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Relationships Among Role Strain, Hardiness, and Academic Achievement

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RELATIONSHIPS AMONG ROLE STRAIN, HARDINESS, AND
ACADEMIC ACHIEVEMENT

By
Evelyn Clare Rutlin

A THESIS

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ABSTRACT

RELATIONSHIPS AMONG ROLE STRAIN, HARDINESS, AND
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By
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The purpose of this study was to determine the relative importance of role strain versus that of hardiness in predicting academic achievement in first semester female ADN students. A convenience sample of 61 students from Lake Michigan College in Benton Harbor, Michigan, participated in the study.

The Lengacher Role Strain Inventory and the Cognitive Hardiness Scale were used to assess role strain and hardiness. Academic achievement was determined by the grade received in the nursing fundamentals course.

Correlation coefficients were used to determine correlation among the variables. Multiple regression analysis was used to explain the variance. Neither role strain nor cognitive hardiness had any significant predictive value on academic achievement. There was a moderate negative correlation ($r = -.33$, $p = .005$) between role strain and cognitive hardiness.

Acknowledgments

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CHAPTER 1

INTRODUCTION

An area of concern for women pursuing higher education in nursing is the increasing demands of the many roles expected of them, particularly the roles of student, mother and/or wife, and employee (Lengacher, 1993a). Attempting to meet all of the obligations associated with multiple roles puts a strain on individuals within those roles. It has been observed by this researcher that some students are able to meet these obligations with higher achievement than others, despite what may appear to be a comparable amount of strain.

Role Strain

The term *role strain* has been used to describe the effect of multiple role expectations on individuals (Goode, 1960). Goode first discussed the concept of role strain in depth and defined it as "the felt difficulty in fulfilling role obligations" (p. 483). Since Goode's work, the concept of role strain has been widely researched (Burden, 1986; Lengacher, 1993a, 1993b; Lengacher & Keller, 1990; Vanmeter & Agrono, 1982; Ward, 1986), and it is generally felt to be a normal experience. The phenomenon of role strain among

health care providers is frequently reported and often manifested by job dissatisfaction and burnout (Ward, 1986).

Student perception of role strain as a predictor of success on the National Council Licensure Examination for Registered Nurses (NCLEX-RN) was researched by Lengacher and Keller (1990). The authors found that perception of role strain had no predictive value on the NCLEX-RN success rate in associate degree nursing (ADN) graduates in the study. They suggested that further studies on role strain among ADN students should be done because this is currently the largest student body in nursing education taking the NCLEX-RN. Most studies to date have been done on baccalaureate graduates.

It is the belief of this researcher that it may be possible that role strain in the first semester of an ADN program may be related to low academic achievement (or failure). This low achievement or failure occurs long before the opportunity exists to take NCLEX-RN exams or before job dissatisfaction can arise. As such, it is an area of concern for nurse educators. Role strain was one of the variables of interest for this study.

Hardiness

Another concept of interest that has been researched and analyzed in recent years is that of hardiness (Holt, Fine, & Toll, 1987; Kobasa, 1979; Kobasa, Maddi, & Courington, 1981; Kobasa, Maddi, & Kahn, 1982; Lambert & Lambert, 1993; Langemo, 1990; Lee, 1983; Lindsey & Hills,

1992; McCranie, Lambert, & Lambert, 1987; Nowack, 1989; Nowack 1990; Pagana, 1990; Pollock, 1989; Rich & Rich, 1987; Wagnild & Young, 1991). Hardiness is generally considered to be a personality characteristic, composed of attitudes about commitment, control, and challenge, that functions as a resistance to stressful life events (Kobasa, Maddi, & Courington, 1981). Pollock (1989) identified hardiness as a motivating factor in adaptation and in resolving stressful situations. It has been suggested by Pagana (1990) and Lindsey and Hills (1992) that hardiness can be learned and that persons with low hardiness may be given hardiness instruction so that they can learn to cope with stressful factors in their lives. It is the belief of this researcher that, although a person's personality cannot be totally changed, there are certain characteristics, hardiness among them, that may be modified. Hardiness was one of the variables of interest for this study.

Role Strain, Hardiness, and Academic Achievement

Most studies looking at role strain have examined nurses already in the work setting, either in faculty, staff nurse, or management roles. Most hardiness studies have examined the concept in terms of effects on health. Although there has been much research examining role strain and hardiness among health care professionals (Campaniello, 1988; Dillard, 1990; Lambert & Lambert, 1987; Lambert & Lambert, 1993; Langemo, 1990; Lengacher, 1993a, 1993b; Lengacher & Keller, 1990; McCranie, Lambert, & Lambert,

1987; Pagana, 1990; Rich & Rich, 1987; Topf, 1989; Wolf, 1990), very little research has addressed these variables in nursing students, specifically female ADN students. No studies were found that looked at both role strain and hardiness together for nursing students in relation to academic achievement.

Significance

Factors that can affect performance, either in school or later in the work setting, are of concern to nurse educators, nursing students, and health care agencies. The results of this study provide a greater understanding of the relationships among role strain, hardiness, and academic achievement. These areas are of interest to nurse educators and ultimately the nursing profession. If a negative relationship exists between role strain and hardiness, and if hardiness can be taught, then perhaps a type of "hardiness intervention" can be initiated early for those students who score low on the hardiness scale. This intervention can help students adapt to even higher degrees of role strain experienced within their nursing programs and still attain satisfactory academic achievement throughout those programs. Ultimately, this may even result in higher success rates on the NCLEX-RN and less job dissatisfaction later on. The findings of this study have laid the groundwork for future research concerning these areas of interest.

PURPOSE

The purpose of this study was to determine if a relationship existed among role strain, hardiness, and academic achievement in first semester female ADN students.

It is important for nurse educators to examine a variety of ways to assist students to become successful in their chosen careers. Before they can enter that career, nursing students must attain achievement in their academic programs. This study should help give nursing faculty insight into problems that may hinder that process. Once problems have been identified, interventions can be instituted to facilitate greater academic achievement. Role strain interventions that may facilitate achievement include those suggested by Lengacher and Keller (1990), such as assistance with test-taking, independent learning activities, computer-assisted instruction, and small support group seminars. Hardiness interventions may include those suggested by Wolf (1990), such as fostering commitment by communicating a vision of what can be, focusing on challenge as opportunity, and fostering control by encouraging self-confidence.

CHAPTER 2

CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

Conceptual Framework

The theory that was used to organize and develop this study was the theory of adaptive modes, derived from the Roy Adaptation Model (Roy & Andrews, 1991). Lutjens (1991) summarized Roy's model and explained that each of Roy's adaptive modes represents a grouping of behaviors that promote the individual's movement toward general goals; among these general goals are survival, growth, reproduction, and mastery. Prior to further discussion of adaptive modes, however, an overview of the Roy adaptation model is described to show how the concepts fit together for the purposes of this study.

Roy's Adaptation Model

Person, according to Roy and Roberts (1981) is "an adaptive system with cognator and regulator acting to maintain adaptation in regard to the four adaptive modes" (pp. 44, 48), which are described as physiological, self-concept, role-function, and interdependence. This study dealt only with the role function mode. According to Roy and Andrews (1991), the person as an adaptive system can be described as consisting of inputs, control processes,

effectors, and outputs. Inputs are environmental stimuli that are processed by coping subsystems. The activity of the coping subsystems is manifested in adaptive modes, the effectors. Outputs of the person consist of adaptive or ineffective responses. Figure 1 shows the relationships within this adaptive system. According to Roy and Andrews (1991), adaptive systems can be individuals, groups, communities, or society. For the purposes of this study, person consisted of female ADN students.

Environment, according to Roy and Andrews (1991), consists of "all conditions, circumstances, and influences that surround and affect the development and behavior of the person" (p. 18). Environment for this study was the academic program of female ADN students. Andrews and Roy further discuss three classes of stimuli that form the person's environment: 1) *focal stimuli*, "the internal or external stimuli most immediately confronting the person" (p. 8); 2) *contextual stimuli*, "all other stimuli present in the situation that contribute to the effect of the focal stimulus" (p. 9); and 3) *residual stimuli*, "the environmental factors within or without the person whose effects in the current situation are unclear" (p. 9). This study was concerned with focal stimuli. Role strain was seen by this researcher as the focal stimulus which activates coping mechanisms.

The regulator subsystem is described by Roy and Andrews (1991) as a coping mechanism that responds

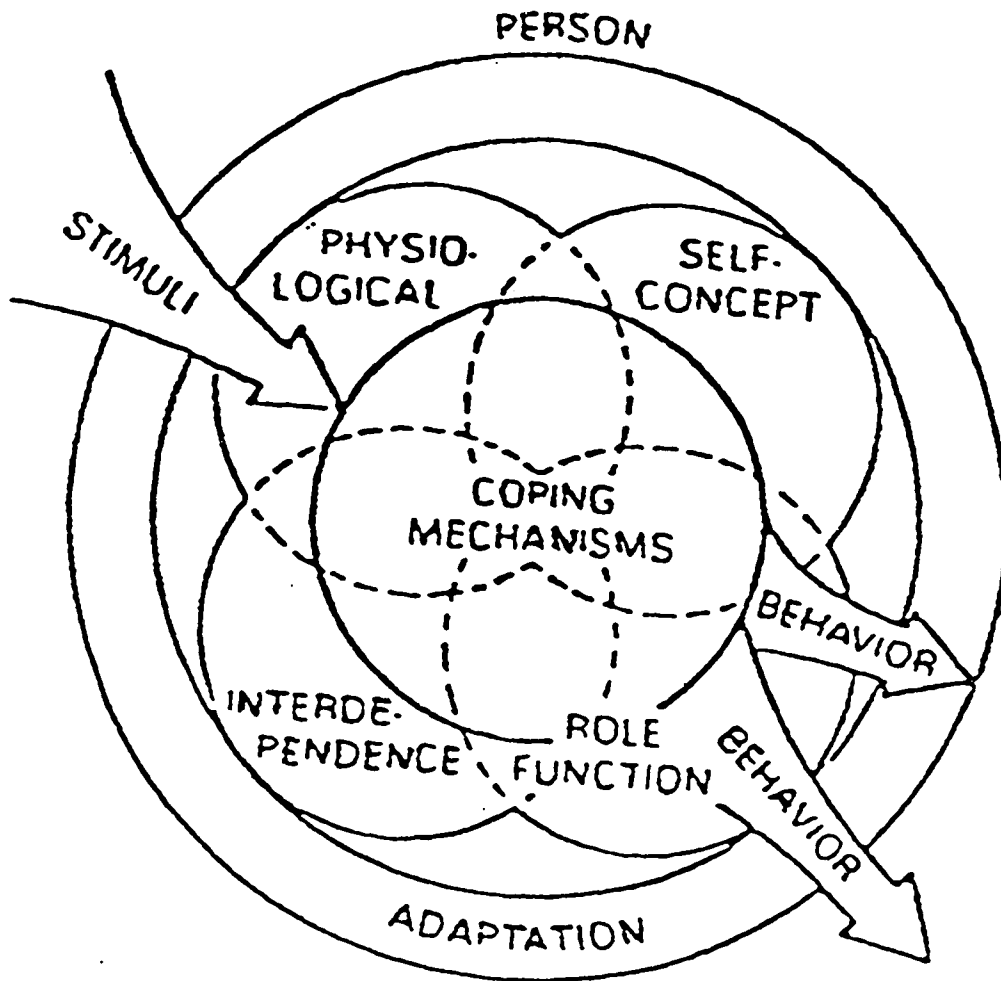


Figure 1. Person as an adaptive system.

Note. From The Roy adaptation model: The definitive statement. (p. 17) by C. Roy and H. A. Andrews, 1991, Norwalk, CT: Appleton & Lange. Copyright 1991 by Appleton & Lange. Reprinted by permission (Appendix A).

automatically through neural, chemical, and endocrine systems. The cognator subsystem is described as a coping mechanism that responds through four channels of perception and information processing, learning, judgment, and emotion. The processes inherent in these four channels are apparent in the three dimensions of hardiness. Langemo (1990) described, from earlier work of Kobasa, Maddi, and Kahn (1982), the three dimensions of hardiness: control, commitment, and challenge.

Control reflects individuals' belief and feeling that they can influence life events rather than feeling helpless in a confrontation with reality. *Commitment* relates to a generalized sense of purpose and meaningfulness shown in one's becoming actively involved rather than remaining passively uninvolved. *Challenge* concerns the perception of life events as an expected part of life that provides an opportunity for development rather than an onerous burden" (p. 159).

Adaptive modes are "ways of coping that show the activity of the regulator and cognator mechanisms" (Andrews & Roy, 1986, p. 7). The activity of the cognator subsystem was seen to be manifested as hardiness in the role function mode.

Health, according to Andrews & Roy (1986) is "a state and a process of being and becoming an integrated and whole person. It is a reflection of adaptation, the interaction of the person and the environment" (p. 19). Health for this

study was manifested by female ADN students who have adapted to the academic program.

The *goal of nursing* is defined by Andrews and Roy (1986) as "the promotion of adaptation in each of the four modes, thereby contributing to the person's health" (p. 21). For the purpose of this study, nurse educators were seen as the ones who promote the adaptation and health of nursing students in their new roles.

Adaptation is defined as "the person's response to the environment that promotes the general goals of the person including survival, growth, reproduction and mastery" (Roy & Roberts, 1981, p. 53). It is adaptation (adaptive or ineffective role transition) by female ADN students, at the end of their first semester, through the role function mode, that was the focus of this study.

