) positive relationships were found between age and total scores on the ACP, PCCS, and the RSES.

Based on the preceding findings, analysis of covariance (ANCOVA) was used to examine the differences in scores by region with age as a covariate. Box's M Test of Equality of Covariance ($59.674, p = .002$) revealed that the observed variances were not equal across regions. By dividing regions into groups, sample sizes decreased and unequal numbers of subjects in each group led to violation of the assumption of homogeneity of variance-covariance (Tabachnick & Fidell, 1996). In situations of unequal sample size, tests for main effects and interaction effects are no longer independent.

For this sample, the between-subjects effects of scores by region with age as a covariate were significant ($p = .03$). The covariate age was significantly related to the attitudinal component of professional nurse autonomy ($F(1, 269) = 9.042, p = .003$) and perceived clinical competence ($F(1, 269) = 4.437, p = .036$). With age held constant there were no significant differences in the attitudinal component of professional nurse autonomy and self-esteem scores by region. Perceived clinical competence ($F(3, 269) = 6.266, p < .0001$) and perceptions of instructor caring behavior ($F(3, 269) = 5.062, p = .002$) scores by region, however, remained significantly different even when age was held constant. The observed power for the effect of age was only .74; for region the observed power was .99. The findings related to regional differences, therefore, are more reliable than those related to age. The effectiveness of this ANCOVA analysis may be
limited by the weak relationships between age and each of the study variables. ANCOVA analyses are most effective when $R^2$s are above .30 (Munro, 1997). For this sample, there were significant differences by region in perceptions of instructor caring behaviors and perceived clinical competence, but not in self-esteem and the attitudinal component of professional nurse autonomy. Despite these differences, the decision was made not to differentiate between the regions for hypotheses testing. Reasons for differences between the regions cannot be explained from the data in this study. The original intent to test the hypotheses with a large national sample was maintained.

Hypotheses Testing

Preamble

Before subjecting the data to regression analysis, a preliminary screening for multicollinearity and singularity was performed using a correlation matrix (Table 10). When there are high correlations between the independent variables, the regression coefficients are unstable and inflated (Munro, 1997; Tabachnick & Fidell, 1996). Therefore, highly correlated independent variables should not be entered into the regression equation.

Because all of the relationships were weak to moderate, none of the independent variables were eliminated. Thus, regression analysis was used to test the hypotheses. For regression analysis, SPSS-PC version 9.1 was used; for path analysis, Amos 4.0 was employed. A summary of results from analyses of the first six hypotheses is displayed in Table 11.
Table 10

Correlation Matrix of Study Variables (N = 317)

<table>
<thead>
<tr>
<th></th>
<th>ACP</th>
<th>RSES</th>
<th>PCCS</th>
<th>PICB</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACP</td>
<td>1.00</td>
<td>.285**</td>
<td>.282**</td>
<td>.031</td>
</tr>
<tr>
<td>RSES</td>
<td>1.00</td>
<td>.361**</td>
<td>.082</td>
<td></td>
</tr>
<tr>
<td>PCCS</td>
<td>1.00</td>
<td></td>
<td>.276**</td>
<td></td>
</tr>
<tr>
<td>PICB</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < .0001

Hypothesis One

To test the null of hypothesis one, “Nursing students’ perceptions of instructor caring behaviors have a direct positive effect on their self-esteem”, simple linear regression was used. Perceptions of instructor’s caring behavior did not significantly explain the variance in self-esteem ($R^2 = .007; p = .151$). Thus, the null hypothesis was retained. Nursing students’ perceptions of instructor caring behaviors do not have a direct positive effect on their self-esteem.

Hypothesis Two

To test the null of hypothesis two, “Nursing students’ perceptions of instructor caring behaviors have a direct positive effect on their perceived clinical competence”, simple linear regression was also used. Nursing students’ perceptions of instructor caring behaviors explained 7.6% of the variance in perceived clinical competence ($R^2 = .076, p$).
### Table 11

**Summary of Linear Regression Results for Hypotheses One Through Six**

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>R</th>
<th>R²</th>
<th>df</th>
<th>F statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis I</td>
<td>.082</td>
<td>.007</td>
<td>1,303</td>
<td>2.072</td>
</tr>
<tr>
<td>Hypothesis II</td>
<td>.276</td>
<td>.076</td>
<td>1,307</td>
<td>25.303**</td>
</tr>
<tr>
<td>Hypothesis III</td>
<td>.031</td>
<td>.001</td>
<td>1,273</td>
<td>.259</td>
</tr>
<tr>
<td>Hypothesis IV</td>
<td>.361</td>
<td>.130</td>
<td>1,308</td>
<td>46.024**</td>
</tr>
<tr>
<td>Hypothesis V</td>
<td>.285</td>
<td>.081</td>
<td>1,275</td>
<td>24.273**</td>
</tr>
<tr>
<td>Hypothesis VI</td>
<td>.282</td>
<td>.080</td>
<td>1,276</td>
<td>23.885**</td>
</tr>
</tbody>
</table>

**p < .0001**
Therefore, the null hypothesis was rejected. Nursing students’ perceptions of instructor caring behaviors have a direct positive effect on their perceived clinical competence.

Hypothesis Three

The null of the third hypothesis, “Nursing students’ perceptions of instructors’ caring behaviors have a direct positive effect on the attitudinal component of professional nurse autonomy”, was tested using simple linear regression. Results indicated that nursing students’ perceptions of instructors’ caring behaviors did not have a positive effect on the attitudinal component of professional nurse autonomy ($R^2 = .001, p = .611$). Thus, the null hypothesis was retained. Nursing students’ perceptions of instructor caring behaviors do not have a direct positive effect on the attitudinal component of professional nurse autonomy.

Hypothesis Four

The null of the fourth hypothesis, “Nursing students’ self-esteem has a direct positive effect on perceived clinical competence”, was tested using simple linear regression. Results indicated that nursing students’ self-esteem explained 13% of the variance in perceived clinical competence ($R^2 = .130, p < .0001$). Therefore, the null hypothesis was rejected. Nursing students’ self-esteem did have a direct positive effect on perceived clinical competence.
Hypothesis Five

The null of the fifth hypothesis, "Nursing students' self-esteem has a direct positive effect on the attitudinal component of professional nurse autonomy," was tested using simple linear regression. Regression analysis revealed that 8.1% of the variance in the attitudinal component of professional nurse autonomy was explained by nursing students' self-esteem ($R^2 = .081, p < .0001$). Therefore, the null hypothesis was rejected. Nursing students' self-esteem did have a direct positive effect on the attitudinal component of professional nurse autonomy.

Hypothesis Six

The null of the sixth hypothesis, "Nursing students' perceived clinical competence has a direct positive effect on the attitudinal component of professional nurse autonomy" was tested using simple linear regression. Nursing students' perceived clinical competence explained 8% of the variance in the attitudinal component of professional nurse autonomy ($R^2 = .08, p < .0001$). Therefore, the null hypothesis was rejected. Nursing students' perceived clinical competence did have a direct positive effect on the attitudinal component of professional nurse autonomy.

Hypothesis Seven

Hierarchial multiple regression was used to test whether nursing students' perceptions of instructor caring behaviors, self-esteem, and perceived clinical competence together were better predictors of the attitudinal component of professional nurse autonomy than any one variable alone. Perceptions of instructor caring behavior
PICB) was entered into the regression equation in step 1, self-esteem (RSES) in step 2, and perceived clinical competence (PCCS) in step 3. Because age significantly influenced ACP scores for this sample, age was added in step 4.

The regression model was \( Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + u \) with:

- \( Y \) = attitudinal component of professional nurse autonomy
- \( a \) = intercept constant
- \( b_1 - b_4 \) = regression coefficient for the predictor variables
- \( X_1 \) = perceptions of instructor caring behaviors
- \( X_2 \) = self-esteem
- \( X_3 \) = perceived clinical competence
- \( X_4 \) = age
- \( u \) = random error associated with the attitudinal component of professional nurse autonomy

Inspection of the regression analysis revealed that perceptions of instructors caring behaviors did not contribute to the variance in the attitudinal component of professional nurse autonomy (Table 12). The observed power was only .13. When self-esteem was added in step two, 7.1% of the variance was explained with an observed power of .82. An additional 5% of the variance was explained by entry of perceived clinical competence in the third step. The observed power was .95. With the entry of age in the final step, an additional 2.1% of the variance with an observed power of .85 was explained for a total of 14.2% variance explained by the model. Based on this model, self-esteem and, to a lesser degree, perceived clinical competence and age were
Table 12

Summary of Hierarchical Regression Analysis for Predictors of the Attitudinal Component of Professional Nurse Autonomy (N = 317)

<table>
<thead>
<tr>
<th>Order Variables Entered</th>
<th>Multiple R</th>
<th>R²</th>
<th>Increment of R²</th>
<th>F test for increment</th>
<th>Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>PICB</td>
<td>.016</td>
<td>.000</td>
<td>.000</td>
<td>.066</td>
<td>.016</td>
</tr>
<tr>
<td>RSES</td>
<td>.267</td>
<td>.071</td>
<td>.071</td>
<td>20.409**</td>
<td>.268</td>
</tr>
<tr>
<td>PCCS</td>
<td>.348</td>
<td>.121</td>
<td>.050</td>
<td>15.145**</td>
<td>.249</td>
</tr>
<tr>
<td>Age</td>
<td>.377</td>
<td>.142</td>
<td>.021</td>
<td>6.527*</td>
<td>.147</td>
</tr>
</tbody>
</table>

*p = .011; **p < .0001

PICB: Perceptions of Instructor Caring Behaviors

RSES: Rosenberg's Self-Esteem Scale

PCCS: Perceived Clinical Competency Scale

Age: Measured in years
predictive of the attitudinal component of professional nurse autonomy.

