STRESS IN HISPANIC WOMEN ENROLLED IN SELECTED MEDICAL SCHOOLS IN TEXAS

A Dissertation

by

ANITA CONNELLY NICHOLSON

Submitted to the office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

December 2004

Major Subject: Educational Human Resource Development

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Approved as to style and content by:

Walter F. Stenning (Chair of Committee)	Lloyd Korhonen (Member)
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Cliff Whitten (Member)	

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ABSTRACT

Stress in Hispanic Women Enrolled in Selected

Medical Schools in Texas. (December 2004)

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Chair of Advisory Committee: Dr. Walter F. Stenning

Little uniquely identifiable information about Hispanic women who gain entrance into medical school is known. A few studies that focus just on stress in Hispanic women in medical school have found "unique" stressors. This research examines stress in Hispanic women students (all four years) at Texas A&M University System – Health Science Center – College of Medicine (TAMUS-HSC) at College Station and at the University of Texas Medical Branch (UTMB) at Galveston, Texas. Twenty- four women took part in this project.

Data was gathered using a packet of questionnaires, incorporating Sheridan and Radmacher's Comprehensive Scale of Stress Assessment and the Personal Style Inventory (1987 and 1991) and The Community Oriented Primary Care (COPC) Student Project: Stress in First-Year Medical Students (Lensky, Noori, Matsukuma, Melamud & Chen, 1999). Each woman was personally interviewed.

The results suggest increased stress and "unique" stressors found by others who have researched Hispanic women in medical school. The intensity of medical school

coupled with the stress that engulfs them from fear and sometimes anger (two stress emotions) stemming from worry about failure in school and worry about student loans that they are fearful they may not be able to repay causes high stress. Social, ethnic, and cultural bias and norms barriers to which they struggle to overcome anger them. Results from investigation of coping strategies suggest the women are coping as well as can be expected and are joyous over what they are doing. They rely on social groups to give them support. The knowledge they have obtained that there is prejudice toward their academic qualifications seems to make them more determined. They appear to be non-traditional and strong women who feel they are destined to become medical doctors

This research should add valuable information to future research in this area. It is suggested by this author that there is a need for substantial, active, immediate and constant support for all minority students in Texas medicine. It is of necessity that minority mentors be trained and efforts made to put in place a program that works to support the women who are struggling and in fear of failing out.

DEDICATION

This dissertation is dedicated to Yahweh, my protector, who provides every breath I take. You are my dunamis and constant. The only reality in my world is the reality of redemption. My life would not exist without God nor be worth living without the obedience Jesus Christ has to the Father.

This dissertation is also dedicated to my precious mother Carmen who gave me birth and who instilled in me the love of others, the care of life and the hope for better things. Mom, you remain in my heart and I know you are watching over me from heaven. This one is for you.

This is also dedicated to the women in this study and the readers: May the peace of God always remain with you and provide you with decreased stress in your life.

ACKNOWLEDGMENTS

I chose to walk a different path in my research in choosing to do this project. I have my mother's altruistic heart and therefore chose to do research that would better pave the road for others. However, when I began, I did not realize the path led to a project of this magnitude. My life became a lonely vigil a very singular affair except for the presence of God. I could only watch as human friends became few and trusted, loyal human support groups vanished. Notwithstanding I realized all along the path that God held me in His hands, and there were those stalwart academicians all over the world who always offered their time, energy and effort to me.

Thanks to Dr. Manuel Salinas – Texas A&M University – Kingsville, who helped me realize that I could indeed become a Ph.D. During the years he let me know that he was supporting me in this venture. He taught me how to write and helped me develop qualities that enabled my success in graduate school.

A dear friend, Dr. Charles Sheridan – The University of Missouri – Kansas City, answered every email I sent to him and helped me through my tears. The care he took with me is exhibited in the care he took to build the stress questionnaire used in this research, which he freely gave to me.

Thanks to my committee at Texas A&M University – College Station. Thank you for you substance and your expertise. Thanks to Dr. David Erlandson and to Dr. Lloyd Korhonen, who are both mindful teachers. Thanks to Dr. Paulette Beatty, who retired late in my project and thanks to Dr. Cliff Whitten, who took her place on my

committee. Thanks to Dr. Walter Stenning, chair of the committee, who stayed the course with me. My committee let me be authentic and helped me climb to a place that is much higher than I ever dreamed, and the view is spectacular.

Very special thanks to Texas A&M University System – Health Science Center College of Medicine at College Station, Texas, and Temple, Texas, and The University of Texas Medical Branch at Galveston, Texas. You did not have to invite me in to do this research, but you trusted me, and I thank you. Huge thanks to my friend Dr. Kyriakos Markides (Kokos), who not only chose to become my faculty sponsor at UTMB but who also chose to become an informal member of my committee. Thanks go to Sandra Garvock and Dr. Lauree Thomas and others from the Student Affairs Office at UTMB. Thanks also go to Shiela Graham and Malcom Moore in the UTMB Internal Review Board (IRB) office. All of you worked overtime on this project. Thanks also go to the many others at UTMB who believed in the worth of this research. I am also deeply indebted to the registrar and the Student Affairs Office at TAMUS – College of Medicine.

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CHAPTER I

INTRODUCTION

Background Information and Purpose

The Texas–Mexico Border focuses the future of Texas as looking to an increasingly "bilingual, bicultural and bi-national" environment (Strayhorn, 1998, p. 1). Even in the context of this current broad-based social movement, characterized by a growing Hispanic population, there are pockets of under-representation, which undermine true social progress. This issue of under-represented minorities (URM) in Texas medicine is problematic, since currently there is a critical shortage of medical doctors, especially in the rural areas. In 2002, The University of Texas Medical Branch (UTMB) Family Medicine Residency website (University of Texas Medical Branch, 2004) offered a Fellowship in Rural Family Medicine and Obstetrics and stated "With the second highest number of U.S. counties designated as Health Professions Shortage Areas (HPSAs) or Medically Underserved Areas (MUAs), Texas' need for primary care physicians in underserved areas is crucial." In 2001 (Telford, p. 59-62) in a report issued by the Select Committee on Rural Development in Texas noted more than half of the state's rural counties are considered HPSAs.

Hispanics form a large part of the population of Texas. Yet within the medical field in Texas as well as nationally, Hispanics form a very small portion of the work force. The fact that minority medical doctors have been found to be altruistic

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This dissertation follows the style and format of the *American Educational Research Journal.*

concerning the needs of patients, especially those who are disadvantaged, marginalized, under-educated and undervalued has been duly noted in the literature (Carlisle, Gardner, & Liu, 1998, p. 1316; McFarland, Smith, West, & Rhoades, 2000).

Hispanics are “Severely under-represented in medicine and the health profession” (American Association of Medical Colleges, 1998, p. 3-9; McIver, 2000). Currently, there is a national need for “roughly twice as many Hispanic physicians than are available” (Carlisle et al., 1998, p. 1314-1317) and “any recent gains in minority enrollment have been markedly reversed.” The resonance becomes deafening as one realizes that Hispanics comprise only “about 4% of the total physician workforce” (Fox, 2000), and the number of Hispanic medical students in the United States “has never risen over 2.7%” (American Association of Medical Colleges, 1998, p. 3-9).

Dr. J. Cohen, President of the Association of American Medical Colleges, stated “The stark disparity between the number of practicing minority physicians and the increasingly diverse U.S. population is becoming more acute and presents unique challenges for the future delivery of quality health care” (American Association of Medical Colleges, 2000). Disproportionate ethnic minority representation in medical school is a viable, historical and contemporary dynamic in the United States.

Petersdorf, Turner, Nickens and Ready (1990) remarked that since 1970, the AAMC has had two key policies: 1. Special attention should be paid to minority groups; and 2. Minority groups must be represented in medicine in the same proportion as in the whole population. In 1991, medical schools in the United States developed

their “Project 3000 by 2000” in an effort to enroll 3000 minorities by the year 2000 (Helms & Helms, 1998, p. 231).

United States Census Bureau-Population Division projections (2000) indicated “Hispanics, all ages living in the United States, will number somewhere around 38 million by 2005” and this number escalates to “more than 43 million by 2010.” On this course, Hispanics will be the largest minority group in the nation; a distinction Texas Hispanics arrived at in 1997 (Ramos, 1999). Currently, the number of Hispanics living in Texas is “close to 6 million with projections of over 10 million by 2015” (Murdock, 1996, p. 4; United States Census Bureau, 2000). Bailey (1999, p. 53) stated that out of the ten United States areas with the lowest per capita personal income in 1997, “the six lowest ranking areas are on the Mexican border” and this is an historically salient point for this area. A timely, pertinent, sociological question might be: “Who is going to care, medically, for the fast growing number of Hispanics in Texas?” An obvious answer seems simply to increase the number of minority physicians. That appears, however, to be a difficult goal to achieve (Helms & Helms, 1998).

Barry Commoner reminded readers that, “the first law of ecology is that everything is related to everything else” (Cunningham, 1997, p. 37). This is a true and relevant point for a real-world study of URM. The shortage of medical doctors and the increasing Hispanic population in Texas interrelate. There are several relating consequential elements that were brought out in the literature concerning the phenomenon of under-represented Hispanic women in Texas medicine, stress in this population and information concerning coping strategies.

Interrelating Literature Points

1. The well documented historical problem of extreme stress in the medical school environment
2. The dearth of medical doctors available versus the number needed currently and into the future for the growing and aging population of Texas, coupled to the high incidence of poverty among Texas Hispanics is an escalating problem, without many answers forthcoming.
3. Little is known about Hispanic women in medical school in Texas and how they fare
4. Under-representation of Hispanic women is a phenomenon that affects the fiber of every person in Texas. Reports and statistics have shown that we have consistently failed to recruit minorities into Texas medicine.
5. Academic issues such as assumed academic inferiority and questions concerning intellectual qualifications are egregious problems.
6. Research concerning coping strategies is needed. How do the Hispanic women cope? Stewart et al. (1995) recommended that medical educators and those responsible for curriculum development should be more aware of the stresses of medical life and take prophylactic actions for the prevention of short-term and long-term stress-related problems for medical students. Short-term intervention has been found to be beneficial to medical students.

Seaward, (1997) talked about a path any student travels as being from known to unknown, and there is a startling list of stressors any college student experiences. Very

high stress in the medical school environment is well documented and several researchers consider the medical school environment “threatening” (Wolf, 1994, p. 9). These interrelating literature points are valuable indicators of the high stress, which may envelope and suffocate an Hispanic woman who matriculates into medical school. She may well have the cognitive ability to go to a prestigious university and obtain an undergraduate degree, but upon arriving at a medical school, she may be treated as if she were academically inferior. It becomes tedious to defend yourself daily. That stress coupled with the normative stress of medical school, and cultural, ethnic and gender norm bias, may well be so stressful that she fails or has to drop out of medical school. If intervention is in place and support available from minority mentors, her path could be quite different. Reports from the literature state that intervention for medical students is not only needed but also woefully necessary, as stress has been shown to be unnecessary in medical school and can cause cognitive dysfunction at a time when students need their brains working at top speed.

Statement of the Problem

The literature points to a disheartening truism that “minorities have been under-represented, relative to their numbers in the general population, since the beginning of medical education and the existence of teaching medical colleges in the United States” (Tekian & Foley, 1997, p. 94-95). The URM status is “particularly acute with Hispanic women as compared to other women in medicine” (Zambrana, 1996, p. 147). The “Fall 1999 Texas student enrollment data reported only 287 Hispanic females in all the Texas medical schools, out of 2,193 total females and 5,162 total medical students”

(McIver, 2000) or only 5.5% of the total population of Texas medical students in 1999. Consequently, the supply of female Hispanic physicians is not in place to meet the demands of the growing and aging population, especially at a time when the overall shortage of medical doctors is at a critical crossroads.

Texas needs a great increase in the number of medical doctors in the work force, yet little is known about Hispanic women who gain entrance into medical school. There have been very few studies that focus just on the professionally oriented Hispanic woman (Lango, 1995) There have been even fewer studies of Hispanic women in medical school and their stressors. For an Hispanic woman even to consider the field of medicine may begin for her a marked departure from family and culturally held traditions. If she is able to surpass all the barriers and enter a medical school, then she may be running against her own cultural traditions or "adaptive capacity" (Wolf, 1994, p. 9) and "cognitive styles or schemas" (Anacona, Scully, Van Manen, & Westney, 1999). This may cause high stress to a woman who may already feel less than hardy, more vulnerable, unable to cope with perceived societal values, issues of double bias, stressors from family, cultural role beliefs and traditions. There is a vital and acute need to examine components of this phenomenon so as to enhance understanding of this socially dynamic dilemma. To ignore distinctive characteristics invites sustained under-representation and Texas loses valuable work force participants in the medical field.

Purpose of Study

There are many relevant questions that could be asked concerning Hispanic women. There are even more questions that need to be posed for the professionally achieving Hispanic woman. This population has been studied very little, and therefore, few questions have been asked or answered concerning their needs and issues. Hence **t**he purpose of this study was to find answers to questions about stressors and coping strategies in Hispanic women in medical school in Texas.

Research Questions

1. What stressors affect female Hispanic medical students in Texas?
2. What coping techniques do the female Hispanic medical students use to counter the stress found in medical school in Texas?