Role Function Mode

Within the theory of adaptive modes is the role function mode, the basic underlying need of which is for social integrity (Roy & Andrews, 1991). Social integrity is defined as "the need to know who one is in relation to others so that one can act" (Andrews, 1991, p. 347). The role function mode is an adaptive mode that focuses specifically on the roles that persons occupy in society.

Roles are defined by Andrews (1991) as "the functioning units of society; each role exists in relation to another" (p. 348). Primary roles are seen as ascribed roles based on age, gender, and developmental stage that are engaged in

during particular growth periods of life. Secondary roles are those assumed to complete tasks associated with a developmental stage and primary role. These secondary roles are further described as normally achieved positions that are developed and mastered over a period of time and thus are typically stable and not readily relinquished. However, Andrews observes that problems with role function usually occur within these assumed secondary roles. Another interesting observation made by Andrews is that individuals do not always have a conscious choice about assuming new roles. Sometimes, secondary roles can be thrust upon individuals by circumstances and the environment. Tertiary roles are those freely chosen in association with the accomplishment of minor tasks and are temporary in nature.

Adaptation to the secondary role of ADN student was the subject of interest for this study. In adapting to the new role of nursing student, the general goal is for movement toward role mastery that may be attained by the process of *role transition*, defined as "the process of assuming and developing a new role. It is growth in a positive direction, and is compatible with the tasks of the primary role of the individual" (Nuwayhid, 1991, p. 364).

Certain other concepts described by Andrews (1991) are defined here in order to understand how they fit with the major variables for this study. *Expressive behaviors* are "the feelings, attitudes, likes, or dislikes that a person has about a role or about the performance of a role" (p.

348). *Instrumental behavior* is "the actual physical performance of a behavior to achieve the goal of role mastery" (p. 348). *Role mastery* "indicates that a person demonstrates both expressive and instrumental behaviors that meet social expectations associated with the assigned roles" (p. 348). For ADN students these behaviors are manifested in such areas as professional attitude, attendance at class and clinical lab and clinical facilities, skill performance, and academic achievement.

Role transition is seen by this researcher as the process critical to the attainment of role mastery. It was determined through the measurement of academic achievement in nursing students at the end of their first semester. With Roy's theory in mind (Roy & Andrews, 1991), it can be seen that this role transition is either adaptive or ineffective. Adaptive transition to the role of nursing student in the first semester is an important step towards mastery of the role. Adaptive or ineffective behavioral responses have been specified in Figure 2 to show how role transition fits with Roy's schematic model.

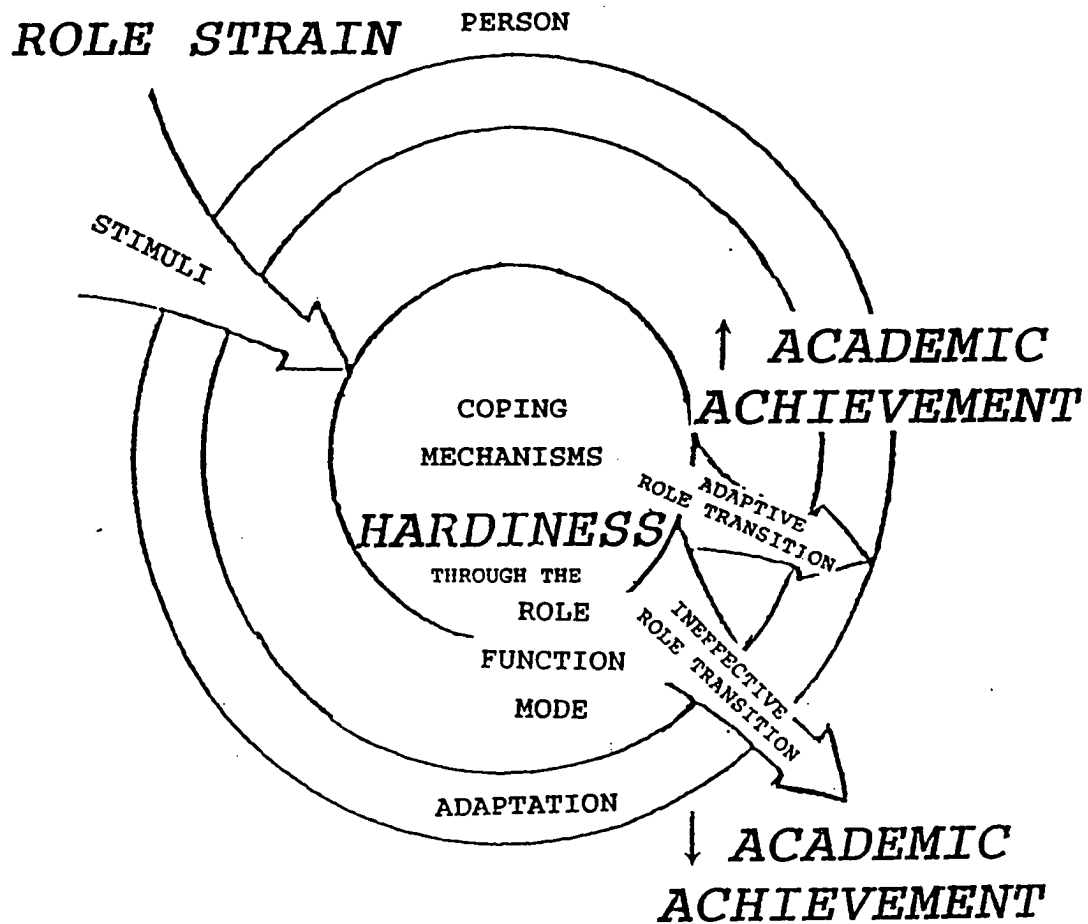


Figure 2. Role function mode and research variables.

Note: Research variables are in *italicized, bold print*.

Definition of variables

Roy and Roberts (1981) do not define role strain, but refer to Goode's work (1960) where he defines *role strain* as "the felt difficulty in fulfilling role obligations" (p. 483). As an expansion of this idea for the current study, a definition of role strain from Lengacher's work (1993a) was used.

Lengacher (1993a) defines *role strain* as "a subjective experience that can be described as a tension, a driving force, anxiety, and/or frustration that a woman may experience due to multiple demands she puts upon herself or demands put upon her by others" (p. 72). This is congruent with the earlier discussion of Roy and Andrews (1991) which stated that problems can occur within assumed secondary roles.

Hardiness as a concept has been defined by Kobasa, Maddi, and Puccetti (1982) as a "constellation of three crucial personality characteristics--commitment, control, and challenge. Together they form a personality style (characteristic) that is an amalgam of cognition, emotion and action, aimed, not only at survival, but at the enrichment of life through development" (p. 392). Kobasa, Maddi, and Kahn (1982) further defined hardiness as "a constellation of personality characteristics that function as a resistance resource in the encounter with stressful life events" (p. 169). Kobasa (1979) had earlier described a life event as being stressful "if it caused changes in,

and demanded readjustment of, an average person's normal routine" (p. 2). Both of these definitions are congruent with the earlier discussion of Roy and Andrews (1991) which stated that the cognator subsystem serves as a coping mechanism that responds through perception, learning, and emotion channels, among others. Thus the constellation of personality characteristics, commitment, control, and challenge, that comprise hardiness provide a way of coping with stressful environmental stimuli.

Pollock (1989) discussed hardiness in relation to adaptation. "Adaptation is a complex process involving numerous internal and external factors that influence response and the subsequent level of adaptation established. The hardiness characteristic has been identified as a motivating factor in resolving stressful situations and in adapting to actual health problems" (p. 53).

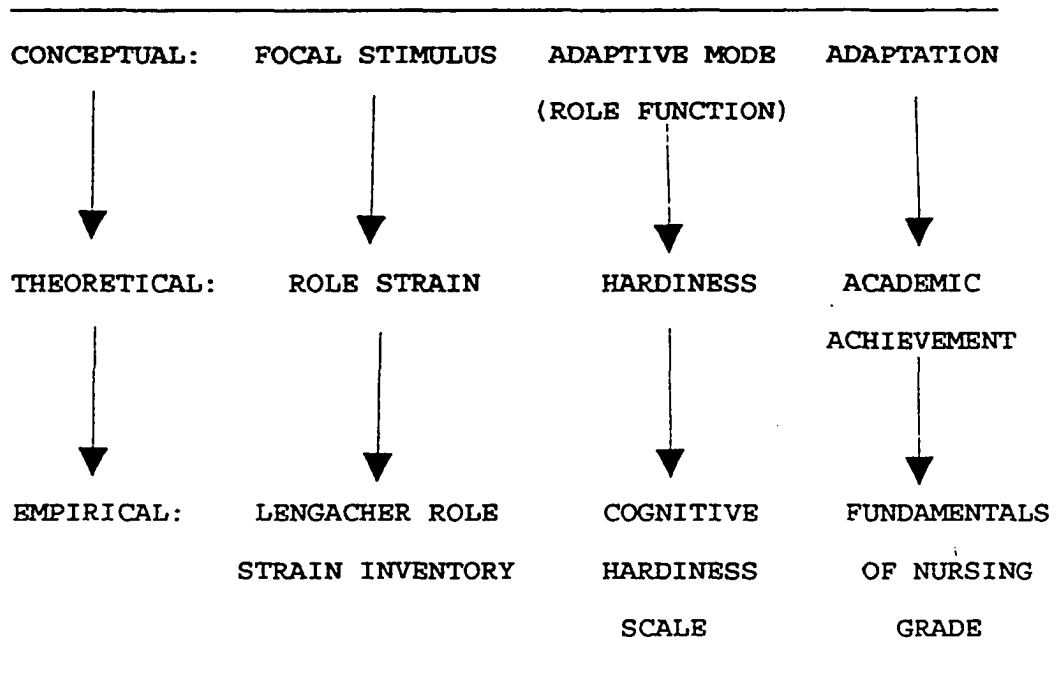
With these definitions and descriptions in mind, it can be seen that the dimensions of hardiness, commitment, control, and challenge, fit with Roy's theory (Roy & Andrews, 1991) as ways of coping with role strain. The effect of coping is observed and measured in the role function mode. Effective coping leads to adaptation. This study focused on female nursing students, whose progress toward role mastery was seen as role transition, at the end of the first semester of an ADN program.

For this study *academic achievement* was the means by which either adaptive or ineffective role transition was

measured at the end of the first semester of an ADN program. Table 1 shows the relationships among the research variables using a conceptual-theoretical-empirical structure.

Table 1

Relationships among Research Variables



Literature Review

This literature review focused on previous research that had been done concerning role strain and hardiness. Role strain was addressed first. The review proceeded from some of the earliest work regarding role strain, to general research about role strain in a variety of settings, and

finally to role strain as it related to nursing students. Hardiness was reviewed in a similar manner.

Role Strain

The earliest work reviewed concerning role strain was by Goode (1960), who defined it as "the felt difficulty in fulfilling role obligations" (p. 483). He developed a role theory based on the view that societal structures are made up of roles and that it is normal to experience role strain. "The total role system of the individual is unique and ever-demanding. Since the individual cannot fully satisfy all demands, he must move through a continuous sequence of role decisions and bargains in an effort to adjust to these demands. The choices and decisions he makes are made somewhat easier by the existence of mechanisms he uses to organize his role system. The cumulative pattern of all such role bargains determines the flow of performances to all social institutions and thus to the needs of society for survival" (p. 495).

Ward (1986) looked at role strain and its relationship to role stress and role conflict, both terms that have been variously discussed in the literature. *Role stress* was defined from Hardy's theory (1978) as "a social structural condition in which role obligations are vague, irritating, difficult, conflicting, or impossible to meet" (p. 76), and was seen as an antecedent to role strain. *Role conflict* was defined by Goode (1960) as the likelihood that an individual would face conflicting role obligations. This conflict was

also seen as an antecedent to role strain. Although the concepts of role stress and role conflict were not measured by this researcher in the current study, they are terms that are related to role strain and that can help in the understanding of this important concept. Several other concepts were examined by Ward, all with the common thread of being antecedents to role strain. *Role strain* was finally defined by Ward as "an undesirable state perceived by the individual within a role arising from the stress associated with the role" (p. 41). An interesting observation from Ward's analysis was that positive consequences can also arise from the multiplicity of roles experienced, and this was termed *role gratification*. This idea lends support to Burden's study (1986) that showed high levels of job satisfaction in single parent employees. Strain reducing strategies, such as restructuring of roles, decreasing the level of involvement in the role, concealing stressors, and even resigning from the role, were suggested for health care providers to prevent job dissatisfaction and burnout.

Although not directly measuring role strain in her study, Berkove (1979) did a descriptive study of the perceptions of husband support and family role change in 361 returning women students who were occupying the roles of student, wife, and mother. Support was examined in terms of attitudinal, emotional, financial, and behavioral aspects. It was found that husband support was considered

to be very important to most women but that the degree of support varied. Although support was not a concept directly measured by this researcher in the current study, it is included in Lengacher's (1993a) ten content areas related to role strain. Women reported high levels of stress, particularly in the first semester back to school when the greatest number of personal and family adjustments must be made. They also reported little change in the basically traditional division of labor (roles) in the home once enrolled in school, and therefore noted increased stress from extra responsibilities. Individual and group counseling by the academic institution were suggested as a means of reducing the burden (strain), as well as providing flexible scheduling, financial assistance, and inexpensive child care.

