

EXPLORATION OF THE RELATIONSHIP BETWEEN ACCULTURATION AND
ROLE STRESS IN NURSING STUDENTS AND NEW GRADUATE NURSES

A DISSERTATION

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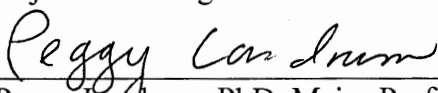
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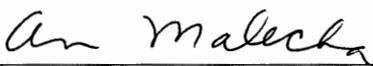
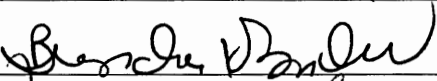
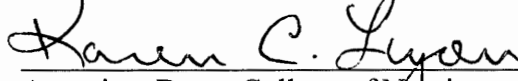
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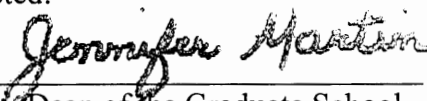
I am submitting herewith a dissertation written by Elizabeth Perius entitled "Exploration of the relationship between acculturation and role stress in nursing students and new graduate nurses." I have examined this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy with a major in Nursing Science.


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We have read this dissertation and recommend its acceptance:




Associate Dean, College of Nursing

Accepted:


Dean of the Graduate School

ABSTRACT

ELIZABETH PERIUS

EXPLORATION OF THE RELATIONSHIP BETWEEN ACCULTURATION AND ROLE STRESS IN NURSING STUDENTS AND NEW GRADUATE NURSES

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Nursing students and new graduate nurses experience a great deal of role stress and acculturation issues may compound that stress. The goal of this secondary analysis was to assess the relationship between acculturation levels of student nurses and their role stress experienced in nursing school and in their first two years in professional practice. This study was a longitudinal, repeated measures design that explored role stress and acculturation in a cohort of student nurses over the course of four years. Results revealed moderate role stress in student nurses with correlations between acculturation and clinical stress as measured by the Student Nurse Stress Index (SNSI). Clinical role stress was significantly correlated with acculturation on all five student measurements. Mild/occasional stress was detected in new graduate nurses. A single correlation was found between new graduate nurses' role stress and discrimination as measured by the Expanded Nursing Stress Scale (ENSS). The ENSS may not be well-suited to detect role stress in new graduate nurses.

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CHAPTER 1

INTRODUCTION

The nursing profession in Texas (TX) is becoming ever more diverse as recent data indicate that minority nurses constitute 33.1% of the registered nurse population (Texas Center for Nursing Workforce Studies [TCNWS], 2010). This trend will continue in the future as minority students now constitute 49.9% of the student nurse population in the state (TCNWS) and over 25% of the population of student nurses in the United States (US; Fang, Tracy, & Bednash, 2010). Acculturation challenges such as language and communication can be significant barriers with the increasing diversity of nursing and nursing students (Amaro, Abriam-Yago, & Yoder, 2005; Gardner, 2005a; Gardner, 2005b; Junious, 2008; Sanner & Wilson, 2008; Sanner, Wilson, & Samson, 2002). Role stress is already a well-known issue in nursing and nursing education and is likely compounded by language and communication challenges. Therefore, the purpose of this secondary analysis is to examine the relationship between acculturation and role stress in students during their two years of upper division nursing courses through their first two years in professional practice.

Problem of Study

Maintaining a healthy, multicultural nursing workforce requires supporting a diverse student population (Gardner, 2005b). Nursing students and new graduate nurses experience a great deal of role stress, and acculturation issues may compound that stress (Casey, Fink, Krugman, & Propst, 2004; Junious, 2008; LeDuc, 2010; Oermann &

Lukomski, 2001). For this study, acculturation has been defined as English language use. Language use has been shown to be a valid proxy for acculturation in psychometric development of an acculturation scale (Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987; Ribas & Lam, 2010; Wallen, Feldman, & Anliker, 2002). This is in agreement with Schumann's acculturation model of second language acquisition which basically states that acculturation to the language is synonymous with acculturation to the group (1986). Studies have been conducted in the US with student nurses for whom English is a second language. These students report issues related to language and acculturation such as difficulty reading and comprehending assignments (Amaro, Abriam-Yago, & Yoder, 2005; Junious, 2008; Sanner & Wilson, 2008), difficulty with English proficiency and heavy accents (Amaro et al.; Gardner, 2005a; Gardner, 2005b; Junious, 2008; Sanner & Wilson; Sanner, Wilson, & Samson, 2002), and translation and issues with American colloquial terms (Amaro et al.; Junious; Sanner & Wilson).

Role stress has been defined as an "internal cue in the physical, social, or psychological [academic or clinical] environment that threatens the equilibrium of an individual" (Gray-Toft & Anderson, 1981, p. 12). American stress research pertinent to this review examined levels of role stress and sources of that role stress. The major role stressors reported by students in quantitative studies were the amount of material to be learned (Junious, 2008; LeDuc, 2010; Oermann & Lukomski, 2001) and fear of passing medications and making a medication error (Oermann & Lukomski). Qualitative studies of role stress found that clinical evaluations, procedures, and new rotations induced role stress as well (Shipton, 2002). Many students feel overwhelmed, unprepared, and

overworked (Magnussen & Amundson, 2003). This sentiment was echoed in the graduate nurse literature as well (Casey, Fink, Krugman, & Propst, 2004; Fink, Krugman, Casey, & Goode, 2008; Oermann & Garvin, 2002; Pellico, Brewer, & Kovner, 2009).

Qualitative studies were found that examined the issues of acculturation and role stress in nursing students; however, no quantitative studies with nursing students were found. No studies that examined acculturation and role stress in new graduate nurses were found; therefore, the goal of this secondary analysis is to assess the relationship between acculturation levels of student nurses and their role stress experienced in nursing school and in their first two years in professional practice.

Rationale for the Study

Student Nurses

The typical nursing student in Texas (TX) is a non-Hispanic Caucasian female less than 25 years old (TCNWS, 2010). While the general population of Texas is 46% Caucasian, 38% Hispanic/Latino, and 11.5% African American, the student nurse population has disproportionately fewer Hispanic/Latinos at 24%, and more Caucasians (50%) and African Americans (15%;TCNWS).

By the year 2042, national population projections indicate minorities will comprise 56% of the population; by 2050, Hispanic population projections indicate they will comprise 30% of the United States (US) population (US Census Data, 2008). To keep up with changing demographic trends, the diversity of the nursing population must increase.

New Graduate Nurses

A new graduate nurse is a graduate nurse in the first 2 years of his/her career (Wolff, Pesut, & Regan, 2010). Based on data from the American Association of Colleges of Nursing (AACN), the typical graduate nurse is female (90%) and White (75%), with African Americans comprising 14% of graduate nurses, Hispanics 5.6 %, and Asian or Pacific Islander almost 5% (Fang, Tracy, & Bednash, 2010).

A random sampling of new registered nurses (RNs) in the US that had graduated within 18 months of the survey ($N = 3266$) showed that the average new RN was 32.3 years old ($SD = 8.6$), White (82%), married (60%), spoke English as a first language (90%) and female (91%; Kovner, Brewer, Fairchild, Poornima, Hongsoo, & Djukic, 2007). African Americans comprised 7.5% and Asians comprised 5.4% of the sample; no other population specifics were reported. Ninety two percent were staff nurses, 84% were working in hospitals, and 26% worked in an intensive care or step-down unit (Kovner et al.). New graduate nurses in TX are comprised of 54% non-Hispanic Caucasian, 12% African American, and 23.5% Hispanic (TCNWS, 2010). The overall nursing profession in TX is 66% non-Hispanic Caucasian, 10% African American, and 12% Hispanic (TCNWS).

This study is important to nursing for several reasons. Firstly, there is a small amount of nursing literature available regarding acculturation and language use. There are studies with ESL, foreign-born, and ethnically diverse students but no such research exists with new nurse graduates. No studies have followed ESL nursing students through

their upper level nursing education and through their first two years in professional practice.

Secondly, a diverse nursing workforce means diverse nursing students; it is essential to support these students regarding acculturation issues such as language and communication difficulties as they become part of the nursing workforce (Amaro, Abriam-Yago, & Yoder, 2005; Gardner, 2005a; Gardner, 2005b). Support is a factor in student retention and success, and successful students can become successful nurses (Amaro et al.; Gardner, 2005a; Gardner, 2005b).

Thirdly, a healthy nursing workforce is essential to enable nurses to meet the demands placed on them. Although the health effects per se are beyond the scope of this analysis, stress-related health effects such as fatigue, headache, nausea, and muscle tension are well known (Centers for Disease Control and Prevention [CDC], 2010; American Psychological Association [APA], 2010). The economic impact of stress is enormous; role stress manifested as absenteeism, turnover, and decreased productivity, as well as various other expenses (e.g., insurance) is estimated to cost United States businesses up to \$300 billion annually (American Institute of Stress, 2010). Add to this the burden of becoming acculturated and even the hardiest of personalities could feel overwhelmed. This is the first step in developing interventions to decrease role stress and increase academic and professional success.

Acculturation studies with nursing students were qualitative, thus a gap exists in the quantitative literature regarding acculturation and nursing students. No literature was published that examined role stress in those new nurses who are not well-acculturated to

American English. This study will fill several gaps identified in the nursing research regarding acculturation, role stress, student nurses, and new graduate nurses.

Theoretical Framework

Lazarus and Folkman's transactional theory of stress contributed to the theoretical framework for this analysis. According to transactional theory, transactions between a person and her/his environment lead to changes in both; consequently, as Lazarus and Folkman so elegantly state, "stress is neither in the environment nor in the person but a product of their interplay" (Lazarus & Folkman, 1984, p. 354). The term 'transactional' refers to interactions between at least two variables of interest with changes occurring in the second variable as a result of the interaction with the first variable; the changed second variable then interacts again with the first variable (McInerney, Adam, Campbell, Kamat, & Kelleher, 2009). For example, a student nurse in the clinical environment for the first time may experience stress when giving patient care. This transaction is appraised by the student who deems it stressful or not stressful. If this primary appraisal results in stress, a secondary appraisal of how to cope with the stress is undertaken and the student adapts with behavioral changes. The student is altered by the clinical experience and the clinical situation or environment is altered by the student.

Schumann's acculturation theory states that language acquisition is synonymous with the learner's acculturation to the target language group (Schumann, 1986). The closer an individual is psychosocially to the target language group, the more readily the individual acquires and uses that group's language. Acculturating to the group occurs in the academic and professional environments through shared vocabulary and common

goals. The positive relationship between acculturation to the group and language acquisition/use demonstrates the interchangeability between acculturation and language acquisition/use.