Screening was performed to determine whether the assumptions for regression were violated. A scatterplot of the residuals against the predicted dependent variable was inspected. The residuals formed a rectangular band with minimal deviation indicating the scores were homoscedastic (Tabachnick & Fidell, 1996). A histogram of the standardized residuals relative to the ACP scores indicated that the distribution of residuals was approximately normal. Nonindependence of errors associated with the order or cases was also checked using the Durbin-Watson statistic (Tabachnick & Fidell, 1996). Results less than -2 or greater than 2 are significant for autocorrelation (Newton & Rudestam, 1999). For this sample, the Durbin Watson statistic was 1.88.

The assumption that the independent variables are not related to each other was also met. Examination of the variance inflation factor (VIF) indicated that none of the variables contributed to collinearity (Munro, 1997). Furthermore, the tolerance values ranged from a low of .809 to a high of .992 indicating that multicollinearity was not a problem. For this sample, the error term was small relative to the total variation in the variables as indicated by the highly significant F value ($F(3, 267) = 11.22, p < .0001$). Although the regression analysis findings were statistically significant and assumptions for the test met, 86% of the variance was unexplained by this model.

**Hypothesis Eight**

Hypothesis eight stated, “Transpersonal teaching-learning carative factor (perceptions of instructor caring behaviors) interacts with sensitivity to self and others
(self-esteem) and creative problem-solving caring process (perceived clinical competence) to influence transpersonal caring (attitudinal component of professional nurse autonomy). For the hypothesized recursive model, perceptions of instructor caring behaviors was the observed exogenous variable. Self-esteem, perceived clinical competence, and the attitudinal component of professional nurse autonomy were the observed endogenous variables (refer to Figure 3, p. 149).

Using Amos 4.0, the hypothesized model was tested with path analysis. The single-headed arrows in the path diagram represent linear dependencies (Figure 4) (Arbuckle & Wothke, 1999). The error term, represented by \( \eta \) and enclosed in a circle, represents random fluctuations in scores due to measurement error and the composite of the study variables and any other variables not measured in this study. Because the path diagram is supposed to identify all variables that affect the attitudinal component of professional nurse autonomy, the error term must be linked to each endogenous variable in the model (Arbuckle & Wothke, 1999). The resulting just-identified model fit the data perfectly (\( \chi^2 (0, N = 317) = -0.000 \)). Just-identified models contain the same number of data points as parameters to be estimated (Tabachnick & Fidell, 1996). Thus, the estimated parameters perfectly reproduced the sample covariance matrix. The resulting zero value for degrees of freedom and chi-square indicated that there was no hypothesis to be tested (Arbuckle & Wothke, 1999, Tabachnick & Fidell, 1996). Therefore, the model as a whole was not testable. To proceed with the analysis, the model must be over-identified. Over-identified models contain more data points than parameters to be estimated (Tabachnick & Fidell, 1996).
Figure 4.

Just-Identified Model of the Attitudinal Component of Professional Nurse Autonomy

* \( p \leq .05 \)

- **PICB**: Perceptions of Instructor Caring Behaviors
- **RSES**: Rosenberg’s Self-Esteem Scale
- **PCCS**: Perceived Clinical Competence Scale
- **ACP**: Autonomy, the Caring Perspective
Based on the preceding findings, the decision was made to trim the model. Some researchers suggest that model revision is appropriate when the estimated parameters or path coefficients in a just-identified model are not significant (Pedhazur, 1997). Therefore, all nonsignificant paths were trimmed from the just-identified model and the revised model was subjected to path analysis. For the revised recursive model, perceptions of instructor caring behaviors and self-esteem were the observed exogenous variables; perceived clinical competence and the attitudinal component of professional nurse autonomy were the observed endogenous variables. The curved line with arrows at both ends represents an unanalyzed relationship between perceptions of instructor caring behaviors and self-esteem (Tabachnick & Fidell, 1996). The curved line demonstrates the covariance between the two variables without any implied direct effects (Figure 5).

Because the revised model was over-identified, goodness of fit was assessed. The chi-square statistic, $\chi^2(1, N = 317) = .548, p = .459$, indicated that the data fit the model. Although a nonsignificant chi-square is indicative of a good fit, the test may be influenced by sample size (Tabachnick & Fidell, 1996). Therefore, other goodness of fit indices were assessed. The normed fit index (NFI) of 1.000 met the criterion of .90 or above for a good fit (Pedhazur, 1997). Root mean square error of approximation (RMSEA) indexes of .05 or less are indicative of a close fit relative to the degrees of freedom (Arbuckle & Wothke, 1999). For the study data, the RMSEA was .000.

Table 13 summarizes the results of the path analysis for the revised model. The path coefficients or standardized regression weights provide an index of the effects of variables in the model (Pedhazur, 1997). Substantive direct effects are those with path
Note. For all path coefficients, p ≤ .05.

PICB: Perceptions of Instructor Caring Behaviors

RSES: Rosenberg's Self-Esteem Scale

PCCS: Perceived Clinical Competence Scale

ACP: Autonomy, the Caring Perspective
Table 13

Summary of Path Analysis for the Over-Identified Model (N = 317)

<table>
<thead>
<tr>
<th>Path</th>
<th>Path Coefficient (standardized regression weight)</th>
<th>Regression Weight (unstandardized)</th>
<th>Standard Error</th>
<th>Critical Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCCS&lt;---RSES</td>
<td>.340</td>
<td>.491</td>
<td>.074</td>
<td>6.630*</td>
</tr>
<tr>
<td>PCCS&lt;---PICB</td>
<td>.248</td>
<td>.087</td>
<td>.018</td>
<td>4.820*</td>
</tr>
<tr>
<td>ACP&lt;---RSES</td>
<td>.203</td>
<td>.640</td>
<td>.191</td>
<td>3.343*</td>
</tr>
<tr>
<td>ACP&lt;---PCCS</td>
<td>.201</td>
<td>.438</td>
<td>.132</td>
<td>3.312*</td>
</tr>
</tbody>
</table>

Note. *p ≤ .05

coefficients that are .20 or greater in magnitude (Munro, 1997). Pedhazer (1997) recommends reporting both the standardized and unstandardized regression weights. Critical ratios that exceed 1.96 are significant at the .05 level or above (Arbuckle & Wothke, 1999). For the revised model, all of the critical ratios were above 2.0 indicating that all paths were statistically significant (Arbuckle & Wothke, 1999). The direct, indirect, and total effects of each path in the revised model are summarized in Table 14.

Amos reports a squared multiple correlation for each endogenous variable, indicating the proportion of variance accounted for by the predictors (Arbuckle & Wothke, 1999). Nineteen percent of the variance ($R^2 = .191$) in perceived clinical competence was explained by perceptions of instructor caring behaviors and self-esteem.
Table 14

Direct, Indirect, and Total Effects of Each Path in the Over-Identified Model (N = 317)

<table>
<thead>
<tr>
<th>Path</th>
<th>Direct Effect</th>
<th>Indirect Effect</th>
<th>Total Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCCS ←→ PICB</td>
<td>.248</td>
<td>.000</td>
<td>.248</td>
</tr>
<tr>
<td>ACP ←→ PICB</td>
<td>.000</td>
<td>.050</td>
<td>.050</td>
</tr>
<tr>
<td>PCCS ←→ RSES</td>
<td>.340</td>
<td>.000</td>
<td>.340</td>
</tr>
<tr>
<td>ACP ←→ RSES</td>
<td>.203</td>
<td>.068</td>
<td>.272</td>
</tr>
<tr>
<td>ACP ←→ PCCS</td>
<td>.201</td>
<td>.000</td>
<td>.201</td>
</tr>
</tbody>
</table>

The three predictors in the model, however, only contributed 11.1% to the variance in the attitudinal component of professional nurse autonomy. Although trimming of the model rendered the model testable, removal of nonsignificant paths did not substantially influence the results. Over 88% of the variance remains unexplained by the revised path model.