Burden (1986) studied the impact of multiple job and homelife responsibilities on single parent employees. Results of data collected from 193 employees of a large corporation indicated that single female parents were particularly at risk for high job-family role strain and reduced levels of well-being. In spite of increased stress, however, single parents did not report significantly greater numbers (no statistics were provided) of problems with children, or higher absenteeism. They reported high levels ($F=1.598$, $p=.1362$) of job satisfaction as well. One wonders whether it is possible that these people had high levels of hardiness. It was speculated that the satisfaction gained

from the job made the stressful aspects of managing both job and homelife more tolerable. This was an interesting and encouraging finding since it has been personally observed in recent years that there are greater numbers of single female parents entering the ADN school where this researcher teaches and where this research study was conducted.

Vanmeter and Agrono (1982) sampled 133 married women college students to analyze stress-related variables that could be seen as predictors of role strain. Findings indicated the importance of moderator variables in assessing the amount of role strain experienced. These variables included role priorities, whether or not the woman had children, and especially whether the children needed substitute care arrangements. The importance of preventive strategies from counselors, academic advisors, and family therapists was discussed as a means of reducing strain. Limitations of the study included the use of a role strain instrument that was developed only for that study, and the fact that the entire sample came from women in the home economics department of an urban university from 1964 to 1974.

Campaniello (1988) studied 155 female professional nurses enrolled in a Bachelor of Science in Nursing (BSN) completion program to examine the effect of multiple roles on their perception of role conflict and well-being. Their reentry into the academic setting was described as a major role transition. Although role strain was not measured in

this study, role conflict and role strain were both described as consequences of multiple roles. Results supported other studies (Burden, 1986; Ward, 1986), that, in spite of the occupancy of multiple roles, nurses with more roles did not report greater role conflict. In fact, they reported greater well-being than nurses with fewer roles. Being a parent was reported as the major source of role conflict for women in that study. The author suggested the development of campus-based child care programs and anticipatory parental counseling as strategies for alleviating the experienced role conflict. Limitations of the study included small sample size, sampling of only one BSN program, and the fact that 98% of the sample were employed, making it impossible to determine effects of working versus non-working on perceived conflict and well-being.

Lengacher and Keller (1990) studied 146 graduates of an ADN school who wrote state board exams in July of 1987 and 1988 to determine factors that may have a predictive value in the successful completion of the NCLEX-RN. Among the independent variables of age, perception of role strain, entrance GPA, exit GPA, American College of Testing (ACT) math, ACT English, ACT composite scores, achievement on NLN (National League of Nursing) exams, and achievement in clinical and theory courses in the second year, the best predictors were found to be entrance GPA, age, ACT math, and ACT English. Perception of role strain had no predictive

value. Because successful performance on NCLEX-RN is vital to educators, administrators, graduates, and employers, it is important for educators to be able to identify early in programs those students who may be at risk for failure, so that interventions can be instituted early once predictive variables are recognized. Intervention strategies suggested by the authors for increasing the likelihood of successful performance on the NCLEX-RN included assistance with test-taking, independent learning activities, computer-assisted instruction, small support group seminars, and relaxation programs for testing. Limitations of the study included difficulty in generalizing because only one ADN school was examined, and the possibility that other unmentioned variables may have had an effect on NCLEX-RN scores. The authors suggested that more studies be done at the ADN level since this is the largest body in nursing education taking the NCLEX-RN.

Lengacher (1993b) conducted a study of 86 registered nurses returning to school to identify characteristics that might serve as a predictive model for role strain. Expected characteristics within the model were personality, stage of career development, and marital status. Results of the multiple stepwise regression analysis identified 13 variables as significant predictors of role strain, with emotional stability versus neuroticism having a strong relationship with role strain ($r=.435$, $p=.0000$), and marital status having a stronger relationship with role strain

but a lesser significance ($r=.510$, $p=.0374$). The greatest limitation of the study was the small sample size. However, it was suggested that with further studies identifying predictors of role strain, coping strategies could be developed to prevent emotional and physical problems that might interfere with returning students meeting their career goals.

Lengacher (1993a) discussed the development and study of an instrument to measure role strain. Included in the study were 327 students in different types of programs (BSN completion, ADN, and nonnursing) from three different colleges. To measure the multiple roles of student, mother/wife, and employee, the author devised a grid of 10 related content areas that were developed from a literature review. A definition of role strain by Lengacher also evolved from the literature as, "a subjective experience that can be described as a tension, a driving force, anxiety, and/or frustration that a woman may experience due to multiple demands she puts upon herself or demands put upon her by others" (p. 72). The most stressful time for BSN completion students was found to be at the end of the first semester, and for ADN students it was the middle of the second semester of the first year of the program. Because only two studies were found that examined role strain in ADN students, it is difficult to know whether the middle of the second semester is truly the most stressful for students in all ADN programs. It is the opinion of this

researcher that the end of the first semester is at least an equally stressful time for first year ADN students. Results of Lengacher's study suggested that the Lengacher Role Strain Inventory (LRSI) is a useful research tool; its usefulness lies in the fact that it is designed specifically for female nursing students. There were no other valid and reliable instruments found that assess the same dimensions. The author further suggested that action strategies could be employed to prevent problems related to role strain to assist the students in their transition toward meeting career goals. She suggested that measurement of role strain could be the basis for future study of many women who work, have a family, and are in school.

Hardiness

Hardiness as a concept has been measured by a variety of scales over the years. In order for the reader to better understand the sequence of the literature review, information regarding the development of these scales is included here as well as in Chapter 3. Lindsey and Hills (1992) discussed some of these scales and how they have been used. Among the common scales used, in the order developed, are the Composite Hardiness Score (Kobasa, Maddi & Kahn, 1982), the Abridged Hardiness Scale (Kobasa & Maddi, 1982), the Health Related Hardiness Scale (Pollock, 1984) and the Cognitive Hardiness Scale (Nowack, 1989). Although the literature review proceeds from early research to recent studies showing the relationship of hardiness to stress and

illness, and finally to the relevance of hardiness to nurses and nursing students, it must be remembered by the reader that the Cognitive Hardiness Scale is the one most recently developed and the one felt by this researcher to most accurately assess the components of the hardiness personality characteristic. This is because it focuses on the positive rather than the negative aspects of commitment, challenge, and control, and because of its reported reliability and validity.

The earliest studies reviewed regarding hardiness were by Kobasa (1979), Kobasa, Maddi, and Courington (1981), and Kobasa, Maddi, and Kahn (1982). These studies looked at the hardiness personality characteristic (commitment, control, and challenge) in relationship to health. Results supported the hypothesis that hardiness as a personality characteristic acts as a buffer, or mediator, against the negative effects of stress in producing illness symptoms. However, it has been suggested since then (Funk & Houston, 1987; Hull, VanTreuren, & Virnelli, 1987; Lindsey & Hills, 1992; Wagnild & Young, 1991) that the early scales really measured the negative aspects of hardiness, and assessed maladjustment rather than the positive aspects they were originally designed to measure.

Lee (1983) looked at case studies of persons with cancer who showed attributes of endurance, strength, boldness, and the power to control. Hypothesized as possessing hardiness, these individuals remained relatively

healthy in spite of their disease. The author stressed that recognizing the quality of hardiness in patients has implications for nurses who might then be able to anticipate nursing care strategies.

Holt, Fine, and Toll (1987) explored hardiness in relation to levels of burnout among 211 elementary teachers experiencing various levels of job-related stress. It was found that the hardiness personality characteristic had a mediating effect on the negative outcome of burnout ("a stress syndrome resulting from the individual's inability to deal with occupational stress", p. 52). The significance of the study was that hardiness was found to mediate stress in a different occupation than had previously been studied and was a mediator between stress and a different outcome than illness. Although the word *mediate* was not defined, the authors used the terms "stress resistance" and "resistance resources" to describe the effect of hardiness.

Numerous studies have been done that looked at hardiness in relationship to other variables. Among these other variables are: cognitive and physiological responses to evaluative threat (Allred & Smith, 1989); social support and depression (Ganellen & Blaney, 1984); psychological well-being in chronic illness (Lambert, Lambert, Klipple, & Mewshaw, 1989); simultaneous measurements of Type A behavior, locus of control, stress, illness, and physiological reactivity (Lawler & Schmied, 1992); participation and self-perceived fitness level as promoters

of stress-resistance (Roth, Wiebe, Fillingim, & Shay 1989); and stress moderation and evaluative threat (Wiebe, 1991). Results of these studies generally supported the hypothesis of hardiness as having a buffering effect on stress and well-being.

Lambert and Lambert (1987) reviewed previous work and the conceptual development of hardiness. They felt its relevance to nursing was the view that its assessment "may assist in the determination of who might be more inclined to experience illness when encountering stressful life events, and who might be in need of stress-reduction intervention so as not to succumb to stress-related illness" (p. 92). In addition, their feeling was that hardiness could be taught, and that as such, hardiness instruction could be given to patients as a coping strategy and to nurses in a high stress environment. They suggested that learning programs that help people (nurses in particular) to "become more committed to themselves and their stressful jobs, to gain more control over their lives, and to face unexpected events as a challenge" (p. 95) may be a way to resist stress. "Even nursing educators and administrators might need to recognize that if they possess or could acquire the personality characteristic, hardiness, they too might be more committed to their work, feel more in control of their lives, and be more challenged by their everyday experiences" (p. 95).

Pollock and Duffy (1990) described the development and psychometric evaluation of the Health-Related Hardiness

Scale (HRHS). The final scale retained only two of the originally conceptualized three dimensions of the health-related hardiness construct. These were control and commitment/challenge. Advantages of the scale over the original were the measurement of the presence of the factors rather than the absence of them in determining hardiness. Continued testing was recommended. As stated previously, this scale was refined by Nowack (1989).

Wagnild and Young (1991) presented concerns related to the measurement of hardiness based on a review of the literature. Their particular concerns were whether current instruments were actually measuring hardiness, and whether hardiness is a unitary construct or three separate dimensions. Since hardiness is a popular research variable, the authors felt that a clearer understanding needed to be developed so that more precise and careful measurement could be accomplished. The authors, however, did not make reference to any of Nowack's research.

Nowack (1986) examined the effects of hardiness and Type A behavior to burnout and psychological distress in the face of daily hassles in 193 employees in human services. Analysis revealed that cognitively hardy Type A individuals experienced significantly less burnout and psychological distress than their less hardy counterparts. Although the concepts of burnout and psychological distress were not measured by this researcher in the current study, it would appear that Nowack's study shows consistency in the effect

that hardiness has on helping people cope with stressors in their lives.

Nowack (1989) investigated the effects of coping style and cognitive hardiness on physical and psychological health status of 194 professional employees. In light of various criticisms of the scales previously used to measure hardiness, Nowack developed the 30-item Cognitive Hardiness scale which focuses on the positive rather than negative aspects of the hardiness characteristic. Findings suggested that cognitive hardiness significantly contributed to predictions of psychological distress but not physical illness outcomes. Limitations of the study included the fact that only self-report data were used and the study focused on relatively healthy full-time employees between the ages of 22 and 64. The author suggested that additional research should focus on the potentially additive, or interactive, effects of specific coping styles and this cognitive hardiness scale with multiple health outcome measures. He suggested replication to strengthen the generalizability of the findings.

In subsequent studies, Nowack worked alone and in conjunction with others (Nowack, 1990; Greene & Nowack, 1991; Schwartz, Schwartz, Nowack, & Richling, 1992; Schwartz, Schwartz, Nowack, & Richling, 1993). All of these studies looked at hardiness in relation to stress-illness and coping styles and used the Cognitive Hardiness Scale as the measuring tool. Findings generally supported the

buffering effect of hardiness in stress and health.

Findings by Greene and Nowack also supported the concept that the prior conceptualization, measurement, and use of the original Kobasa scales (1979) should be re-evaluated.

Several recent studies examined hardiness and burnout in hospital nurses (McCranie, Lambert, & Lambert, 1987; Rich & Rich, 1987; Topf, 1989). Results of all studies showed hardiness and burnout to be inversely related; the hardiness personality characteristic is an important stress-resistance resource in preventing or reducing burnout. However, McCranie et al. reported that hardiness did not prevent high levels of job stress from leading to high levels of burnout. Rich and Rich found that young nurses are particularly prone to burnout, perhaps because of "reality shock". In addition, Topf found that it was not supported that greater stress would be linked with greater burnout in nurses. All studies suggested further research.

Wolf (1990) looked at ways of promoting hardiness in nurse executives and nursing staff through the use of language that could have a significant impact on perceptions of the three hardiness dimensions. Instead of using the language of powerlessness, such as "I wish" instead of "I can", and negative thinking, nurses need to focus on opportunities for positive thinking and fostering self-confidence through control.

Langemo (1990) examined factors predictive of work-related stress in 287 full-time female nurse educators.

Hardiness was measured by the Hardiness of Personality Inventory (HPI) developed by Kobasa et al. (1982). Findings indicated that faculty scored fairly high, in the upper quartile, on the hardiness scale. These correlated with other measurements as follows: hardiness correlated positively with the personal accomplishment subscale, and inversely with the emotional exhaustion subscale and the depersonalization subscale of the Maslach Burnout Inventory (Maslach & Jackson, 1986). Thus it was felt that high hardiness scores reduced perceptions of work-related stress. A high physical exercise level also correlated with decreased work-related stress. A suggested means of decreasing work stress in nurse educators was for them to learn specific effective methods of enhancing their hardiness. Further research was suggested to validate the findings among part-time faculty and among a variety of educational programs.