Cummins' theory of language development distinguishes between basic interpersonal communications skills (BICS) and cognitive academic language proficiency (CALP; Abriam-Yago, Yoder, & Kataoka-Yahiro, 1999; Cummins, 1999). Everyday social communication is achieved through BICS while CALP refers to specialized communication that takes place in school or at work (Abriam-Yago et al.). Two years is the typical length of time needed to achieve fluency in BICS while CALP takes 5-10 years (Cummins, 1999). Learning BICS takes place in a context-rich environment, full of stories and meanings of everyday events; complex abstractions are not the norm (Abriam-Yago et al.). The academic environment where CALP is developed consists of many complex and abstract concepts with low-contextual communication an everyday occurrence (Abriam-Yago et al.). Academic language development is a low-contextual and cognitively demanding endeavor, thus requiring 5-10 years to achieve (Abriam-Yago et al.; Cummins).

Students and new graduate nurses' interactions with the academic and clinical environments produce role stress (Casey, Fink, Krugman, & Propst, 2004; Fink, Krugman, Casey, & Goode, 2008; Junious, 2008; LeDuc, 2010; Oermann & Garvin, 2002; Oermann & Lukomski, 2001; Pellico, Brewer, & Kovner, 2009). The lesser acculturated students and new graduate nurses' interactions with those same environments likely produces more role stress due to the additional factor of

communicating in an unfamiliar, technical, and specialized vocabulary, especially given the fact that academic language proficiency takes 5-10 years to develop.

Assumptions

Nursing students and new graduate nurses want to succeed in their goal of becoming a competent registered nurse (RN). Cultural beliefs and values affect every aspect of a person's existence. Individuals are unique in their perception and appraisal of stress, and require a certain level of cognitive ability to perceive and respond to that stress (Lazarus & Folkman, 1984; Rice, 2000). The emotions generated in the potentially stressful encounter are a function of the initial cognitive appraisal (Lazarus & Folkman; Rice).

Hypotheses

There will be a negative relationship between acculturation scores of student nurses and their levels of role stress at the beginning of and during their nursing education.

There will be a negative relationship between acculturation scores of new graduate nurses and their levels of role stress at the beginning of and during the time period when they are new graduate nurses.

There will be a difference in the relationship between acculturation and stress from when participants are students to when they are new graduate nurses.

Definition of Terms

Acculturation

The conceptual definition of acculturation is language use which is a proxy for acculturation level (Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987; Ribas & Lam, 2010; Wallen, Feldman, & Anliker, 2002). The operational definition of acculturation is the score obtained on the Short Acculturation Scale for Hispanics (SASH; Marin, Sabogal, Marin, Otero-Sabogal, and Perez-Stable; 1987).

English as a Second Language

The conceptual definition of English as a second language is a student whose spoken language at home is not English (Guhde, 2003). The operational definition is study participants whose average acculturation score is between 1 and 2.99 as stated by Marin (1995) in the scoring instructions of the SASH.

Student Nurse

The conceptual definition of a student nurse is an individual "formally engaged in learning" who is enrolled in a nursing program (Webster's College Dictionary, 1995, p. 1326). The operational definition is junior and senior baccalaureate nursing students at Texas Woman's University (TWU) who were part of the cohort of students from the class of 2008.

New Graduate Nurse

The conceptual definition of new graduate nurse is "recent nurse graduates with two years or less of experience in providing direct client care" (Wolff, Pesut, & Regan, 2010, p. 187). The operational definition is former students in the study cohort of the

TWU class of 2008 that graduated from TWU with a baccalaureate in nursing who are now practicing nurses.

Student Nurses' Role Stress

The conceptual definition of student nurses' role stress is an "event which aroused one's feelings in a negative way" (Beck & Srivastava, 1991, p. 129). The operational definition is the score on the Student Nurse Stress Index (Jones & Johnston, 1999).

Nurses' Role Stress

The conceptual definition of nurses' role stress is "internal cue in the physical, social, or psychological environment that threatens the equilibrium of an individual" (Gray-Toft & Anderson, 1981, p. 12). The operational definition is the score on the Expanded Nurses' Stress Scale (French, Lenton, Walters, & Eyles, 2000).

Limitations

A secondary analysis is limited by the data at hand. Self-reported data has an inherent risk of response bias; responses may be a reaction to the subject matter of the question rather than the respondents' actual experience with the subject matter (Polit & Beck, 2008). Results could also reflect a social desirability response bias with responses that reflect "the right answer" instead of an honest answer based on the respondents' own experiences (Polit & Beck). Scaled instruments may also reflect a high degree of extreme answers such as "strongly disagree" or all yes or no answers (Polit & Beck). Participants responded to approximately 12 instruments during the parent study which may impact the results. The respondents were student nurses in southeast Texas so results may not be generalizable to other regions of the USA.

Summary

Increased globalization necessitates increased diversity of the nursing profession. For those not highly acculturated to American English, nursing and nursing school may be extraordinarily difficult and can lead to excessive role stress. Research concerning the relationship between acculturation and role stress in nursing students and new nursing graduates may facilitate nursing's diversification as the first step in developing interventions to decrease role stress and increase academic and professional success.

CHAPTER II

REVIEW OF LITERATURE

This literature review seeks to find, analyze, and synthesize available literature regarding acculturation of student nurses and new graduate nurses as well as role stress studies in that same population. The changing population demographics makes determining the role acculturation plays in the role stress experienced by student nurses and new graduate nurses more urgent in order to have a healthy and multicultural nursing workforce.

A literature search was conducted of the following databases: Academic Search Complete, CINAHL with Full Text, ERIC, Health Source: Nursing Academic Edition, MasterFILE Premier, MEDLINE, MEDLINE with Full Text, PsycARTICLES, Psychology and Behavioral Sciences Collection, PsychINFO, and SocINDEX with Full Text. Search words used were acculturation, English as a second language (ESL), foreign, foreign-born, student nurse, nursing student, new graduate nurses, graduate nurses, new nurses, role stress, and occupational stress. The Student Nurse Stress Index (SNSI), and the Nursing Stress Scale (NSS) terms were searched as well. Inclusion criteria were acculturation studies with student nurse or new graduate nurse populations, and role stress, and occupational stress studies in the same populations; all studies were conducted in the United States (US). Reviews of references for those particular studies also contributed to the search as well as reference lists of several recent dissertations examining nursing students and stress or ESL (Chamberlain, 2007; Goff, 2011; Jensen,

2007; Junious, 2008; Mulready-Shick, 2008; Roe, 2009; Sanner, 2004). Stress intervention studies were excluded because interventions are not relevant to this examination. Other exclusion criteria were studies conducted outside the US, foreign language publications, and unpublished works.

Search results for acculturation and nursing were scant. Acceptable studies included those with ESL, foreign-born, ethnic minority, and international students. These students reported issues related to language and acculturation such as difficulty reading and comprehending assignments (Amaro, Abriam-Yago, & Yoder, 2005; Junious, 2008; Sanner & Wilson, 2008), difficulty with English proficiency and heavy accents (Amaro et al.; Gardner, 2005a; Gardner, 2005b; Junious; Sanner & Wilson; Sanner, Wilson, & Samson, 2002), and translation and issues with American colloquial terms (Amaro et al.; Junious; Sanner & Wilson).

Search results regarding role stress yielded a vast amount of literature from Europe (Burnard et al., 2008; Deary, Watson, & Hogston, 2003; Evans & Kelly, 2004; Jimenez, Navia-Osorio, & Diaz, 2010; Nicholl & Timmins, 2004; Nolan & Ryan, 2008; Tully, 2004), Asia (Yeh & Yu, 2009), and Australia (Chang & Hancock, 2003). American research that met the pre-established criteria was scant, representing a major gap in the literature. Few American studies fit the basic criteria of role stress in student nurses and new graduate nurses (Amaro, Abriam-Yago, & Yoder, 2005; Gardner, 2005a; Gardner, 2005b; Junious, 2008; Sanner & Wilson, 2008; Sanner, Wilson, & Samson, 2002). This literature review examined acculturation and nursing role stress research conducted in the US from 2000 to the present which showed the extent to which role

stress is present in the lives of student nurses and new graduate nurses academically and clinically.

Acculturation

Acculturation is defined as English language use; language use is considered to be a valid proxy for acculturation levels in individuals as determined through psychometric testing (Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987; Ribas & Lam, 2010; Wallen, Feldman, & Anliker, 2002). American research that studied nurses and acculturation were conducted with an ethnically diverse population; several qualitative studies examined experiences of ESL, foreign, minority, and ethnically diverse nursing students (Amaro, Abriam-Yago, & Yoder, 2005; Gardner, 2005a; Gardner 2005b; Junious, 2008; Sanner & Wilson, 2008; Sanner, Wilson, & Samson, 2002).

Junious (2008) used a triangulation approach to examine stress among a purposive sample of 10 foreign-born student nurses at a medium-sized multiethnic university in southeast Texas. The sample was 70% African, 30% Asian; 80% were not employed, 60% were in a committed relationship, and 40% had children in the household. Ninety percent were female; mean age or age range was 29 ($SD = 7.1$). The foreign-born nurses were interviewed using focus groups and interviews to describe the essence of stress they experienced in the baccalaureate nursing program at a culturally diverse university. Language and communication challenges were universal among the students. Reading assignments multiple times, and translating and back translating were used to promote comprehension. American colloquial terminology further complicated assignments as did problems with heavy accents.

Gardner (2005a) conducted a phenomenological qualitative study of 15 ethnic minority nursing students to garner their experiences in a predominantly White university. They ranged in age from 22 to 47, 87% were female, 60% were born outside the US, and all had resided in the US for at least four years. Students commented that their lack of English fluency made them different compared to their White counterparts. English proficiency was an obstacle; they also commented on the need for reading assignments multiple times, challenges with comprehension of written material, and difficulty with written assignments.

Sanner and Wilson (2008) conducted three interviews with each of three ESL students (nine interviews total) to describe their feelings in a baccalaureate nursing program. Two participants were Filipino, one was African, and two were female. They expressed similar difficulties with slow reading, difficulty in comprehension, and needing to have a dictionary at hand to look up unfamiliar words. Heavy accents were also an issue.

Sanner, Wilson, and Samson (2002) interviewed eight international ESL students regarding their experiences in their baccalaureate nursing program. They were all Nigerian women ranging in age from 25 to 48; 75% had prior college experience. They expressed feelings of isolation due to their heavy accents; by being silent they avoided feelings of alienation and discomfort.

Gardner (2005b) used a descriptive case study to delineate factors that influenced a foreign-born student's completion of a baccalaureate nursing program. The student was

a married, 32 year-old East Indian woman. Difficulty expressing herself verbally and poor grammatical skills were the communication barriers that influenced her education.

Amaro, Abriam-Yago, and Yoder (1999) interviewed 17 ethnically diverse RNs to identify their needs and barriers in nursing school as minority students. They had graduated from six to 24 months previously. The sample consisted of eight Asians, four Latinos, two Portuguese, two Africans, and one African American. Almost all stated language was a barrier in their educational endeavor. Translating and back translating were time-consuming. Participants also experienced problems with reading, writing, and communicating with their instructors, both academic and clinical.