Reliability of Study Instruments

With regression analysis, measurement errors in the dependent variable can weaken tests of statistical significance (Pedhazur, 1997). In the independent variable, such errors lead to underestimation of the regression coefficient. Underestimation is related to the reliability or precision of the study instruments. Therefore, all of the study instruments were tested for reliability using the Cronbach’s alpha statistic (Table 15).
Table 15

Cronbach's Alpha and Item-to-Total Correlations for ACP, PICB, RSES, and PCCS

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Cronbach Alpha</th>
<th>Item-to-Total Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACP</td>
<td>.79</td>
<td>-.062 to .555</td>
</tr>
<tr>
<td>PICB</td>
<td>.94</td>
<td>.446 to .813</td>
</tr>
<tr>
<td>RSES</td>
<td>.84</td>
<td>.448 to .678</td>
</tr>
<tr>
<td>PCCS</td>
<td>.77</td>
<td>.244 to .626</td>
</tr>
</tbody>
</table>

The ACP, PICB, and PCCS met the criteria of .70 or above for new instruments (Pierce, 1995). The alpha scores for the RSES were acceptable for an established instrument. Except for the ACP, all item to total correlations were above .20.

For the ACP, 18 items were below .20 with two negatively correlated items. Further examination revealed that deletion of any of these items would not significantly improve the alpha score. However, removal of all 18 questionable items would result in an improved reliability of .84 with an item-to-total correlation of .173 to .576. Because deletion of any of the items would significantly change the original instrument, the decision was made to retain all items.

Each of the seven subscales of the ACP were also tested for reliability (Table 16). The lower reliability for each of the subscales was most likely related to the smaller number of items on each subscale (Pierce, 1995). The finding suggests that the total scale is more internally consistent than each of the subscales.
Table 16

ACP Subscales: Number of Items, Cronbach Alpha, and Item-to-Total Correlations

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Number of Items</th>
<th>Cronbach Alpha</th>
<th>Item-to-Total Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advocacy and Activism for Self (AS)</td>
<td>11</td>
<td>.59</td>
<td>.018 to .453</td>
</tr>
<tr>
<td>Regard for Women (RW)</td>
<td>10</td>
<td>.51</td>
<td>.054 to .335</td>
</tr>
<tr>
<td>Regard for Self (RS)</td>
<td>8</td>
<td>.48</td>
<td>-.008 to .417</td>
</tr>
<tr>
<td>Advocacy and Activism for Nurses (AN)</td>
<td>6</td>
<td>.50</td>
<td>.072 to .465</td>
</tr>
<tr>
<td>Advocacy and Activism for Patients (AP)</td>
<td>5</td>
<td>.56</td>
<td>.257 to .420</td>
</tr>
<tr>
<td>Advocacy and Activism for Women (AW)</td>
<td>5</td>
<td>.50</td>
<td>.126 to .528</td>
</tr>
</tbody>
</table>

Ancillary Data Analysis

Over 86% of the variance in the attitudinal component of professional nurse autonomy was not explained by the study variables. To examine patterns of correlations among the study variables and gain an understanding of the measures used for each of the study variables, factor analysis of the study instruments was performed. Exploratory factor analysis also further contributes to theory building (Munro, 1997; Tabachnick & Fidell, 1996).
Autonomy, the Caring Perspective (ACP)

Principal components analysis with varimax rotation was performed using SPSS 9.1 on the 50 item ACP instrument. The rotation converged in 23 iterations. Seventeen factors were extracted accounting for 63.1% of the variance. When a large number of factors are extracted from a solution, the solution is less parsimonious (Tabachnick & Fidell, 1996). For this sample, variables on the ACP were not well defined.

Perceptions of Instructor Caring Behaviors (PICB)

Principal components analysis with varimax rotation on the 16 items from the PICB yielded a two factor solution after the rotation converged in three iterations (Appendix M). These factors explained 59.43% of the variance. Loadings on each factor were accepted if they were .40 or above. Inspection of the items relative to the factor solution revealed that factor 1 items may be interpreted as teacher caring qualities and factor 2 items as personal caring qualities. Items seven (honest) and nine (attentive) loaded equally on both factors. Seven items, however, clearly loaded on each of the two factors. Because deletion of the two factors would not influence the overall study results, the decision was made to retain all items.

Rosenberg’s Self-Esteem Scale (RSES)

The 10 item RSES was entered into a principal components analysis with varimax rotation. The rotation converged in three iterations. The two factor solution explained 58.35% of the variance. Using .40 as the cut-off for loading, seven items loaded on factor one and three on factor two (Appendix N). No items loaded equally on both factors.
Factor one related to perceptions of self and factor two to perceptions of self in comparison to others.

**Perceived Clinical Competence Scale (PCCS)**

The 12 item PCCS was entered into a principal components analysis with varimax rotation. The rotation converged in five iterations. The three factor solution explained 56.2% of the variance. Using .40 as the cut-off for loading, six items loaded on factor one (Appendix O). The remaining six factors loaded equally on factor two and three. Factor one focused on confidence. Factor two addressed the program influence. Factor three concerned clinical practice fears.

**Chapter Summary**

This chapter presented the analysis of the data. The data were collected from 317 subjects selected from 20 baccalaureate nursing programs in each of the four NLNAC regions. The average subject was 26 years old, Caucasian and single. Examination of educational and personal experience characteristics revealed that the mean GPA for this sample was 3.28. Although most students reported no previous degree, 31.5% had at least an Associate degree. Most subjects (65.6%) had at least 12 months of nursing related experience.

Inspection of subjects’ responses to the study instruments revealed a wide range of scores that were significantly skewed. Because regression analysis is generally robust to departures from the assumption of normality (Pedhazur, 1997), the decision was made to subject the data to regression analysis. A correlation matrix of the predictor variables...
demonstrated that all relationships were weak to moderate. Results of the simple linear regression analysis for the first six hypotheses indicated that perceptions of instructor caring behaviors did not have a direct positive effect on either self-esteem or the attitudinal component of professional nurse autonomy. Perceptions of instructor caring behaviors, however, did significantly ($R^2 = .076$, $p < .0001$) effect perceived clinical competence. Nursing students' self-esteem had a direct positive effect on perceived clinical competence ($R^2 = .130$, $p < .0001$) and the attitudinal component of professional nurse autonomy ($R^2 = .081$, $p < .0001$). Nursing students' perceived clinical competence also had a direct positive effect on the attitudinal component of professional nurse autonomy ($R^2 = .08$, $p < .0001$).

Before testing hypothesis seven, the relationship of the demographic variables to the study variables was examined. Because age was the only variable that significantly influenced scores on the ACP, age was added to step four of the regression analysis. Based on the revised model, self-esteem ($R^2 = .071$, $p < .0001$) and, to a lesser degree, perceived clinical competence ($R^2 = .050$, $p < .0001$) and age ($R^2 = .021$, $p = .011$) were predictive of the attitudinal component of professional nurse autonomy. Although regression analysis findings were statistically significant and assumptions for the test met, more than 86% of the variance remained unexplained by the model.

Path analysis was used to test three carative factors in Watson's (1988a) Theory of Transpersonal Caring. The fully saturated just-identified initial model was not testable. Paths from perceptions of instructor caring behaviors to self-esteem and to the attitudinal component of professional nurse autonomy were not statistically significant. With
removal these paths, the trimmed model was over-identified and testable ($\chi^2(2, N = 317) = 2.77, p = .250$). Perceptions of instructor caring behaviors and self-esteem were the observed exogenous variables. Perceived clinical competence and the attitudinal component of professional nurse autonomy were the observed endogenous variables.

To determine whether results were influenced by the precision of the study instruments, all instruments were tested for reliability using the Cronbach's alpha statistic. Because reliability ranged from a low of .77 for the PCCS to a high of .94 for the PICB, the criteria of acceptability for new instruments was met. Except for the ACP, all item to total correlations were above .20. Although removal of 18 items from the ACP would result in an improved reliability of .84, the decision was made to retain all items so as not to change the original instrument.

Ancillary analysis involved exploratory factor analysis of each study instrument. For this study, items on the ACP were not well defined by the factor solution. The PICB contained a two factor solution that was not easily interpreted. Two of the items loaded equally on both factors. The RSES also contained a two factor solution. Factor one focused on perceptions of self and factor two on perceptions of self as perceived by others. The majority of items on the PCCS loaded on factor one which focused on confidence in abilities. The remaining items loaded equally on factors two and three. Factor two related to the program influence and factor three to clinical practice fears.
CHAPTER V

DISCUSSION, CONCLUSIONS, and RECOMMENDATIONS

The primary purpose of this study was to test a model of the attitudinal component of professional nurse autonomy that was based on Watson's (1988a) Theory of Transpersonal Caring. A secondary aim was to test three carative factors embedded in Watson's Theory of Transpersonal Caring. Study variables and their related carative factors included perceptions of instructor caring behaviors (transpersonal teaching-learning), self-esteem (sensitivity to self and others), perceived clinical competence (creative problem solving process), and the attitudinal component of professional nurse autonomy.

This chapter begins with a discussion and interpretation of the study findings. The concluding section contains conclusions, limitations, implications for nursing education, and recommendations for future research.