Operational Definitions

The following operational definitions apply throughout this research:

AAMC: The Association of American Medical Colleges. The AAMC represents the 126 accredited M.D.-granting medical schools in the United States. http://www.aamc.org/medicalschools.htm

AAUW: American Association of University Women. They are "Promoting education and equity for women and girls." http://www.aauw.org

Adaptive Capacity: The way an individual handles pressure of external and internal stressors (Wolf, 1994).

AMA: The American Medical Association. http://www.ama-assn.org

AMWA: The American Medical Women's Association. They are "Changing the face of medicine." http://www.amwa-doc.org

Anxiety: Response to various psychological or environmental stressors (Clement & Chapouthier, 1998).

Bakke: In California the United States Supreme Court case of "*Regents of the University of California v. Bakke*, 438 U.S. 265 (1978)" limiting affirmative action. In California medical schools, (University of California San Francisico, 1998) stated "Under-represented minority enrollment has consistently decreased year-by-year since the high point of 117 in 1992."

Cognitive Schemas: The way a person attempts to solve problems encountered in their world and which have deep and diffuse origins, stemming from gender, family and national origins, childhood socialization, schooling, higher education, work experience (Anacona et al., 1999, Module 4).

Coping Style: The way individuals adjust to stress (Morton, Lamberton, Testerman, Worthley, & Loo, 1996). Halim, Kaplan and Pollack, (2000, p. 174) felt that "Gender may interact with psychological and cognitive coping styles, as females are shown to manifest greater likelihood of psychological distress than males, largely due to greater emotional investments in social network events versus life events involving oneself."

Culture: Culture and ethnicity are defined as the customary beliefs, integrated patterns of human behavior (such as thought, speech and action), social forms, and

traits of an ethnic group and are used synonymously in this paper (McCubbin, Thompson, Thompson, & Fromer, 1998).

Double Minority: Being a minority and female.

Emanation: An encounter in which one person treats another person, such as one's daughter, solely as an extension of him- or herself. If the daughter accepts the denial of her own separate identity it is because of the overwhelming power of the source of this emanation, which offers security (Abalos, 1998).

Ethnicity or Ethnic Identity: Bernal and Knight (1993) stated ethnic identity "Is a psychological construct, a set of self-ideas about one's own ethnic group membership." For this current research project, ethnicity or ethnic identity implies the culture, including all the mores', tenets, traditions and beliefs of Hispanic people descending mostly from Mexico and who have Spanish as the language of origin (Rodriguez & Cordero-Guzman, 1992). Also taken into consideration is the statement by Buriel and Cardoza (1993) that of the dimensions of social biology, culture and psychology, it is the dimension of psychology that is perhaps the most important because, regardless of variations in the biological, culture and social domains, if a person self-identifies as a member of a particular ethnic group then she is willing to be perceived and treated as a member of that group.

Ethno-Racial Self-Identifier: "Ethno-racial identity is foregrounded for ethno-racial minorities throughout their lives because of the power differentials encoded in ethno-race in the United States" (Ginorio & Martinez, 1998, p. 54-55). Bernal and Knight (1993, p. 1) told readers that "self-identification refers to the ethnic labels or

terms that people use in identifying themselves, and to the meaning of these labels." "Ethno-racial self-identifiers are important ways of claiming an identity, and they can code biological, cultural, linguistic, historical and political considerations of the individual" (Ginorio & Martinez, 1998, p. 54-55).

Hardiness: Ability to withstand considerable stress. A trait allowing an individual to tolerate stress well or even thrive on it that depends partly on whether a person perceives she has control over events in her life (Morris, 1985). Pengilly and Dowd (2000, p. 814) suggested that a hardy individual "views events that could be potentially stressful as meaningful and interesting (called commitment), sees oneself capable of changing events (called control) and sees change as normal and as an opportunity for growth (called challenge)."

Hispanic: Hispanic is a generic government term that is recognized by most readers and researchers and is typically used to describe all persons residing in the United States who are of Spanish origin and descent (Herrera & DelCampo, 1996). The term Hispanic, however, shrouds the complexity of a vast group of subcultures. Mexican Americans form a huge majority of the Hispanic population. Almost 80% of this population is Mexican American born either in Texas or Mexico. For this research the term Hispanic is used for Non-Anglo and with origins for the most part from Mexico (Powell, 1971). The terms Hispanic and Mexican American will be used interchangeably for this research.

Hispanophobia: The prejudice toward Hispanic people (Kanellos, 1994, 1998; Powell, 1971).

Hopwood: "A lawsuit brought by Cheryl Hopwood against Texas and the University of Texas that halted the use of affirmative action in college admissions" (University of Texas at Austin, 1999). "*Hopwood v. Texas,* 861 F. Supp. 551 (W.D. Tex. 1994). In No. 94-50664" limiting affirmative action. Texas medical schools bore the brunt of these court decisions with a 30% change in minority recruitment (American Association of Medical Colleges, 1998). Note that The University of Texas at Austin (1999) claimed a 40 % drop in minority student enrollment.

IRB: Internal Review Board of a university, which grant**s** permission to use humans in research.

National Hispanic Medical Association: Their agenda is expanding access to quality health care, increasing opportunities in medical education, cultural competence, and research for Latinos, along with policy development and education efforts focused on eliminating health disparities faced by Latinos. http://www.nhmamd.org

Normative Stress: The "normal," although extreme stress, that most medical students experience, regardless of gender or ethnicity.

Resiliency: The ability to recover quickly from setbacks.

Role Stress: Stress in a woman because of competing demands between school and social and/or family life, social support and sources of support outside school (Rospenda, Halpert, & Richman, 1994), multiple roles and distress in women (Barnett, 1993; Kitano, 1998; Peterkin, 1998; Shervington, Bland, & Myers, 1996).

"Scut Work": Scut work is the name applied to the trivial, often unrewarding, tedious, sometimes dirty and disagreeable chores given medical students, especially in their intern year or residence.

Stereotypes: Includes gender, sexual, ethnic and cultural stereotypes. Kite (2001, p. 216) suggested that stereotypes are persistent and "Once stereotypic beliefs are developed, they have remarkable staying power."

Stress: Response of a human to environmental stimuli that threaten internal equilibrium (homeostasis), as perceived and evaluated by a cognitive or emotional system, which may induce neuroendocrine, metabolic and behavioral changes in an attempt to maximize the probability of success over a demand (Ramos & Mormede, 1998).

TAMUS – HSC-COM: Texas A&M University System – Health Science Center – College of Medicine at College Station, Texas.

UTMB: The University of Texas Medical Branch at Galveston, Texas.

ULAMS: United Latin American Medical Students.

URM: The term under-representation of minorities is known throughout the literature as URM. http://www.aamc.org/meded/urm/start.htm. A new definition of the under-represented in medicine was approved by the AAMC's Executive Council on June 26, 2003, and became effective immediately. The new definition of "Under-represented in medicine means those racial and ethnic populations that are underrepresented in the medical profession relative to their numbers in the general population."

URM is a working definition to:

- Inform future policy initiatives on diversity
- Collect data and measure progress on the under-representation issue
- Develop population-specific outreach and recruiting activities
- Facilitate dialogue about diversity with affiliated organizations.

USMLE: The United States Medical Licensing Examination is a three-step examination for medical licensure in the United States and is sponsored by the Federation of State Medical Boards (FSMB) and the National Board of Medical Examiners® (NBME®). In United States medical schools, most students take Step 1 at the end of their second year and Step 2 in their fourth year; Step 3 is usually taken during the first or second year of postgraduate training.

Vulnerability: This is a field of multiple etiological characteristics including, but not limited to vulnerable personalities (Miller & Surtees, 1991) or the condition of feeling disadvantaged or marginalized (Wolf, 1994) and the stress from this condition. Kanellos (1994) stated that Hispanic women as a whole may be considered vulnerable.

Assumptions of the Study

This researcher has always tried to remain under the "assumption level," because when assumptions are made, they very often become fact, or they are based on already existing fact. This is explained in more detail with suppositional statements. One could not say that ethnicity is capricious but neither is it static, especially if accepting the thought that ethnicity is an individual perception. Therefore, the following statements are made with the understanding that they are suppositional:

1. It is an assumption that the self-report of stress will be truthful and give a fairly accurate picture of stress in the study. Marin and Marin (1991, p. 101) stated “Care needs to be taken when analyzing and interpreting Hispanic data because of concerns that Hispanics may often provide inaccurate and socially desirable responses, may produce large proportions of missing data, may prefer extreme and acquiescent responses, and may show low self-disclosure to strangers.” Kessler, Mickelson and Williams (1999, p. 224) added that “Women are more likely than men to discount discrimination they face and to deny being personally discriminated against.”
2. It is an assumption that the group interview of Hispanic females will provide needed information. Marin and Marin (1991, p. 11 & 17) felt that “Researchers working with Hispanics need to understand not only the socio-demographic characteristics of Hispanics but also their cultural values and norms that may affect the process and outcome of a given study.”
3. It is an assumption that Hispanic women are happy with their decision to be in a Texas medical school. One of the interesting points elicited by research conducted at The University of California – Irvine by medical students in their Doctor-Patient Community Oriented Primary Care (COPC) student projects, Stress in First-year Medical Students, was that 24% of students were unhappy with their decision to become an M.D. while 33% were neutral. The medical students who authored this research pondered whether this dissatisfaction was due to poor academic performance (Lensky, Noori, Matsukuma, Melamud, & Chen, 1999).

4. It is an assumption that the achievement motivations, values, goals, and behaviors of Latina women in medical school are largely influenced by traditional gender socialization experiences (Thorne, 1995) and the altruistic nature that has been found in all minorities (American Association of Medical Colleges, 1998; Carlisle et al., 1998, p. 1316; McFarland et al., 2000).

Limitations of the Study

Limitations are simply more assumptions. The explanation made for the assumption statements, applies to the following limitation statements:

1. Limitations may come from researcher bias. This researcher is an activist for achieving Hispanic women, and as such, wishes to help all Hispanic women succeed. This may offer a limitation in that the desire to find much information concerning stress and its impact on Hispanic women in medical school in Texas, this author may reflect too many inferences into the research.
2. Limitations may come from misrepresented or faulty self-reported answers to questions on the questionnaire and/or interviews. When interpreting data collected among Hispanics, Marin and Marin (1991, p. 103) stated that researchers need to be aware of Hispanics' preference for extreme responses and "observe actual score distributions rather than concentrating only on measures of central tendency. Extreme response sets may provide inaccurate descriptions of a group's responses if only measures of central tendency are considered." It has been suggested by Triandis' use of standardized scores (Z-scores) within respondents (if there are

enough responses) or within the instruments (if the items are homogeneous) (Marin & Marin, 1991).

3. A limitation may be that correlations or inferences do not automatically establish cause and effect relationships between variables.
4. A limitation of this study is that it did not compare Hispanic women to Hispanic men, nor did it compare Hispanic women to non-Hispanic women.

Significance of the Research

There have been few studies concerning the extremely low number of Hispanic women in Texas medicine. As a noted fact, there has been even less information accumulated concerning stress in the achieving Hispanic woman in Texas medicine. Stress and unique stressors in an Hispanic woman may very well factor into the fabric of this population and under-representation. A study of this nature may provide beneficial information to help identify reasons for depressed numbers of Hispanic women in Texas medicine and their "unique" stressors and any coping strategies used.

The phenomenon of URM has implications for Texas that covers social, cultural, economic, physical and polymorphic environments. This is particularly so when considering the combination of growth in the Hispanic population and the minority poor along the Texas-Mexico border areas plus the need for many more medical doctors and the altruistic nature of minority medical doctors (Carlisle et al., 1998, p. 1316; McFarland et al., 2000). This population does not have adequate access to medical service; they are marginalized and are historically and consistently very poor (Strayhorn, 1998). The deans of medical schools in Texas, student affairs

personnel, policy makers and social planners, as well as every Hispanic woman wishing to become a professional in the science world should find this research significant. The problem of the medical doctor shortage could be lessened somewhat through an effort to recruit more minority medical students.

Population for This research

The population included nine Hispanic women enrolled at Texas A&M University System–Health Science Center College of Medicine at College Station, Texas and fifteen Hispanic women enrolled at the University of Texas Medical Branch at Galveston, Texas.

Research Process

This research proceeded with: 1) Personal interview for qualitative information; 2) Collected stress questionnaire and demographic questions for quantitative information. Each participant was interviewed, which provided rich stories and each participant filled out demographic questions and a stress questionnaire packet. It was thereby hoped that this approach would produce as much information as possible.

Summary and Focus of This Study

This researcher understood that this study might not establish a causal link between stress and low numbers of Hispanic women in Texas medicine, but there is under-representation of Hispanic women in Texas medicine and the prejudice that is directed toward most minorities may cause stress, including stress emotions of fear and anger, which may limit a number of Hispanic women premedical students from matriculating into medical school in Texas. This chapter elucidated that this is a critical

time in Texas because of the substantial shortage of medical doctors. It is time for Texas to focus on the largely untapped minority population and aim at educating this population in the health sciences beginning on no later than the middle school years.