These qualitative nursing studies highlight the challenges in communication experienced by student nurses who are not highly acculturated to American English. These challenges include verbal and written communication, and reading comprehension.

Role Stress

American stress research pertinent to this review examined role stress levels and sources of that stress. The major stressors reported by students in quantitative studies were the amount of material to be learned (Junious, 2008; LeDuc, 2010; Oermann & Lukomski, 2001) and fear of passing medications and making a medication error (Oermann & Lukomski). Qualitative studies of role stress found that clinical evaluations, procedures, and new rotations induced role stress as well (Shipton, 2002). Many students feel overwhelmed, unprepared, and overworked (Magnussen & Amundson, 2003). This sentiment was echoed in the graduate nurse literature as well (Casey, Fink, Krugman, &

Propst, 2004; Fink, Krugman, Casey, & Goode, 2008; Oermann & Garvin, 2002; Pellico, Brewer, & Kovner, 2007).

Student Nurses

Junious (2008) in a qualitative study discussed a previously used mixed methods approach with a quantitative analysis of additional study data from 10 foreign-born student nurses enrolled in a nursing and personal stressors study. The analysis was conducted using data obtained from the parent study of this secondary analysis.

Role stress was measured using the Student Nurse Stress Index (SNSI) which measured the sources of stress in nursing students. The 22-item instrument measures sources and levels of stress in 4 domains: *Academic Load*, *Clinical Concerns*, *Personal Problems*, and *Interface Worries*. High scores on the SNSI indicated high stress levels (Junious, 2008).

Academic Load was the highest scoring category ($M = 22.9$, $SD = 9.5$), followed by *Interface Worries* ($M = 22.5$, $SD = 6.2$), *Clinical Concerns* ($M = 18.4$, $SD = 8.1$), and *Personal Problems* ($M = 10.5$, $SD = 3.8$). Two items on the scale had a mean score equal to or greater than four--amount of classwork to be learned and not enough time for my family. Most items scored a mean score of about 2.5. *Academic Load* and *Interface Worries* scored the highest and just above the mid-point of 21 scores with 22.9 and 22.5, respectively. The score for *Clinical Concerns* was 18.4 and *Personal Problems* was 10.5, both lower than the mid-point. While the scores were not indicative of highly stressed individuals, the qualitative portion of the study did uncover unique stressors experienced

by foreign-born students that were not captured by the quantitative instrument (Junious, 2008).

LeDuc (2010) surveyed a purposive sample of 160 undergraduate student nurses completing a pediatric clinical rotation. The sample consisted of traditional and accelerated students. No other information regarding the sample was included in the published article. While the amount of classwork was reported to be the highest stressor, the actual stress measurement was not reported. No other study details pertinent to this review were included in the published article.

Oermann and Lukomski (2001) examined role stress in student nurses in a pediatric nursing clinical course. A convenience sample of 75 nursing students from 12 nursing programs in the Midwest (randomly chosen) completed a modified Pagana Clinical Stress Questionnaire (CSQ). The modified CSQ contained at least 26 items including 6 open-ended questions, a 20-item inventory of emotions, and an unknown number of items in which the degree of stress and the degree of challenge were rated on a scale from one (none) to four (a great deal). Validity and reliability were calculated and confirmed in previous research; the coefficient alpha for this study was .85. A comparison group of nursing students ($n = 383$) were enrolled in medical-surgical, maternity, psychiatric, community health, and foundations of nursing clinical courses. The mean age of the sample was 30.7 years ($SD = 6.4$, range 22-48). Baccalaureate nursing students comprised 53% of the sample (40/75).

Overall clinical stress was reported to be moderate ($M = 2.44$, $SD = 1.17$) with the most stressful events (delineated through the open-ended questions) being fear of giving

medications and making a medication error, and amount of material to learn. This moderate stress level was similar to the comparison group of nursing students in other clinical courses ($M = 2.25$, $SD = 1.07$). Fear and disappointment were the most frequent emotions associated with elevated stress scores ($r = .65$, $p = .0001$; $r = .51$, $p = .0001$). Correlations were also reported between elevated stress levels and less stimulation and confidence in the clinical environment ($r = -.37$, $p = .001$; $r = -.35$, $p = .003$).

The qualitative literature in stress research completes the representation of role stress in student nurses in American research. Focus groups and individual interviews with follow up interviews ($n = 10$) were utilized in the phenomenological portion of Junious' (2008) study to further explore the stress experienced by foreign-born student nurses in a baccalaureate program. An overarching theme of desiring value and acceptance was uncovered with subthemes of language issues and stereotyping reflecting a pattern of cultural ignorance. Communication challenges were experienced by all participants; the most notable were the assimilation of reading assignments, speaking with an accent, and understanding colloquial terminology used in the US.

Shipton (2002) also conducted a qualitative study of nursing student role stress that focused on clinical issues. She interviewed 16 senior nursing students in her grounded-theory examination of stress. The population sample had a mean age of 24.6 (range 21-36) years; half of them lived on campus, 75% were single, and 69% had no previous nursing experience. An open-ended, semi-structured face-to-face interview was conducted as well as a brief follow-up interview to clarify and validate the data. The same interviewer conducted all of the interviews ensuring reliability.

Actions of clinical faculty, nursing staff, and peers in addition to nursing procedures, preparing for clinical assignments, and new clinical rotations were the major categories of stress identified in the interviews. Clinical evaluations, incompetence, and observation by the clinical instructor induced stress in students. Negative attitudes of nursing staff and competition between classmates were also sources of stress in students. The students felt a need to have more time in the hospital environment so they could obtain more technical skills. The amount of time spent in writing care plans was also stressful for some students (Shipton, 2002).

Magnussen and Amundson (2003) interviewed a convenience sample of 12 student nurses to examine their experiences as students. Nine students were female, with six Asians and six Caucasians. No further demographic data was published. The students reported feeling overwhelmed by what they needed to know. They were overworked both clinically and academically, frustrated with what they considered "busy work" that did not increase their practical knowledge. Feeling unprepared was a common theme.

New Graduate Nurses

The amount of research regarding the role stress of new graduate nurses is about equal to that of the student nurse data. Role stressors for new graduate nurses are primarily clinical; aside from the procedures and skills, the struggle between dependence and independence, frustrations with the work environment, lack of confidence, making mistakes, and communication difficulties were the more common stressors (Casey, Fink,

Krugman, & Propst, 2004; Fink, Krugman, Casey, & Goode, 2008; Oermann & Garvin, 2002; Pellico, Brewer, & Kovner, 2007).

New graduates have reported their struggle with becoming an independent practitioner while at the same time depending on more experienced nurses for guidance and advice (Casey, Fink, Krugman, & Propst, 2004). The theory- practice gap between the classroom and the clinical area becomes painfully obvious to the new graduate as the role change occurs; a frequent source of role stress is adjusting to the reality of the workplace (Casey, et al; Fink, Krugman, Casey, & Goode, 2008; Oermann & Garvin, 2002; Pellico, Brewer, & Kovner, 2007). New graduates may start their first position with little autonomy and control (Casey, et al; Fink, et al.; Pellico, et al.); confidence levels are commonly low (Casey, et al; Fink, et al.; Oermann & Garvin, 2002). High workloads increase their stress as well as challenges with work prioritization, organization, and delegation (Casey, et al; Fink, et al.; Oermann & Garvin; Pellico et al.). Many fear making mistakes due to the high workloads or inadequate preparation for the role (Fink, et al.; Oermann & Garvin; Pellico et al.). Another common theme repeated throughout the research was mistreatment or lack of respect from other nurses, physicians, and staff (Casey, et al; Fink, et al.; Pellico et al.).

Several studies with new graduate nurses employed a triangulation approach using both qualitative and quantitative research methods (Casey, Fink, Krugman, & Propst, 2004; Fink, Krugman, Casey, & Goode, 2008). Many stressors were reported in the graduates' work environment during the qualitative phases. While the quantitative

studies identified the stressors, only one study actually measured the level of that stress (Oermann & Garvin, 2002).

Oermann and Garvin (2002) surveyed 46 new nurses to gain an understanding of the stressors and challenges of a new graduate nurse. They had been working for 2.7 months (mean) and their mean age was 38.8 years. They had completed either BSN (Bachelor of Science in Nursing; 43%) or Associate Degree (AD; 57%) programs and worked in either critical care, medical/surgical, or other care areas. The new graduates were recruited in person from the three different hospitals in the Midwest; surveys were returned by mail. The Clinical Stress Questionnaire (CSQ) was used to evaluate their stressors and challenges in the clinical environment. The questionnaire consisted of scaled responses ranging from zero (none) to four (a great deal) scoring stressors, challenges, and 20 different emotions experienced during the course of their clinical work. Alpha coefficients in the past for the CSQ were .84 to .85. The alpha coefficient for the current study was not reported.

The mean stress score was 2.30 ($SD = 1.05$) which indicated a moderate amount of stress experienced by the new graduate. The stressors most often experienced were not feeling confident and competent, making mistakes due to increased workload, and being faced with new experiences and surroundings. Other stressors included inconsistent preceptors, being short staffed and not receiving help when needed. A major challenge to the new graduates was in applying their knowledge in the clinical situation. Anxiety was an emotion frequently experienced by the new nurses (Oermann & Garvin, 2002).

Casey, Fink, Krugman, and Propst (2004) surveyed 270 graduate nurses from a nurse residency program in a two-phase study conducted over two years; participants worked in a wide variety of practice areas. The average new graduate nurse in this study was 35 years old or younger with previous healthcare experience. No mean age or sample characteristics were reported. Approximately half of the respondents had more than 3 preceptors during their nurse residency program. Most new graduates had BSNs. The Casey-Fink Graduate Nurse Experience Survey, consisting of 34 scaled items and seven open-ended questions, was used to measure the new nurses' experience in practice. Cronbach's alpha for the original instrument was previously calculated at .78; no alpha was reported for the slightly revised instrument used in the current study. Data was collected from new graduates with zero, three, six, and 12 months participation in the nurse residency program.

The survey section was analyzed using chi square analysis; statistically significant challenges aside from procedures or skills were communicating with physicians ($\chi^2 = 28.15$; $p = .001$ [residents]; $\chi^2 = 25.02$; $p = .003$ [attending physicians]), delegating to ancillary staff ($\chi^2 = 32.78$; $p = .005$), prioritizing and organizing care ($\chi^2 = 25.86$; $p = .002$), and making changes to the careplan ($\chi^2 = 40.30$; $p < .001$). All participants reported comfort with patient and family communication. Confidence and comfort scores showed significant differences as the new graduates gained experience as demonstrated with analysis of variance (ANOVA) and post hoc Scheffe testing ($F = 4.029$, $p = .008$). Mean confidence levels were initially 55.03, reached a nadir of 53.68 at six to 12 months, and rebounded after a year to 57.92 (Casey, Fink, Krugman, & Propst, 2004).