Lambert and Lambert (1993) examined the relationships of role stress and psychological hardiness, and identified predictors of role stress in 871 nurse educators employed full-time in NLN-accredited schools (both graduate and undergraduate programs). Their review of the literature revealed the absence of studies that had examined relationships among the variables of interest. Psychological hardiness was measured by the Personal Views Survey developed by Kobasa (1985). Findings indicated significant negative correlations ($r = -.21$, $p < .001$) between

role stress and psychological hardiness. It was suggested that as the nurse educator's psychological hardiness increases, his or her perception of role stress decreases. This supported previous studies showing that low psychological hardiness scores were positively correlated to perceptions of stress. These findings also supported earlier studies that discussed the moderating effects of psychological hardiness on stressful life events. The strength of the study was in the large sample size. Its weakness was that the strength of the significant relationships was low. No studies were found that distinguished between psychological hardiness and cognitive hardiness. This was the only study found that looked at variables similar to the ones in this researcher's current study.

Dillard (1990) studied 422 BSN students from two major state universities in Indiana to examine the relationship between hardiness and academic achievement (measured as cumulative grade point average). Three hardiness questionnaires were distributed, and analysis was done to examine the relationship among the three scales and subscales; stepwise regressions were done to determine the value of the scales in predicting academic achievement. Some correlations were found with grade point average and among hardiness scales and subscales, but not to the extent expected. None of the hardiness scores contributed significantly to the variance found in grade point average.

The author suggested further study of hardiness in relation to stress, coping, and burnout among students and other types of populations.

Pagana (1990) hypothesized that hardiness and social support would be mediating variables in student appraisal of stress in an initial medical-surgical clinical experience. Two hundred forty-six male and female nursing students from seven different schools took part in the study. Correlations were low, but it was supported that hardiness was positively related to the evaluation of challenge and negatively related to the evaluation of threat. The author suggested that more vigorous testing of the hardiness concept is warranted. Pagana also stated,

"The fact that the personality variable of hardiness was significantly correlated positively with challenge, and negatively with threat suggests that hardiness may be a worthy construct to pursue further in stressful situations involving nursing students, nurses, and patients. If hardiness levels can be improved, the personal and professional benefits of this would be very valuable. Certainly, hardy clinical instructors and hardy staff nurses would be positive role models for nursing students" (p. 260).

From all of the studies reviewed in relation to hardiness, this researcher agrees with Nowack (1989) that his recent development of the Cognitive Hardiness Scale is the best measurement of the hardiness personality

characteristic. It is a good fit as a means of measuring this interesting variable in female nursing students because it measures positive aspects of hardiness rather than negative aspects or health-related aspects of hardiness.

Summary and Implications for Study

Limitations of Previous Research

Some of the limitations of previous research included small sample sizes and/or single institutions examined. There have been few studies conducted on ADN students, even though this is the largest student body in nursing education programs (Lengacher & Keller, 1990). In addition, no studies were found in the literature that examined role strain and hardiness together in relation to each other or in relation to other variables. Only Lambert and Lambert (1993) looked at similar variables. It was suggested by several authors that hardiness as a concept needs to be further researched since it is perhaps not being measured consistently, or with the same components, with the current tools in use.

Strengths of Previous Research

Strengths of the previous research included specific strategies for reducing role strain, and specific suggestions for increasing hardiness. It was generally supported that hardiness has a buffering, or mediating, effect on stress. Most studies have been done in relation to hardiness and the stress of health/illness. Many of the authors suggested the need for further study of ADN

students, further study of role strain, and further study of hardiness. These suggestions were addressed in this research study.

Research Question

The research question for this study examined role strain, hardiness, and academic achievement in answering the question: "What is the relative importance of role strain versus that of hardiness in predicting academic achievement in female nursing students at the end of the first semester of an associate degree nursing program?"

Definition of Terms

Role strain: "a subjective experience that can be described as a tension, a driving force, anxiety, and/or frustration that a woman may experience due to multiple demands she puts upon herself or demands put upon her by others" (Lengacher, 1993a, p. 72).

Hardiness: "a constellation of personality characteristics (commitment, control, and challenge) that function as a resistance resource in the encounter with stressful life events" (Kobasa, Maddi, and Kahn, 1982, p. 169).

Academic achievement: the measurement of the degree of accomplishment of course requirements at the end of a semester.

CHAPTER 3

METHODOLOGY

Design

The design for this study was descriptive correlational. The purpose of this design was to describe the relationships among the variables of interest without any intervention by the researcher. In this case the variables were role strain, measured by the Lengacher Role Strain Inventory (Lengacher, 1993a), hardiness, measured by the Cognitive Hardiness Scale (Nowack, 1989), and academic achievement, measured by the grade in the nursing fundamentals course.

Major threats to internal validity, according to Polit and Hungler (1991), include competing influences, or extraneous variables, that may have an effect on adaptation to role strain in female freshmen ADN students. These extraneous variables may include: age, primary language, ethnicity, number of years since high school graduation or general education development (GED), number of years since college attendance, educational background, current educational status, current employment status and occupation, marital status, number and ages of children at home or outside home, feelings about life stress, feelings

about coping ability, and feelings about financial resources. These variables were examined as socio-demographic data in order to describe the sample. They could not be controlled and as such are weaknesses of the study.

A potential problem that was controlled was constancy of conditions, described by Polit and Hungler (1991) as a way of making the conditions under which the data are collected as similar as possible for every participant in the study. Because all data were collected at the same time for all participants, factors such as time of day or year, communications to the subjects, and environment were held constant.

Because there was no control, randomization, or manipulation with this type of design, results of this study cannot be generalized beyond the sample. This is the major threat to external validity for this study, but it was beyond the control of this researcher.

Because this was the first known study examining role strain, hardiness, and academic achievement, the major advantage of the chosen methodology is that it will lay the groundwork for future research on these variables of interest.

Sample and Setting

Subjects were recruited using a convenience sample from the first semester female freshmen ADN class at Lake Michigan College (agency approvals in Appendix B). Males

were excluded because of the nature of the role strain instrument which was designed for women only.

Nursing classes in the first year of the ADN program at Lake Michigan College are held twice weekly in a 300-seat lecture hall. This was where the data collection took place. A maximum of 80 students is admitted to the ADN program every fall. Of the 75 students who actually enrolled, 9 were male and were excluded from the study. Of those remaining, 61 female students chose to participate in the study; therefore, the number of subjects in the sample for this study was 61.

Instruments

The instruments used in this research study included the Lengacher Role Strain Inventory (LRSI) (Lengacher, 1993a), the Cognitive Hardiness Scale (CHS) (Nowack, 1989), a Socio-Demographic Questionnaire, and student grade sheets. The LRSI (Appendix C) and the CHS (Appendix D) were approved for use in this study by the authors who developed the instruments (see Appendices G and H for correspondence with the authors). The Socio-Demographic Questionnaire (Appendix F) was developed by this researcher. Grades for the nursing fundamentals course were readily available to this researcher as part of her position in the data collection site.

Lengacher Role Strain Inventory (LRSI)

The purpose of the Lengacher Role Strain Inventory (LRSI) is "to assess the characteristic of role strain in

female nursing students who have multiple roles (being in school, having a family, and being employed)" (Lengacher, 1993a, p. 71). It consists of a 100-item Likert-type scale that covers 10 content areas related to role strain. (See Appendix F for correspondence with Lengacher.)

Lengacher (1993a) developed the tool after a review of the literature to determine item content. The content derived from the literature review was evaluated by a panel of six doctorally prepared experts in nursing and test construction. They were asked to assess the relevancy of each item to role strain by indicating the proportion of content that was related to role strain in each area. Based on their expert review and judgment, the following categories and proportions were derived: "time pressures, 18%; husband/significant other support, 16%; school, 16%; children, 14%; career, 12%; homemaker, 8%; economic pressures, 6%; personal health and community activities, 8%; and recreational activities, 2%"(p. 72). After identification of content areas, 100 items were written in accordance with the proportional number in each content area. After expert review of the written questions, the instrument was designed using a five-point Likert-type scale of from (1) *Strongly Agree* to (5) *Strongly Disagree*. The items were coded so that the higher the response number, the higher the role strain experienced by the person. Fifty items were designed as positive items related to role strain, and 50 items were designed as negative items related

to role strain. After the items were developed, they were distributed using a table of random numbers. The higher the score, the higher the level of role strain that was experienced by the respondents.

Reliability. After initial testing from a pilot study, and then instrument revision, internal consistency was determined with alpha coefficients. Coefficients of .93, .94, and .95 were obtained for female nursing students, and .95 and .87 were obtained for the nonnursing community college student groups (Lengacher, 1993a). The author suggested shortening the size of the 100-item inventory, expanding its use to other groups, and using larger sample sizes. No further studies were found that indicated that the inventory has since been shortened.

Validity. Content validity was determined first from the literature review, then validated by a panel of experts. Construct validity of the LRSI was revealed through a contrasted groups approach by examination of the mean score difference between groups that included nursing and nonnursing community college students. Group 1 was a pilot group of female BSN students. Two ADN female groups (groups 2 and 3) were contrasted with female nonnursing community college students (group 4) and male nonnursing community college students (group 5). Comparisons through *t*-tests between groups 2 and 4 ($p < .01$), groups 2 and 5 ($p < .05$), groups 3 and 4 ($p < .0001$), and groups 3 and 5 ($p < .0000$), resulted in significant differences between the groups.

"Variances in mean score differences between groups were reflected in statistical differences between groups using *t*-tests. Low mean scores were apparent in nonnursing community college students, 246.03 to 247.15, as contrasted with the nursing students' mean score of 267.12 to 277.61" (Lengacher, 1993a, p. 76). Lengacher (1993a) stated, "A reliable and valid instrument that assesses role strain is essential to contribute to research related to multiple roles of women. This instrument will enable educators to test models for application and interventions in the academic environment" (p. 76).

The current study used the LRSI (Lengacher, 1993a) to examine role strain in first semester female ADN students. It was realized that there are a large number of questions on this inventory and a relatively small sample size (N=61); however, it is the only tool currently available that measures role strain in female ADN students. In addition, because this researcher was aware, from her position in the data collection site, that not all students in the study had a family or were employed, a NA (not applicable) category was added to the inventory, with the permission of the author (personal communication, May 2, 1996) (Appendix G). (See Appendix E for a sample of the modified LRSI that was used in this research project.)

Cognitive Hardiness Scale (CHS)

The purpose of this 30-item CHS (Nowack, 1989) is to focus on the positive aspects of the hardiness personality

characteristic. In light of the various criticisms of the previous scales measuring hardiness (particularly the measurement of negative aspects), Nowack developed the Cognitive Hardiness Scale based on the personality hardiness literature. This CHS is composed of attitudes and beliefs about work and life that are relatively enduring from day-to-day and include: "(1) involvement--commitment, as opposed to alienation to one's work, family, self, hobbies; (2) challenge--attitudes around viewing life changes as challenges as opposed to threats; and (3) control--beliefs that one has a sense of control over significant outcomes in life" (Nowack, 1989a, p. 150). Respondents were asked to rate how strongly they agree with specific statements about their beliefs on a 1 to 5 scale, where 1=*Strongly Agree* and 5=*Strongly Disagree*. In a telephone communication with Nowack (November, 1993), the author stated that the scale was designed so that the higher the score obtained, the higher the hardiness characteristic. Scores range from a high of 150 to a low of 30. There are no subscales that differentiate among the scores of the three components (commitment, challenge, control) which comprise the scale.

Reliability and Validity. Initial internal consistency (alpha) was established at .83. The magnitude and direction of the correlations among the variables ($r=.42$, $p<.01$) provided some evidence of construct validity (Nowack, 1989).

Later Nowack (1990) developed an inventory to assess stress and health risk. The inventory is composed of 14

scales, of which Cognitive Hardiness is the eighth scale and consists of the same 30-item questionnaire as in his earlier inventory. Scores are reversed on thirteen of the items of the 30-item CHS (See Stress Assessment Profile Scoring Key in Appendix H).

In a letter from Nowack (personal communication, November 27, 1993) (Appendix H) this researcher received further evidence of reliability and validity. "This 30-item scale has shown adequate internal consistency (alpha) of .84, a unidimensional factor structure, and has demonstrated criterion-related validity with both subjective and objective health outcomes in recent studies".

It was anticipated that the use of the Cognitive Hardiness Scale (CHS) with first semester female ADN students would provide additional evidence to strengthen the previous studies regarding the effectiveness of hardiness as a personality characteristic that may be a mechanism for reducing strain.

Socio-Demographic Questionnaire

The socio-demographic questionnaire (Appendix F) was developed by this researcher based on the literature review and personal experience with nursing students. Included were questions about the participant's age, primary language, ethnicity, years since high school graduation or GED, years since college attendance, educational background, current educational status, current employment status and occupation, marital status, number and ages of children at

home or outside home, feelings about life stress, feelings about coping ability, and feelings about financial resources.

All instruments were formatted by this researcher for easy readability and completion by the subjects (Appendices D and E). Because it was realized that the inventories sent by the original researchers were different in size and format, and the LRSI in particular was difficult to read, both instruments were reformatted with similar design in order to avoid confusion. This also helped to avoid frustration when answering the questions.

Academic Achievement

Academic achievement was determined by a measurement at the end of the first semester of the ADN program that indicated either adaptive role transition (a grade of 2.0 or greater, on a 4.0 scale, in fundamentals of nursing) or ineffective role transition (a grade of less than 2.0, on a 4.0 scale, in fundamentals of nursing). This measurement was obtained from the student grade sheets.