This project focused on stress in Hispanic women in medical schools in Texas and, to all intents and purposes, examined it as fully as possible including coping strategies used by the women. It is hoped that this research helps 1) bring about recruitment of many more minority medical students in Texas; 2) bring the knowledge of chronic high stress and unique stressors in Hispanic women medical students to the medical schools; 3) point to the importance and need for further evaluation of this issue; 4) point to the need for intervention in the form of immediate, constant, substantial and sustained support in all areas for minority women entering the medical field; 5) encourage increased recruitment of Hispanic women into Texas medical schools.

Leo Vygotsky (1976, p. 546) said “I do not see the world simply in colour and shape, but also a world with sense and meaning.” Thoreau penned in his “Walden Pond” experiences (1989, p. 98) “My instinct tells me that my head is an organ for burrowing, as some creatures use their snout and fore paws, and with it I would mine and burrow my way through these hills. I think that the richest vein is somewhere hereabouts; so by the divining-rod and thin rising vapors I judge; and here I will begin to mine.” This researcher continually searches for sense and understanding in societal prejudice and limits for certain people and ponders why society so often behaves unjustly toward any individual or group of individuals. This thought persuaded this

researcher to believe that the “hill” of research into URM Hispanic medical students and their stressors and coping strategies contained a rich vein of vital information in which to mine.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

It can be a challenging thought that any woman might face external and internal personal barriers to achievement, including lack of self-confidence, economic hardship and gender bias. Indeed, any professional woman, including any female medical student, may be troubled with "role ambiguity" (Peterkin, 1998, p. 8), lack of "role models" and "role strain" (Shervington et al., 1996, p. 153) or "gender schemas" (Valian, 1999, p. 2)**.** Society, family, community, academia or religion may erect barriers that are almost insurmountable. Stress from these issues, when added to the universal stress found in medical students, as noted in the literature, can be overwhelming to the nervous system. Virshup (1985, p. xi) remarked, "Medical school is so radically different from college that coping strategies that worked for you in college may no longer suffice." It appears, however, that barriers on the intricate and complex road toward a medical career may be even more intense and more impenetrable for a woman of double minority than for other, non-minority students, male or female.

Shervington, et al. (1996, p. 153) found "Female African-American medical students are faced with the double challenges of sexism and racism . . . minority status or prejudice, lack of role models and mentors or sponsors, and role strain, which have been identified as major sources of stress for women physicians." In corresponding

research, the literature elucidated the following stressors in female Hispanic medical students:

1. Family stress (Bowman & Allen, 1990; Tekian, 1997)
2. Ethnic bias in “Hispanophobia” (Kanellos, 1994, 1998; Powell, 1971, p. 3-12), p. 3-12)
3. “Cultural scripts” and “Simpatía” that are peculiar to Hispanics (Flores, Abreu, Schwartz, & Hill, 2000; Triandis, Marin, Liasansky, & Betancourt, 1984, p. 1363);
4. Research by Grijalva and Coombs (1997, p. 67-78) found that Hispanic women in medicine experienced great stress at work and home and struggle with “unique” stressors.
5. Assumption of academic inferiority and questions concerning academic qualifications of Hispanic women medical students. (Grijalva & Coombs, 1997, p. 67-78).
6. Montero-Seibruth (1996, p. 66), found “divergent expectations” in professional Hispanic women.

Salient to this current research is the landmark longitudinal research concerning personality development in the United States and Mexican cultures, by Holtzman, Díaz-Guerrero and Swartz. They found the following markers, which comprise a path for researchers (Holtzman, Diaz-Guerrero, & Swartz, 1975, p. 339-348):

1. Americans tend to be more active than Mexicans in their style of coping with life’s problems and challenges.

2. Americans tend to be more technological, dynamic, and external than Mexicans in the meaning of activity within subjective culture.
3. Americans perceive aggressive, competitive emotions as highly active, while Mexicans tend to see as more active the static, internalized emotions, such as shame, which calls for self-modification.
4. Americans tend to be more complex and differentiated in cognitive structure than Mexicans.
5. Mexicans tend to be more family-centered, while Americans are more individual-centered.
6. Mexicans tend to be more cooperative in interpersonal activities while Americans are more competitive.
7. Mexicans tend to be more fatalistic and pessimistic in outlook on life than Americans.
8. The Mexican has more often than not perceived life as something to be endured rather than enjoyed.

The personal life that a traditional Hispanic woman has led from formative years onward as a double minority may lead to stressors that can splinter into "divergent expectations" (Montero-Sieburth, 1996, p. 66) for Latinas in academia. Kitano (1998, p. 154) revealed that some gifted Hispanic women had school principals, counselors and teachers "Who communicated low expectations" and who even discouraged Hispanic women from seeking college admission. Hernández and Morales (1999, p. 45), in their investigation of Latinas working in higher education, described

research which, “Reveals strong images of an inhospitable and non-supportive place to work and suggests that Latina women are inhibited from achieving the same levels of success as men or other women in higher education.” Montero-Seibruth added (1996, p. 66):

> Often enough, the experiences of Latinas involve a conflict between the meaning that mainstream academic culture foists upon them and the world view – the social assumptions and obligations that they have inherited as part of their indigenous cultures and traditions. Their role then becomes, at best, that of mediator between two or more worlds of value and meaning. It is a role confounded by incompatible or divergent expectations. A sensitivity to the subjective conflicts that this engenders is therefore vital to a proper understanding of the reasons for under-representation.

Holtzman, et al. (1975, p. 4) cited a remark from Powell, which stated:

> Our national habit of condescension and over-simplification of virtually all phenomena of the Hispanic world is a habit that stretches from our elementary schools to universities to the White House, and it grows out of ancestral antagonisms that have come to constitute a perennial prejudice as unjustifiable as it can be dangerous. The very depth of this prejudice renders it difficult to discern, especially when camouflaged by relatively superficial immediacies. It is a prejudice that defies correction, for it is pervasive among so many of the teachers, writers, and politicians who guide our attitudes concerning Hispanic countries and their relationship to us.

Kanellos confirmed, “This prejudice, ‘Hispanophobia’, has been pervasive and consistent throughout U.S. history and into the present” (1998, p. vii). An Hispanic woman in Texas who is more than capable may be left far out of the “pipeline” of physicians (Johnson et al., 1998, p. 237).

In years past, Hurst (1992) tells readers that biases are often built into the theories aimed at understanding women's positions in society. Hurst continued that to understand women in U.S. society, researchers must start with the life experiences of the women themselves. Understanding the formative years of the women in this research was deemed very important and was investigated during the personal interviews.

Having been introduced to literature concerning gender bias, double minority stressors and issues that emanated from the literature concerning URM in medicine, the next step was to look at literature concerning the shortage of medical doctors nationally and in Texas.

Crisis in Medicine and Its Intrinsic Problems

Currently, there is a crisis in medicine in the United States (Telford, 2001). There are not enough medical doctors to satisfy current, let alone future needs. Salient information for Texas, with its high percentage of Hispanics, is statistical and empirical knowledge of a national need for "Roughly twice as many Hispanic physicians than are available" (Carlisle et al., 1998, p. 1317). Fox (2000) stated that Hispanics comprise about 4% of the total physician workforce. AAMC (1998) stated that the number of Hispanic medical students in the U.S. has never risen over 2.7%. If Texas is going to be able to supply the number of doctors needed for the aging and growing population there needs to be an effort put forth to recruit more minority applicants to medical school. It is an easy leap of the imagination to wonder about the pool of undergraduate minorities on a premedical track who, heretofore, evidently have not entered medical

schools or medical practice in Texas since there are so few minorities in Texas medicine.

This pool of possible minority medical doctors needs to be tapped, as Texas is looking into a future that is increasingly “Bilingual, bicultural and bi-national” (Strayhorn, 1998). In 2001, a report issued by the Select Committee on Rural Development in Texas (Telford, 2001, p. 59-62) identified the chronic shortage of physicians and allied health professionals as a serious problem in rural areas. The committee noted that: “Rural communities have higher average death rates, higher infant mortality rates, higher suicide rates and higher trauma death rates than urban areas.” More than half of the state's rural counties are considered health professional shortage areas.

Below is a list of factors to be examined in order to understand the consequences of the problem emitting from a chronic shortage of physicians:

Texas’ Growing and Aging Hispanic Population

Currently, in Texas, there are over 6 million Hispanics with a projected population of over 10 million by 2015 (United States Census Bureau, 2000). Murdock (1996, p. 5) predicted that the Hispanic population in Texas is heading toward an increase of “257.6 percent” by the year 2030. The United States Census Bureau Press-Release (2000) stated, that about 75% of Hispanics lived in seven states with 1 million or more each: California, Texas, New York, Florida, Illinois, Arizona and New Jersey. Benson (2003, p. 213) revealed that “In 2000, fully half of the nation’s Hispanic population lived in two states: California, home to 11 million Hispanic people and

Texas, home to 6.7 million." Many of the Hispanic Texans live along the border of Texas and Mexico, and many are part of the underserved, undereducated, undervalued, disenfranchised, and marginalized poor of Texas (Strayhorn, 1998). Not surprising, Hispanic women are, as Firestone and Harris (1994) found, particularly disenfranchised during population demographic changes such as occurring now in Texas.

Poverty Among Texas' Hispanic Population

Many Hispanic Texans who live in the Texas-Mexico border area have been and remain very poor. In the U.S. "Eight of the ten poorest per capita areas are in the Southwest or Southeast regions, and the six lowest ranking areas are on the Mexican border" (Bailey, 1999, p. 53), Strayhorn relayed the following information:

> In 1990, 37 % of adults in the border region lacked a high school diploma. Unemployment was the highest in Texas. Health statistics revealed a substantial gap between the border region and non-border Texas. Almost four-fifths of the border counties are entirely or partially designated as 'health professional shortage areas' by the federal government. (1998)

The Hispanics along the border are a group of undereducated, underrepresented, underserved, disenfranchised and marginalized citizens. This is a stigma on Texas historically. Texas has not treated Hispanics well in the past. Welch, Gruhl, Comer and Rigdon (2004, p. 16) stated "The idea that everyone loses when minority rights are trampled is a lesson that does not stay learned." Santanyana stated: "those who cannot remember the past are condemned to repeat it" (Magill, Catinella, Haas, & Hughes, 1998, p. 874). Paulo Freire (1970) spoke of the culture of silence where dominant

members of a society effectively silence others. He felt that oppressed people internalize negative images of themselves through images created and imposed by the dominant members. Sapolsky (1998, p. 300) stated poverty leads to "disproportionate amount of psychological stressors." Many Hispanics in Texas are impoverished and many Hispanic families do not understand the need to provide higher education for academically gifted daughters. Many of the daughters of these families could matriculate into medical school in Texas if only realistic opportunity truly existed, interventions were in place and minority mentors were available.

Affirmative Action

For California and Texas, two states with large Hispanic populations, affirmative action issues have in the past and continue today to disrupt and stagnate minority enrollment at the university level. In California, the United States Supreme Court case of "*Regents of the University of California v. Bakke*, 438 U.S. 265 (1978)" and in Texas "*Hopwood v. Texas,* 861 F. Supp. 551 (W.D. Tex. 1994). In No. 94-50664" both concerned affirmative action.

In California medical schools (University of California San Francisico, 1998), "Under-represented minority enrollment has consistently decreased year-by-year since the high point of 117 in 1992. The largest one-year drop (24%) in underrepresented minorities occurred between 1995 and 1996." In Texas, one year after the Hopwood court decision dismantled affirmative action, Texas medical schools suffered a 40 % drop in minority student enrollment (University of Texas at Austin, 1999). The AAMC (American Association of Medical Colleges, 1998) stated it was a 30% change in

minority recruitment. Carlisle, et al. (1998) declared that most of the U.S. medical schools have consistently failed to enroll minorities. The emphasis the University of Texas Medical Branch (UTMB) at Galveston, Texas has placed on recruiting and graduating minority medical students is significant. In 1996 UTMB ranked number one out of the ten U.S. Medical schools with the highest performance in URM enrollment (Carlisle et al., 1998). In 2003, UTMB was again identified as the nation's top granting institution of medical degrees for Hispanic Americans (Borden & Brown, 2003). The concept issues of affirmative action, the growing and aging Hispanic population in Texas and the poverty that exists among many Hispanic Texans, coupled with the insufficient number of medical doctors in Texas should bring focus upon the need for more minority medical doctors.

Issues have been discussed in this section concerning the shortage of medical doctors and critical consequences from this shortage in Texas. Affirmative action issues appear to have decreased the minority enrollment in the past in Texas medical schools. The growing Hispanic population and poverty among that population along the Texas–Mexico border are definite and applicable reasons to increase the number of minority medical doctors. In order to understand under-representation of all women in science fields, attention will now be turned to the literature concerned with the history of under-representation of women in medicine.

The History of the Under-Representation of Women in Medicine

Society has had many centuries to “get it right,” but sadly, Deaux (1999) stated that indications are that the pace of changing attitudes toward gender roles in the

direction of liberalization has slowed or stopped. Glick and Fiske (1999) added, especially so when one considers the contradictable, conflicted, bipolar and stereotypical thoughts on what society believes a woman actually is or is not. From this woman researcher's point of view, the pace has never quickened enough to know whether is has slowed or not.