Qualitative analysis of the seven open-ended questions indicated a lack of confidence in skills and knowledge, organizational skill limitations, frustrations with being valued as a nurse, dissatisfaction with pay, and dependence/independence issues. Many graduates had expected to know the answers to their patients' questions; they also grappled with the theory-practice gap regarding patient care. Communicating with physicians was problematic during the first six months of practice; this included attending physicians, residents, and interns. After one year the major stressors were peer relationships with feelings of under-appreciation and work environment problems expressed through feeling "burned out" and dissatisfied (Casey, Fink, Krugman, & Propst, 2004).

Fink, Krugman, Casey, and Goode (2008) performed a qualitative analysis of survey of new nurse graduates participating in a nurse residency program. The Casey-Fink Graduate Nurse Experience Survey consisted of 34 scaled items and eight open-ended questions. They analyzed data generated from a convenience sample of 434 new graduates with zero, three, six, and 12 months participation in a nurse residency program.

The average new graduate nurse was a white 26 year old with a BSN (a requirement of the nurse residency program) and previous experience in health care; the sample population worked in 12 different academic hospitals. Qualitative analysis of data from graduates reporting problems with role transition revealed five themes related to role changes, lack of confidence, workload, fears, and orientation problems. Some new graduates found it difficult to delegate work to ancillary personnel; they wanted to be respected by their coworkers. They had difficulty with organizing their work so they

could gain efficiency. The new graduate improved over time but then received increasingly challenging patients without a preceptor; this explained the increase in stress between six and 12 months of their residency program. Fears included the National Council Licensure Examination (NCLEX) exam, expectations of others, making mistakes, and patient safety concerns (Fink, Krugman, Casey, & Goode, 2008).

Pellico, Brewer, and Kovner (2009) reported on a secondary analysis that queried newly licensed nurses about their work environment. The cross-sectional survey invited comments from the nurses that responded; comments from 612 participants underwent qualitative analysis. The mean age of the sample was 33.4; 93 % of the sample was female and 82% was White.

Five themes emerged from the content analysis. *Colliding expectations* concerned the expectations of the new nurses conflicted with reality in the clinical environment; examples included not being treated like a professional, enduring verbal abuse, and stress regarding the heavy workload. *The need for speed* included being taken off orientation early and pressure to be fast in the clinical setting. *You want too much* included demands from employers, insurance companies and other stake holders; such demands included workload, the amount of documentation required, and mandatory overtime. *How dare you?* involved mistreatment of new nurses by physicians and more experienced nurses that added to the new nurses' stress level. *Change is on the horizon* reflected the optimism of the new nurses for a brighter future for the nursing profession.

No studies were found that pertained to stress in new graduate nurses who are not highly acculturated to American English/US society. The studies examined in this

review clearly demonstrate the role stress experienced by nursing students, and new graduate nurses, both in the academic and clinical environments. New graduate nurses' stress is a result of staffing shortages, heavy workload, little support, workplace politics, and staffing inadequacies. The transition from student to practitioner is hampered by the same stressful situations. Many new nurses leave or intend to leave their first position due to concerns such as these (Bowles & Candela, 2005). These are unhealthy conditions in which nurses (including students) deliver health care.

Summary

The previous studies clearly indicate that role stress is present in nursing school and continues through the early years of practice. Role stress is likely to continue and acculturation issues could certainly compound the problem. Globalization underscores the importance of increasing knowledge and understanding of acculturation in nursing. A better understanding could lead to future interventions that may decrease the role stress of both students and new graduate nurses. If the nursing profession is to deliver health care to a multicultural population then nursing itself must be multicultural.

The limited American research in nursing regarding acculturation and role stress highlights a gap in the literature. Acculturation studies with nursing students were qualitative only; no quantitative studies were found. There was no literature published that examined role stress in those new nurses who are not well-accultured to American English. This proposed inquiry will fill that research gap and add to current knowledge about acculturation in nursing and its relationship to role stress.

CHAPTER III

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

This study was a secondary analysis of the Nurses and Personal Stressors (NAPS) data, a longitudinal, repeated measures study of a cohort of upper division baccalaureate student nurses at the beginning of their nursing program through their first two years of nursing practice (Malecha, 2010; Malecha, 2008). Data was collected over four years from the baseline data in the fall of 2006 through 2010. The purpose of this secondary analysis was to assess the relationship between acculturation levels of student nurses and their role stress experienced in nursing school and in their first two years in practice.

Setting

Texas Woman's University, whose home campus is located in Denton TX, was the site for the study; however, the campuses in Dallas and Houston were the physical sites of recruitment and data collection. Texas Woman's University was ranked third in the state and in the top 10 nationally for the diversity of the student population by US News and World Report (TWU, 2011). The university had a 46% minority population for the 2009/2010 academic year. The Houston campus is located in a major metropolitan region in southeast TX with an equally diverse population.

Population and Sample

The purposive sample was recruited from Texas Woman's University Junior I nursing students at the beginning of their first semester of nursing from the Houston and Dallas campuses in the autumn of 2006 ($N = 124$; Dallas $n = 53$; Houston $n = 71$). The

following year more students were recruited from the same class to increase the sample size ($N = 132$; Dallas $n = 56$; Houston $n = 76$; Malecha, 2010.). Inclusion criteria were belonging to the class cohort, being at least 18 years old at the time of the study, and reading and speaking English.

Protection of Human Subjects

The parent study was approved by the TWU Institutional Review Board (IRB). Consent was obtained from the participants prior to the interviews (in-person); it was implied by the completion of the written or electronic surveys. Approval for access to the database for this secondary analysis was obtained from Texas Woman's University IRB (Appendix A). Each participant received a numeric identifier to maintain anonymity.

Instruments

Demographic data included in the analyses were age, gender, race/ethnicity, first language spoken (English or English as a second language), country of birth (US born or non-US born), employment and student status (part time or full time). The Short Acculturation Scale for Hispanics (SASH; Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987) was used to assess acculturation levels; this scale queried the student on the language used at home, in their social circles, and in thought (Appendix B). The Student Nurse Stress Index (SNSI; Jones & Johnston, 1999), a scaled instrument, was used to assess role stress in student nurses (Appendix C) and the Expanded Nurses' Stress Scale (ENSS; French, Lenton, Walters, & Eyles, 2000) was used to assess role stress in new graduate nurses (Appendix D). These instruments have also been used in previous research with acceptable validity and reliability scores.

Short Acculturation Scale for Hispanics

Marin, Sabogal, Marin, Otero-Sabogal, and Perez-Stable (1987) developed a 12-item measure of acculturation for Hispanics to aid in detecting individual differences as well as assessing its relationships to mental health status, social support, substance use, risk of disease or suicide, and political and social attitudes. A total of 591 Hispanics and non-Hispanic whites were surveyed; 160 of 363 Hispanics were Mexican American, 21 were Cuban Americans, 145 were Central Americans, and 7 were Puerto Ricans. The remaining 30 were classified as "Other Hispanics". Seventy percent were foreign born but had been living in the US for an average of 14.7 years. They ranged in age from 15 to 75 years and 62% were female.

Respondents answered a 16 page questionnaire that covered such variables as language proficiency, language preference, and preferred ethnicity of personal contacts. Respondents indicated their preference on a scaled instrument that ranged from "Very Latin/Hispanic" to "Very American". A Spanish version was developed simultaneously (Marin et al., 1987).

An exploratory factor analysis was conducted on the Hispanic as well as the non-Hispanic responses in order to group like items of the instrument. Like items in an exploratory factor analysis reflect the dimensions of acculturation for Hispanics and non-Hispanics (Polit & Beck, 2008). Three factors were identified that fit both groups. In the Hispanic scale, Language Use and Ethnic Loyalty subscale caused 54.5% of the variance, Media subscale accounted for 7% of the variance and Ethnic Social Relations subscale caused 6.1% of the variance. The factors are the same for the non-Hispanic version

although in different amounts; Language Use and Ethnic Loyalty subscale caused 40% of the variance, Media subscale accounted for 10.3% of the variance and Ethnic Social Relations subscale caused 14.1% of the variance. Twelve items were identified that had similar factor structures for the groups (Marin et al., 1987).

The reliability alpha coefficient is an indication of the consistency of measurements taken by an instrument (Polit & Beck, 2008). The twelve common items of the Marin acculturation instrument had an alpha coefficient of 0.92, which is to say, quite accurate; the coefficient has a possible range of +1.00 to -1.00. The individual factors alpha coefficients were 0.90 for Language, 0.86 for Media, and 0.78 for Ethnic Social Media (Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987).

The validity of an instrument is the extent to which the instrument measures what it is in reality supposed to be measuring (Polit & Beck, 2008). Validity was established through correlational analysis of the relationships between the total and subscale scores and the respondent's generational level, number of years living in the US, and the self-acculturation scores. All correlations were significant at $p < 0.001$. The correlation coefficient between the acculturation scale and the generation of the respondent was 0.65. The correlation coefficients between the three factors score and the generational level was 0.69 for Language, 0.43 for Media, and 0.53 for Ethnic Social Relations. A *t*-test analysis also demonstrated that the scale discriminates between generations via the total acculturation scores. Acculturation scores of first generation Hispanics ($M = 2.37$) were significantly lower than the scores of the second generation ($M = 3.42$) Hispanics ($t(303) = 13.74, p < 0.001$). The generational scores of the first five items of the Language

subscale were significantly different as well ($t(346) = 17.34, p < 0.001$). Likewise, self acculturation and scale-item scores had significant correlations ($0.76, p < 0.001$) as did the self acculturation scores with the first five items of the Language scale ($0.74, p < 0.001$). In addition to discrimination between generations, the scale discriminates between Hispanic and non-Hispanic on all the items as well as the first five items of the Language subscale. On the 12 items of the scale, non-Hispanics' scores were significantly higher ($M = 4.63$) than Hispanics' ($M = 2.72$) scores ($t(455) = 26.42, p < 0.001$). Non-Hispanics' scores were significantly higher ($M = 4.87$) than Hispanics' ($M = 2.35$) scores ($t(582) = 36.27, p < 0.001$) on the first five items of the Language subscale as well (Marin et al., 1987).

These validation and reliability analyses showed that the first five items of Marin's Acculturation scale could be used as a short acculturation scale in itself. This short form of the acculturation scale was used in the present study to indicate nursing students' acculturation levels. The SASH has been validated in a multitude of studies with different populations including adolescents, Asian Americans, and ESL students (Marin, 1995; Salamonson, Everett, Koch, Andrew, & Davidson, 2008). Childhood language usage can be omitted from the scale without decreasing its reliability or validity (Marin).