Procedure

Recruitment of subjects for the study was done by this researcher. Female freshmen ADN students were asked to complete a role strain inventory, a hardiness scale, and a socio-demographic questionnaire. On the planned data collection date, a verbal explanation was provided to the prospective sample during a regularly scheduled class period. Research instruments and socio-demographic

questionnaires were distributed by this researcher with specific instructions for completing and returning them. A written explanation was provided that stated the purpose of the research, the type of information to be obtained, the nature of the commitment (time and risks/benefits), a confidentiality pledge, voluntary consent, the right to withdraw, and contact information (Appendix I). All data were collected at the beginning of a class period prior to lecture and on a date other than a scheduled exam date.

At approximately 6 weeks prior to the end of the semester (mid-November), when it was observed in previous years to be a time of high stress (role strain) for nursing students, the Lengacher Role Strain Inventory and the Cognitive Hardiness Scale were administered. Socio-demographic data were collected at this same time. Data regarding academic achievement was collected by this researcher at the end of the first semester of the nursing program. A comparison was then made between their academic achievement (grade in nursing fundamentals) at the end of the first semester of the program and their scores on the role strain and hardiness scales.

Potential risks to participants in this research project were minimal. The greatest risk was participant concern about confidentiality since the questionnaires had to be identified in order to correlate academic achievement at the end of the study. All questionnaires were coded on the front with the student identification number of the

individual participants, a number that was removed once the final data were obtained and analyzed. In addition, the questionnaires were collected in a way to minimize concern about confidentiality; they were placed in a box at the front of the classroom by the participants, whether or not they had completed them. Questionnaires were then placed in the locked office of the nursing coordinator until the students had been given their grade for the semester. At that time, data was retrieved and analyzed. No names were attached to data analysis or reports of findings.

Another risk to participants was that of fatigue or frustration at loss of class time due to the amount of time required to complete the questionnaires. This was particularly true of the 100-item role strain inventory. Questionnaires were typed with clear directions for ease in understanding and with print bold enough for easy readability. Adequate spacing between questions helped to minimize fatigue. It was expected that if the questionnaires were administered at the beginning of a class period when there was no extra stress because of an exam, participants would be relatively refreshed and relaxed. It was anticipated that not more than 30 minutes would be required to complete the questionnaires. Reassurance was provided to the students that there would be adequate class time remaining to cover pertinent nursing material. The chosen date allowed sufficient time for both questionnaires and lecture to be completed without difficulty.

CHAPTER 4

DATA ANALYSIS

Introduction

This chapter will provide the results of the study. A description of the participants will be provided first. Next the research question will be addressed.

Sample

There were 66 female students enrolled in the freshmen nursing class during the semester in which this study was conducted. Of those 66, 2 withdrew from the program prior to the study and 3 chose not to participate. The total number of students who participated in the study was 61 (N=61), which was 95% of the target sample. Surveys from all 61 students were included in the data analysis. All data was analyzed using SPSS/PC+.

Characteristics

The socio-demographic data was analyzed for all participants and is reported here using a value label, frequency, and percent for each item on the questionnaire. Items included were: age, primary language, ethnic background, years since high school graduation or GED, years since college attendance, educational background and current educational status, current employment status and

occupation, marital status, number of children at home or outside home, feelings about life stress, feelings about ability to cope with stress, and feelings about financial resources.

Socio-Demographic Data

All participants were women, so no gender category was included. The mean age for the sample was 31, with a range of 19 to 52. The most frequently reported age was 34 (9.8% of the participants). English was the primary language for 97% of the participants (N=59). One participant spoke Spanish as the primary language, and one participant spoke Bangla as the primary language. Eighty-two percent of the participants (N=50) were Caucasian. Four participants were African American, 3 were Native American, 1 was Asian, 1 was Hispanic, and 2 were "other". (Table 2).

The greatest number of participants in the study was married (N=33, or 54.1%), and the lowest number (N=1, or 1.6%) was widowed. Seventeen of the participants (27.9%) reported having no children, and 1 participant reported having 5 children. The mean number of children, of those with children, was 1.73, with the most frequently reported number (N=16, or 26.2%) having 2 children. The most frequently reported number of children still living at home (N=17, or 27.9%) was 2, with the mean at 1.6. Only 1 participant reported having 5 children still living at home.

Current household income of the participants ranged from less than \$10,000 (N=19, or 31.1%) to more than \$50,000

(N=8, or 13.1%). The mode income was between \$20,000 and \$30,000. One participant reported being uncertain of household income. Forty-two participants (68%) reported feeling either dissatisfied (N=21, or 34.4%) or very dissatisfied (N=21, or 34.4%) with their current household income. Nineteen (31.1%) reported feeling satisfied with household income. None of the participants reported feeling very satisfied with current household income.

The "typical" participant was a 31 year old, English-speaking Caucasian female, married, with either no children, or 2 children living at home, had an income of less than \$10,000, and was dissatisfied with that income.

Table 2

Demographic Characteristics

	Value	N	%
Age	19 and under	1	1.6
	20-29	29	47.5
	30-39	23	37.6
	40-49	7	11.3
	50 and over	1	1.6
Language	English	59	97.0
	Spanish	1	1.6
	Other	1	1.6
Ethnicity	African American	4	6.6
	Asian	1	1.6
	Caucasian	50	82.0
	Hispanic	1	1.6
	Native American	3	4.9
	Other	2	3.3

(table continues)

Table 2 continued

Demographic Characteristics

	Value	N	%
Marital Status	Never Married	14	23.0
	Married	33	54.1
	Divorced	9	14.8
	Separated	4	6.6
	Widowed	1	1.6
# Children	0	17	27.9
	1	9	14.8
	2	16	26.2
	3	12	19.7
	4	6	9.8
	5	1	1.6
# Children at Home	0	17	27.9
	1	12	19.7
	2	17	27.9
	3	9	14.8
	4	5	8.2
	5	1	1.6
Income in Thousands	Less than 10	19	31.1
	10 to 20	13	21.3
	20 to 30	6	9.8
	30 to 40	9	14.8
	40 to 50	5	8.2
	Greater than 50	8	13.1
	Uncertain	1	1.6
Satisfact with Income	Very satisfied	0	0
	Satisfied	19	31.1
	Dissatisfied	21	34.4
	Very Dissatisfied	21	34.4

Educational Characteristics

Educational background of the participants is shown in Table 3. Most participants (N=16, or 26.2%) had graduated from high school or received their GED within 1 to 5 years prior to the semester in which this study took place, with the mean falling between 6 and 15 years (N=26, or 43.7% of the participants). Eleven participants (18%) had graduated more than 20 years prior to the semester in which this study took place. The number of years since previous attendance at college ranged from no previous college attendance (N=6, or 9.8%) to greater than 20 years (N=2, or 3.3%). The mean number of years since attendance at college prior to the semester in which this study took place fell between 1 and 5 (N=44, or 72.1% of the participants).

The highest level of education attained by the participants ranged from high school or GED (N=11, or 18%) to a master's degree in an area other than nursing (N=1, or 1.6%). Most participants (N=41, or 67.2%) reported having some college education, but less than an associate degree.

Current part-time or full-time status of the participants as college students is also shown in Table 3. The greatest number of participants (N=23, or 37.7%) reported being full-time students, including both nursing and other courses. The next greatest number (N=17, or 27.9%) reported being part-time students, in nursing only. Twelve participants (19.7%) reported being full-time

Table 3

Educational Characteristics

	Value	N	%
Years Since HS or GED	< 1	0	0
	1 to 5	16	26.2
	6 to 10	14	23.0
	11 to 15	12	19.7
	16 to 20	8	13.1
	> 20	11	18.0
Years Since College Attendance	No previous	6	9.8
	< 1	31	50.8
	1 to 5	13	21.3
	6 to 10	5	8.2
	11 to 15	2	3.3
	16 to 20	2	3.3
	> 20	2	3.3
Highest Level of Education Attained	HS or GED	11	18.0
	Some, 0 degree	41	67.2
	AD, Non-nursing	5	8.2
	Bachelors	3	4.9
	Masters	1	1.6
	Phd.	0	0
Part-time (P-T) or Full-time (F-T) Student	P-T, Nursing	17	27.9
	P-T, Nursing + other courses	9	14.8
	F-T, Nursing + other courses	23	37.7
	F-T, Nursing	12	19.7

students, in nursing only, and 9 participants (14.8%) reported being part-time, in nursing and other courses.

Employment and Stress Characteristics

Employment status, field of employment, perceived feelings about life stress, and perceived feelings about participant ability to cope with life stress are shown in Table 4. The greatest number of participants (N=23, or 37.7%) reported that they were unemployed. The next greatest number (N=21, or 34.4%) were employed less than 20 hours per week. Fourteen participants (23.0%) were employed greater than 20 hours per week. Only 1 participant (1.6%) was employed full-time. Two participants (3.3%) did not respond to the employment category.

Of those employed, the greatest number (N=17, or 27.9%) were employed in an area not related to health care. Ten participants (16.4%) were employed in a health care field, and of those, 8 (13.1%) were employed in direct patient care, and 2 (3.3%) were employed in indirect patient care. One participant (1.6%) responded as "other".

The perceived feelings of the participants about the stress in their lives ranged from feeling stress-free to feeling overwhelmed by stress most of the time. Most participants (N=47, or 77%) reported feeling either sometimes moderately stressed or sometimes heavily stressed. None of the participants reported feeling relatively stress-free. The perceived feelings of the participants about their ability to cope with the stress in their lives ranged

Table 4

Employment & Stress Characteristics

	Value	N	%
Employment	Unemployed	23	37.7
Hours/Week	<20	21	34.4
	>20	14	23.0
	Full-time	1	1.6
	No response	2	3.3
Employment	Unemployed	23	37.7
Field	Non-health	17	27.9
	Health Care	10	16.4
	Direct Pat.	8	13.1
	Indir. Pat.	2	3.3
	Other	1	1.6
Feelings About	Stress-free	0	0
Life Stress	Sometimes Mild	4	6.6
	Sometimes Mod	24	39.3
	Sometimes Heavy	23	37.7
	Often Heavy	7	11.5
	Mostly Overwhelmed	3	4.9
Feelings About	Adequate	26	42.6
Coping Ability	Sometimes Difficult	32	52.5
	Freq Difficult	2	3.3
	Inadequate	1	1.6

from having adequate coping ability (N=26, or 42.6%), to having inadequate coping ability (N=1, or 1.6%). Most participants (N=32, or 52.5%) reported sometimes having difficulty coping.

In addition to the previously reported "typical" characteristics of the participants, it can also be seen (from Tables 3 and 4) that the typical participant had graduated from high school or received a GED between 1 to 5 years prior to the semester in which this study took place, had a time period of less than 5 years since previous college attendance, had less than an associate degree, and was a full-time student, including both nursing courses and other courses. The typical participant was either unemployed or employed less than 20 hours per week in a non-health care field, reported feeling sometimes moderately stressed, and found it sometimes difficult to cope with that stress.

Research Question

The research question for this study examined role strain, hardiness, and academic achievement in answering the question: "What is the relative importance of role strain versus that of hardiness in predicting academic achievement in female nursing students at the end of the first semester of an associate degree nursing program?" Independent variables included role strain and hardiness. The dependent variable was academic achievement.

Instruments

The Lengacher Role Strain Inventory (LRSI) (Lengacher, 1993a) was used to measure role strain in the 61 participants. Internal consistency was determined with alpha coefficients and analyzed to be .91. The mean role strain score for the participants was 238.22, with a standard deviation of 41.81. The range was 202.

The Cognitive Hardiness Scale (CHS) (Nowack, 1989) was used to measure hardiness in the 61 participants. Internal consistency was determined with alpha coefficients and analyzed to be .74. The mean hardiness score for the participants was 108.66, with a standard deviation of 9.55. The range was 43.

Academic achievement was determined by measurement of the grade in the nursing fundamentals course at the end of the first semester of the ADN program. A grade of 2.0 or greater, on a 4.0 scale, indicated adaptive role transition. A grade of less than 2.0 indicated ineffective role transition. Student grade sheets were used to determine this measurement. The mean grade for the participants was 2.85, with a standard deviation of .65. The range was 3.0.

See Table 5 for a summary of the participant scores for role strain and hardiness, and their grades in the nursing fundamentals course. Only 1 participant received a grade of less than 2.0, which indicated ineffective role transition and inability to successfully pass the semester.