History points to a path that has been steep and slippery for women who were self-driven into the medical field. Women in medicine and what they had to go through affords a look at the path that faces many Hispanic women today who dream of a career in medicine. The analysis of the available literature indicated initial receptivity of women into the study of medicine in synch with the progress of males. However, in his book, *To The Ends of the Earth: Women's Search For Education in Medicine* (1992), Bonner recounts that, "In all the world in 1850, no regularly established medical school anywhere consistently opened its doors to women . . . Small wonder then, that few women braved the censure and ridicule of their contemporaries to seek a problematic career in medicine." Bonner (1995) stated that during the 1800's "beyond the barriers of social class and inadequate schooling, many women were excluded altogether from medical education by not only reason of sex but because of religion or color."

Kate Campbell Hurd-Mead (1938) lamented in her very in-depth treatise, *A History of Women in Medicine:*

> If they had been able to work collectively for the reform of their condition, or had been able to found such colleges and schools for girls as were to be found in republican Switzerland and America two hundred

> years later, the story of medical women during the past three centuries would undoubtedly have been far more brilliant. It was obviously unfair that medical women, denied a university education in every country but Italy, should yet be blamed for their lack of success.

Hurd-Mead quoted Daniel Defoe (1938), a staunch proponent of education for women during the Seventeenth Century, who stated:

> I have often thought of it as one of the most barbarous customs in the world, considering us as a civilized and Christian country, that we deny the advantage of learning to women. We reproach the sex every day with folly and impertinence, while I am confident that had they the advantages of education equal to us [men], they would be guilty of less than ourselves.

It is a sad legacy indeed for women and all minorities that "For many years medical schools mirrored the discrimination of our society. . . They were primarily the preserve of white men" (Petersdorf et al., 1990). Solomon (1985) posited that, “At every stage of their progress, individual women persisted in exploiting opportunities.” She added that, “History reveals dialectic between women’s demands for education and the opposition they encountered.” These were self-driven women.

Of great interest to this research, Luchetti (1998) spoke of rural frontier medicine women who she stated were “Strongly driven, generally unorthodox” (p. 49), who “had to function in a society that was deeply patriarchal, structured around men who held the upper hand both in public and in private, and who resented female deviance from traditional roles” (p. 13). She continued, (p. 28) “Families often threw obstacles in the path of aspiring female medical students hoping that a ‘storm of opposition’ would deflect the young girls from an experience that would be socially

embarrassing, if not dangerous." Bonner (1992) asked the question, "Who were these early women physicians and what drove them to so unpromising a career?" Luchetti (1998) asked a similar question of rural, frontier women doctors, "What inspired them and what were their sacrifices?"

This statement begs for inquiry concerning the similarities between the early women physicians, rural, frontier women doctors and this population of Hispanic women medical students. So how does the history of "medicine women" connect with Hispanic female medical students today?

Kitano (1998) pointed to the answer in speaking of gifted Latinas. She pondered exactly how successful Latina women might be, or how much earlier, greater, or less stressful might their productivity have been had these gifted women encountered less resistance. Similarly, every reader may ponder the question: In the face of racism, sexism, and cultural barriers, how have highly accomplished Latinas coped and succeeded to make it into medical school in Texas, and will they make it? The history of women in medicine is an epic, sad, and prolonged tale. These women in medicine fought difficult battles, but the few who persevered remained strong and set the path for women in medicine today.

Rigol (1998) acknowledged that, "Traditional Latino values contrast sharply with those of European Americans and may represent distinctively different ways of looking at the world and organizing experience." Olmos, Ybarra and Monterrey (1999) stated, "In contrast to the European immigrants, Latinos continue to base their identity on the family, culture, religion, and language." It was interesting that several

researchers felt the necessity to compare Latina medical women to early Euro-American medical women.

Bonner (1992) studied Early American women who were forced to leave their home country and travel to Europe to find a medical school that allowed them to enter courses with the possibility of eventual graduation. Bonner (1992) found these early American females had 3 traits:

- They came from comfortable middle class families in America.
- The families were headed by a professional male figure with progressive views about women.
- Each female had a very determined mindset.

These women were hardy, strong, driven and able to cope with the stress while others evidently could or would not. These women believed they could become physicians during a time when socially it was not to their advantage. So Kitano's (1998) previous question is asked again: Exactly how successful might Latina women be, if they encountered less resistance or how much earlier, greater, or less stressful might the productivity have been, had these gifted women encountered less resistance? It gives time to think through the question and ponder the fallout from the doctor shortage, the growing population in Texas, poverty and under-representation of Hispanic women in Texas medicine.

Achterberg (1990) breaks the musing with this jarring statement:

> At other places, in other eras, women's legal right to practice the healing vocations was gradually eroded by changing mores and religious dogma. Today, over 80 percent of the workers in the health

> system in the United States are women. Without women, hospitals, laboratories, and social agencies could not operate. Nevertheless, women in general, have limited professional independence and authority, and are in some instances, legally constrained in practicing the skills associated with their training.

Taking that cognitively discordant statement into the next section, focus will now be shifted to issues of current under-representation of Hispanic women in medicine.

Under-Representation of Hispanic Women in Medicine

The occurrence of under-representation of Hispanic women in medicine fills the mind with worrisome questions that all begin with "WHY?" The literature search revealed a consistent reality, which formed an interwoven amalgamation of ubiquitous, extreme stress in medical school underpinned with double minority stressors and bias toward Hispanic women. One might connect the historical and common societal bias against women in medicine, with the URM medical students. Within these boundaries the literature developed into a small light on a path through a very dark tunnel. Luchetti (1998), stated "Knowing why she chose medicine, how she went about achieving a degree, and who she had to become during the process are the building blocks of understanding" the under-representation of all women in medicine.

Bowman and Allen (1990, p. 8) gave possible reasons for lower numbers of all women than men in medical school as (1) "Women medical students indicate their parents were less supportive of their decision to study medicine than is reported by men." (2) "Subtle discrimination by medical schools." Tekian, (1997) reporting on

URM, stated they often “face considerable socioeconomic problems, including financial hardship, poorly financed schools, and lack of proper support from family.”

Zambrana (1996) in examining the under-representation of Hispanic women observed “High levels of family poverty linked to secondary school dropout rates, inadequate educational background and work experiences and lack of information on resources and opportunities.” Baker (1996, p. 15) remarked, the entire “Chicano profile of educational achievement, and ensuring economic achievement, paints a disturbing portrait of human capital investment lost, and economic productivity blunted at a time when it is most desperately needed to avoid a wholesale intergenerational transmission of want.” Firestone and Harris (1994) suggested that “Low income and high rates of poverty experienced by Hispanic women result from structural changes in the family and in the labor market rather than from individual deficiencies or lack of human capital.” In a fluid, crystal-clear understanding, Carlisle, et al. (1998) avowed, “One of the most compelling reasons to continue efforts to increase URM medical students is to address changing population demographics of such groups in the United States.”

The literature has painted a picture of under-representation of all women in medicine, as relating to less support from families, and possible discrimination by the medical schools. Researchers have found socioeconomic problems, poverty, lack of family support, poorly financed schools, inadequate educational background and educational achievement as influencing Hispanic women in the medical profession.

With this section completed, the next focus is on some umbrella issues found in the literature, such as stereotypes, prejudices, patriarchs and the power of males in the

Hispanic culture, as well as gender issues that are troubling to all women and may develop into stressors that might impact under-representation.

Stereotypes and Women

The current section examines the phenomenon that from antiquity, more often than not, male dominance and prejudicial bias focused on everything from male psychiatric peccadillo thoughts of women leading to illegal, malicious and murderous actions by men to downright sabotage of education and practice when women penetrated into the field of medicine (Bonner, 1992; Luchetti, 1998). As Achterberg (1990) wrote, “It was never insinuated that women lacked the knowledge or the wisdom to ply the healing arts. . . However, because they were women—not men, nor philosophers, nor priests, nor physicians—any manifestation of their healing practices was deemed the work of demons.”

White, Donat and Bondurant (2001) acknowledged that children “From the beginning learn the major lesson of patriarchy: The more powerful control the less powerful. Furthermore, children learn that power is gendered and associate men and masculinity with power and dominance.” This has contributed to constrictive limitations to female professionalism. Glick and Fiske (1999) added, “Male structural power, which creates high status for men and low status for women, fosters hostile sexism: unfavorable attitudes toward women that justify men’s higher status.” Kite (2001) stated that “Once stereotypic beliefs are developed, they have remarkable staying power; studies in a variety of settings and cultures show that men are believed to be higher in agency then women, where as women are believed to be higher in

communion than men." Prejudice and bias that is aimed toward women affects all professional women, and especially affects those of double minority.

Glick and Fiske (1999) felt "The generic female stereotype presupposes conventional women, including subtypes such as housewife and 'chick', who are in a cooperative but low-status relationship with a man"

The literature discussed the point that perhaps stereotypical statements, beliefs and mores arose from biased research; religion and history of what society felt defined "Woman" and her role as a woman. Anne Fausto-Sterling, in her book, *Myths of Gender* (1992) reported "Research about sex differences frequently contains gross procedural errors. . . Examining the same material that for years great intellects had deemed solid, whole, flawless. . . But where are the women? Maccoby and Jacklin (1974) found no difference in how the two sexes learn; yet in scanning several beginning psychology books these authors are cited as showing that there is a difference. There may be a reason for that.

In the past, research has been conducted on men and results extrapolated to women. However, more egregious in nature, Unger (2001) found:

> Most of the early studies were conducted from an individual difference perspective derived from Sir Francis Galton's work in the 19th century. For example, Galton concluded that women tend in all their capacities to be inferior to men. More to the point of this current project, he also concluded that people of color were inferior to White, English men and, as he measured larger psychological deficiencies, the more his subjects deviated from his Anglo-Saxon norm.

Unger (2001) posited the glaring nexus that when it came to sexual difference, “Studies that failed to confirm dominant theories were unlikely to remain part of psychology’s official history.”

Tavris (1992) stated, “In recent years, women have been uncovering many of the implicit biases that resulted from using men as the human standard. But the universal man is deeply embedded in our lives and habits of thought and women who deviate from his ways are still regarded as, well, deviant.” Lerner (1985) stated, “What is important about being at the bottom of the seesaw relationship is culturally prescribed for women. While individual women may defy or even reverse the prescription, it in fact, underlies our very definitions of femininity and the whole ethos of male dominance.” Tavris also stated (1992) that historically, “Implicit use of men as the norm pervades much of what school children learn about American and Western civilization.”

Gender is immutable, while ethnicity revolves more around an individual perception. Nevertheless, the societal belief that one gender or ethnicity is better suited than another is repugnant at any place and any time. “Race and gender continue to be important lenses through which Americans view the world. Yet too often, commitments to racial or gender equity are viewed as competitive” (Chavkin, 1996). Goodwin and Fiske (2001) stated “It is perplexing that gender-based power differences are so resilient in modern societies.”

It appears that society; government, culture, family, education and religion all play a conflated part with genetics in establishing stereotypes (Major, Barr, & Babey,

1999). Valian (1999) explained that because of our "gender schemas" even an "egalitarian environment such as academia does not guarantee accurate, objective and impartial evaluation and treatment of others." Glick and Fiske (1999) proposed "Dimensions that reflected the ambivalent view of women as likable, but incompetent." Valian (1999) substantiated this thought in that successful women were perceived as having less leadership ability than successful men, and "Women who behave 'like men' elicit negative reactions. Women may feel forced into a less competitive stance because they are punished for being competitive." Any professional woman has felt this sort of stereotypical bias. In the current section, focus has been on general societal stereotypes, which form prejudice against women that affects all women and especially Hispanic women. Attention will now be turned to gender issues and stress in female medical students.

Gender Issues and Stress in Female Medical Students

In talking about gender identity and gender role, Loue (1999) stated, "Despite any distinction, (biological) sex has often been synonymous or predictive of, gender (social role)." However, the understanding of Maccoby and Jacklin (1974) is that "A variety of social institutions are viable with the framework set by biology and it is up to human beings to select those that foster the life styles they most value." Erickson and Babcock (1995) stated, "Gender lies at the heart of family relations; for rights and duties of family members are inextricably linked to sex." In examining this topic, Kessler and McLeod (1984) argued that women are more vulnerable to stress "due to the greater emotional involvement of women with the lives of those around them."

Kessler and McLeod (1984) demonstrated for the first time the emotional cost of caring is reason for a substantial part of overall relationship between sex and stress and they found “Not only do men and women respond to the same types of stressors differently, but women and men have different stressors.” Nazroo, Edwards and Brown (1998) concluded that, “gender differences in depression are largely the result of differences in roles and the stress and expectation that go with them.” Abalos (1986) noted, in Latino families “It is the internalized feelings of being owned by the men in the family fostered by linkages of dependence that allowed the tradition of male-female roles to be repeated generation after generation.”

Goodwin and Fiske (2001) argued that, “Existing gender roles shape what men and women believe about their own skills, and whether certain skills can or should be developed.” Barnett (1993, p. 410) stated, “For women, family roles have been assumed to be the core roles. Indeed, in Erikson’s seminal work, *Identity: Youth and Crisis* (1968), marriage and motherhood were considered crucial to the completion of a woman’s identity. Knight, in his book, *Medical Student: Doctor in the Making,* (1973), stated, “Regardless of what we say, we believe Americans of both sexes usually have acted as if the possession of a uterus uniquely qualifies its owner for domestic service.”