Student Nurse Stress Index

The Student Nurse Stress Index (SNSI) is an amended version of the Beck and Srivastava Stress Inventory (BSSI) which measured the sources of stress in medical, dental, and nursing students (Beck & Srivastava, 1991). Jones and Johnston further

refined the instrument in 1999 (Jones & Johnston, 1999). The BSSI supplied 43 items for the amended instrument while a literature search supplied 15 more. Three hundred twenty first year student nurses tested the instrument in the initial study and 195 student nurses at similar points in their education participated in the second study. A principal components analysis of the amended scale collapsed into 12 factors with 41 items loaded accounting for 24.9% of the variance. The scree plot confirmed four factors, *Academic Load*, *Clinical Concerns*, *Personal Problems*, and *Interface Worries*; Cronbach's alpha was 0.68. *Academic Load* was responsible for 60% of the variance, *Clinical Concerns* 20%, *Personal Problems* 9%, and *Interface Worries* 11%. The characteristics of the first study group was a mean age of 24.9 years ($SD = 6.8$), 80% female, 61% married, and 50% living at home. A principal components analysis confirmed the four factor structure in a second study accounting for almost 50% of the variance. *Academic Load* was responsible for 50% of the variance, *Clinical Concerns* 27%, *Personal Problems* 14%, and *Interface Worries* 9%. Cronbach's alpha for all factors in the first study was greater than 0.70 except *Personal Problems* which was 0.68. Cronbach's alpha in the second study was greater than 0.70 for all factors. The characteristics of the second group was a mean age of 24.4 years ($SD = 6.8$), 85% female, 18% married, and 40% living at home.

Concurrent validity was demonstrated by correlations with the General Health Questionnaire 30 (GHQ 30), and the Marlowe-Crowne Social Desirability scores. Discriminant validity was established by comparing distressed and non-distressed students on the SNSI subscales and total adjusted mean scores with gender and social desirability as covariates. All differences were significant in the first study with $p <$

0.0005 in all factors (except *Clinical Concerns* [$p = 0.02$]) and with the total SNSI score. All differences were significant in the second study with $p < 0.0005$ in all factors (except *Academic Load* [$p = 0.001$] and *Clinical Concerns* [$p = 0.009$]) and with the total SNSI score. A reliability coefficient was reported by Junious (2008) of .92 in a subsequent study using the SNSI.

Expanded Nursing Stress Scale

The Nursing Stress Scale (NSS) was developed to measure sources and frequency of nursing role stress (i.e., within the hospital; Gray-Toft & Anderson, 1981). The scale consists of 34 stressful scenarios rated for their frequency on a scale ranging from never (zero) to very frequently (3). The scenarios were drawn from a literature review and interviews with health care personnel. Nurses were chosen from five different units in order to represent their stress experiences within a wide variety of patients and environments. Factor analysis was conducted on the subscales and identified seven stress components. The seven components included nursing work load, death and dying patients, inadequate preparation to deal with emotional needs, lack of staff support, uncertainty concerning treatment, conflict with physicians, and conflict with other nurses and supervisors (Gray-Toft & Anderson, 1981).

Nursing Stress Scale test-retest reliability was tested with a repeat measurement of 31 nurses two weeks after the initial test. The test-retest coefficient was 0.81; four of the subscales' internal consistency scores were greater than 0.70. Internal consistency was calculated using four measures: the Spearman-Brown coefficient was 0.79, Guttman split-half coefficient was 0.79, coefficient alpha was 0.89, and a standardized item alpha

was 0.89. Internal consistencies for five of the seven subscales were greater than 0.70 (Gray-Toft & Anderson, 1981).

The Nursing Stress Scale was validated by correlating its measures with that of anxiety (trait and state) since anxiety and stress are related concepts. Trait anxiety was measured with the Institute for Personality and Ability Testing (IPAT) Anxiety scale, a 40-item scale with questions relating to issues such as worry, tension, and low self control. State anxiety was measured with the Affect Rating Scale which has 30 bipolar adjectives designed to detect anxiety change. Job satisfaction was also hypothesized to be a proxy indicator with which to correlate stress levels on the premise that high levels of stress would decrease job satisfaction. Trait and state anxiety both correlated to the NSS (correlation coefficients 0.39 and 0.35, respectively) but not job satisfaction (-0.15; Gray-Toft & Anderson, 1981). Subsequent studies have reported alpha coefficients of .89 to .93 (AbuAlRub, 2004; AbuAlRub, 2006; Lambert et al., 2004).

The Expanded Nursing Stress Scale, with 57 items, was developed from the NSS to more accurately represent the sources of stress as times changed (French, Lenton, Walters, & Eyles, 2000). Additional items were added based on findings from focus group discussions with RNs and licensed practical (vocational) nurses that worked in a variety of clinical specialties (French, Lenton, Walters, & Eyles). Factor analysis resulted in the 57-item instrument and all factor loadings were significant at 0.05. Cronbach's alpha scores for the nine factors ranged from 0.65 (Discrimination) to 0.88 (Problems with supervisors). The final instrument was tested in a random sample of 2280 nurses across a variety of specialties and work settings. Concurrent criterion-

related validity was established with modest correlations with the Overall Life Stress scale. Construct validity was established with positive correlations with an author-derived index that assessed health problems of nurses.

Data Collection

The researcher asked for the release of data that was collected over four years from the baseline data in the fall of 2006 through 2010. Acculturation and baseline stress scores were obtained with the initial data collection in the autumn of 2006. Subsequent role stress scores were collected at the end of each semester and then one and two years after the May 2008 graduation. The dataset did not contain any student identifiers and was maintained in the researcher's home office in a password-protected personal computer. Demographic data was obtained from the parent study to describe the sample. Demographic data included in the analyses are age, gender, race/ethnicity, first language spoken (English or English as a second language), country of birth (US born or non-US born), employment and student status (part time or full time).

Treatment of Data

The dataset contained the junior I nursing student responses to the SASH, SNSI, and the NSS over the four years of the study. Demographic data was analyzed using descriptive statistics such as means and standard deviations to characterize the sample. Descriptive statistics was also used initially to calculate the responses on the study instruments. Pearson product moment correlation was used to test the stated hypotheses by quantifying the relationships between acculturation levels of student nurses and their role stress levels during their final 2 years of nursing school and their first two years as

practicing nurses. The correlation coefficient r quantified the strength of the relationship between these study variables as well as determined the direction of the relationship (Munro, 2005). Alpha was set at 0.05 for significance. All data was analyzed using Statistical Package for the Social Sciences (SPSS).

Summary

This study was a secondary analysis of data obtained from Junior I nursing students at the beginning of nursing school and throughout their first two years in practice. This analysis detailed their role stress levels throughout nursing school as related to their acculturation levels. Instruments chosen to measure these variables were the SASH, SNSI, and the ENSS, measuring acculturation levels, student nurse stress, and nurses' role stress. The scores were assessed with the Pearson product moment correlation r to determine the strength and the direction of the relationships.

CHAPTER IV

ANALYSIS OF THE DATA

The increasing diversity of the nursing profession, including the student population, can produce significant communication and language barriers (Amaro, Abriam-Yago, & Yoder, 2005; Gardner, 2005a; Gardner, 2005b; Junious, 2008; Sanner & Wilson, 2008; Sanner, Wilson, & Samson, 2002). Role stress associated with nursing and nursing school is likely compounded by these challenges. Acculturation equates psychometrically with language use (Schumann, 1986) so this study explored the relationship between acculturation and role stress in a cohort of nursing students at the start of their upper division nursing courses and continuing through their first two years in professional practice. Three hypotheses were tested using this data: (a) there will be a negative relationship between acculturation scores of student nurses and their levels of role stress at the beginning of and during their nursing education; (b) there will be a negative relationship between acculturation scores of new graduate nurses and their levels of role stress at the beginning of and during the time period when they are new graduate nurses; (c) there will be a difference in the relationship between acculturation and role stress from when participants are students to when they are new graduate nurses.

This chapter describes the original study from which the data was obtained for this secondary analysis. The statistical analysis is described as well as the characteristics of the sample, followed by instrument scoring procedures, the results of the study, and a summary of the findings.

The first two hypotheses were tested by conducting a Pearson's product moment correlation between acculturation and role stress in student nurses and new graduate nurses. The third hypothesis was tested by calculating the differences between the two correlation coefficients from the first two hypotheses.

Description of the Sample

Sample participants were 89% female (117), 58% minority, and born in the US (69%). Mean age of the sample was 26.4 with 65% of the students less than 30 years old. Native English speakers comprised 58% (77) of the sample and 42% (55) were non-native English speaking. Further breakdown of ethnicity revealed that 20.5% were Asian, 20% were African, and 18% were Hispanic; 42 % were Caucasian. Most students were fulltime (91%) and 41% were employed. Employed students most often worked between 10 and 24 hours per week (55%; see Table 1.)

Table 1.

Demographics

	N (132)	%
Female	117	89
Male	15	11
White	55	42
Asian	27	20.5
African	26	20
Hispanic	23	18
Native English speaker	77	58
Fulltime student	120	91
Employed	54	41

The original study was a longitudinal, repeated measures, 4 year cohort study of student nurses that began in 2006 at Texas Woman's University, Houston and Dallas campuses. Participants were recruited with announcements by the researchers, email announcements, and flyers. Initially 124 participants were recruited but additional recruiting the next semester from the same student nurse class resulted in 132 participants, 76 from the Houston campus and 56 from the Dallas campus. Baseline interviews were conducted in the fall of 2006 in a private area of TWU such as an office or a conference room; interviews lasted about one hour and follow up interviews lasted approximately 30 minutes. Follow up interviews were conducted at the completion of

each semester. Student interviews were conducted face-to-face; new graduate nurses completed online surveys.

Participants were followed whether or not they remained a student at TWU. At graduation in May 2008 data were collected on 91% (120) of the sample; 65% (86) of the cohort graduated and 13 % (17) failed/dropped out of the program. May 2010 data collection indicated an 86% (114) response rate and 18 (14 %) failed/dropped out of the program.

Instrument Scoring

The SASH was scored by summing the individual items and dividing by five for a mean score. Low acculturation was defined by the instrument authors as an acculturation score between 1 and 2.99 (Marin, 1995). Highly acculturated individuals have a mean score of greater than three.

The SNSI total score was the sum of all items thereby indicating the amount of stress with which the students cope (Jones, 2006). Totals could range from 22 to 110. High scores indicate a greater amount of stress. The items were coded into the subscales *Academic Load*, *Clinical Concerns*, *Personal Problems*, and *Interface Worries* which were scored in a similar fashion (Jones & Johnston, 1999). *Academic Load*, *Clinical Concerns* and *Interface Worries* had scores ranging from 7 to 35; *Personal Problems'* score could range from 4-20 (Jones).