Table 5

Participant Scores for Role Strain (RS), Cognitive Hardiness (CH), and Academic Achievement (AA)

ID	RS	CH	AA	ID	RS	CH	AA
1	170	116	4.0	32	265	100	3.0
2	117	111	3.0	33	265	112	2.0
3	267	98	3.0	34	147	124	3.0
4	260	93	2.0	35	228	98	4.0
5	296	96	3.0	36	229	110	2.0
6	195	101	3.0	37	245	116	4.0
7	269	103	2.0	38	244	111	3.0
8	210	99	3.0	39	209	121	3.0
9	193	104	2.0	40	272	118	2.0
10	251	108	2.0	41	261	100	3.0
11	234	107	3.0	42	223	117	2.0
12	238	111	3.0	43	210	124	2.0
13	286	111	3.0	44	249	125	3.0
14	253	118	4.0	45	308	94	3.0
15	136	111	2.0	46	245	108	3.0
16	198	113	3.0	47	228	115	4.0
17	224	112	3.0	48	311	110	3.0
18	267	100	2.0	49	249	115	3.0
19	197	123	3.0	50	229	122	3.0
20	243	102	2.0	51	198	104	3.0
21	177	115	3.0	52	271	114	4.0
22	255	101	3.0	53	232	119	3.0
23	165	125	3.0	54	284	82	2.0
24	276	89	3.0	55	256	97	3.0
25	222	99	3.0	56	229	91	3.0
26	184	110	3.0	57	256	97	3.0
27	190	102	2.0	58	269	102	3.0
28	276	113	2.0	59	236	118	3.0
29	185	99	4.0	60	241	119	3.0
30	319	107	4.0	61	173	121	3.0
31	242	102	1.0				
<u>Note.</u>							
	<u>RS</u>				<u>CH</u>		
Range	202.00				43.00		
Mean	238.22				108.66		
SD	41.81				9.55		
					<u>AA</u>		
					3.00		
					2.85		
					.65		

Analysis

Correlation coefficients were used to determine correlation among the variables. Multiple regression analysis was used to determine how much of the variance in academic achievement could be explained by role strain, how much could be explained by hardiness, and how much could be explained by both role strain and hardiness together.

See Table 6 for the correlation coefficients among role strain, cognitive hardiness, and academic achievement (grade in nursing fundamentals course). There was a weak positive (.0166) but non significant relationship ($p=.450$) between role strain and academic achievement. There was also a weak positive (.1383) but non significant relationship ($p=.144$) between cognitive hardiness and academic achievement. There was a moderate negative relationship ($-.3304$) between role strain and cognitive hardiness, with a significance of $p=.005$.

See Table 7 for a summary of the multiple regression analysis among role strain, cognitive hardiness, and academic achievement. Multiple R and R Square values are reported for the independent variables role strain and cognitive hardiness, both separately and together, with academic achievement (grade) as the dependent variable. The R Square values represent the percent of variability in academic achievement that can be explained by role strain and cognitive hardiness. According to the multiple

Table 6

Correlation Coefficients among Role Strain (RS),
Cognitive Hardiness (CH), and Academic Achievement
(AA), with a 1-tailed Significance (N=61)

	RS Total	CH Total	AA Total
RS Total	1.0000	-.3304	.0166
	(61)	(61)	(61)
	p= .	p= .005	p= .450
CH Total	-.3304	1.0000	.1383
	(61)	(61)	(61)
	p= .005	p= .	p= .144
AA Total	.0166	.1383	1.0000
	(61)	(61)	(61)
	p= .450	p= .144	p= .

regression analysis, less than .05% (.00033) of the variability in the participants' academic achievement can be explained by role strain. Less than 1% (.00833) of the variability in the participants' academic achievement can be explained by cognitive hardiness. Only 1.2% (.01222) of the variability in the participants' academic achievement can be explained by role strain and cognitive hardiness together. According to Norusis (1991), low observed F values suggest that there is no linear relationship among the variables.

Table 7

Multiple Regression Analysis for Prediction of Academic
Achievement by the Variables Role Strain and Cognitive
Hardiness (N=61)

Variables

Role Strain

Multiple R	.01825
R Square	.00033
Adjusted R Square	-.01853
Standard Error	.67434

Analysis of Variance

	DF	Sum of Squares	Mean Square	F	p
Regression	1	.00803	.00803	.01754	.8948
Residual	53	24.10106	.45474		

Cognitive Hardiness

Multiple R	.09129
R Square	.00833
Adjusted R Square	-.00906
Standard Error	.64845

Analysis of Variance

	DF	Sum of Squares	Mean Square	F	p
Regression	1	.20142	.20142	.47900	.4917
Residual	57	23.96808	.42049		

Role Strain andCognitive Hardiness

Multiple R	.11054
R Square	.01222
Adjusted R Square	-.02577
Standard Error	.67674

Analysis of Variance

	DF	Sum of Squares	Mean Square	F	p
Regression	2	.29459	.14730	.32163	.7264
Residual	52	23.81450	.45797		

CHAPTER 5

DISCUSSION AND IMPLICATIONS

Discussion of Findings

Data analysis of the independent and dependent variables revealed that neither role strain nor cognitive hardiness had any significant predictive value on academic achievement in female nursing students at the end of the first semester of an associate degree nursing program. There was a moderate negative correlation, ($r = -.33$, $p = .005$) however, between role strain and cognitive hardiness.

It was noteworthy that, even though no previous studies were found that examined together the same variables as in this current study, the findings in this study were consistent with similar studies found in the literature review. Lengacher and Keller (1990) found that role strain had no predictive value for the successful completion of the NCLEX-RN. Dillard (1990) found that hardiness scores did not contribute significantly to the variance found in grade point average. Lambert and Lambert (1993) found significant negative correlations between role stress and components of psychological hardiness.

Role strain is still seen by this researcher, in terms of the Roy Adaptation Model (Roy & Andrews, 1991) as a

possible focal stimulus that may activate hardiness as a coping mechanism through the role function mode. The negative correlation between role strain and cognitive hardiness, although weak, indicates that as the hardiness score decreases, the role strain score increases. Conversely, as the hardiness score increases, the role strain score decreases. There may be other unknown explanations for the findings since they were not significant. Because there was no correlation between either role strain and academic achievement or hardiness and academic achievement at the end of the first semester, perhaps academic achievement is not the best measure of adaptive or ineffective role transition at that level. Perhaps the end of the first semester is too early to measure role transition. In a single study, Lengacher (1993a) found that the middle of the second semester of the first year was the most stressful time for ADN students. Perhaps this would be a better time to measure adaptation to the role of nursing student.

Limitations

Because this study was conducted on a convenience sample in one semester of a single associate degree nursing program, and because there was no control, randomization, or manipulation, the results cannot be generalized beyond the 61 female students in the study. This is the major weakness of the study.

The original role strain instrument that was developed by Lengacher (Appendix C) does not have a "not applicable" category, or a category that would allow a score of 0. Because there is no 0 point, even those students in Lengacher's study who received a score of 1 for each item would have a total score of 100; therefore, the midpoint for measuring difficulty in meeting role obligations might be higher than 250, perhaps closer to 300. The role strain instrument was modified by this researcher to include a 0, or "not applicable", category. Students in Lengacher's study may have recorded a 3 when an item didn't apply, whereas students in the current study would have reported 0. Therefore, overall scores in the current study are probably lower than those reported by Lengacher. Thus, the mean score of 238.22 reported in the current study cannot be adequately compared to the mean score of 253.52 to 277.61 reported by Lengacher (1993a).

Further limitations of the study include small sample size (N=61), and the fact that males, a growing number in nursing program enrollments, were excluded because of the design of the role strain inventory. One of the male students at Lake Michigan College was unsuccessful in the fall semester in which this study was conducted, and another male student was unsuccessful in the second semester of the program. One wonders what their role strain and hardiness scores might have been. Although the hardiness instrument was designed for universal use, there is no current

instrument that measures role strain specifically in male nursing students.

In addition, pre-admission GPA of the participants was a factor that was not considered in the design of the study. GPA data might have added another variable to the understanding of factors that may have an impact on the adaptive or ineffective role transition of nursing students.

Application to Education

Because of the limitations of the current study, it is difficult to apply the findings in a meaningful way to nursing education as a whole. An examination of the students who were ultimately unsuccessful later on in the nursing program could indicate that there may be a better time than the end of the first semester to evaluate adaptive or ineffective role transition.

Perhaps academic achievement at the end of the first semester would be a better predictor than role strain or hardiness of the ultimate success of the students enrolled in the nursing program. Even before that, examination of cumulative GPA as students enter the program may be a good indicator of which students may need early interventions to help them accomplish adaptive role transition. Students in the program where this researcher teaches are required to have a cumulative GPA of 2.5 to enter the program, but perhaps this is not high enough for them to adapt to the stringent requirements of their new role as nursing students and ultimately nursing graduates. A higher GPA admission

requirement may be necessary in nursing programs to assure greater success later on.

There are students who will not be successful in the role of nursing student regardless of interventions on the part of educators, and these students should probably not be in nursing. It was not the intent of this research study to attempt to initiate interventions to help such students achieve success. However, if there are ways to increase the likelihood of success for students who may have difficulty in certain areas, then educators should pursue interventions that can correct the problems in those areas.

Suggestions for Further Research/Modifications

The first suggestion for further research would be to replicate the study in other ADN programs and BSN programs to determine if similar results would be found. Because the major limitation of the current study was difficulty in generalizing the results, a greater understanding of the variables could be accomplished by repeating the study with larger numbers of participants.

It would be interesting to follow through in the succeeding semesters of a nursing program to determine if high role strain scores and/or low hardiness scores ultimately affect students' adaptive or ineffective role transition by the end of the nursing program. It was not the intent of this study to determine a correlation among role strain, hardiness, and academic achievement at a time other than the end of the first semester; however, further

research could examine the possibility of a correlation if the variables were examined regularly throughout the entire program.

Another suggestion for further research would be to include pre-admission GPA as an independent variable along with role strain and hardiness. The dependent variable could be adaptive or ineffective role transition at the end of the entire nursing program. The findings of such a study might be important in establishing admission GPA requirements.

Lengacher (1993a) suggested shortening the size of the Lengacher Role Strain Inventory. This may accomplish a reduction in the redundancy of the inventory items. In addition, future LRSI instruments need to be modified so that a "not applicable" category is added. This will make it possible to have a score that ranges from 0 to 500 as stated on Lengacher's scoring sheet. A role strain inventory that includes male nursing students would also be helpful, and there may be one in existence since 1993. Further researchers should investigate these possibilities in an effort to reduce some of the limitations that were found in the current study.

It would also be interesting to examine specific components of the role strain and hardiness inventories. Specific responses could be cross-tabulated to determine if there are certain responses that may have a correlation to adaptive or ineffective role transition. Along with this, a

comparison between the students' role strain and hardiness scores and the students' perceived stress and coping abilities (from information on the socio-demographic questionnaire) could be made. Information gained from this comparison might give students greater insight into their own strengths and weaknesses and provide the basis for helpful interventions on the part of nurse educators.

Appendices

Appendix A

Permission for Use of Figure 1

Permission for Use of Figure 1



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4/22/96

To: John Campbell

Re: Prof. Claire Rutlin's request

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12 Alban Rd, Dedham, MA 02026

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Sincerely,

Tamara Mann
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KIRKHOFF SCHOOL OF NURSING

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Appendix B
Agency Approvals



2755 East Napier Avenue
Benton Harbor MI 49022-1899
(616) 927-3571

Appendix B

Agency Approvals

October 18, 1994

Human Research Review Committee
Grand Valley State University
201 Lake Michigan Hall
Allendale, MI 49401

Dear Sirs:

E. Clare Rutlin, a student in the Master's in Nursing program at GVSU and an employee at Lake Michigan College, has permission to conduct the necessary research for her thesis at Lake Michigan College. She will be administering three surveys to nursing students and will be using cumulative GPA's as part of her study. She will maintain confidentiality throughout.

Should you need further information, please contact us at (616) 927-8134.

Sincerely,


Patricia A. Hall
Dean, Occupational Studies

jr



1 CAMPUS DRIVE • ALLENDALE MICHIGAN 49401-9403 • 616/895-6611

November 10, 1994

Clare Rutlin
2755 E. Napier
Benton Harbor, MI 49022

Dear Clare:

Your proposed project entitled "*Relationship Among Role Strain, Hardiness, & Academic Achievement*" has been reviewed. It has been approved as a study which is exempt from the regulations by section 46.101 of the Federal Register 46(16):8336, January 26, 1981.

Sincerely,

A black rectangular box redacting the signature of Paul Huizenga.

Paul Huizenga, Chair
Human Research Review Committee

Appendix D

Cognitive Hardiness Scale

COGNITIVE HARDINESS SCALE

Below is a list of common beliefs people hold. How strongly do you agree or disagree with each statement?