One might think that society has advanced somewhat since Erickson’s work and Knight’s statement were reported. However, as Lenhart and Evans (1991) explained, “Women physicians, as a group, continue to advance more slowly than their male counterparts and continue to report a variety of gender related problems in the workplace.” Valian (1999) affirmed that currently “Women physicians tend to be

concentrated in lower-earning specialties and, with increased experience, earn less than men physicians." Baxter, Cohen and McLeod (1996) suggested:

> Fewer females than males were found to have considered or to have chosen surgery as a career. This may have resulted from a lack of exposure of female students to surgery. Female students did fewer surgical electives during medical school and were less likely to have an appropriate surgical role model than men.

Field and Lennox (1996), in their study of women medical students during the clinical year, found "Female students were more likely to suffer discrimination because of their gender in certain specialties such as surgery and to be dissuaded from pursuing a career in that specialty." Nora et al. (1996) demonstrated that "medical students perceive gender discrimination across specialty areas. Exposure to gender discrimination and sexual harassment can affect specialty and residency program choices."

Little research has been done in gender issues in the realm of academic medicine. In their research, Carr, Szalacha, Barnett, Caswell and Inui (2003) found that "Many women in academe carry the added burden of gender discrimination, which is real and, at times, pervasive in their lives." Carr et al. (2000) stated, "Gender bias and mild forms of sexual harassment have more far-reaching consequences than has previously been appreciated." This sort of research provides a critical insight into the importance of study in the area of stress in all minority women in medical school. If the women professors are stressed by prejudice, this might limit the help they can pass on to the students, especially help in the form of role modeling and mentoring, especially

if they do not have or have not been given the power base necessary for mentoring at their institution.

Eccles, Barber and Jozefowicz (1999) believe that “Gender roles affect behavioral choices largely through their influence on identity formation, which in turn shapes expectations for success and values.” They pondered the thought:

“If a child grows up in a world that both encourages and reinforces independence, flexibility, and individual choice and provides extensive models of gender-role transcendence, she is likely to place much less importance to conformity to gender-role stereotypic behavior norms.”

Hispanic women who have lived in a world that is still often bound in patriarchy may conform very closely to gender-role stereotypic behavioral norms of the culture. When such a woman arrives at a medical school in Texas, she perhaps will have a primary language other than English. Peterson, Friedman, Ash, Franco, and Carr (2004) found that women in academic medicine who have a primary language other than English, experience racial or ethnic bias independent of minority status, which may give them “outsider” status.

This section discussed the literature reports on the all-engulfing and strangling effects of bias. Prejudice limits the progress of a minority student and the support a minority faculty member could give to that student. Gender issues and stress in female medical students is a real world issue and one that brings stress to all medical women. The following section discusses the stressors affecting these medical students.

Stressors and Stress in Medical School

Stressors are "Situations, circumstances, or any stimulus that is perceived to be a threat and can be divided into three categories" (Seaward, 1997):

1. Biological or ecological influences are those external influences such as sunlight, gravitational pull, earth's orbit or axis rotation and the effect of technological advances, which may have upset the balance in a life but can be positively influenced by lifestyle changes.
2. Psycho-intrapersonal influences make up the greatest percentage of stressors and involve those thoughts, values, beliefs, attitudes, and perception that we use to defend our identity or ego.
3. Social influences include environmental issues such as overcrowding, personal space, major life change or the accumulations of daily hassles or acute stressors.

Medical school contains an environment of high stress but also emits stressors that are flagrant negatives. The American Medical Women's Association (AMWA) stated in its position paper, (1994) "That certain behaviors by teachers, house staff, and other students are abusive, disruptive of the learning process, and should not be tolerated." Listed below are some of these highly negative stressors:

1. Wolf (1994) stated that "coupled with resolving normal psychosocial developmental crisis is the problem of professional socialization or the [rites of passage] in which incoming first-year medical students begin to acquire the attitudes, values, ethics, behaviors, and lifestyles of physicians and this pressure

taxes the “adaptive capacities of medical students at a time in their life cycles when they are struggling to consolidate their identities.”

2. Dr. Monique Bégin delivered her keynote speech, *Working and Speaking with Others: Are Doctors Aliens?* at the 1999 Atlantic Medical Students’ Conference. She stated, “To succeed in the eyes of their peers, medical students are socialized, especially as interns and residents, to be overly competitive, domineering and single-mindedly focused upon career advancement.” In the medical school, “professional socialization takes place in an environment which has been characterized as rigid, authoritarian and dehumanizing” (Wolf, 1994). Kassebaum and Cutler (1998) stated “We can think of nothing more hostile to the learning of professionalism and cultural sensitivity than an educational environment rife with abuse of learners by their teachers and supervisors.”
3. A conundrum issue that eludes expulsion is the horror of abuse of medical students. Silver and Glicken (1990) found that “abuse as perceived by students is a frequent occurrence in medical school.” Kassebaum and Cutler (1998) added the abuse of student “is ingrained in medical education, and has shown little amelioration despite numerous publications and righteous declarations by the academic community over the past decade.” Elnicki, along with medical school personnel from twelve medical schools in the nation (2002, p. 92), found that students, during their internal medicine clerkship, “Described a variety of personal and educational effects of abuse. They generally did not report abuse because of fear of retaliation and the belief that reporting is pointless.”

4. Another very troubling issue found by Sheehan, Sheehan, White, Leibowitz and Baldwin (1990, p. 535) was that “Half of those who gave their race as nonwhite or Hispanic reported experiencing racial or ethnic slurs, most frequently (50 percent) from classmates but not infrequently from clinical faculty and residents or interns (33 percent) and residents (25 percent).”
5. Medical students are faced with other stressors such as personal or interpersonal issues (Wolf, 1994). Spiegel, Smolen and Jonas (1986, p. 1158) found “conflicts between medical students and those involved in their clinical training are a common, yet little studied, source of stress for students.”
6. Along with concrete stressors, students also find subtle pressures that included “intangible phenomena such as threat and anonymity and more practical problems such as limited personal time and long hours” (Vitaliano, Russo, Carr, & Heerwagen, 1984, p. 736).
7. Kassebaum, Szenas, and Schuchert (1996) asserted that rising student debt and consequences of student loans are stressful issues for students. Grijalva and Coombs (1997) reported that many “minority students abandon plans for a medical career because of the costs involved.”
9. Minority women often are faced with the concept of academic inferiority. Grijalva and Coombs (1997, p. 72) found, “Nearly every Latina interviewee was challenged by associates concerning her intellectual qualifications for a medical career.”

Whether the stress is from being used as a “scut monkey” (Sheehan et al., 1990, p. 533), fending off racial slurs and sexual harassment, having to justify your undergraduate work just because you are an Hispanic women or just overloaded in general, stress for all medical students is severe and the stressors are many and can be very distressing.

The salient point for any medical student is simply how to survive in a threatening environment and cope with the dilemmas faced by all medical students while acquiring all the knowledge needed to achieve a degree and to do well in the medical field. Gordon (1994) wrote that during the early 1970s the American Medical Association’s (AMA) Council on mental health (concerned about the mental health of medical students) issued its landmark report *The Sick Physician*. Since then, literature has contained many reports of covert and overt stress in medical students. Coombs and Virshup (1994) stated many medical students are “overwhelmed with the voluminous amounts of assigned work and disturbing experiences that they deal with by denying or suppressing emotions.” Virshup (1985) spoke of students, even very bright students, who are more than capable of coping with all areas of education, but who may find their coping skills are not sufficient for the high stress and intense pressures of medical school. Almost every medical student deals with stress on a minute-to-minute basis.

Many recent science texts pointed to how little the academic world has considered the term and concept of stress and the stress response. In their treatment of this worrisome issue, Hubbard and Workman (1997, p. 5) stated, “In the not-too-distant past, stress was a rather esoteric concept that has become literally a household word;

even so, medical texts often give little attention to the topic." Cunningham (1997, p. 4) explained that, "No previous age in history has included the variety and intensity of psychological pressures, demands, and expectations for work and lifestyle." Along the same lines, McKenzie, Pinger and Kotecki (1999, p. 352) stated, "Stress, as a contributor to mental health problems, is likely to remain important in the twenty-first century as life becomes increasingly more complex."

Cunningham (1997) remarked, "Stress is as lethal as the dragon of mythical history" (p. 3). He described stress as "a multifaceted problem affected by diet, personality, working conditions, and lifestyle" (p. 29). Cunningham also saw stress as individual, variable and cumulative. He held that, individual perception of stressful conditions might be a key factor in understanding how one responds to stress. Kirkcaldy, Athanasou and Trimpop (2000, p. 325) concurred and acknowledged from their own research that there is a personal construction of stress "idiosyncratic perceptions and construction" which overlays any common meaning of the phenomenon. They further stated personal constructions included one's own personal context such as family, one's position, such as physician, the social organizational aspects, working conditions, excessive workload, physical dangers and the impact of unexpected events.

Seaward (1997) sounded the warning that, lifestyle diseases currently are the leading (70-80 %) cause of death and are preventable by altering the habits and behaviors that contribute to their etiology. Even though research documenting the connection to stress and illness is recent, the knowledge that stress acts as a precursor

to disease is not a new concept. Ornstein and Sobel (1987, p. 28) asserted that, “As early as 1919, researchers studying tuberculosis observed a decrease in the activity of white blood cells in patients during emotional excitement. Many had severe life crises in the one to two years preceding the onset or relapse of the disease.”

The striving for, or prodding toward, a medical education may add much stress to the already overloaded system of a woman who has had to deal with double biases her entire life. Her emotional state may be already highly taxed. Barton (1993, p. 782) stated, “Emotional strain, chronic depletion, demoralization, troubled interpersonal relationships, anxiety and depressive symptoms are widespread among medical trainees and practitioners.” Barton stated that there is a critical need to teach stress management to medical students. Cohen, Kessler and Gordon (1995, p. 102), revealed that, “Prolonged and active coping with a stressor can be psychologically fatiguing, resulting in attention, thought, and performance deficits.” Diamond and Hopson (1998, p. 80-81) stated, “During extended periods of chronic stress, cortisol and other related stress hormones cause nerve cells in certain parts of the brain to lose their dendritic branches and spines, and eventually die off completely. This can lead to poor memory, fuzzy thinking and a lack of creativity.”

Benson (2003, p. 90) stated, “We inherited, from earlier generations, the physiologic ability to fight effectively or run away from danger because our ancestors were unlikely to survive without it.” However, a threat today that triggers the stress response usually is not physical but rather psychological in nature. Taylor et al. (2000, p. 29-30) have proposed, from their research the “Bio-behavioral alternative to

Cannon's (1932) fight-or-flight response," which, they state, has "Dominated stress research of the last five decades and has been disproportionately based on studies of males." These authors contend that "Female responses to stress are characterized by a pattern termed 'tend and befriend,' built on the bio-behavioral attachment or care-giving system" (p. 29). Readers must be getting a clear picture of stress, stressors, and all the damage that can be done to the body of a medical student. There a critical danger from a high-stress life, especially when that stress is constantly there. Attention now will be turned to the literature concerning stress found in Hispanic women in medical school.

Stress in Hispanic Women in Medical School

Abalos (1986, p. 66-67), in speaking of Hispanic women lamented:

> Women from the Latino culture, have for centuries belonged to men – whether a father, husband, brother, bishop, or other male guardian (emanation). Their ability to create conflict or change was minimal. Their lives were limited to cooperating with and seeking to continue the strength of the male who gave them security. Women were unable to create alternatives and exercised only those strategies acceptable to the culture (subjection). Women were allowed to withdraw only into a psychic state of moodiness (isolation). An aunt or other mediator could intercede on their behalf and win for them some concessions (buffering). If the stress and strain went beyond all reason, a woman could become bold enough to confront the dominant male in her life and ask for a better life (direct bargaining). If she succeeded or failed, she was still left with the only option of returning to normal, that is, seeing herself only as an extension of others and therefore limited to what they would permit. This was their life space: possession and domination softened by limited isolation, a brooding silence, mediators, and bargaining. Women were devoid of the right to be physically left alone, the right to go away to renew themselves, denied any autonomy (boundary management) and ironically, forbidden even to descend into depression (incoherence) lest it cast a shadow on the family image of contentment. People forbidden to feel their own deep discontent cannot

> generate the conflict and the energy necessary to break the old and transform their lives (transformation). It is the internalized feeling fostered by linkages of dependence that allowed the tradition of male-female roles to be repeated generation after generation.

Hispanics follow a cultural script called *simpatía* (Marin & Marin, 1991; Triandis et al., 1984). Because of *simpatía*, "Hispanics are more likely than the non-Hispanics to expect high frequencies of positive, social behaviors and low frequencies of negative social behaviors . . . This suggests different levels of adaptation for social behavior in the two cultures" (Triandis et al., 1984, p. 1363). They stated further, "The interaction among non-Hispanics in the presence of this script among Hispanics is likely to lead to misunderstanding when Hispanics and non-Hispanics interact."