Discussion of Findings

The discussion is divided into five sections. The effect of each of the study variables as entered in the hypothesized model is addressed in the first three sections. The fourth section focuses on findings relative to the attitudinal component of professional nurse autonomy. The model of the attitudinal component of professional nurse autonomy as it relates to Watson's Theory of Transpersonal Caring is discussed in the final section.
Perceptions of Instructor Caring Behaviors

In this study, perceptions of instructor caring behaviors did not have a positive direct effect on nursing students' self-esteem. Yet, Haldorsdottir (1990) suggested in a qualitative study that perceptions of caring and non-caring behaviors may be related to the self-concept. The diverse theoretical orientations toward the concept of self and its various components make comparison of findings with other studies difficult. For this study, self-esteem was the global evaluative component of the self-concept (Rosenberg, 1979). Failure to establish a relationship between measures of the self-concept and other variables in nursing studies may be related to the use of inappropriate measures and small sample sizes. Senior baccalaureate nursing students in the current study may have internalized aspects of the self that are related to the personal self and may not be influenced by their instructors. The professional self-concept, as described by Arthur (1992), may be more relevant to the study of nursing students' perceptions of instructor caring behaviors.

For this study, nursing students' perceptions of instructor caring behaviors did have a positive direct effect on their perceived clinical competence. This result lends support to Kosowski's (1995) qualitative finding that being competent emerged from the pattern of creative caring. Miller et al. (1990) also found qualitatively that a climate of support led to student empowerment, growth, and hope for the future. In a quantitative study, Eberhard (1998) found a significant positive relationship between a caring climate and perceived clinical competence. Others found that a trusting non-threatening relationship with faculty promoted students' feelings of competence (Eberhard, 1998;
Loving, 1993; Mozingo et al., 1995). This study's findings provide support for Loving's (1993) theoretical model of competence validation. A perceived learning context was based on trusting, non-threatening relationships with their instructors. When students felt successful in the learning context, they developed an identity as a competent beginning nurse.

In this study, perceptions of instructor caring behaviors did not directly effect the attitudinal component of professional nurse autonomy. While Sheston (1990; 1992) claimed that nursing students' perceptions of interpersonal caring processes were better predictors of their transformation as caring persons than was the academic milieu, others claimed that the teaching-learning climate influenced nursing students' learning to care (Hughes, 1992; Miller et al., 1990). Although this study did not investigate the learning milieu, transformation related to the attitudinal component of professional nurse autonomy from a caring perspective was investigated. Perhaps caring and the attitudinal component of professional nurse autonomy are not related directly. The revised path model demonstrated that perceptions of instructor caring behaviors indirectly through perceived clinical competence influenced the attitudinal component of professional nurse autonomy. Variables in the educational milieu other than the instructor caring behaviors may influence the attitudinal component of professional nurse autonomy. Without additional analyses of the school climate, conclusions regarding these differences cannot be made.

The Perceptions of Instructor Caring Behaviors (PICB) semantic differential scale may not have been sensitive enough to isolate the influence of perceptions of instructor
caring behaviors on the study variables. Although students were asked to give their impression of the caring qualities of their instructors since the beginning of the program, the wide range and significantly negatively skewed responses suggested that many students addressed negative caring behaviors of their instructors. Caring interactions between faculty and students that are perceived as relational and reciprocal reflect the nature of the professional-client relationship itself (Watson, 1988b). While research has supported the importance of these caring interactions, some have found that students learn caring through the non-caring behaviors of others (Eberhard, 1998; Halldorsdottir, 1990; Hanson & Smith, 1996; Sheston, 1990, 1992). Others have found evidence of the paradoxical nature of caring (Kosowki, 1995; Nelms et al., 1993). Learning to care was influenced by caring experiences as well as by behaviors and events that are perceived as non-caring. Although perceptions of instructor caring behaviors for this study were negatively skewed, the majority of scores were in the positive direction. More importantly, autonomy scores which reflect the caring professional nurse were positive. This study lends support to the paradoxical nature of caring. Caring can be learned by observing the non-caring behaviors of others (Kosowki, 1995; Nelms et al., 1993).

In a qualitative study, Hanson and Smith (1996) found that the continuum of faculty caring and not-so-caring behaviors included both personal and teaching behaviors. Factor analysis of items on the Perceptions of Instructor Caring Behaviors semantic differential scale indicated that two factors were present. Although the factors appeared to reflect either personal or teaching caring behaviors, there was overlap with at least two of the items indicating that further validation and discrimination of caring and
not-so-caring behaviors is needed. Although the instrument was reliable, it may not be measuring instructor caring based on Watson’s theory.

Other problems with the instrument may be related to the directions for responding to the scale. Several students commented that they were confused about how to respond. Some students indicated both caring and non-caring responses for the same item. Others responded to the confusion by marking the same number for each item. Therefore, actual scores may not be a true reflection of students’ perceptions of instructor caring behaviors.

**Self-Esteem**

Self-esteem had a direct effect on perceived clinical competence and both a direct and indirect effect on the attitudinal component of professional nurse autonomy. In the revised over-identified path model, 18% of the variance in perceived clinical competence was explained by self-esteem.

There were no previous studies that related self-esteem, as defined for this study, to perceived clinical competence or the attitudinal component of professional nurse autonomy. Previous studies of college student populations found positive relationships between self-esteem and achievement or ability (Eronen et al., 1998; Huguet et al., 1995; Osecka’ & Blatny’, 1993; Tafarodi & Swan, 1995). Studies of nursing students, however, failed to find relationships between achievement and self-esteem (Hughes et al., 1991; Olson et al., 1984). As with other research on self-esteem, conclusions about the relationship of this study’s findings with the findings of other studies is complicated by
inconsistencies with the definitions and imprecise measurement instruments (Addeo et al., 1994; Stein, 1995). Comparison of findings from nursing studies with this study are inconclusive as several different measures of the self were used. Although the variables appear to be similar, past studies may not have been measuring the same concept.

In the current study, age was the only demographic characteristic that significantly but weakly related to self-esteem. Past studies with both college and nursing students have not found statistically significant relationships between self-esteem and age, GPA, or clinical grades in nursing (Burgess, 1980; Jaradat, 1995; Hughes et al., 1995; Osecka & Blatny, 1993). The wide range in the ages of the college students in this sample provided some support for previous developmental research that has suggested that self-views can change from infancy through adolescence (Damon & Hart, 1982; Tafarodi & Swann, 1995). Most likely, however, the findings reflect the large sample size.

Only one study (Rew, 1989) used Rosenberg's Self-Esteem Scale (RSES) with a nursing student population. Although Rew established the validity of using the RSES with nursing students, other study findings were not relevant to the current study. For this study, the RSES was reliable ($\alpha = .80$) for use with a college nursing student population. The range of students' ratings of their self-esteem varied greatly as demonstrated by the significantly negatively skewed scores on Rosenberg's (1979) Self-Esteem Scale. Despite the wide range of scores, the majority of the scores were above the mean indicating a positive self-esteem.
Rosenberg’s (1979) 10 item self-esteem scale is purported to measure global self-esteem. The instrument was selected because it appeared to be conceptually congruent with Watson’s (1988a) beliefs about the self. Results from past factor analysis have been mixed between a one and two factor solution (O’Brien, 1985; Taforidi & Swann, 1995; Wylie, 1989). This study yielded a two factor solution. Factor one related to perceptions of self and factor two to perceptions of self in comparison to others. This finding is consistent with Watson’s (1997) view of the self as being composed of both personal perceptions and perceptions of relationships with others.

**Perceived Clinical Competence**

The study findings indicated that perceived clinical competence was influenced by caring student-teacher relationships and self-esteem. To a lesser degree, perceived clinical competence directly affected the attitudinal component of professional nurse autonomy. Based on a concept analysis of professional nurse autonomy, competence and a unique body of knowledge are necessary precursor to autonomy in practice (Grinnell, 1989; Kramer & Schmalenberg, 1993). Furthermore, nurses must perceive that they are competent. These findings provide support for Loving’s (1993) qualitative analysis of the process whereby nursing students established an identity as a competent nurse. Nursing students’ perceptions of their competence influenced their ability to be patient-centered. The attitudinal component of professional nurse autonomy for this study was based on a patient-centered caring paradigm. The study findings are also consistent with Watson’s (1988a) contention that nurses must possess a strong knowledge base and clinical
competence to provide human care.

Overall, the perceived clinical competency of students in this study was high. Despite a wide range of scores that were significantly negatively skewed, the mean (43.62), median (44.00), and mode (43.00) were consistent with those of Mozingo et. al (1995) and Eberhard’s (1998) studies. As with Eberhard’s (1998) study, students in the current study were close to graduation and were most likely anticipating successful completion of their studies. Although Moyer (1996) used a different measure of competence than was used in the present study, senior students’ competence scores were higher than those of juniors indicating that perceived competence may increase as nursing students become closer to the completion of their studies. Perhaps this finding reflects the expectation of competence rather than the reality.