The *Academic Load* consisted of items 1, 2, 3, 8, 14, 18, and 20 (Jones, 2006). The sum of these items quantified stressors relating to classroom learning such as exams, assignments, and grades (Jones & Johnston, 1999). *Clinical Concerns* was the sum of

items 13, 14, 16, 17, 18, 19, and 20 (Jones). Clinical issues such as relations with the staff and student challenges within the clinical environment were measured (Jones & Johnston). *Personal Problems*, those issues that the student faced outside of the academic and clinical realms, consisted of items 9, 10, 11, and 12 (Jones; Jones & Johnston). *Interface Worries*, items 4, 5, 6, 7, 15, 21, and 22, quantified the stressors of the students' nonspecific concerns of being in nursing school/secondary education (Jones; Jones & Johnston). These worries could be those of any university student.

The ENSS items were summed for a total nurses' stress score ranging from 57 to 228. Higher scores indicate a higher level of stress. The items rated the frequency of stressful encounters of the nurse using a scaled response from 1 to 4 (Never Stressful, Occasionally Stressful, Frequently Stressful, and Always Stressful) and Does Not Apply. Not applicable answers were given a score of 1 with the rationale that if they have not encountered the stressful event then it has been "never stressful" for them. Missing items were given a score of one with the rationale that if it was left blank then it has been "never stressful" for them. The items were coded into nine factors: *Death and Dying* (items 1, 9, 17, 27, 37, 47, and 53); *Conflict with Physicians* (items 2, 10, 28, 38, and 48); *Inadequate Preparation* (items 3, 11, and 19); *Problems with Peers* (items 4, 12, 20, 21, 22, and 50); *Problems with Supervisors* (items 5, 30, 31, 40, 46, 49, and 54); *Workload* (items 13, 23, 32, 41, 42, 45, 51, 55, and 57); *Uncertainty Concerning Treatment* (items 6, 14, 18, 24, 29, 33, 36, 39, and 43); *Patients and their Families* (7, 15, 25, 34, 35, 44, 52, and 56); *Discrimination* (sexual, ethnic, and gender; items 8, 16, and 26; Lenton, 2006). Factor items were summed for a stress score for that particular factor.

Scatterplots of the data did not appear to show any relationships between the variables. An influence analysis using a standardized difference in fit statistics was conducted to detect any outliers in the results; all data points were well within one standard deviation of the mean.

Findings

The first hypothesis stated: there will be a negative relationship between acculturation scores of student nurses and their levels of role stress at the beginning of and during their nursing education. This was tested by obtaining correlations between acculturation scores and the scores on the SNSI.

Acculturation (language use) was measured with the baseline scores at the first data collection point. The mean score on the SASH was 4.3 ($SD = 0.88$). Most of the sample had high acculturation levels (90%); 10% (13) met the criteria defining low acculturation levels. Cronbach's alpha was .884.

The SNSI measured the stress experienced by the student nurses. This index was obtained at the beginning of the first semester of upper level nursing courses for baseline scores, at the end of the first semester of courses (junior 1), and thereafter at the end of the each semester (junior 2, senior 1, and senior 2). Scores were calculated by adding the individual scores and calculating the mean for each particular scale. Cronbach's alpha for the SNSI was .892.

The mean scores for the SNSI total score at baseline was 52.6 (15.4), junior (jr.) 1 was 60.2 (15.1), junior 2 was 56.4 (13.5), senior (sr.) 1 was 56.8 (16.0), and senior 2 was 54.8 (15.5). Scores for the individual scales are listed in Table 2. The highest rated items

on the SNSI at baseline were *amount of classwork material to be learned, examinations and/or grades, lack of free time, and difficulty of classwork material to be learned.*

Subsequent measurements showed *classwork material to be learned, examinations and/or grades, and lack of free time* were in the top three 100% of the time.

All SNSI scores peaked at the junior 1 time period. They decreased at the end of the junior spring semester (junior 2) and increased again at the end of the first senior semester (senior 1) with a subsequent decrease after the final semester (senior 2). At all measurements *Academic Load* was the highest scoring subscale followed by *Interface Worries*, and *Clinical Concerns* (except the junior 1 measurement when *Clinical Concerns* was the lowest scoring [mean] subscale). The *Academic Load* scores were always less than two points away from the midpoint score of 21. *Interface Worries* reached the midpoint once at the end of junior 1 while *Clinical Concerns* were always well below midpoint (Table 2).

Table 2.

Student Nurse Stress Index (SNSI) Scores over Time

	Baseline (<i>n</i> = 124) <i>M</i> (<i>SD</i>)	Jr.1 (<i>n</i> = 132) <i>M</i> (<i>SD</i>)	Jr.2 (<i>n</i> = 121) <i>M</i> (<i>SD</i>)	Sr.1 (<i>n</i> = 115) <i>M</i> (<i>SD</i>)	Sr.2 (<i>n</i> = 114) <i>M</i> (<i>SD</i>)
SNSI	52.6 (15.4)	60.2 (15.1)	56.4 (13.5)	56.8 (16.0)	54.8 (15.5)
Academic	20.4 (6.6)	22.9 (5.3)	21.7 (5.1)	21.6 (6.2)	20.4 (6.2)
Clinical	14.7 (6.2)	15.1 (5.9)	14.0 (5.1)	14.3 (5.1)	14.2 (5.6)
Personal	8.1 (3.4)	8.7 (3.6)	8.0 (3.4)	7.9 (3.2)	7.6 (3.5)
Interface	16.8 (5.5)	21.0 (5.9)	19.8 (5.7)	20.3 (6.8)	19.3 (6.2)

Significant negative relationships existed between acculturation and *Clinical Concerns* ($r = -.268, p = .001$), on the baseline measurement; *Clinical Concerns* ($r = -.261, p = .001$), and *Interface Worries* ($r = -.241, p = .003$) on the jr.1 measurement; Total ($r = -.329, p < .001$), *Academic Load* ($r = -.250, p = .003$), *Clinical Concerns* ($r = -.336, p < .001$), and *Interface Worries* ($r = -.294, p = .001$) on the jr.2 measurement; *Clinical Concerns* ($r = -.254, p = .003$) on the sr.1 measurement; and Total ($r = -.269, p = .002$) and *Clinical Concerns* ($r = -.351, p < .001$) on the sr.2 measurement. See Table 3 for the complete correlation data.

Table 3.

Acculturation and SNSI Correlations

SNSI	Baseline	Jr.1	Jr.2	Sr.1	Sr.2
Total	-.215	-.214	-.329**	-.203	-.269*
<i>Academic Load</i>	-.150	-.144	-.250*	-.163	-.192
<i>Clinical Concerns</i>	-.268**	-.261**	-.336**	-.254 *	-.351**
<i>Personal Problems</i>	-.104	-.068	-.213	-.142	-.131
<i>Interface Worries</i>	-.199	-.241*	-.294**	-.168	-.222

Jr.1 = first junior semester, Jr.2 = last junior semester, Sr.1 = first senior semester, Sr.2 = last senior semester.

Note: * $p \leq 0.00625$; ** $p \leq 0.001$.

The second hypothesis stated: there will be a negative relationship between acculturation scores of new graduate nurses and their levels of role stress at the beginning of and during the time period when they are new graduate nurses. This was tested by obtaining correlations between acculturation scores and the scores on the ENSS. The ENSS measured the frequency of stressful events in the new graduate nurses. These measurements were obtained one year and two years after graduation. Scores were obtained by summing the appropriate items for the nine different factors. Cronbach's alpha for the ENSS was .970.

Factor 9, Discrimination, was the only factor that correlated significantly with acculturation ($r = -.256, p = .004$) for the first year nurses. There were no significant relationships between acculturation and nursing role stress in the cohort of second year

nurses (Table 4). The mean Total scores were 100.0 (29.4) after year 1 and 101.2 (29.5) after year 2 (Table 5). These are well below the midpoint of 142.5 and are considered occasional/mild stress. The top five ranked items in the first year of practice (and their subsequent ranking in the next year) were *fear of making a mistake* (7), *no time to complete tasks* (2), *criticism by a physician* (10), *having to work through break* (8), and *conflict with a physician* (26). The top five ranked items in the second year of practice (and their previous ranking in the first year) were *not enough staff* (10), *no time to complete tasks* (2), *unpredictable staffing and scheduling* (8), *patients' families making unreasonable demands* (15), and *unreasonable demands* (7).

Table 4.

Acculturation and ENSS Correlations

	Year 1 (<i>N</i> = 106)	Year 2 (<i>N</i> = 108)
ENSS Total	-.087	-.058
Factor 1: Death and Dying	.081	.055
Factor 2: Conflict with Physicians	-.045	-.068
Factor 3: Inadequate Preparation	.036	-.042
Factor 4: Problems with Peers	-.165	-.193
Factor 5: Problems with Supervisors	-.171	-.126
Factor 6: Workload	-.085	.050
Factor 7: Uncertainty Concerning Treatment	-.056	-.077
Factor 8: Patients and their Families	-.105	-.040
Factor 9: Discrimination	-.256*	-.232

* $p < .00625$

Table 5.

ENSS Scores over Time

	Year 1 (<i>n</i> = 106) <i>M</i> (<i>SD</i>)	Year 2 (<i>n</i> = 108) <i>M</i> (<i>SD</i>)
ENSS Total	100.0 (29.4)	101.2 (29.5)
Factor 1: Death and dying	13.0 (4.8)	13.0 (4.4)
Factor 2: Conflict with Physicians	9.4 (3.3)	9.2 (3.2)
Factor 3: Inadequate Preparation	5.8 (2.1)	6.0 (1.8)
Factor 4: Problems with Peers	8.7 (2.9)	9.0 (2.8)
Factor 5: Problems with Supervisors	11.5 (4.5)	12.0 (5.0)
Factor 6: Workload	17.9 (5.8)	18.2 (6.2)
Factor 7: Uncertainty Concerning Treatment	16.3 (5.6)	16.1 (5.1)
Factor 8: Patients and their Families	14.0 (4.6)	14.8 (5.3)
Factor 9: Discrimination	3.6 (1.4)	3.4 (1.0)

The third hypothesis stated: there is a difference in the relationship between acculturation and stress from when participants are students to when they are new graduate nurses. This was tested by calculating the difference between two dependent correlation coefficients.

The t-statistic was calculated from the correlations between acculturation and the final stress scores of the students and the second year stress scores of the new graduate nurses. Calculating the second year scores gives a better representation of the stress

experienced over time by student nurses and new graduate nurses since they have been students for two years at one measurement and nurses for two years at the last measurement. The differences between the groups were significant ($t(104) = 8.05, p = .006$), but small with about 7% shared variance between student stress and acculturation ($r = -.263$) and less than 1% between graduate nurse stress and acculturation ($r = -.058$; Table 6).

Table 6.

Difference between Acculturation Correlation Coefficients

	<i>r</i>	<i>r</i> ²
SNSI	-.263	.0693
ENSS	-.058	.003

Summary of the Findings

There were significant correlations between students' stress levels and their acculturation levels on the clinical subscale of the SNSI. There was one significant correlation between new graduates' stress levels and their acculturation levels on the discrimination subscale of the ENSS. There were significant differences between the students' and nurses' correlations of stress and acculturation but these were quite small.