- 1 = Strongly Agree
 2 = Agree
 3 = Neither Agree nor Disagree
 4 = Disagree
 5 = Strongly Disagree

- | | | | | | |
|--|---|---|---|---|---|
| 1. My involvement in non-work activities and hobbies provides me with a sense of meaning and purpose. | 1 | 2 | 3 | 4 | 5 |
| 2. By taking an active part in political and social affairs, people can strongly influence world events and politics. | 1 | 2 | 3 | 4 | 5 |
| 3. When all else appears bleak, I can always turn to my family and friends for help and support. | 1 | 2 | 3 | 4 | 5 |
| 4. I prefer to do things that are risky, exciting, and adventuresome rather than adhere to the same comfortable routine and lifestyle. | 1 | 2 | 3 | 4 | 5 |
| 5. Becoming a success is mostly a matter of working hard; luck plays little or no role. | 1 | 2 | 3 | 4 | 5 |
| 6. There are relatively few areas about myself in which I feel insecure, highly self-conscious, or lacking in confidence. | 1 | 2 | 3 | 4 | 5 |
| 7. In general, I tend to be a bit critical, pessimistic, and cynical about most things in work and life. | 1 | 2 | 3 | 4 | 5 |
| 8. It would take very little change in my present circumstances at work to cause me to leave my present organization. | 1 | 2 | 3 | 4 | 5 |
| 9. I do not feel satisfied with my current involvement in the day-to-day activities and well-being of my family and friends. | 1 | 2 | 3 | 4 | 5 |
| 10. In general, I would prefer to have things well planned out in advance rather than deal with the unknown. | 1 | 2 | 3 | 4 | 5 |
| 11. Most of life is wasted in meaningless activity. | 1 | 2 | 3 | 4 | 5 |
| 12. I often feel awkward, uncomfortable, or insecure interacting with others socially. | 1 | 2 | 3 | 4 | 5 |
| 13. I rarely find myself saying out loud or thinking that I'm not good enough or capable of accomplishing something. | 1 | 2 | 3 | 4 | 5 |
| 14. I am committed to my job and work activities that I am currently pursuing. | 1 | 2 | 3 | 4 | 5 |

- | | | | | | |
|---|---|---|---|---|---|
| 15. I tend to view most work and life changes, disappointments, and setbacks as threatening, harmful, or stressful rather than challenging. | 1 | 2 | 3 | 4 | 5 |
| 16. Just for variety's sake, I often explore new and different routes to places that I travel to regularly (e.g., home, work). | 1 | 2 | 3 | 4 | 5 |
| 17. Others will act according to their own self-interests no matter what I attempt to say or do to influence them. | 1 | 2 | 3 | 4 | 5 |
| 18. If I get a chance to see how others have done something or get the opportunity to be taught what to do, I am confident that I can be successful at most anything. | 1 | 2 | 3 | 4 | 5 |
| 19. I expect some things to go wrong now and then, but there is little doubt in my mind that I can effectively cope with just about anything that comes my way. | 1 | 2 | 3 | 4 | 5 |
| 20. Overall, most of the things that I am involved in (e.g., work, community, social relationships) are not very stimulating, enjoyable, and rewarding. | 1 | 2 | 3 | 4 | 5 |
| 21. I am likely to get frustrated and upset if my plans do not unfold as I hoped, or if things do not happen the way I really want them to. | 1 | 2 | 3 | 4 | 5 |
| 22. There is a direct relationship between how hard I work and the success and respect that I will have. | 1 | 2 | 3 | 4 | 5 |
| 23. I don't feel that I have accomplished much lately that is really important or meaningful with respect to my future goals and objectives in life. | 1 | 2 | 3 | 4 | 5 |
| 24. I often think that I am inadequate, incompetent, or less important than others with whom I work and that I know. | 1 | 2 | 3 | 4 | 5 |
| 25. Many times I feel that I have little or no control and influence over things that happen to me. | 1 | 2 | 3 | 4 | 5 |
| 26. If anything else changes or goes wrong in my life right now, I feel that I might not be able to effectively cope with it. | 1 | 2 | 3 | 4 | 5 |
| 27. When change occurs at work or home I often find myself thinking that the worst is going to happen. | 1 | 2 | 3 | 4 | 5 |
| 28. At the moment, things at work and at home are fairly predictable and any more changes would just be too much to handle. | 1 | 2 | 3 | 4 | 5 |
| 29. You can't really trust that many people because most individuals are looking for ways to improve their welfare and happiness at your expense. | 1 | 2 | 3 | 4 | 5 |
| 30. Most of the meaning in life comes from internal, rather than external, definitions of success, achievement, and self-satisfaction. | 1 | 2 | 3 | 4 | 5 |

Appendix E

Lengacher Role Strain Inventory Modified

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**Appendix E
Lengacher Role Strain Inventory Modified
Pages 83-86**

UMI

Appendix F

Socio-Demographic Questionnaire

Appendix F

Socio-Demographic Questionnaire

1. What is your age? 1) _____
2. What is the primary language you speak? (select one)
 - 1) _____ English
 - 2) _____ Spanish
 - 3) _____ Other 4) _____
3. What is your ethnic background? (select one)
 - 1) _____ African American
 - 2) _____ Asian
 - 3) _____ Caucasian
 - 4) _____ Hispanic
 - 5) _____ Native American
 - 6) _____ Other 7) _____
4. How many years has it been since you graduated from high school or received your General Education Degree (GED)? (select one)
 - 1) _____ Less than one
 - 2) _____ One to five
 - 3) _____ Six to ten
 - 4) _____ Eleven to fifteen
 - 5) _____ Sixteen to twenty
 - 6) _____ More than twenty
5. How many years has it been since you attended college? (select one)
 - 1) _____ Never attended college
 - 2) _____ Less than one
 - 3) _____ One to five
 - 4) _____ Six to ten
 - 5) _____ Eleven to fifteen
 - 6) _____ Sixteen to twenty
 - 7) _____ More than twenty
6. What is the highest level of education you have received? (select one)
 - 1) _____ High school or GED
 - 2) _____ Some college but no degree
 - 3) _____ Associate Degree in an area other than nursing
 - 4) _____ Bachelors in an area other than nursing
 - 5) _____ Masters Degree in an area other than nursing
 - 6) _____ Phd. in an area other than nursing
7. How would you describe your current status as a college student? (select one)
 - 1) _____ Part-time, nursing only
 - 2) _____ Part-time, nursing plus other classes
 - 3) _____ Full-time, nursing plus other classes
 - 4) _____ Full-time, nursing only

8. How would you describe your current employment status? (select one)
- 1) _____ Unemployed
 - 2) _____ Part-time, less than 20 hours per week
 - 3) _____ Part-time, more than 20 hours per week
 - 4) _____ Full-time
9. How would you describe your current employment? (select one)
- 1) _____ Not currently employed
 - 2) _____ Employed in an area not related to health care
 - 3) _____ Employed in an area related to health care
 - 4) _____ Direct patient care
 - 5) _____ Indirect patient care
 - 6) _____ Other 7) _____
10. What is your marital status? (select one)
- 1) _____ Never Married
 - 2) _____ Married
 - 3) _____ Divorced
 - 4) _____ Separated
 - 5) _____ Widowed
11. How many children do you have? 1) _____
12. How many children live at home? 1) _____
13. What are the ages of the children living in your home?
- 1) _____
14. Which of the following best describes your overall feelings about the stress in your life? (select one)
- 1) _____ I feel relatively stress-free
 - 2) _____ I sometimes feel mildly stressed
 - 3) _____ I sometimes feel moderately stressed
 - 4) _____ I sometimes feel heavily stressed
 - 5) _____ I often feel heavily stressed
 - 6) _____ I feel overwhelmed by stress most of the time
15. Which of the following best describes your overall feelings about your ability to cope with the stress in your life? (select one)
- 1) _____ I have adequate coping ability to handle my stress
 - 2) _____ I sometimes have difficulty coping with my stress
 - 3) _____ I frequently have difficulty coping with my stress
 - 4) _____ I have inadequate coping ability to handle my stress
16. Overall, how satisfied are you with your current income? (select one)
- 1) _____ Very satisfied
 - 2) _____ Satisfied
 - 3) _____ Dissatisfied
 - 4) _____ Very dissatisfied
17. What is your current household income? (select one)
- 1) _____ Less than \$10,000
 - 2) _____ \$10,001 to \$20,000
 - 3) _____ \$20,001 to \$30,000
 - 4) _____ \$30,001 to \$40,000
 - 5) _____ \$40,001 to \$50,000
 - 6) _____ Greater than \$50,000

Appendix G

Correspondence with Lengacher



Appendix G

Correspondence with Lengacher

2755 East Napier Avenue
Benton Harbor MI 49022-1899
(616) 927-3571

November 1, 1993

Cecile A. Lengacher, PhD, RN
College of Nursing
University of South Florida
12901 Bruce B. Downs Blvd.
MDC Box 22
Tampa, Florida 33612-4799

Dear Dr. Lengacher:

I am enrolled in a MSN program at Grand Valley State University in Allendale, Michigan. My research thesis is a study of the relationship between role strain and hardiness in first year female ADN students. With your permission, I plan to use the tool you developed, the LRSI, to measure role strain. Since I teach in the first year of an ADN program at Lake Michigan College, I hope eventually to use the results of this study to improve the success rate of our nursing students in their overall nursing education.

I would appreciate it if you could please give me written permission to use your role strain instrument and send me a copy to use in my research project.

Thank you very much for your consideration.

Clare Rutlin, BSN, RN



Nursing Instructor
Lake Michigan College

We'll Get You There


Dear Colleague:

Thank you for your interest in the use of my Lengacher Role Strain Inventory for your research project. I will be very happy to share with you the instrument and scoring sheet upon completion of the attached agreement for use of the Lengacher Role Strain Inventory.

I am requesting that \$10.00 be sent to cover the cost of mailing and making the instrument kit for your use. In addition, please note the requirements for use of the inventory.

Thank you again for your interest in this area of research.

Sincerely,


Cecile A. Lengacher, RN, PhD
Assistant Dean for Undergraduate Studies

9L:1nt.ltr

12/18/93

AGREEMENT FOR USE OF
LENGACHER ROLE STRAIN INVENTORY

DIRECTIONS: The following information must be completed prior to using the Lengacher Role Strain Inventory. Please print.

NAME: Clare Rutlin

ADDRESS: 2503 Bristol Terrace
St. Joseph, MI 49085

TITLE OF STUDY: Relationship between role strain, hardiness, and the success or failure of 1st year female ADN students

NUMBER OF SUBJECTS: 70 ± 10

SAMPLE POPULATION (Please describe ages and sex): All female 1st year ADN students, ages ranging from 18 - mid 50's (mostly 20s & 30s)

COSTS: \$10.00 for an Lengacher Role Strain Inventory and a Lengacher Role Strain Inventory Scoring Set.

EXPECTED DATE OF COMPLETION: Fall 1995

REQUIREMENTS: I am willing to provide Cecile A. Lengacher, RN, PhD with:

- (1) The raw data (for each item from every subject) from my study. I understand that this data will be used only for further studies of the psychometric properties of the instrument. Credit will be given to me in any reports based on the data submitted.
- (2) A summary, or abstract, of my findings.
- (3) A completed copy of the Summary Form for Completed Study.

DATE: 12/16/93 SIGNATURE: [REDACTED]

Return to: Cecile A. Lengacher, RN, PhD
University of South Florida
College of Nursing, MDC Box 22
12901 Bruce B. Downs Boulevard
Tampa, Florida 33612-4799

Upon completion and submission of this form, and \$10.00 to cover cost of mailing and processing, an instrument kit will be sent to you. Please make checks payable to: Cecile A. Lengacher, RN, PhD.

Feb. 3, 1994

Dear Colleague: *Clara:*

Thank you for your interest in using the Lengacher Role Strain Inventory in your research. Enclosed is a copy of the Lengacher Role Strain Inventory which you may duplicate for use in your specific research project as submitted in your signed agreement.

Please feel free to duplicate the inventory for the necessary number you need in your research project. This permission does not allow for free distribution of the inventory for use by any other individuals.

In addition I have enclosed the scoring sheet, which you will need for scoring of your results. Normative data is published in the Journal of Nursing Education, February 1993, Volume 32, Number 2 in the article "Development and Study of an Instrument to Measure Role Strain."

Thank you for the interest in this concept. I am continuing to refine the instrument and will notify you of future changes.

Sincerely,


Cecile A. Lengacher, R.N., Ph.D.

Good luck with your research! Long the way to the top!

May 2, 1996

Cecile A. Lengacher, Ph.d., R.N.
College of Nursing
University of South Florida
12901 Bruce B. Downs Blvd.
MDC Box 22
Tampa, Florida 33612-4799

Dear Dr. Lengacher:

This letter is in follow-up to our phone conversation of May 2, 1996. As requested by you, I am sending a copy of the abstract of my thesis entitled "Relationships Among Role Strain, Hardiness, and Academic Achievement" in first year female ADN students. As you are aware, I added a "not applicable" category to your role strain inventory because many of the nursing students being surveyed were neither married nor had families; therefore, the results I am sending you in the data analysis reflect that modification. Thank you very much for your assistance with this research project. I look forward to reading more about your research on role strain in the future.

Sincerely,

A black rectangular box redacting the signature of Clare Rutlin.

Clare Rutlin, B.S.N., R.N.
2503 Bristol Terrace
St. Joseph, MI 49085
(616) 429-8449

Appendix H

Correspondence with Nowack

Appendix H

Correspondence with Nowack

November 22, 1993

Kenneth M. Nowack
Organizational Performance Dimensions
20950-38 Oxnard Street
Woodland Hills
California 91367

Dear Mr. Nowack:

I am enrolled in a MSN program at Grand Valley State University in Allendale, Michigan. My research thesis is a study of the relationships between role strain and hardiness in first year female ADN students. With your permission, I plan to use the tool you developed, the Cognitive Hardiness Scale, to measure hardiness. Since I teach in the first year of an ADN program at Lake Michigan college, I hope eventually to use the results of this study to improve the success rate of our nursing students in their overall nursing education.

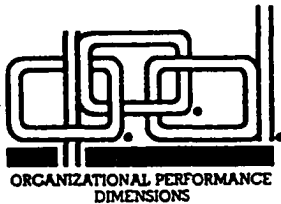
I would appreciate it if you could please give me any other information about the tool, its reliability, validity, etc. Would you please send me written permission to use the Cognitive Hardiness instrument and send me a copy to use in my research project.

Thank you very much for your cooperation.

Clare Rutlin, BSN, RN



Nursing Instructor
Lake Michigan College
2755 E. Napier Avenue
Benton Harbor, MI 49022
(616) 927-3571



November 27, 1993

20950-38 Oxnard Street
Woodland Hills, CA 91367
818 340-9644

RE: Stress Assessment Profile Research Scales

Thank you for your interest in utilizing my research scales in your work. I am enclosing a copy of these scales for you to use, scoring instructions, and information about recent publications.