Perceived clinical competence scores of students from the Midland region were significantly higher than those from the West and the South. These differences were also reflected in a higher mean score on perceptions of instructor caring behaviors in the Midland region. Perhaps pedagogical approaches in this region are more conducive to faculty student interaction and caring. Findings from this study lend support for Loving’s (1993) qualitative analysis of the process whereby nursing students established and identity as a competent nurse. This study, however, did not relate perceived clinical competence to the type of pedagogical model used in the nursing education program. Therefore, conclusions about reasons for regional differences cannot be made from the current study.
Except for age, the relationship of personal and educational variables to perceived clinical competence were not statistically significant. The weak relationship between age and perceived clinical competence was most likely an artifact of the large sample size. Consistent with Dufault’s (1990) findings, previous work experience did not relate to perceived competency as measured by Schwerian’s (1978) Six-Dimensional Scale of Nursing Performance. Using the Perceived Clinical Competence Scale, however, Mozingo et al. (1995) did find a statistically significant but weak relationship between perceived clinical competence and employment in a health care setting that increased significantly with the length of time the student was employed. Mozingo et al (1995) also found a weak but statistically significant negative relationship between GPA and perceived clinical competence. These findings were not supported by the current study. Mozingo et al’s (1995) study was limited by the use of subjects from only one university, administration of a new instrument, and rather modest correlations. Therefore, the substantive value of their findings relative to the current study is questionable.

The Perceived Clinical Competence Scale is a relatively new instrument designed to measure perceived competency. Instrument reliability ($\alpha = .77$) was acceptable for a new instrument (Pierce, 1995). The alpha coefficient was consistent with Eberhard’s (1998) analysis with a similar student population. Factor analysis revealed a three factor solution. Factor one focused on self-confidence; factor two addressed program influences; and factor three was concerned with clinical practice fears. These factors reflect Watson’s (1979) claim that competence, closely associated with achievement, involves self-approval, positive recognition from others, social
acknowledgment of skills, and an internal sense of satisfaction. Therefore, the instrument used to measure perceived clinical competency may reflect Watson's (1988a) creative individualized, problem-solving caring process carative factor. Competency is an individual perception involving self-approval, positive recognition from other with social acknowledgment of skills and an internal sense of satisfaction.

**The Attitudinal Component of Professional Nurse Autonomy**

The attitudinal component of professional nurse autonomy was influenced directly by nursing students' self-esteem and perceived clinical competence. Perceptions of instructor caring behaviors influenced the attitudinal component of professional nurse autonomy indirectly. Although the relationships between self-esteem and perceived clinical competence and the attitudinal component of professional nurse autonomy were statistically significant, they were weak.

One possible explanation for these findings is the wide range of significantly positively skewed scores on the instrument to measure the attitudinal component of professional nurse autonomy. The mean score of 136.96 indicated that students' attitudes were generally positive. Mean scores were similar to pretest scores of a nursing and non-nursing female college student population (M = 138.1 - 141.8) in a study to determine the validity of the instrument (Boughn, 1995). Although Thompson (1998) used the instrument with a sample of RN students, mean scores (M = 138.3) were similar to this study and the standardization study.
Another plausible explanation for the findings is that other variables may contribute more strongly to the attitudinal component of professional nurse autonomy. Over 86% of the variance in the attitudinal component of professional nurse autonomy was unexplained. Others have suggested that there are intervening variables that influence both the attitudinal component and the exercise of professional nurse autonomy (Boughn, 1995; Husted, 1991; Lach, 1992; Schutzenhofer & Musser, 1994; Thompson, 1998). Age, which contributed 2.1% to the variance in the attitudinal component of professional nurse autonomy, was the only intervening variable that was significantly but weakly related to scores on the autonomy instrument in the current study. This finding may reflect the wide variation in age of this study sample or the large sample size. Using the same instrument with a much smaller RN sample, Thompson (1998) did not find any significant relationships between age or any other demographic variables and the attitudinal component of professional nurse autonomy. Similarly, Schutzenhofer and Musser (1994) did not find any significant relationships between age or years of nursing experience and the exercise of professional nurse autonomy in an RN population.

Another possible explanation for the weak study findings may be related to the newness of the instrument. This study was the first to examine predictors of the attitudinal component of professional nurse autonomy in female baccalaureate students using an instrument designed for nursing students. Although instrument reliability ($g = .79$) was acceptable for a new instrument (Pierce, 1995), item-to-total correlations for 18 of the items were below .20 with two negatively correlated items. The two negatively correlated items were from the “regard for self” subscale and may reflect the altruistic
views of many novice nurses. Although reliability from Thompson's (1998) study was slightly higher than for the current study, the range of item-to-total correlations also indicated that some items may not be acceptable. Perhaps not all items on the instrument are measuring the attitudinal component of professional nurse autonomy from a caring perspective.

Comments from respondents may further explain why so many items were not acceptable. Several students commented that the instrument was “sexist”. Several students indicated that they did not understand item 34 which stated, “Women are equal to men physically (doesn’t refer to body mass and muscle strength)”. Many students either refused to respond to item 48 or commented that they did not see anything wrong with a picture of a naked nurse in a Playboy magazine layout. Others did not see the relevance of this item to nursing. The Autonomy, the Caring Perspective instrument was designed by an experienced nurse educator and validated by nurse educators with similar backgrounds (Boughn, 1995). Responses to some of the items may reflect generational differences.

Boughn (1995) originally identified seven subscales for the instrument. After factor analysis of principal components with varimax rotation, she claimed the instrument contained four subscales. For the four subscales, however, she did not identify the items. Although Thompson (1998) reported reliability for four subscales ranging from .51 to .70, a factor analysis was not reported. Factor analysis for the current study extracted 17 factors indicating that the factor solution was not parsimonious (Tabachnick & Fidell, 1996). Furthermore, the factor solution did not support Watson’s (1989b) contention that
"Transpersonal caring is the full actualization of the carative factors in a human-to-human transaction" (p. 232). If the attitudinal component of professional nurse autonomy represents transpersonal caring, then all 10 carative factors should be evident. The instrument was based on caring theories of both Benner and Wrubel (1989) and Watson (1988a) as well as Gilligan’s (1982) theory of women’s development (Boughn, 1995). Perhaps the instrument to measure the attitudinal component of professional nurse autonomy does not represent Watson’s (1988a) Theory of Transpersonal Caring, but a new theory of professional nurse autonomy that is based on a caring perspective.

Model of the Attitudinal Component of Professional Nurse Autonomy and Watson’s Theory of Transpersonal Caring

Hypothesis eight proposed to test three carative factors embedded in Watson’s (1988a) Theory of Transpersonal Caring. The carative factors tested and their measures were: Transpersonal teaching-learning (perceptions of instructor caring behaviors), sensitivity to self and others (self-esteem), and creative problem-solving caring process (perceived clinical competence). The outcome of the interaction of these factors was proposed to be transpersonal caring (attitudinal component of professional nurse autonomy). For this study, the human-to-human transactions were between students and faculty.

The hypothesized causal model was based on Watson’s (1988a) proposition that transpersonal caring reflects the interconnectedness and intersubjectivity of the human-caring consciousness and relationships. The initial, just-identified model was fully...
saturated and fit the data perfectly. Although consistency of the model lends support to the theory, the model as a whole could not be tested (Pedhazur, 1997; Tabachnick & Fidell, 1996). With removal of the nonsignificant direct path from perceptions of instructor caring behaviors to the attitudinal component of professional nurse autonomy and from perceptions of instructor caring behaviors to self-esteem, the revised model, though testable, did not reflect the interconnectedness and intersubjectivity of Watson's (1988a) theory. With retention of all of the predictor variables, the meaningfulness of the model of the attitudinal component of professional nurse autonomy was not altered. Although the direction of the relationships was not changed, the nature of the effects were changed. Instead of testing Watson's (1988a) Theory of Transpersonal Caring, the revised model appeared to be testing the attitudinal component of professional nurse autonomy that is based on a caring perspective.

Another explanation for the failure to establish a significant direct path between perceptions of instructor caring behaviors and self-esteem and the attitudinal component of professional nurse autonomy may be error in the measurement instrument. Although the instrument used to measure Perceptions of Instructor Caring Behaviors was reliable ($\alpha = .92$), it may not be valid. Also, several comments from the respondents indicated confusion with the measure.

In the revised model, the strongest direct effects were from self-esteem and perceptions of instructor caring behaviors to perceived clinical competence. Perceptions of instructor caring behaviors combined with self-esteem contributed more to the variance in perceived clinical competence then did the three predictors to the attitudinal
component of professional nurse autonomy. However, 89% of the variance in the
attitudinal component of professional nurse autonomy remained unexplained by the study
variables. This finding was not surprising as only three carative factors were supposedly
tested. Furthermore, the measures of the carative factors were not without error. The
revised model suggested that self-esteem and perceptions of instructor caring behaviors
directly influence nursing students’ perceived clinical competence. Findings from this
study provided stronger support for Loving’s (1993) competence validation model than
for Watson’s (1988a) Theory of Transpersonal Caring. Trusting, nonthreatening
relationships with faculty motivated students to acquire the skills and knowledge
necessary to provide competent, patient-centered nursing care. Feelings of success
promoted the development of an identity as a competent beginning nurse. Hence, the
attitudinal component of professional nurse autonomy was primarily influenced by
nursing students’ self-esteem and perceived clinical competence.