Marin and Marin (1991, p. 1) wrote that "Contrary to the assumptions of some individuals, cultural values—not demographic characteristics—help Hispanics self-identify as members of one same ethnic group." Triandis, et al., (1984, p. 1375) stated that the "Simpatía script is reflected in actual behavior and is a central component of more general, culturally based patterns of social behavior." Rigol (1998, p. 11) related that, Latino culture with its emphasis on *familismo, respeto* and its religious influences, may exert a significant role on individual moral development and may contribute to greater levels of "super ego pathology" characterized by guilt, excessive self-punishment and high levels of self-criticism. The *simpatía* social script and the ethnic or cultural values of an Hispanic woman today may make her very vulnerable to the stress of humiliation in trying to please authority figures as found in medical school.

Kanellos (1994, p. 39) explained, “The traditional cultural stereotype of the Hispanic female is based on dualistic perspective of the sexes and a strong belief in appropriate roles for each gender.” In other words, deviation from the “‘natural’ gender roles” (1994, p. 39) is not traditionally accepted. Yetley, Yetley and Aguirre (1981) defined the concept of role as having “Several associated dimensions, including cultural, behavioral, and socio-psychological dimensions. Rospenda, Halpert, and Richman, (1994, p. 496) defined role stress as “Stress involving competing demands between school and social or family life.”

Nazroo, et al. (1998, p. 326) concluded that, “Gender differences in depression are largely the result of differences in roles and the stress and expectation that go with them.” Wolf (1994, p. 11) reported that professional women have role conflicts and families are less supportive of their career choices. Shervington, et al.(1996, p. 153) found role strain affected women especially in clinical rotations. Glick and Fiske (1999) stated researchers have argued that stereotypes of women and men follow from their social roles. Rigol (1998, p. 9) reported that, “When compared to other cultural groups Latino men and Latina women exhibit the greatest discrepancy in gender roles. Gomez (1996, p. 15) suggested “Latinas with a Hispanic spouse experienced greater work-family conflict and stress than Latinas with non-Hispanic partners and the dual role of managing work and family life is more exacting for Latinas then for non-Latinas because of Latino culture’s emphasis on the family.”

In her book, *The Career Development of Notable Latinas*, Maria Jesus Gomez (1996, Abstract) found “Latina career development was greatly influenced by

sociopolitical, cultural, contextual and personal variables" and these cultural values not only influence feelings about financial success, but also feelings about who women are as Latinas in the world as they adhere to the code of the family.

Anzaldúa (1987, Preface) wrote: "Hispanic females live not only near a physical border but must also live within psychological borders unlike that of a non-Hispanic female." Gutierrez, (2001, p. 216) stated Anzaldúa's fractured identities, were identities fractured not only by gender, class, race, and religion but also by the reality of life along the U.S.-Mexico border. Strayhorn (1998) in speaking of the Texas-Mexico Border remarked "This area has a heritage unlike any other in the world." There may be bitter experiences for those Hispanic women who find they are professionally competing in an arena grasped firmly by Euro-American infra-structure, education and government, while living close to and within cultural borders that frequently are of a traditional Hispanic mindset.

Perhaps it does not need to be stated, but "Medical students from subgroups, differing from the mainstream, reported more stress than their mainstream counterparts" (Shervington et al., 1996, p. 153). Pyskoty, Richman and Flaherty (1990, p. 581-685) found that throughout the school year, the Hispanic medical students continued to report higher self-esteem and greater social support but showed increased external locus of control . . . it is disturbing to note that the minority students manifested decreased feelings of self-efficacy."

The female Hispanic medical student does differ from the mainstream, which joins a ligament or connector of this research. Female Hispanic medical students have

been found to have “unique” stressors and experience great stress at work and at home (Grijalva & Coombs, 1997, p. 67-78). Long and Martinez (1994, p. 183-186) agreed and shared the thought that “Professional Hispanic women face the challenge of balancing two cultures: the majority middle-class culture and their ethnic culture and this can cause internal conflict leading to lower self-acceptance.” The double minority of ethnicity and gender, and the barricades erected from this bias, coupled with the “unique” stressors and role strain (Shervington et al., 1996, p. 153) can “leave emotional pain” (Kitano, 1998, p. 157) for an Hispanic woman increasing her vulnerability (Kanellos, 1994).

If that was not enough, Grijalva and Coombs (1997, p. 72) found, “Nearly every Latina interviewee was challenged by associates concerning her intellectual qualifications for a medical career.” Kitano (1998, p. 142) found “educators may have low expectations for migrant students.” Kitano stated “Problematically, a strong emphasis among Latinas on domestic responsibilities is negatively associated with progress in academic programs” (1998, p. 134).

In an attempt to understand this issue, Bennett (2001, p. 671) found “The time spent on domestic tasks became barriers to higher education among Chicanas, a trait not encountered to the same degree among Chicanos or the Anglo Women studied.” The “cultural Script of Simpatía in which there are cultural values of allocentrism, *familismo*, power distance (including *respeto*), personal space, time orientation and gender roles” (Triandis et al., 1984, p. 1363) form from birth cultural barriers leading to stress in professional achieving Hispanic women.

This chapter has focused thus far on literature concerning stress and stressors in medical school. The focus has also been on Hispanic women in medical school and their stress. It was noted that Hispanic women have specific unique stressors. It is time now to examine coping and managing stress in medical school.

Coping and Managing Stress in Medical School

There is something very pertinent to be said about medical students and the high stress with which they must be able to cope. The literature pointed out that medical schools are not focusing on this concept. Vitaliano, et al. (1984, p. 730) stated, "Contrary to the traditional belief that stressful experiences are necessary for future medical practice, research suggests that stress and anxiety are major causes of cognitive dysfunction." Klamen (1997, p. 42) added, "Most have never been exposed to a formal stress management program. . . yet stress management programs have been shown to be effective in hospitals, businesses, and large corporations in reducing the stress level."

Stern, Norman and Komm (1993, p. 173) found "In dealing with medical-school-related stressors, that first-year students used self-blame and problem-solving styles of coping more than fourth-year students. When dealing with interpersonal stressors, however, fourth-year students tended to use confrontative coping more than first-year students." Most medical students would be helped by learning about coping strategies and about how harmful high stress can be.

Wolf, Faucett, Randall and Balson, (1988, p. 641) believe if a "medical student can learn how to control their stress during medical school through individualized

health programs then they will take more responsibility for their health during resident and clinical training." Barton, (1993, p. 782) stated, "We urgently need to design and provide course work in medical school curricula to teach preventive, proactive methods of managing this stress." Barton further added, (p. 782) "If taught effectively medical students might then continue to apply these techniques though out their careers." Shapiro, Schwartz and Bonner, (1998, p. 581) acknowledged that the "Inability to cope successfully with the enormous stress of medical education may lead to a cascade of consequences at both at personal and professional level." Peterkin (1998, p. 11) placed "maintenance of personal physical and mental health" in the center of his seven elemental points in his list of *Necessary Elements of a Physician's Well-Being*.

Research from stress studies elucidates the importance and benefits of stress management programs. Seaward (1997, p. 162) stated that Richard Lazarus defined coping as "the process of managing demands that are appraised as taxing or exceeding the individual's resources." Additionally, Lazarus believed coping to be mostly a state of mind, consisting of "Both cognitive and action oriented behavioral changes" (Seaward, 1997, p. 162).

Mattlin, Wethington and Kessler (1990, p. 117) determined that cognitively, and "thinking about ways to make a situation better is harmful when it is not accompanied by action" whereas active behavioral coping or getting up and doing something about the situation is positive adjustment. Along the same lines, Mosley et al. (1994, Abstract) found that coping organized around "Engagement strategies" acted to lower depressive symptoms while "Disengagement strategies" acted to raise levels

of depressive symptoms. Engagement coping would seem to be the same concept as active behavioral coping. Mosley, et al. felt that training in engagement coping could be used as intervention to decrease stress among medical students. Smith, Wethington and Zhan (1996, p. 427) found that "clearer self-concepts are associated with the endorsement of more active coping styles such as taking action . . . versus behavioral disengagement or denial."

Pyskoty, Richman and Flaherty (1990, p. 585) stated that from their findings concerning internal resources being the most protective against distress they recommend that minority medical students be involved with "enrichment programs that focus on enhancing inner and external resources to facilitate greater feeling of control and self-efficacy."

Aldwin, Sutton and Lachman (1996, p. 866) found that even in the "midst of despair people struggled to learn and grow" and they found it remarkable the degree to which people perceive their own personalities as malleable. This would portend that coping strategies could be learned by medical students if the medical school would teach them. Researchers should be aware of valuable information that still needs to be accumulated on stress and how one copes with stress. For instance, Zorrilla, DeRubeis and Redei (1994, p. 598) found that "subjects that were high in self-esteem and hardiness or that had effectively stable personalities had higher basal levels of circulating cortisol…and higher circulating levels of β–endorphin." Further research into coping strategies and education to learn about coping is very important and would enable knowledge about hardiness on the individual level.

Pengilly and Dowd (2000, p. 814) cited Maddi and Kobasas in their description of a “hardy” individual as “One who views events that could be potentially stressful as meaningful and interesting (called commitment), sees oneself capable of changing events (called control), and sees change as normal and as an opportunity for growth (called challenge).” Cunningham (1997, p. 73) stated that personality is a key component in the stress response and is a central piece to understanding how a person may react to stressful events and circumstances. However, Seaward (1997, p. 120) believed that “Regardless of personality type. . . Low self-esteem is the common denominator in stress-prone personalities, as seen in Type A, helpless-hopeless types and codependent.”

Pengilly and Dowd (2000, p. 818) stated: “the relationship between stress and depression is a complex one . . . and treatment programs for depression might profitably include provision for increased social support, increasing an individual’s hardiness level especially in the area of commitment and problem-solving training”

Sapolsky (1998, p. 335) posed the following question: “What general strategies can help us the most in the face of psychological stressors?” Seaward, (1997) explained that there are four basic components of successful coping strategies:

1. An increased awareness of the problem
2. Some aspect of information processing
3. Peaceful confrontation, or modified behavior
4. Peaceful resolution.

Corresponding to this information are numerous coping strategies that may be used, including correct breathing, exercise, diet, behavioral modification, progressive relaxation, biofeedback, meditation, self-hypnosis, journaling, humor, art, time management, therapeutic massages, socializing, and some form of cognitive restructuring, working to gain control of the situation, or commitment to some cause.

Shapiro, et al. (1998) found that short-term stress reduction intervention might prove a useful complement to medical and premedical education. Medical students everywhere could profit from this sort of intervention.

This section brings to a close the information derived from the literature concerning hardiness in an individual and information on coping and coping strategies The summary of this chapter will be the next focus.

Summary of Literature

This chapter discussed the impacting issues brought out in the literature, which may directly and generally affect all women's roles in medicine. Throughout most of recorded history, women have been under-represented, undereducated, undervalued, disenfranchised and marginalized in stereotypically chronicled male-dominated fields such as math and science (American Association of University Women, 1995). However, other issues were discussed in the literature concerning Hispanic women, such as the double minority stressors of gender and ethnicity. The discussion covered URM in medicine and the critical shortage of medical doctors in Texas. The literature brought out statements such as, "The career development experiences of Latinas in higher educational systems continue to point to stereotyping and the barriers these

stereotypes produce. . . these barriers, in turn, reinforce the oppression experienced by these women from a predominantly 'White male system' and their own traditional roles within their cultures, (Hernández & Morales, 1999)" Kitano,(1998) during interviews with gifted Latina women, discovered that "They experienced emotional pain produced by confrontations with obstacles such as racism and sexism." Hispanic women have unique stressors that are problematic, and some of the most egregious issues from these stressors are the assumption that they are academically inferior to other populations. The fallout from affirmative action issues is ongoing. Recruitment of minorities into medicine is a real-world problem that needs to be addressed, especially during a time when medical doctors are in such short supply. Finally, this section discussed what researchers have learned concerning coping strategies. Listed below are the summary points from the literature of the major impacting factors facing medical schools and Texas medicine currently.

The Historical Problem of Extreme Stress in the Medical School Environment

Morton et al. (1996); Wolf (1994); Vitaliano, et al. (1984); Kassebaum and Cutler (1998), as well as many more researchers, reported on the dangerous diurnal stress in medical school. Researchers reported that this high stress during medical school is not necessary and is indeed harmful to the students. The literature has shown that the diurnal stress of medical school can take on unique forms to a woman of color because of double biases, double challenges, "unique" stressors, divergent expectations, strain from role stress and enormous barriers of cultural and ethnic prejudice that only add to the stress level. Researchers have also recommended

interventions and short-term interventions, which have been found to work for lowering stress in medical students.

The Current Dearth of Medical Doctors

Texas does not have enough medical doctors to fill the needs of its population, especially in the rural areas. The Hispanic population in Texas is escalating and aging (Murdock, 1996). Added into this mix is the fact there is a current need for about twice as many Hispanic medical doctors as are produced nationally (Carlisle et al., 1998). The growing and aging population in Texas portends a need for many more medical doctors to support the medical needs of Texans into the future. Additional medical doctors will need to be able to tend to the many Hispanics living in Texas who are under-represented, undereducated, undervalued and extremely poor (Strayhorn, 1998). Who better to tend to patients from this population than minority medical doctors who have been found to more altruistic toward the under-represented, undereducated, undervalued and extremely poor patients? Yet reports and statistics have shown that Texas has consistently failed to recruit enough minorities into Texas medicine.