The Cognitive Hardiness Scale has shown construct validity with optimism (LOT; Scheier & Carver, 1985) and the original Kobasa hardiness scales (correlations with optimism, overall hardiness scale, commitment, challenge, and control subscales are .74, -.46, -.42, .05, and -.58, respectively). This 30-item scale ($M=106.21$, $S.D.=12.97$) has shown adequate internal consistency reliability (alpha) of .84, a unidimensional factor structure, and has demonstrated criterion-related validity with both subjective and objective health outcomes in recent studies.

The 25-item Coping Style Scale measures is conceptually based on the work of Richard Lazarus at U.C. Berkeley and assess four coping styles including: 1) Intrusive Positive Thoughts ($M=17.17$, $S.D.=2.95$, alpha .72); 2) Intrusive Negative Thoughts ($M=13.01$, $S.D.=3.56$, alpha .79); 3) Avoidance ($M=15.66$, $S.D.=2.79$, alpha .70); and 4) Problem-Focused Coping ($M=15.82$, $S.D.=2.67$, alpha .69). This scale has shown criterion-related validity with a variety of self-reported health outcomes.

The 30-item Lifestyle Habits Scale consists of four subscales: 1) Global Health Habits; 2) Exercise/Physical Activity; 3) Sleep/Relaxation; and 4) Eating/Nutrition. These scales have shown adequate internal consistency reliability (alphas) of .73, .81, .71, & .70, respectively. It has been validated in over 1,040 professional working adults (Mean for Global Health Habits= 87.28 , $S.D.=9.61$). Additional information about these scales can be found in:

Nowack, K. (In press). Lifestyle habits, substance use, and predictors of job burnout in a sample of professional working women. Work and Stress.

Schwartz, G.E., Schwartz, J.I., Nowack, K.M., & Eichling, P.S. (1993). The hardiness and the negative affectivity confound as a function of a defensive coping style. University of Arizona and Canyon Ranch. Unpublished manuscript.

Schwartz, G.E., Schwartz, J.I., Nowack, K.M., & Eichling, P.S. (1992). Changes in perceived stress and social support over time are related to changes in immune function. University of Arizona and Canyon Ranch. Unpublished manuscript.

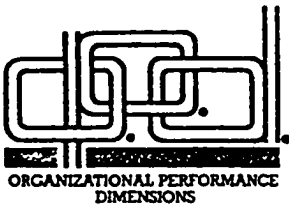
Nowack, K. M. (1991). Psychosocial predictors of health status. Work & Stress, 5, 117-131.

Greene, R. and Nowack, K. (1991) Stress, hardiness and absenteeism: Results of a 3-year longitudinal study. Paper presented at the Annual Conference of the American Psychological Association, August, San Francisco.

Nowack, K. M. (1990). Initial development and validation of a stress and health risk factor instrument. Journal of Health Promotion, 4, 173-180.

Nowack, K. M. (1989). Coping style, cognitive hardiness, & health status. Journal of Behavioral Medicine, 12, 145-158.

I welcome the opportunity to collaborate and would be very interested in any results you might obtain using any of the Stress Assessment Profile Scales. If you have additional questions, please feel free to contact me at (818) 340-9644. Best of luck with your future research efforts.



STRESS ASSESSMENT PROFILE SCORING KEY

SCALE/ITEM NUMBERS

1. Stress 1-6
2. Global health habits 7-31 (Reverse score 10-17, 19-20, 22, 25-31)
3. Health Habits--Exercise 7-9
4. Health Habits--Sleep/Relaxation 10-14
5. Health Habits--Eating/Nutrition 22-28
6. Social Support 32-46
7. Type A Behavior 47-56
8. Cognitive Hardiness 57-86 (reverse score: 57-62, 69-70, 72, 74-75, 78, 86)
9. Coping Style--Intrusive Positive Thoughts 87-91
10. Coping Style--Intrusive Negative Thoughts 92-96
11. Coping Style--Avoidance 97-101
12. Coping Style--Problem-Focused Coping 102-106
13. Psychological Well-Being 107-118
14. Response Distortion Bias 119-123 (Reverse Score: 119, 121, 122, 123)

(Note: High scores correspond to more frequent behavior or levels of satisfaction with each of the above scales)

Cognitive Hardiness. Below is a list of common beliefs people hold. How strongly do you agree or disagree with each statement? (1=Strongly Agree, 2=Agree, 3=Neither Agree nor Disagree, 4=Disagree, 5=Strongly Disagree).

		Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
57.	My involvement in non-work activities and hobbies provides me with a sense of meaning and purpose.	1	2	3	4	5
58.	By taking an active part in political and social affairs, people can strongly influence world events and politics.	1	2	3	4	5
59.	When all else appears bleak, I can always turn to my family and friends for help and support.	1	2	3	4	5
60.	I prefer to do things that are risky, exciting, and adventuresome rather than adhere to the same comfortable routine and lifestyle.	1	2	3	4	5
61.	Becoming a success is mostly a matter of working hard; luck plays little or no role.	1	2	3	4	5
62.	There are relatively few areas about myself in which I feel insecure, highly self-conscious, or lacking in confidence.	1	2	3	4	5
63.	In general, I tend to be a bit critical, pessimistic, and cynical about most things in work and life.	1	2	3	4	5
64.	It would take very little change in my present circumstances at work to cause me to leave my present organization.	1	2	3	4	5
65.	I do not feel satisfied with my current involvement in the day-to-day activities and well-being of my family and friends.	1	2	3	4	5
66.	In general, I would prefer to have things well planned out in advance rather than deal with the unknown.	1	2	3	4	5
67.	Most of life is wasted in meaningless activity.	1	2	3	4	5
68.	I often feel awkward, uncomfortable, or insecure interacting with others socially.	1	2	3	4	5
69.	I rarely find myself saying out loud or thinking that I'm not good enough or capable of accomplishing something.	1	2	3	4	5
70.	I am committed to my job and work activities that I am currently pursuing.	1	2	3	4	5

		Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
71.	I tend to view most work and life changes, disappointments, and setbacks as threatening, harmful, or stressful rather than challenging.	1	2	3	4	5
72.	Just for variety's sake, I often explore new and different routes to places that I travel to regularly (e.g., home, work).	1	2	3	4	5
73.	Others will act according to their own self-interests no matter what I attempt to say or do to influence them.	1	2	3	4	5
74.	If I get a chance to see how others have done something or get the opportunity to be taught what to do, I am confident that I can be successful at most anything.	1	2	3	4	5
75.	I expect some things to go wrong now and then, but there is little doubt in my mind that I can effectively cope with just about anything that comes my way.	1	2	3	4	5
76.	Overall, most of the things that I am involved in (e.g., work, community, social relationships) are not very stimulating, enjoyable, & rewarding.	1	2	3	4	5
77.	I am likely to get frustrated and upset if my plans do not unfold as I hoped, or if things do not happen the way I really want them to.	1	2	3	4	5
78.	There is a direct relationship between how hard I work and the success and respect that I will have.	1	2	3	4	5
79.	I don't feel that I have accomplished much lately that is really important or meaningful with respect to my future goals and objectives in life.	1	2	3	4	5
80.	I often think that I am inadequate, incompetent, or less important than others with whom I work and that I know.	1	2	3	4	5
81.	Many times I feel that I have little or no control and influence over things that happen to me.	1	2	3	4	5
82.	If anything else changes or goes wrong in my life right now, I feel that I might not be able to effectively cope with it.	1	2	3	4	5

	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
83. When change occurs at work or home I often find myself thinking that the worst is going to happen.	1	2	3	4	5
84. At the moment, things at work and at home are fairly predictable and any more changes would just be too much to handle.	1	2	3	4	5
85. You can't really trust that many people because most individuals are looking for ways to improve their welfare and happiness at your expense.	1	2	3	4	5
86. Most of the meaning in life comes from internal, rather than external, definitions of success, achievement, and self-satisfaction.	1	2	3	4	5

STRESS ASSESSMENT PROFILE DESCRIPTIVE STATISTICS

<u>SCALE</u>	<u>MEAN¹</u>	<u>S.D.</u>	<u>ALPHA</u>	<u>TEST² RETEST</u>
STRESS	17.22	3.56	.67	.66
LIFESTYLE HABITS	87.28	9.61	.73	.95
Exercise	9.13	3.39	.81	.97
Rest/Sleep	16.31	3.27	.66	.76
Eating/Nutrition	23.79	3.49	.71	.91
SOCIAL SUPPORT	48.16	9.03	.81	.94
TYPE A BEHAVIOR	31.85	5.26	.73	.91
COGNITIVE HARDINESS	106.21	12.87	.84	.96
COPING STYLE				
Postive Self-Talk	17.17	2.95	.72	.62
Negative Self-Talk	13.01	3.56	.79	.66
Avoidance	15.66	2.80	.70	.78
Problem-Focused	15.82	2.67	.68	.70
PSYCHOLOGICAL WELL-BEING	42.30	7.47	.90	.86

¹Norms based on over 1530 employees in manufacturing, aerospace, communications, and health care organizations

²Test Re-test based on two-week interval (N=46)

February 7, 1994

Kenneth M. Nowack
Organizational Performance Dimensions
20950-38 Oxnard Street
Woodland Hills
California 91367

Dear Mr. Nowack,


Recently I wrote to you asking permission to use your Cognitive Hardiness Scale in research I am conducting on female ADN students. I appreciate your prompt reply and return of the scale and information about recent publications.

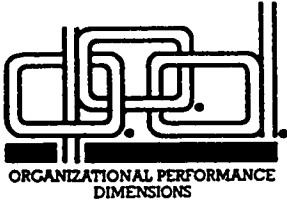
Would it be possible for you to send me more information on how the tool was originally developed, and specifically how the reliability and validity have been established?

I would also appreciate it if you could give me information about the cost of a software package for data analysis and how I can obtain it.

Thank you very much for your time.

Mrs. Clare Rutlin, BSN, RN


2503 Bristol Terrace
St. Joseph, MI 49085
(616) 429-8449



20950-38 Oxnard Street
Woodland Hills, CA 91367
818 340-9644

February 10, 1994

Mrs. Clare Rutlin, BSN, RN
2503 Bristol Terrace
St. Joseph, MI 49085

Dear Clare,

Thank you for your note of February 7th regarding use of my stress research scales. I am enclosing a copy of an earlier published article that describes the initial validation process as well as some recent unpublished work for your review. The manuscript on stress, hardiness and absenteeism is currently being reviewed by Work and Stress.

My software program only generates a narrative report for the entire stress research scales but would not be helpful for your research purposes. I'd recommend utilizing a statistical software package or database management package to assist you using the scoring protocols that I sent you.

Best of luck with your project! I'd be very interested in your findings when you are done. If I can be of any further assistance, please don't hesitate to call or write.

Sincerely,

Kenneth M. Nowack, Ph.D.

Appendix I
Consent Forms

Appendix I

CONSENT FORM

I understand that this is a study of roles and resources for dealing with complex roles in female nursing students in the first year of an ADN program. The knowledge gained is expected to help nursing faculty with early interventions that will assist nursing students in their adaptation to new roles experienced throughout the course of their nursing education.

I also understand that:

1. participation in this study will involve completing three questionnaires, the total of which will take approximately thirty minutes to complete.
2. I have been selected for participation because I am a female nursing student in the first year of an ADN program.
3. it is not anticipated that this study will lead to any physical or emotional risks to myself.
4. the information I provide will be kept strictly confidential and the data will be coded so that identification of individual participants will not be possible except by the researcher.
5. a summary of the results will be made available to me upon my request.

I acknowledge that:

"I have been given an opportunity to ask questions regarding this research study, and that these questions have been answered to my satisfaction."

"In giving my consent, I understand that my participation in this study is voluntary and that I may withdraw at any time without affecting my standing in the nursing program."

"The investigator, Clare Rutlin, has my permission to review my school file."

"I hereby authorize the investigator to release the information obtained in this study to scientific literature. I understand that I will not be identified by name."

"I have been given Clare Rutlin's phone number so that I may contact her at any time if I have questions."

"I acknowledge that I have read and understand the above information, and that I agree to participate in this study."

Witness

Participant's Signature

Date

Date

_____ I am interested in receiving a summary of the study results.

Adapted from Grand Valley State University Thesis Handbook (1993-94)

Verbal Explanation

The research in which you are about to participate is a study of the various roles, and resources/coping mechanisms for dealing with those roles, in female nursing students in the first semester of an ADN program. You are being given a consent form which explains the basics of the study and which should be signed by you and a classmate. In addition, you will be given a 3-part survey which includes a role strain inventory, a cognitive hardiness scale, and a socio-demographic questionnaire. At the end of the semester, your grade in nursing fundamentals will also be attached to your responses. The requested identification number will be the number you have been using for testing purposes in nursing fundamentals this semester. Be sure to include this number at the upper right of your 3-part survey. Please be assured that your responses to the questions will in no way affect your grade for this course.

Your survey responses will be collected at the end of approximately one-half hour and sealed and locked in the nursing coordinator's office until after you have received your grade at the end of the semester. At that time, the surveys and grades will be analyzed and your identification number will be removed. No names will be attached to data analysis or to reports of findings. It is anticipated that the results of this study will assist nursing faculty with early interventions that may assist nursing students in their adaptation to the variety of roles experienced throughout their nursing education.

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- Schwartz, G. E., Schwartz, J. I., Nowack, K. M., & Richling, P. S. (1993). The hardiness and the negative affectivity confound as a function of a defensive coping style. University of Arizona and Canyon Ranch. Unpublished manuscript.
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