A final explanation for the study findings may be that Watson’s theory is not
amenable to testing by quantitative methods. Although Watson (1989b) was not opposed
to testing her theory using empirical methods, most of the past research used her
proposed phenomenological-existential methodology. Watson (1989b) claimed that the
factors associated with caring need to be further delineated, operationalized, expanded,
and researched. If quantitative methods are to be used to test Watson’s theory, then the
measures must clearly reflect the carative factors.
Conclusions

This section starts with a summary of conclusions based on the study findings followed by a discussion of the limitations. Next, implications for nursing education are addressed. Finally, recommendations for future research are outlined.

Summary of Conclusions

Based on the study findings, the following conclusions are offered:

1. Nursing students’ perceptions of instructor caring behaviors did not have a direct effect their self-esteem.

2. Nursing students’ perceptions of instructor caring behaviors did have a direct effect on perceived clinical competence.

3. Nursing students’ perceptions of instructor caring behaviors did not have a direct effect on the attitudinal component of professional nurse autonomy.

4. Nursing students’ perceptions of instructor caring behavior indirectly effected the attitudinal component of professional nurse autonomy.

5. Nursing students’ self-esteem did have a direct effect on their perceived clinical competence.

6. Nursing students’ self-esteem both directly and indirectly through perceived clinical competence influenced the attitudinal component of professional nurse autonomy.

7. Nursing students’ perceived clinical competence directly effected the attitudinal component of professional nurse autonomy.
8. Nursing students' self-esteem, perceived clinical competence, and age, together were better predictors of the attitudinal component of professional nurse autonomy than any one predictor alone.

9. The proposed model of the attitudinal component of professional nurse autonomy that reflected the holistic, interconnective components of Watson's (1988a) was not testable.

10. Although the revised model of the attitudinal component of professional nurse autonomy was testable, its relationship to Watson's (1988a) Theory of Transpersonal Caring was not supported.

11. The revised model provided support for the positive direct effect of self-esteem and perceived clinical competence and the indirect effect of perceptions of instructor caring behaviors on the attitudinal component of professional nurse autonomy.

12. Global self-esteem contained two dimensions: perceptions of self and perceptions of self in relation to others. These dimensions are consistent with Watson's (1988a) carative factor sensitivity to self and others.

13. The Perceived Clinical Competence Scale (PCCS), a reliable instrument for measuring nursing students' perceived clinical competence, contained three factors that are consistent with Watson's (1988a) definition of competency.

14. The Autonomy, the Caring Perspective instrument does not measure the 10 carative factors associated with Transpersonal Caring.
Limitations

Several limitations were identified for this study. Selection was a major threat to the study's internal and external validity (Burns & Grove, 1997). Although random quota sampling was used to obtain a proportional national sample, selection of subjects by convenience effected the generalizability of the results. Subjects were limited to female senior baccalaureate nursing students who were not RNs or LPNs. Analysis of the demographic data showed that, except for age, there were no significant relationships with scores on the study instruments. Although each geographic area was represented in the study, the low response rate (40%) and failure to obtain a proportional sample must also be considered a limitation. There were regional differences in scores on the study instruments to measure perceptions of instructor caring behaviors and perceived clinical competence that will also influence the generalizability of the findings. However, no attempts were made to collect and analyze data about the participating schools to ascertain the reasons for these differences.

Although the sample size was smaller than proposed, the power for all study hypotheses except those involving perceptions of instructor caring behaviors was above .80. Construct validity, however, was another study limitation. Construct validity determines whether the operational definitions reflect the conceptual definitions (Burns & Grove, 1997). Factor analysis of the instrument used to study the attitudinal component of professional nurse autonomy (ACP) yielded a factor solution that could not be explained by Watson’s (1988a) 10 carative factors. Although the sample size was above the minimum requirement of 300 subjects, the large number of low item-to-total
correlations may have resulted in the 17 factor solution (Tabachnick & Fidell, 1996). The instrument used to measure perceptions of instructor caring behaviors (PICB), although highly reliable ($\alpha = .92$), did not capture any of the carative factors in the factor solution. Therefore, it is unlikely that these instruments were measuring carative factors associated with transpersonal caring.

**Implications**

The findings from this study have several implications for nursing education, nursing practice, and nursing science. The paradoxical nature of caring was supported by the study findings. If students learn caring by observing both the caring and non-caring behaviors of faculty and others, opportunities for students to reflect on these behaviors should be provided. As Tanner (1990b) proclaimed in a review of caring in nursing education, it is the subtle socialization that occurs between nursing faculty and students that illuminates how students learn to care. To make visible the invisible practices of caring, nursing faculty and students must be involved in an ongoing process of developing awareness as caring persons. Opportunities for reflection could be provided either during clinical conferences or in the form of reflective journaling. With modifications, the instrument to measure perceptions of instructor caring behaviors could be used as a guide to help students articulate the caring and non-caring behaviors of faculty and nurses.

Perceptions of instructor caring behaviors directly influenced nursing students’ perceived clinical competency and indirectly the attitudinal component of professional
nurse autonomy. This finding supported Loving's (1993) theoretical model that trusting, nonthreatening relationships with faculty motivate students to acquire the skills and knowledge necessary to provide competent, patient-centered nursing care. Being competent emerges from a pattern of creative caring (Kosowski, 1995). When students feel successful, development of an identity as a competent beginning nurse is promoted. Faculty may wish to help students to articulate their strengths and abilities by challenging students to evaluate their strengths during clinical evaluation conferences.

Not only can faculty help students articulate their clinical competencies, faculty must nurture and support students' personal qualities related to caring. Few studies have been able to capture the importance of self-esteem to the developing professional. Lack of support from the research literature appears to be related to inconsistencies and confusion about the meaning of the concept. This study identified self-esteem as a predictor of both perceived clinical competence and the attitudinal component of professional nurse autonomy. Kosowski (1995) found that creative caring imbued a sense of well-being and feeling competent as well as a positive self-perception. Faculty need to adopt a caring "way of being" through communication of a climate of support.

When the climate of nursing education is perceived as caring, students learn a professional way of being (Watson, 1988b). The attitudinal component of professional nurse autonomy is most likely a precursor to the exercise of professional nurse autonomy in practice. Therefore, the attitudinal component of professional nurse autonomy should be considered as an important outcome of a baccalaureate nursing education. Both the NLN and the AACN have endorsed caring as a core value in nursing education and
practice (AACN, 1998; Tanner, 1990b). The instrument used to measure autonomy from a caring perspective could serve as a means of evaluating the efficacy of nursing programs in terms of the attitudinal component of professional nurse autonomy.

Findings from this study also have implications for nursing practice and nursing science. The attitudinal component of professional nurse autonomy, which is nurtured during the nursing education process, provides the basis for autonomy related behaviors in practice (Boughn, 1995; Schutzenhofer, 1987). If caring is the essence of nursing, then professional nurse autonomy must be based on a caring perspective. Health care consumers deserve nurses who demonstrate autonomy and caring (Schutzenhofer, 1992; Watts, 1990). This study links the seemingly contradictory values of caring and autonomy and provides a basis for evaluating the outcomes of nursing practice on client care. Professional nurse autonomy is recognized as an essential aspect of professional practice for nurses in the 21st century (Schutzenhofer, 1992). Findings from this study provide a foundation for further theory development related to professional nurse autonomy.

Recommendations for Research

Based on the findings from this study, the following recommendations for future study are proposed:

1. Refine the model of the attitudinal component of professional nurse autonomy by adding other predictor variables such as type of pedagogy. Consider variables that reflect Watson's (1988a) 10 carative factors.
2. Professional nurse autonomy is a nursing behavior that should not be limited to females. After making adaptations to the Autonomy, the Caring Perspective instrument for males, conduct a comparative study with a population of male baccalaureate nursing students.

3. Perform a cross-sectional study to determine if there are differences between freshman, sophomore, junior, and senior baccalaureate nursing students in the attitudinal component of professional nurse autonomy.


6. Develop a new instrument to measure nursing students' perceptions of instructor caring behaviors that reflects Watson's (1988a) 10 carative factors and results from qualitative studies of caring in nursing education. Nyberg's (1990) instrument measuring staff nurses' perceptions of nurse managers caring behaviors could be used as a guide.

7. The Autonomy, the Caring Perspective instrument should be further validated and revised, with permission from Boughn (1995), to reflect Watson's 10 carative factors.

8. After validating instruments to test Watson's (1988a) Theory of Transpersonal Caring, conduct additional quantitative research to test the Theory.
9. Determine the relationship between the attitudinal component of professional nurse autonomy and the exercise of professional nurse autonomy using Schutzenhofer and Musser’s (1994) Nursing Autonomy Scale with a sample of recent graduates of baccalaureate nursing programs.

Chapter Summary

This chapter reported the conclusions reached from the analysis of the study findings. Following a discussion of possible explanations for the findings, conclusions were summarized. Limitations, implications for nursing education, and recommendations for future research completed the chapter.

A model testing correlational design was employed to explore the relationships among female baccalaureate nursing students’ perceptions of instructor caring behaviors, self-esteem, perceived clinical competence and the attitudinal component of professional nurse autonomy. To test Watson’s (1988a) Theory of Transpersonal Caring, the predictor variables were related to three of Watson’s 10 carative factors. Although random quota sampling was used to select baccalaureate nursing programs from each of the four NLN regions, convenience sampling was used to select student participants.