Little is Known About Hispanic Women in Medical School and How They Fare

Not much is known concerning their stressors, nor how they cope with these stressors. Grijalva and Coombs (1997) did find that “Latina physicians and medical students experienced great stress at work and at home, with ‘unique’ stressors.” A medical career may cause major upheaval at home and a marked departure from culturally held and traditional roles. An Hispanic woman may have been biased throughout her education by professionals and her family before entering medical

school. Becoming a medical student may put her in conflict with those she loves as well as with herself. She may be running countercurrent, even against her own cognitive styles or schemas. This may cause extreme anxiety to any "adaptive capacities or lack of adaptive capacities" (Wolf, 1994) of a woman who may already feel less than hardy, more vulnerable and less able to cope.

Under-Representation of Hispanic Women

Reports and statistics have shown that Texas has consistently failed to recruit minorities into medical science. The phenomenon of under-representation of Hispanic women in Texas medicine brings forth the question of why? This question may have several answers

1. Fausto-Sterling (1992) alerted readers to the flawed and biased research on sex differences. She asked the questions, “Where are the women? And doesn’t that change the whole conclusion?”
2. Affirmative action issues decreased the number of all minorities in Texas medicine.
3. Most women throughout history have been under-represented in medicine. Women were mostly expunged from medicine throughout history, and as time wore on, women were less and less able to become physicians. The literature plainly stated that racism and gender issues kept many women from the medical field. Sheehan, et al. (1990); Baldwin, Daugherty and Rowley, (1996); Lenhart and Evans (1991); Nora, et al. (1996) were a few of the researchers who reported on egregious acts such as sexual harassment, gender bias, bigotry and hate toward any woman who threatened the establishment by trying to enter the medical field. These

impediments are still extant today, although they can be very subtle, affecting minorities who threaten the establishment by trying to enter the medical field. Zambrana (1996) warned that the URM status of Hispanic women is “particularly acute as compared to other women in medicine.”

4. Stereotypes are very stressful. Parkerson Broadhead and Tse (1990); Kitano (1998), and others reported on the negative effect on physical, mental and general health leading to higher anxiety and depression scores, which puts all females at a greater risk than men for impaired health. Kite (2001), Valian (1999), and Glick and Fiske (1999), among others, spoke about stereotypes, gender schemas, cultural and societal thought patterns concerning what a woman is or is not. This is fatiguing stress for all women.
5. Kanellos (1994, 1998) reminded readers that Hispanic women, as a whole group, might be considered vulnerable because of traditional gender roles. Shervington, et al. (1996); Rospenda, et al. (1994); Barnett (1993); Peterkin (1998) ; and Kitano (1998), among others, all spoke of role strain and multiple roles or the role stress of competing demands between medical school, social or family life. Role strain and stress can leave a full time female medical student highly stressed, confused, angry and depressed. Role stress can stress a Hispanic woman medical student who is trying to keep together her studies and social and family ties that bring her support even further. Montero-Seibruth (1996) spoke about divergent expectations and the role of mediator that a professional Hispanic woman assumes “between two or

more worlds of value and meaning. It is a role confounded by incompatible or divergent expectations."

6. A female Hispanic medical student may be vulnerable from childhood (Wortham, 1998) because of cultural scripts and have an existing coping mechanism that will be overwhelmed with the high stress of medical school (Virshup, 1985).
7. Triandis, et al. (1984) brought forth the concept of *simpatía*. They talked about interaction between non-Hispanics and Hispanics in the presence of this script. This interaction is likely to lead to misunderstanding when Hispanics and non-Hispanics interact because of *simpatía.*

Aggressive and Passive Research

Holtzman, et al. (1975) talked about how United States students perceive aggressive, competitive emotions as highly active, while Mexican students tend to perceive the static, internalized emotions, such as shame, which calls for self-modification as more active.

Academic issues

A critically egregious issue concerns assumed academic inferiority of female Hispanic medical students (Kitano, 1998) and insults concerning their intellectual qualifications (Grijalva & Coombs, 1997). Kitano (1998); Grijalva and Coombs (1997), and a few others reported on how principals at high schools, counselors and medical school personnel perceive female Hispanic medical students. They report thought patterns running so amuck that there are some professionals who believe that gifted Hispanic women should be in lower classes and not advanced far. However,

Rospenda, et al. (1994) felt that women medical students in general might be at higher risk of experiencing poorer performance as a result of stress. Lensky et al. (1999) found in their study of first-year medical students that 77% chose academics as one of the leading causes of their stress.

Coping Strategies

How do the Hispanic women cope? Stewart, et al. (1995) recommended that medical educators and those with the responsibility for curriculum development should be more aware of the stresses of medical life and take prophylactic actions for the prevention of short-term and long-term stress-related problems for medical students. Short-term intervention has been found to be beneficial to medical students. It has been shown that research needs to continue into how medical students cope. It was shown that hospitals and corporations educate with stress management programs yet most medical students have never had the opportunity to take part in a formal stress management program even though these programs have been shown to help reduce stress. Interventions were discussed and short-term stress training was found to be helpful for medical students. The message was given that medical students need this sort of intervention, especially since the stress and anxiety found in medical school does not have to exist and can cause major cognitive dysfunction to the student.

1. Personality had been shown to be malleable
2. Coping skills can be learned.
3. Active behavioral coping has been found to be positive and engagement strategies act to decrease depression

In the final section, special attention is focused on the multiple bases, which imply multiple adaptations by various entities, other than the student to significantly alleviate the problem of under-representation of Hispanic women in medical school, the shortage of medical doctors, stress and coping.

Closing Contextual Dynamics and Thoughts Related to This Research

Seaward (1997) reminded readers that, "a student travels a path from known to unknown and the list of stressors a college student experiences is rather startling." Very high stress in the medical school environment is well documented and several researchers consider the medical school environment "threatening" (Wolf, 1994). Added to this threatening environment in medical school is an elemental phenomenon that consists of ethnic, cultural scripts, family mores, religious tenets, false assumptions about academic achievement and gender schemas and a prejudicial society toward most minorities, which cannot be legislated or prompted. Societal thought must change toward cultural and gender prejudice and change must begin in family units and with each individual. It is an impacting necessity that families, religious personnel, public educational institutions, government and individual communities appreciate the paralyzing attitude of bias and prejudice that has been thrust upon women throughout history and continues into contemporary time. Perhaps then people and institutions can "catch on" that incongruities and inequalities of bias are consequential and can cause stress, which may in part contribute to the continual under-representation of Hispanic women in medicine today. There is a need to understand more about this population especially during a time when medical doctors are in such shortage and the Hispanic

population is greatly expanding. Knowledge from such studies of stress and coping may be used to gain a better understanding of why no more Hispanic women are entering and matriculating in Texas medical schools. The historical look at women in medicine lends credence to the viable truism that culture must forge ahead the changes that are necessary to clear the path for all women, while hopefully, policy will follow with fair and enabling remediation.

CHAPTER III

METHODOLOGY

Introduction

The major reason for this research was to study stress in female Hispanic medical students in Texas and the coping strategies they use. Stress in medical students has been well documented in the literature. However, little is known of Hispanic women who are of double minority status, with unique stressors and enrolled in medical school. More to the point, even less is known about stress in Hispanic women enrolled in Texas medical schools. The comprehensive literature review highlighted the fact that most medical schools are not focusing on helping medical students cope with stress or learn coping strategies.

In order to process this research procedurally, instruments were collected which comprehensively measured perceived stressors, demographic questions were written,/ and personal interview event questions were compiled. The interviews were arranged when the questionnaire packet was delivered to each woman. The demographic questions and stress questionnaires were self-reported.

This researcher hoped to obtain as much information as possible as there is an urgent need to identify unique stressors found in professional Hispanic women and to find any stress-resistant habits of this population.

Essential Purpose of Research

1. To measure the degree to which Hispanic women perceive stress in Texas medical schools.
2. To identify perceived factors that may cause stress among female Hispanic medical students in Texas.
3. To identify "unique" stressors that may exist in female Hispanic medical students in Texas
4. To identify how female Hispanic medical students in Texas coped with stressors

Research Questions

The research questions are restated here to allow readers to ponder the literature that has been discussed and begin to formulate an answer for each question.

1. What stressors, if any, do female Hispanic medical students in Texas display?
2. What coping techniques do the female Hispanic medical students recognize they are using to counter stress found in medical school in Texas?

Measures Used to Answer Research Questions

Research Question 1 was answered through the administration of the Inventory of Stressors and the Inventory of Stress-Related Symptoms, two stress questionnaires providing the quantitative measure, along with a personal interview, which provided a rich qualitative dimension in the stories told by the women. Research Question 2 was

answered through two quantitative measures in the Personal Style Inventory and the Inventory of Stress Resistance Resources along with the qualitative measure in the interview information on stress hardiness.

Research Design

The research design utilized in this study was descriptive in nature and empirical in the form of the stress questionnaires and demographic questions, which were handled statistically. The descriptive techniques illustrated the frequency of each variable and the percentages from that data. This research was also synthetic in nature in the form of the personal interviews with the women and information derived from those interviews, which were compiled into very rich stories told by the women. This research is not inferential in nature except possibly for other populations of Hispanic women in other geographical areas. This researcher was not just interested in obtaining information for the sake of research but plowed on with this project in hopes that information collected could be applied in the field to support and increase minority medical students in Texas medicine.

Variables used in this research pertained to broad areas of personally perceived stressors, unique stressors, noted only in Hispanic professional women, adaptive capabilities of the women, coping strategies in place, vulnerability, impact of primary and secondary social ties, church, personality and lifestyle as they pertain to stress in Hispanic women.

The raw data was computer generated and examined through a statistical computer program. The software for analyzing the data for this research was the

student version of the SPSS version 11.0. This was found to be the most reliable, affordable, software for this research. The descriptive data were entered and calculated using the SPSS. Once generated, the results were examined and interpreted so that conclusions could be drawn about this project.

Setting

The setting for this research was two medical schools in Texas. Texas A&M University System Health Science Center College of Medicine (TAMUS) at College Station and Temple, Texas (for third and fourth year students) and the University of Texas Medical Branch (UTMB) at Galveston, Texas.

Population

Figure 1: Number of Hispanic women enrolled in the medical schools. (Nicholson)

Institution	Participants	Population
UTMB School of Medicine	15	64
	9	9

The population for this study involved Hispanic women attending the medical schools in Texas shown in Figure 1. Texas has eight medical schools, one of which is private. This researcher began looking for medical schools in Texas that would allow research of this type. This research was accepted by two of the public medical schools

in Texas. The medical schools that gave their permission for this research were TAMUS and UTMB. This researcher traveled to the two medical schools to interview and meet with the women. At TAMUS, the first and second year students are at College Station and then move to Temple to finish the third and fourth year at Scott and White. At UTMB, all four years are spent at Galveston.

Procedures

At first this researcher worked to find out what medical schools in Texas needed, so that this project could be brought to a close. Most Texas medical schools contacted never communicated back, or if they did, they stated they did not want this research. Several schools at first wanted to work with this researcher but never officially committed to the project. TAMUS was first to commit. The Internal Review Board (IRB) acceptance from TAMU – College Station was put into place and then it was a short step to receiving the women's email addresses from the registrar. From here, interview times were arranged. The next school to grant permission was UTMB at Galveston. The need to obtain their IRB acceptance and a faculty sponsor was deemed important by the school. The faculty sponsor proved to be a very valuable link to this entire process. Dr. Kyriakos S. Markides agreed to be faculty sponsor for this research. He is the Annie and John Gnitzinger Professor of Aging Studies and Director, Division of Sociomedical Sciences, Department of Preventive Medicine and Community Health. Markides asked Ms. Sandra Garvock to work on the project also. Garvock is Director of Special Programs, Assistant Director of the Hispanic Center of Excellence, Office of Student Affairs and Admissions at UTMB. Sandra worked

diligently on this project. She obtained the names and sent emails out to the women. She also encouraged the women to be included in this research. Edna Vasquez from the Student Affairs office handled all the scheduling of appointments for the interviews. Markides advanced this research with help in obtaining the IRB approval and also gave a reception for the women participants on August 28, 2003 at the Stork Club in Galveston.

The research packet given to each woman included:

1. The demographic sheet
2. A consent form
3. The interview question sheet
4. The COPC
5. The CSSA

Instrumentation

DemographicQuestions

In building the demographic personal information sheet, it seemed important that women were given the right to self-identify. There was also a keen interest in mentors or if indeed there was a mentor. Questions were asked concerning socioeconomic attainment of a family member closely involved with guidance of the woman. Family religion was deemed important because of the close tie of Hispanic heritage to the Catholic Church and the Catholic Church's view of the traditional role

of women. Finally, there was an interest is how much the women knew about stress and stressors in their life.

Interview

The interview elements were constructed generally around questions concerning the unique stressors found in female Hispanic medical students. The choice of interview as a research instrument was initiated because this researcher felt an important need to meet the women before they answered the stress questionnaire package. Interviews have been found to have an advantage over other research tools because of their flexibility and the ability to probe for clarification in responses (Lang & Heiss, 1984, p. 112). Marin and Marin (1991) emphasized the importance of an investigator becoming known to Hispanic participants to help defray possible problems with missing data, low self-disclosure to strangers or extreme answers questions in the stress questionnaire package. This interview period afforded a pleasant time during which the participants got to know this researcher, while giving time to help each student understand the importance of mindfulness in their answers to the stress questionnaire.