CHAPTER V

SUMMARY OF THE STUDY

The purpose of this study was to explore the relationship between acculturation and stress in nursing students and new graduate nurses. The findings are partially supported in the literature.

Summary

This study was a longitudinal, repeated measures design that explored stress and acculturation in a cohort of TWU student nurses (class of 2008) over the course of four years. They were surveyed at the beginning of their upper level nursing courses, after each semester, and through the first two years of their practice as professional nurses. The parent study was known as the Nurses and Personal Stressors study (NAPS). The principal investigator approved the secondary analysis and permission was granted for the study by the Institutional Board of Review (IRB) for the protection of human subjects at TWU (Appendix A).

Most of the students were highly acculturated to the English language; however, 10% (13) did meet the criteria for low acculturation. Student stress vacillated throughout nursing school; the peak was at the end of the first semester of upper level nursing courses (jr.1) with a second peak at the end of the first semester of the senior year (sr.1). All scores on the SNSI (the total score and all subscales) peaked at the end of the first junior semester. The correlations between acculturation and clinical stress were significant at all measurements, from the baseline scores to the last measurement at the

end of the senior year. Graduate nurses were occasionally stressed overall and the relationship with acculturation reached significance on Factor 9 (Discrimination) after the first year in practice. There were no significant correlations in the second year of practice.

Discussion

Ten percent of the sample met the criteria for having a low acculturation to the English language. No other studies published have examined acculturation levels in nurses so it is unclear how this compares to other nursing programs.

The Total subscale scores on the SNSI were all below the midpoint of 66. The scores vacillated from semester to semester which has been seen in previous stress research with student nurses (Burnard et al., 2008; Edwards, Burnard, Bennett, & Hebden, 2009; Jimenez, Navia-Osorio, & Diaz, 2010; Lo, 2002; Tully, 2004; Yucha, Kowalski, & Cross, 2009).

Burnard et al. (2008) examined the sources of stress in 1707 student nurses across five countries. Student nurses in Albani-Tirana and the Czech Republic had mean stress levels that increased and decreased (or vice-versa) over each year of study. Likewise, Edwards et al. (2009) showed mean stress levels in student nurses ($n = 136-169$) over their three years of nursing school to have the same pattern of stress as the present study. Stress was measured five times over three years; the stress levels were up at the first measurement after baseline, decreased about 20 months into the program, increased at the beginning of the final year, and decreased at the end of the program. Jimenez, Navia-Osorio, and Diaz (2010) reported variable stress levels from year to year in student nurses

($n = 357$) in five out of nine areas of stress measured. Lo (2002) measured stress over three years of nursing school ($n = 101-120$) and found a similar pattern in the stress of nursing students increasing in the second year and decreasing in the last year of school. Tully reported higher levels of stress in second year students as compared to first year (2004) in a study of stress in psychiatric nursing students ($n = 35$). Yucha, et al. (2009) reported a similar zigzag pattern of stress in the control group of an intervention study conducted in a clinical setting ($n = 79$).

The seemingly random pattern of vacillating stress levels found could be explained by the transactional stress theory which states that stress is a product of the interaction between the student and the environment. The learning environment of nursing school is dynamic with many events and interactions taking place simultaneously. So many interacting variables could result in a random pattern of peaks and troughs; however, as the student learns from the clinical encounters from one semester to another, the stress would presumably decrease. In this instance, the stress was increased at the beginning of the first junior semester and as learning took place the stress decreased, with lower stress levels at the beginning of the next junior semester. The pattern repeated itself in the senior semesters. A new year brought fresh challenges and increased stress levels that decreased in the second semester.

Correlations were found between the Total SNSI and acculturation levels in the last junior semester and the last senior semester. *Academic Load* was significantly correlated with acculturation at the end of the last junior semester. *Interface Worries* and acculturation were significantly correlated at the end of both junior semesters. These

correlations seem to be as variable from year to year as the stress levels. No other studies to date have reported correlation data between role stress and acculturation.

Correlations were also found between *Clinical Concerns* and acculturation levels at all five measurements of the SNSI. There are no previous reports of this finding in the current literature. That *Clinical Concerns* were significantly correlated to acculturation levels at all five data collection points is especially interesting since the *Clinical Concerns* subscale was always well below midpoint and *Academic Load* was close to midpoint at all measurements. The language development theory put forth by Cummins (1999), which states that it takes longer to learn academic language proficiency, helps to explain these findings. The clinical environment is fast-paced with a specialized vocabulary that can be quite intimidating. Several years are required to master a specialized language and these communication challenges appear to compound the stress of those individuals not highly acculturated to the English language.

The highest ranked items over all five measurements were *amount of classwork material to be learned, examinations and/or grades, and lack of free time*. Similar results were reported by Evans and Kelly (2004), Junious (2008), LeDuc (2010), Nicholl and Timmins (2004), Oermann and Lukomski (2001), and Tully (2004).

Tully (2004) conducted a cross sectional survey of 35 psychiatric nursing students' stress and found the highest ranked items of the SNSI were *amount of classwork to be learned, exams and/or grades, and fear of failing*. Junious' (2008) triangulation study of 10 nursing students found amount of classwork to be learned was their highest ranked stressor. Nicholl and Timmins' (2004) study of 70 part time nursing students

showed exams to be their number two stressor. The extensive information to be learned was the number two stressor in Oermann and Lukomski's (2001) examination of 75 student nurses in a pediatric clinical rotation. Evans and Kelly (2004) found exams and the intense amount of work were the top two stressors in their cross sectional survey of 52 student nurses. LeDuc (2010) surveyed 160 student nurses whose number two and three rated stressors were amount of class work material to be learned and exams.

The stress levels of the graduate nurses are mild/occasional with means of 100.0 (29.4) and 101.2 (29.5) in years one and two; this is well below the midpoint of 142.5 and indicates a mild amount stress overall. The limited quantitative research on new graduate nurses (one study) showed a moderate amount of stress in 46 new graduate nurses that had been in practice less than three months (Oermann & Garvin, 2002).

The only significant correlation between the ENSS and acculturation was on the first year Factor 9, *Discrimination* (sexual harassment, gender, and ethnic discrimination). This cohort was very diverse with 58% minority population and the typical 89% female so discrimination is quite plausible. The *Discrimination* subscale was the lowest ranked subscale (mean) of the ENSS for both years.

The top ranked items on the ENSS did not change considerably. Eight out of 10 items were consistently ranked in the top 10 both years. Their ranked means combined (both years) in descending order were: *fear of making a mistake* (2.16), *no time to complete tasks* (2.16), *not enough staff* (2.11), *criticism by a physician* (2.10), *unreasonable demands* (2.09), *having to make decisions under pressure* (2.09), *having to work through break* (2.09), and *unpredictable staffing* (2.07). These values are still well

below the midpoint of 2.5 and rank as mildly or occasionally stressful events for the graduate nurse. Previous research with the ENSS has not been conducted with a graduate nurse population. The NSS was used in a graduate population in an Australian intervention study but scores were not reported as means and the scaled responses were from 1-10 so comparisons could not be made (Brunero, Cowan, & Fairbrother, 2008).

The ENSS showed new graduate nurses to be mildly stressed at work. This is not in agreement with previous research. Missing and not applicable answers impacted the results.

The frequency of the "Does Not Apply" (NA) answers was concerning. Twenty five participants had 10 or more NA answers and this constitutes 19% of the sample. Of these 25 participants, eight had 10 or more NA answers from year to year. Of these eight participants three had decreased their NA answers from 2009 to 2010; this makes sense intuitively in that the more experience that is obtained, the fewer NA answers one would expect. However, five participants either had the same number or an increased number of NA answers. Information regarding shift worked was obtained in the 2009 and 2010 surveys. Of the 25 participants that answered with 10 or more NA answers, 52% worked 12-hour day shifts. One would expect to obtain quite a variety of experience on the busy day shift; however, recent job acquisition could explain a lack of experiences.

An analysis of the questions which had high rates of not applicable or missing answers indicated that perhaps the questions do not pertain to graduate nurses as much as they pertain to more experienced nurses. *A physician not being present when a patient dies, listening/talking to a patient about death, and death of a patient with whom you*

were close are issues with which experience is crucial. A young nurse with little experience may not recognize the patient's need to talk about death; those nurses with more life experience with death would be more likely to recognize that need and would be more likely to develop a bond with a dying patient. Another possibility for the high number of NA answers is their area of specialty; for example, a new nurse working on a surgical unit will likely not have as much experience with death as perhaps would a nurse working in the emergency, intensive care, or oncology departments. *Being in charge with inadequate experience* also had a high not applicable/missing rate. This is not likely to be an issue in a large facility in a major metropolitan area such as Houston but could be in the rural areas where there is more potential for new nurses to be thrust into a charge position. The discrimination statements all had between 30 and 37 not applicable answers. This may be an issue with individuals more likely to experience discrimination such as minority nurses; however, this sample was quite diverse. *Having to organize doctors' work* and *abuse from patients' families* had 23-25 not applicable answers as well. In this day and age it is not expected of nurses to gather charts and make rounds with a physician. Depending on their specialty, nurses may not have a great deal of family contact; for example, nurses in the operating room would likely not be exposed to abuse from families. Some of the issues of 12 years ago (e.g., *having to organize doctors' work*) may have been replaced by new concerns such as the constant level of high acuity patients encountered on a daily basis.

There were also many missing answers on the ENSS in 2009 and 2010.

Approximately 21 % of the sample in 2009 and 63% in 2010 had at least one missing

answer. The survey was online in 2009 and 2010. The respondents were able to leave and resume the survey where they left off. It would not have been possible to lose their place but perhaps with the high number of items in the instrument they became tired and skipped answers. The instrument instructions, despite having a not applicable category, state "(i)f you have not encountered the situation, write '0'." This was not an option in the electronic version; however this statement was included in the online instructions. This certainly could have impacted the total number of missing or not applicable answers. The original purpose of the ENSS was to be useful in many different types of nursing specialties; maybe that has decreased its sensitivity for detecting stress in certain nursing populations. Perhaps new graduate stress is different from the stress experienced by nurses with a longer history of nursing practice.

The issue of the frequency of NA and missing answers has not been previously mentioned in the literature. The "Does Not Apply" option is unique to the ENSS. The NSS, from which the ENSS originated, did not have a "Does Not Apply" answer. The ENSS has been used three times in published literature since its development and twice the "Does Not Apply" category was not used (Hazell, 2010; Por, 2005; Williams, 2003). The single use of the ENSS with the "Does Not Apply" category was a master's thesis and the category was not discussed (Williams).