Study findings revealed that perceptions of instructor caring behaviors had a direct effect on only perceived clinical competence; nursing students’ self-esteem directly influenced perceived clinical competence and the attitudinal component of professional nurse autonomy. Nursing students’ perceived clinical competence also directly effected the attitudinal component of professional nurse autonomy. Model testing, using
hierarchial multiple regression with age added, demonstrated that self-esteem and, to a lesser degree, perceived clinical competence and age predicted the attitudinal component of professional nurse autonomy. Watson's (1988a) Theory of Transpersonal Caring was tested using path analysis. The initial just-identified model was not testable indicating that all of the variables did not interact as proposed by Watson. After trimming the model of all nonsignificant paths, an over-identified and testable model of the attitudinal component of professional nurse autonomy was specified.

Although the discussion related findings to similar research, this study presented new research from a quantitative perspective on the effects of caring in nursing education. Qualitative studies of instructor caring behaviors identified the importance of instructor caring behaviors to the development of caring. For this study, however, perceptions of instructor caring behaviors contributed only indirectly to the attitudinal component of professional nurse autonomy. These findings were most likely related to limitations of the instrument to measure instructor caring behaviors and not to the construct. The indirect effects of perceptions of instructor caring behaviors and the direct effects of self-esteem on perceived clinical competence supported Loving's (1993) theoretical model of the process whereby nursing students establish an identity as a competent nurse. Study findings supported the use of Rosenberg's Self-Esteem Scale with baccalaureate nursing students.

This study provided a foundation for future research on the attitudinal component of professional nurse autonomy and the contributing variables. Nine recommendations for additional nursing research were proposed. To test Watson's (1988a) Theory of
Transpersonal Caring, revisions in two of the study instruments to reflect the 10 carative factors are recommended. Additional variables associated with the carative factors should also be proposed.
REFERENCES


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Appendix A

Autonomy, the Caring Perspective (ACP) Instrument

Instrument was contained on pages 227 to 231
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Appendix B

Perceived Clinical Competency Scale (PCCS)

Instrument was contained on page 233
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Appendix C

Perceptions of Instructor Caring Behaviors (PICB)

Instrument was contained on pages 235 to 236
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Appendix D

Rosenberg Self-Esteem Scale

Instrument was contained on page 238
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Appendix E

Student Demographic Data
Student Demographic Data

The following information will be used to describe the characteristics of students participating in the study. Please answer every question by either writing in the appropriate response or placing a mark (X) in the space allotted.

1. Age: _______ (in years)

2. Gender: Male: ___ Female: ___

   Sophomore: ___ Senior: ___

   Divorced: ___ Separated: ___
   Widowed: ___

5. Number of children: ___ (If none place a zero (0)

6. Race/Ethnic Background:
   African-American: ___ Caucasian: ___
   Hispanic/Latino: ___ Asian: ___
   Other: ___ (please specify ______________________)

7. Current Grade Point Average (G.P.A.) ___

8. Previous non-nursing degree:
   None: ___ Associate Degree: ___ Baccalaureate Degree: ___
   Masters Degree: ___ Doctoral Degree: ___
   Please identify field of study for non-nursing degree ____________________

9. Nursing experience other than student experience: Yes: ___ No: ___
   If yes, what type? Nurse’s Aide: ___ Nurse Extern: ___
   Licensed Practical Nurse: ___
   Registered Nurse: ___
   Other (please specify) ____________________
   Length of experience? ___ (number of months)

10. Did a staff nurse act as your preceptor in any of your required clinical courses?
    Yes: ___ No ___
Appendix F

Permission to Use Instruments
April 23, 1991

Dear Student:

I have developed a semantic differential scale to measure students' perception of instructor caring. Aspects of care were derived from Leininger (1986) and Watson (1990). Current research (Miller et al., 1990; Halldorsdottier, 1990) regarding the structure and experience of care was used to develop the evaluation tool.

Your cooperation in completing this survey will be greatly appreciated. The results of this survey will be incorporated into a professional paper which is required course in the graduate program.

I plan to administer this survey to second semester, fourth semester, and graduate level students. I will share the results with you.

Thank you.

Debrah Phillips RNC
Graduate Student

1-7-98

Gail,
You have my permission to use or alter and use this tool.

Best Wishes,
The Rosenberg Self-Esteem Scale

Thank you for your interest in the Self-Esteem Scale of Dr. Morris Rosenberg, regrettably, Dr. Rosenberg passed away several years ago. However, Dr. Florence Rosenberg, Manny's widow, has given permission to use the Self-Esteem Scale for educational and professional research. Please be sure to give the credit due to Dr. Morris Rosenberg when you use it. We would also appreciate receiving copies of any published works resulting from this research.

Below you will find a copy of the scale, along with brief instructions on norming and scoring it. A fuller description of the scale may be found in the Appendix of Society and the Adolescent Self-Image. You may wish to contact Dr. Rosenberg's co-author for more information relating to his work.

There is no charge associated with the use of this scale in your professional research.
February 9, 1998

Gail Wade

Dear Ms. Wade:

I am pleased to learn of your interest in using the PERCEIVED COMPETENCY tool in your research. The instrument is currently being used in several projects nationwide, and my only stipulation is that individuals give appropriate credit for the instrument, make no changes without my express permission, and share data with me at the end in case we decide to do some further testing on the instrument itself. All individuals using the tool have made the promise to share data, but to date I have received none. Thus, no further testing has been done. I will soon send cut letters to people reminding them of their promise.

Although the 1995 publication contains a complete description of the tool including questions and scoring instructions, I am enclosing a xeroxed copy of the scale as we used it on a scanable form.

Do you know Sally Eberhard or Marguerite Ambrose? They are also students at Widener who requested in the past to use the tool.

If you have questions or need assistance in some way, you can reach me at [contact information redacted] or by e-mail [contact information redacted].

Best wishes in your work.

[Signature]

Professor
Dear Dr. Boughn,

I certainly enjoyed our recent telephone conversation about your Autonomy, the Caring Perspective (ACP) instrument and other academic issues. Also, thank you for sending me copies of your articles. I found them helpful and enlightening.

As discussed, I am interested in using the ACP for my doctoral dissertation on the Attitudinal Components of Professional Nurse Autonomy. I plan to use Watson's Theory of Transpersonal Caring for the theoretical framework as I examine the effect of perceptions of instructor caring, self-esteem, and perceived clinical competence on the attitudinal component of professional nurse autonomy. The ACP is an excellent instrument for measuring the criterion variable.

In order to continue with my study, I need your written permission for use of the ACP. Instead of sending me a formal letter of permission, you may sign this letter and return it to me. A copy of your signed permission will be included in my dissertation. Thank you again for all your assistance and support.

Gail H. Wade  
Doctoral Candidate  
Widener University School of Nursing
Appendix G

EXPLANATION OF THE STUDY

My name is Gail Wade and I am a nurse and a doctoral candidate from Widener University in Chester, Pennsylvania. To receive my doctoral degree, I must complete a research study. I would greatly appreciate your assistance with my study on senior baccalaureate nursing students’ attitudes about professional nursing practice.

Little is known about factors that may influence your attitudes about professional nursing practice. Because you are a senior nursing student who will soon start practicing, your input is invaluable. Participation in this study is completely voluntary. Should you agree to participate, approximately 30 minutes of your time is needed to complete a personal information form and answer the research questionnaires. Answering the questionnaires will involve checking off all 88 items on a scale and 10 items on the personal information form. Your instructor will identify the time and place for completing the questionnaires.

All of your answers will be anonymous. Therefore, your name should not be placed on any of the research questionnaires. The questionnaires must be sealed before they are returned to your instructor. There will be no way for me or your instructor to identify your answers. Should the study be published, only group data will be reported.

There are no foreseeable risks or discomforts associated with participation in this study. While there are no direct benefits to you for agreeing to participate, being part of this study may help professional nurses understand how professional attitudes are nurtured in nursing students and may indirectly influence the profession.

PLEASE REMEMBER - Participation in the study is completely voluntary. You will not be compensated for participating in the study. If you do not wish to participate, grades or progress in the course will not be affected in any way. Should you have any questions or want a summary of the results, you can contact me via e-mail [email protected]). If you agree to be a part of my study, I want to thank you in advance for your participation. There is no formal consent required.

YOUR CONSENT IS IMPLIED BY COMPLETION OF THE PERSONAL INFORMATION FORM AND THE QUESTIONNAIRES.

MANY THANKS!
Appendix H

Widener University School of Nursing Research Committee Approval
TO: Gail Wade, MS, RN, DNSc cand.
FROM: Lois Ryan Allen, PhD, RN
Chairperson, Nursing Research Committee (NRC)
DATE: February 15, 2000
RE: Protection of Rights of Human Subjects Review

This letter serves to inform you that your research, “Perceptions of instructor caring behaviors, self-esteem, and perceived clinical competence: A model of the attitudinal component of professional nurse autonomy”, has been reviewed and approved by the NRC for the protection of rights of human subjects. You may begin data collection as proposed in your application to the NRC.