An alternate method of scoring was used to calculate the correlations using the items that contributed to stress. Not applicable answers were not counted and they were not used in the denominator to calculate the means. This limits the items counted to those that actually contributed to the stress. The ENSS Totals in both years were close to

the midpoint of 142.5, indicating moderate stress ($n = 87$, $M = 145.13$, $SD = 45.6$; $n = 92$, $M = 141.10$, $SD = 43.1$). Significant correlations between the acculturation means and the ENSS variables were found for the ENSS Total and Factor 6 (*Workload*) for new graduate nurses in their first year of practice ($r = -.267$, $p = .006$; $r = -.338$, $p < .001$), and Factor 2 (*Conflict with Physicians*) for new graduate nurses in their second year of practice ($r = -.287$, $p = .003$). Factor 6 consists of workload issues such as staffing and working conditions. Factor 2 concerns physician issues such as availability and conflict.

Application to the Theory

Lazarus and Folkman (1984) describe stress as a product of the transaction between person and environment. The results of this inquiry indicate that the transactions between student nurses and their academic environment produced mild to moderate levels of role stress. The clinical stress levels were affected by the acculturation of the students. Acculturation to the group occurs through clinical experiences (Schumann, 1986). Challenges with acculturation are demonstrated by the negative relationships between acculturation and clinical stress; that is, lower acculturation levels are associated with higher stress scores. Academic language is much more difficult to learn than everyday social language and takes 5-10 years to achieve proficiency, thus producing more role stress for the student (Cummins, 1999). This same result was not found in the graduate nurse population. After practicing for two years, the new graduate nurse has had at least four to six years to gain proficiency in the language.

Conclusions

1. The hypotheses proposed were shown to be partially true. There are some correlations between student nurses' acculturation and clinical concerns; there was one correlation between new graduate nurses' role stress and discrimination.
2. Students experience a moderate amount of stress in nursing school which changes from semester to semester for unknown reasons.
3. Becoming a nurse carries with it a heavy academic burden.
4. Acculturation levels impact stress levels in the clinical environment for unknown reasons.
5. Acculturation levels impact stress related to discrimination experiences in the first year of practice for unknown reasons.
6. The ENSS may not be an accurate indicator of stress in the new graduate nurse.
7. The stress levels as measured by the ENSS vary greatly according to the scoring procedure employed.
8. There is a small but significant difference in role stress correlations with acculturation between students and new graduate nurses.

Implications

Student nurses had moderate levels of stress which peaked with each new semester and the *Academic Load* was consistently at the top. Perhaps the peaks are related to suddenly knowing all that is expected of the student for the next two semesters

or perhaps it is becoming accustomed to new instructors and teaching styles. *Amount of classwork to be learned* is a universal issue with student nurses. Perhaps it is a lack of ability to filter the information overload which sends stress levels upward. Educating students on stress along with tips on good study habits and effective study techniques early in the semester may limit the peaks.

There were some correlations between acculturation and *Academic Load*; however, there were no cultural, language, or communication statements on either of the instruments used in this study. Stress in those not highly acculturated to the English language may have been missed. A diversified nursing workforce needs a reliable tool with which to measure stress in all nursing students and nurses.

Acculturation and clinical stress correlated every semester throughout the students' education. Helping students manage the stress should be a vital part of every clinical curriculum. The nursing workforce must be able to manage the stress in nursing school to diversify the profession to care for all cultures.

The ENSS may not be the best instrument for detecting stress in new graduate nurses. Most research on stress in new graduate nurses is qualitative and suggests they are under a great deal of stress yet this instrument detected mild or occasional stress (Casey et al., 2004; Fink et al., 2008; Pellico et al, 2009). The stress needs to be identified in the new graduate nurse population; currently there is little quantitative evidence with which to develop evidence-based interventions. There is an inconsistency here that needs to be addressed further.

Recommendations for Research

1. Explore the fluctuations in stress as experienced by nursing students in order to develop evidence-based interventions to reduce stress in nursing education.
2. Investigate the correlations found between acculturation levels and clinical stress. This topic needs to be explored further. What issues between acculturation and stress in the clinical environment are responsible for the significant correlations? What effect might this have on the students' ability to learn? Would these results be replicated in another venue? What happens to this relationship when the student becomes a practicing nurse? The stress instrument needs to be further evaluated for use in a diverse student nurse population. What acculturation factors could be responsible for the correlations? Are there communication/language issues involved? Identification of these factors is essential to ensure an accurate stress instrument in an ethnically diverse student nurse population.
3. Develop an instrument specific to the new graduate nurse population that will better detect their stress experience. Identify current stressors with which graduate nurses are challenged. Identify stressors unique to new graduate nurses who are not highly acculturated to American English so the instrument can be used in a diverse nursing population.
4. Conduct a triangulation study to explore the stress of new graduate nurses and compare the qualitative versus quantitative results. Are the qualitative concerns addressed by the quantitative instruments?

5. Update the ENSS with a more consistent method of scoring; delete the not applicable choice.
6. Explore how a specialized academic language impacts stress in student nurses.
Can a formal class decrease the stress or is learning the academic language as it is needed the best way?

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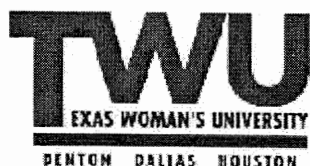
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APPENDIX A

Institutional Review Board Letter of Approval



Office of Research
6700 Fannin Street
Houston, TX 77030-2343
713-794-2480 Fax 713-794-2488

January 25, 2012

Ms. Elizabeth Perius
College of Nursing
6700 Fannin Street
Houston, TX 77030

Dear Ms. Perius:

Re: "Exploration of the relationship between acculturation and role stress in nursing students and new graduate nurses" (Protocol #: 16224)

The above referenced study has been reviewed by the TWU Institutional Review Board (IRB) and was determined to be exempt from further review.

Any modifications to this study must be submitted for review to the IRB using the Modification Request Form. Additionally, the IRB must be notified immediately of any unanticipated incidents. If you have any questions, please contact the TWU IRB.

Sincerely,

Carolyn Kelley, PT
Carolyn Kelley, PT, DSc, NCS
Institutional Review Board - Houston

APPENDIX B

Short Acculturation Scale for Hispanics

APPENDIX B

Short Acculturation Scale for Hispanics

The following questions are about the language(s) you speak.(Circle one number for each question.)

In general, what language do you read and speak?

What was the language(s) you used as a child?

What language(s) do you usually speak at home?

In which language(s) do you usually think?

What language(s) do you usually speak with your friends?

USE THE FOLLOWING RESPONSE CATEGORIES FOR THE QUESTIONS:

1. Only Non-English language
2. Non-English more than English
3. Non-English and English Equally
4. English more than Non-English
5. Only English

APPENDIX C

Student Nurse Stress Index

APPENDIX C

Student Nurse Stress Index

*For each situation you have encountered during your educational preparation to become a nurse, indicate **HOW STRESSFUL** it has been for you **in the past month**:*

NOT Stressful.....EXTREMELY Stressful
1.....5

1. Amount of classwork material to be learned
2. Difficulty of classwork material to be learned
3. Examinations and/or grades
4. Competition with peers/classmates
5. Attitudes/expectations of other professional towards nursing
6. Lack of free time
7. College's response to student needs
8. Fear of failing a course
9. Actual personal health problems
10. Health problems of family member(s)
11. Relationship with parents
12. Other personal problems (relationship with partner)
13. Relations with other professional (faculty, nurses, MDs)
14. Too much responsibility as a student nurse
15. Lack of timely feedback about performance
16. Patient/client attitudes towards me
17. Patient/client attitudes towards my profession
18. Atmosphere created by instructors/faculty
19. Relations with staff in the clinical area (nurses, physicians)
20. Unsure what is expected of me
21. No time for fun, entertainment, recreation
22. Not have enough time for my family

APPENDIX D

Expanded Nursing Stress Scale

APPENDIX D

Expanded Nursing Stress Scale

Below is a list of situations that commonly occur in a work setting. For each situation you have encountered in your **PRESENT WORK SETTING**, would you indicate **HOW STRESSFUL** it has been for you:

(Enter the number in the right hand column that best applies to you. If you have not encountered the situation, write '0'.)

Never Stressful 1	Occasionally Stressful 2	Frequently Stressful 3	Always Stressful 4	Does Not Apply 5
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1. Performing procedures that patients experience as painful
2. Criticism by a physician
3. Feeling inadequately prepared to help with the emotional needs of a patient's family
4. Lack of opportunity to talk openly with other personnel about problems in the work setting
5. Conflict with a supervisor
6. Inadequate information from a physician regarding the medical condition of a patient
7. Patients making unreasonable demands
8. Being sexually harassed
9. Feeling helpless in the case of a patient who fails to improve
10. Conflict with a physician
11. Being asked a question by a patient for which I do not have a satisfactory answer
12. Lack of opportunity to share experiences and feelings with other personnel in the work setting
13. Unpredictable staffing and scheduling
14. A physician ordering what appears to be inappropriate treatment for a patient
15. Patient's families making unreasonable demands
16. Experiencing discrimination because of race or ethnicity
17. Listening or talking to a patient about his/her approaching death
18. Fear of making a mistake in treating a patient
19. Feeling inadequately prepared to help with the emotional needs of a patient
20. Lack of an opportunity to express to other personnel on the unit my negative feeling towards patients
21. Difficulty in working with a particular nurse (or nurses) in my immediate work setting
22. Difficulty in working with a particular nurse (or nurses) outside my immediate work setting
23. Not enough time to provide emotional support to the patient

APPENDIX D (cont.)

Expanded Nursing Stress Scale

24. A physician not being present in a medical emergency
25. Being blamed for anything that goes wrong
26. Experiencing discrimination on the basis of sex
27. The death of a patient
28. Disagreement concerning the treatment of a patient
29. Feeling inadequately trained for what I have to do
30. Lack of support of my immediate supervisor
31. Criticism by a supervisor
32. Not enough time to complete all of my nursing tasks
33. Not knowing what a patient or a patient's family ought to be told about the patient's condition and its treatment
34. Being the one that has to deal with the patients' families
35. Having to deal with violent patients
36. Being exposed to health and safety hazards
37. The death of a patient with whom you developed a close relationship
38. Making a decision concerning a patient when the physician is unavailable
39. Being in charge with inadequate experience
40. Lack of support by nursing administration
41. Too many non-nursing tasks required, such as clerical work
42. Not enough staff to adequately cover the unit
43. Uncertainty regarding the operation and functioning of specialized equipment
44. Having to deal with abusive patients
45. Not enough time to respond to the needs of patients' families
46. Being held accountable for things over which I have no control
47. Physician(s) not being present when a patient dies
48. Having to organize doctors' work
49. Lack of support from other health care administrators
50. Difficulty in working with nurses of the opposite sex
51. Demands of patient classification system
52. Having to deal with abuse from patients' families
53. Watching a patient suffer
54. Criticism from nursing administration
55. Having to work through breaks
56. Not knowing whether patients' families will report you for inadequate care
57. Having to make decisions under pressure