If, for any reason, the approved research data collection method changes significantly, you are required to inform the NRC, in writing, of such changes. If you have any questions please call Dr. Lois Ryan Allen at [redacted].

The members of the NRC extend their best wishes for your successful completion of this research project.

Lois Ryan Allen, PhD, RN
Appendix I

Letter Inviting Schools to Participate
As a doctoral candidate in nursing education at Widener University, I am conducting a national study of the attitudinal component of professional nurse autonomy that is based on a caring perspective. Your school has been randomly selected as a site for data collection. I am writing this letter to invite your school to participate and to ask for the assistance of one of your faculty members with administration of the study questionnaires to at least 15 of your senior students.

As an Assistant Professor in a school of nursing, I am aware of demands on faculty's time. Administration of the research questionnaires should take only 30 minutes. Following administration of the questionnaires, the faculty member will be asked to return the sealed responses to me in a self-addressed stamped envelope. A small token of appreciation will be given to faculty members who assist with data collection.

I foresee no negative consequences to your students for participating in this study. Although there are no direct benefits for participating in this study, the study findings may provide clues of how faculty nurture professional attitudes with their students. The study was reviewed and approved by the Nursing Research Committee of the Widener University School of Nursing for the protection of human subjects. Students' names will not be required on the questionnaires. Therefore, complete anonymity of the students will be maintained.

To insure that the study sample is representative of baccalaureate nursing programs throughout the country, it is very important that all schools selected for the study participate. Although the decision to participate is entirely up to you, I hope you will give my request serious consideration. By agreeing to include your school in this national study, you will be adding to a developing body of nursing knowledge on professional nurse autonomy and caring. In addition, the author of the Autonomy instrument suggests that study of the attitudinal components of professional nurse autonomy may provide valuable information about the efficacy of educational programs in promoting this attribute. Should you agree to include your students in my study, I would be happy to send you an abstract of the study results.
I would appreciate it if you would indicate your decision by returning the self-addressed post card to me by March 15, 2000. If you agree to involve your school in this national study, please identify the name, address, and e-mail address of the faculty member who will administer my research questionnaires. Once I receive this information, I will send a packet of questionnaires and additional information about the study to the designated faculty member. If you or your faculty have any questions, please e-mail me at [email]. Thank you in advance for consideration of this study.

Sincerely,

Gail H. Wade, MS, RN
Doctoral Candidate
Widener University
Appendix J

Post Card Response from Dean or Director

NAME OF SCHOOL: ________________________________

ARE YOU INTERESTED IN PARTICIPATING IN THE STUDY ON THE ATTITUDBINAL COMPONENTS OF PROFESSIONAL NURSE AUTONOMY?

YES____ NO____

IF YOUR ANSWER IS YES, PLEASE DESIGNATE A FACULTY MEMBER TO ADMINISTER THE QUESTIONNAIRES.

NAME OF FACULTY: ________________________________
ADDRESS: _______________________________________
___________________________________________

PHONE NUMBER:
E-MAIL ADDRESS:

NUMBER OF QUESTIONNAIRES NEEDED: ______

THANK YOU FOR RESPONDING!
Gail H. Wade, MS, RN
Doctoral Candidate
Widener University, School of Nursing

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Appendix K

Letter to Responsible Faculty Member
Dear (name of faculty member):

Thank you for agreeing to help with data collection for my national study on the attitudinal component of professional nurse autonomy in baccalaureate nursing students. As a faculty member, I realize that you have many demands on your time. Your assistance will be invaluable to my efforts and my study findings more valid because of your participation. You are under no obligation to participate in this study. I hope, however, that you will agree that the study is worth the small amount of time you will need to invest. Hopefully my study will provide valuable insight on the attitudinal component of professional nurse autonomy and possibly clues about how faculty may nurture these attitudes in their students.

Enclosed are copies of the questionnaires to be given to your senior baccalaureate nursing students. Although one of the questionnaires was designed for female students, I have made some minor adjustments for male students may. I realize that classroom and clinical time is always very limited. However, I would appreciate it if you could arrange about 30 minutes of classroom or clinical time for students to complete the questionnaires. I believe the return rate will be better and the responses more valid if they complete them in your presence.

The study is completely voluntary. Should you or the students have any questions, please encourage them to e-mail me. Also, please assure students that their grades will not be influenced in any way by participating or choosing not to participate. Students should not place their names on any of the questionnaires. Consent to participate is implied by completion of the questionnaires.

Although directions for responding to the questionnaires are provided on the study explanation form and with each category of questions, I have enclosed a list of procedures for administering the questionnaires. After the questionnaires have been completed, please ask students to place their sealed responses in the enclosed blank envelope. I would appreciate your return of the completed questionnaires within two weeks.
Thank you again for agreeing to assist me with data collection for my dissertation. As a small token of appreciation for your time and support, I have enclosed a nurse poem. You may choose to frame it as a tribute to nurses. Once my study is completed, I would be happy to provide you with an abstract. If you are interested in receiving an abstract please e-mail me at [redacted]. Should you have any questions, please feel free to call me at [redacted] or e-mail me.

Sincerely,

Gail H. Wade, MS, RN
Doctoral Candidate, Widener University
Appendix L

Procedure for Administering the Study Instruments
Procedure for Administering the Study Instruments

1. Give each student a copy of the “Explanation of the Study” form.

2. Allow students time to read the information and ask questions. Students may e-mail me ( ) with any unanswered questions.

3. Please assure students that their grades will not be affected by their decision to participate. Any student who chooses not to participate can seal and return the uncompleted questionnaire with the rest of the questionnaires.

4. Please advise students that their consent to participate is implied by completion of the questionnaires.

5. Distribute the questionnaires. Directions are provided at the beginning of each questionnaire. Students may circle or check the items with pen or pencil.

6. Tell students it is important that they respond to every item. If they feel they do not have an opinion, please tell them to select the response that most closely reflects their view.

7. Autonomy, The Caring Perspective Instrument (ACP) was designed for female students. Please ask the male students not to answer items #23 and #30 (marked in italics for females only). I plan to look at their responses and possibly redesign the instrument at a later time.

8. Allow students 30 minutes to complete the questionnaires.

9. When the questionnaires are completed, ask students to place them in the envelopes provided and seal them.

10. Ask a student to collect all the sealed questionnaires and place them in the self-addressed mailer provided. The student collecting the questionnaires should seal the mailer.

11. Please return the self-addressed envelope with the questionnaires enclosed within two weeks.

12. If you have any questions at any time, please do not hesitate to e-mail me ( ).

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Appendix M

Factor Analysis for PICB Items

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<thead>
<tr>
<th>Item</th>
<th>Factor I</th>
<th>Factor II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexible</td>
<td>.449</td>
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</tr>
<tr>
<td>Respectful</td>
<td>.756</td>
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<tr>
<td>Competent</td>
<td>.776</td>
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<tr>
<td>Honest</td>
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<td>.463</td>
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<td>Trusting</td>
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<tr>
<td>Attentive</td>
<td>.527</td>
<td>.557</td>
</tr>
<tr>
<td>Considerate</td>
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</tr>
<tr>
<td>Supportive</td>
<td>.727</td>
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<tr>
<td>Sensitive</td>
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</tr>
<tr>
<td>Patient</td>
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<td>.753</td>
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<tr>
<td>Genuine</td>
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<td>.626</td>
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<tr>
<td>Concerned</td>
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<td>.679</td>
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<tr>
<td>Warm</td>
<td></td>
<td>.649</td>
</tr>
<tr>
<td>Non-judgmental</td>
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<td>.748</td>
</tr>
<tr>
<td>Positive</td>
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<td>.650</td>
</tr>
<tr>
<td>Personal</td>
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<td>.671</td>
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### Appendix N

**Factor Analysis for RSES Items**

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor I</th>
<th>Factor II</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Person of worth</td>
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<tr>
<td>2. Have good qualities</td>
<td>.876</td>
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<tr>
<td>3. I am a failure</td>
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</tr>
<tr>
<td>4. Do things as well as most people</td>
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<tr>
<td>5. Not much to be proud of</td>
<td>.506</td>
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<tr>
<td>6. Positive self attitude</td>
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<td>7. Satisfied with self</td>
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<tr>
<td>8. Respect for self</td>
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<tr>
<td>9. Feel useless</td>
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<tr>
<td>10. I am no good</td>
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## Appendix O

### Factor Analysis for PCCS Items

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor I</th>
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<tr>
<td>1. Strengths bring to first position</td>
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<tr>
<td>2. Professional goals</td>
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<tr>
<td>3. Confidence in ability as nurse</td>
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<tr>
<td>4. Give excellent nursing care</td>
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<tr>
<td>9. Find answers about nursing</td>
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<tr>
<td>11. Know how to do a lot</td>
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<tr>
<td>6. Program has prepared me</td>
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<tr>
<td>7. Faculty mentor</td>
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<tr>
<td>10. Teacher respect</td>
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<tr>
<td>5. Lack technical skills</td>
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<tr>
<td>8. Scared about first job</td>
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<tr>
<td>12. Anxious about clinical skills</td>
<td>.854</td>
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</tbody>
</table>

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