The interview was semi-structured from the standpoint of set interview questions and set time frame. The format for the interview was one-on-one or small groups and scheduled for one hour. However, this researcher found that many times after the hour interview was over, the women wanted talk on and actively worked to invite others in. So, since many times the women wanted to talk with each other, so the set time-frame was not enforced, allowing much more and richer information.

Stress Questionnaire

This researcher was unable to find a single tool that seemed appropriate that would measure the unique stressors of the research group. Therefore, this study involved using a group of questionnaires. The questionnaires were obtained from:

1. The University of California Irvine College of Medicine using the Community Oriented Primary Care (COPC) Patient-Doctor Student Project. The COPC questionnaire was constructed by medical students and investigated stress in first year medical students (Lensky et al., 1999). There are 15 questions using a scale of 1-5, with 1 being “strongly disagree” and 5 being “strongly agree.” The questions addressed current self–perceived stress, happiness, and sufficiency of sleep and health status. It also asked if these criteria were consistent with the student’s pre-medical school expectations. To discuss this questionnaire, it was divided into two parts that investigated general stress and specific stress. This gave this researcher a percentage of the self-perceived stressors in medical school, happiness, or not, of choosing to go to medical school and satisfaction with academic achievement.
2. Dr. Charles Sheridan, the University of Missouri - Kansas City (1987). The Comprehensive Scale of Stress Assessment (CSSA), which included:
    - The Global Inventory of Stress (GIS)
    - The Inventory of Stressors
    - The Inventory of Stress-Related Symptoms

Also administered was the Personal Style Inventory (PSI) and the Inventory of Stress Resistance Resources Dr. Sheridan (personal communication, October 12, 2000) stated the following:

> The Global Inventory of Stress (GIS), so far as I know, the only generic measure of stress available. Most instruments assess stress by providing a sample of typical stressors and seeing how many of those respondents affirm. This won't work if the stressors are unusual for the population in general. Probably Hispanic medical students have their own kinds of problems, not necessarily the same as those faced by other groups. The GIS is at a low reading level, but most people subjectively experience it as a "hard read." That is because it requires respondent to read definitions of key concepts pertaining to stress. Since you are working with highly achieving students that should be no problem.

Following below are reported use of each scale in the CSSA:

1. The *Global Inventory of Stress* (GIS) consisted of twenty-two questions that assessed the various aspects of stress generically, by defining the relevant dimensions, then asking the respondent to rate her standing on those dimensions. Subscales of the GIS are stressors, stress resistance resources, symptoms of stress. Also measured were: (a) stress in the primary relationship; (b) stress in the work environment (school); and (c) stress in the social environment. Items are in Likert Scale format, and they assess the frequency and intensity of stressors, resistance resources, feelings of strain, and stress-related symptoms in the woman's life.
   In addition, the GIS assessed several dimensions of relationships including Range, Frequency, Intensity, Control, Arousal and Unpleasantness.
   Sheridan and Smith (1987) reported high internal consistency (0.95) and a strong correlation with reported health status (r = .55). The GIS also appeared to be valid

with significant correlation with the Social Readjustment Rating Scale of Holmes and Rahe. Sherk used the GIS with a sample of 163 college students and found the GIS to be a significant predictor of symptoms and made independent contributions to that predictions (GIS beta weight = .59).

2. The *Inventory of Stressors* measured stress a student had felt in the last six-month period. This was a checklist of 80 stressors from a wide range of stress dimensions that are significantly related to health status.
3. The *Inventory of Stress Resistance Resources* measured buffering and coping
4. The *Inventory of Stress-Related Symptoms* measured symptoms that may be found in stressed individuals

In order to internalize the issues in this research, a model was constructed. This model represents a summary of literature findings brought together in a flow pattern that points to high stress in Hispanic women in medical schools, the under-represented minority (URM) crisis in medicine and the need for immediate, substantial, active and constant support.

As seen in Figure 2, the model shows a reciprocal, totally interacting nature to the under-representation of Hispanic women in Texas medicine, the positive and negative mediating mechanisms and the immediate and constant need for support. If the support is not there, not forthcoming from families, communities, alumnae at the medical school or others, then possibly more stress is added to an already stressed student. If the support is there, then there is possibly less stress to the student. If the negative mediating mechanisms are there, then stress possibly rises in the already

stressed student. If the positive mediating mechanisms are there, such as intact coping strategies, then stress possibly decreases in the student. There is normative stress found in most medical students, which arises from just being in medical school. It is when double minority prejudice and stereotypes meet with the normative stress found in medical school that the stress can become unbearable. Mediating mechanisms of socioeconomic status and peer differentials may be either positive or negative, depending on the circumstances and can work either to increase or decrease stress in the student.

The reciprocal, interacting action can be mediated more with instant, substantial, active, constant support and mentors or role models. There are not enough minority mentors in place. Their presence in the life of a minority student just like support in the student's life would most likely lessen stress. Coping strategies if appropriate and in place would also lessen stress. However, there is not much known from research found in the literature about coping strategies in the population of female Hispanic medical students. Virshup (1985) stated that coping strategies effective in college might not be effective in medical school for any student. Therefore this researcher was very interested in active use of coping strategies, if any, and identifying what those coping strategies were and if there were any mentors or support the students could use.

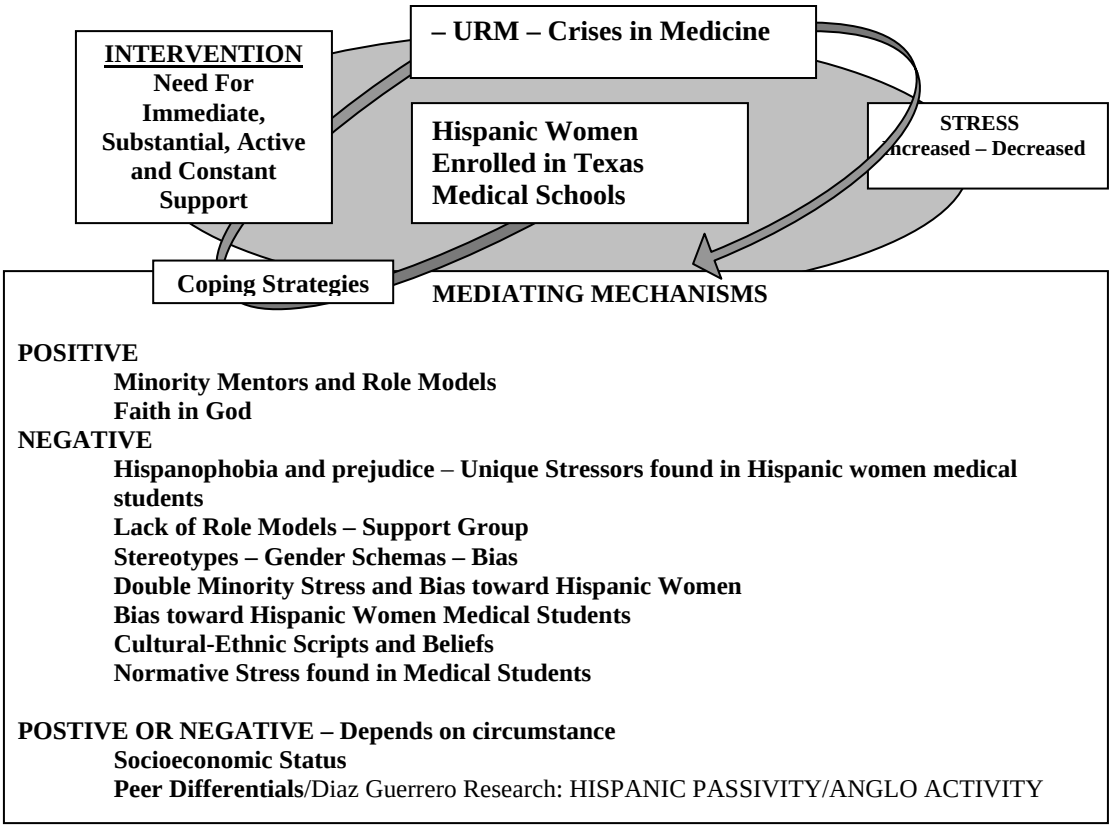

Figure 2: Research Model (Nicholson) URM – Hispanic women, stress, coping strategies, mediating mechanisms and intervention for Hispanic women in medical schools in Texas.

Review of the Major Points from Literature Used in This Research

1. There is a well-documented historical problem of extreme stress in the medical school environment.
2. There is a dearth of medical doctors currently and into the future for the growing and aging population of Texas; coupled to the high poverty level among many Hispanic Texans this is an escalating problem without many answers forthcoming.

3. Little is known about Hispanic women in medical school in Texas and how they fare.
4. Under-representation of Hispanic women is a phenomenon that affects the fiber of every person in Texas. Reports and statistics have shown that we have consistently failed to recruit minorities into Texas medicine.
5. Academic issues such as assumed academic inferiority and questions concerning intellectual qualifications are egregious problems.
6. Research concerning coping strategies used by Hispanic women in medical schools. Stewart,et al. (1995) recommended that medical educators and those with the responsibility for curriculum development should be more aware of the stresses of medical life and take prophylactic actions for the prevention of short- and long-term stress-related problems for medical students. Short-term intervention has been found to be beneficial to medical students.

Summary

This chapter reviewed the flow of this research. Research design, population, setting, procedures and instruments used were all discussed. There was a review of the major points of the literature used in this research. The model constructed for this research was discussed as well as the thoughts behind the completion of the research packet delivered to each woman. The research questions and essential purpose behind this research were reexamined. The major literature reports were put into this chapter in order to allow readers to ponder the need for this research and the processing in this research.

CHAPTER IV

RESULTS OF STUDY

The major purpose of this research was to investigate stress in Hispanic women enrolled in medical school in Texas. From the outset, the urgent need for and importance of this research was clear. Hispanic women medical doctors are highly under-represented both in Texas and nationally (Zambrana, 1996). In Texas there are about two-thirds more Hispanic women in universities who are enrolled in pre-medical track classes than matriculate to their first year of medical school. During 2001-2003 there were 597 Hispanic women who applied to medical school and only 219 that matriculated on into medical school. This shows that only 36.6% or just a little over one third of Hispanic women pre-medical students actually matriculated into medical school in Texas (Mabry, 2004, Personal communication).

Table 1 below shows that during fall 2001-fall 2003 school years there were a total of 3369 male and female; all ethnicities pre-medical students – Texas residents who entered and matriculated into their first year in a Texas medical school (McIver, 2000). Hispanic women totaled 248 and White (non-Hispanic) women totaled 1007.

Table 1:
First Year Entering Class – Texas Residents – 2001-2003

Year	Hispanic Women	White Women	All Men	All Women	All Students
2001	73	308	648	547	1195
2002	84	339	616	613	1229
2003	91	360	589	656	1245
TOTAL	248	1007	1853	1513	3369

From these figures it was derived that Hispanic women comprised 6.7% of the total incoming first-year class both sexes, while White (non-Hispanic) women comprised 27.4%. Hispanic women comprised 16.4% of the total female population while White women totaled 66.5% (McIver, 2000).

If one considers the first year entering class non-Texas residence included as seen in Table 2 then, Hispanic women totaled 6.2% of the total incoming first-year students both sexes while White women (non-Hispanic) comprised 26.9%. Hispanic women totaled 12.9% of all the women while White women (non-Hispanic) totaled 55.8%

Table 2:
First Year Entering Class – 2001-2003

Year	Hispanic Women	White Women	All Men	All Women	All Students
2001	74	339	706	605	1311
2002	85	376	675	667	1342
2003	91	361	694	656	1350
TOTAL	250	1076	2075	1928	4003

Including Baylor College of Medicine Medical School, Texas College of Osteopathic Medicine, Texas Tech Medical School System, The University of Texas Medical School System and Texas AandM Medical School System there were 7, 320 total women (first year through forth year) from both in state and out of state from 2001 to 2003 and 15, 670 total students both sexes (McIver, 2000). In Table 3 readers can see that during these years there were 895 Hispanic women enrolled in Texas medical schools. Hispanic women comprised only 5.7% of the student body both sexes compared to White women who comprised 26.7%. Comparing just the female population, Hispanic women comprised 12.2% and White women totaled 57.0%.

Table 3:
First–Fourth Year – 2001-2003

Year	Hispanic Women	White Women	All Men	All Women	All Students
2001	285	1360	2824	2360	5184
2002	296	1376	2789	2416	5205
2003	314	1442	2737	2544	5281
TOTAL	895	4178	8350	7320	15670

In the population data for the state of Texas from April 2000 to July 2002 the total population both sexes for both non-Hispanic and Hispanic was 20, 955, 248 July 1, 2000; 21, 270, 985 for July 1 2001 and 21, 779,893 July 1 2002. The Non-Hispanic population of females totaled 7, 234, 390 for July 1 2000; 7, 302, 776 for July 1, 2001 and 7,372,208 for July 1, 2002 while the Hispanic population of females totaled 3,314,091 in July 1 2000; 3,450,392 in July 1 2001 and 3,581,761 July 1 2002 (Peoples, 2004). Hispanic women comprised 15.8% of the total population in 2000, 16.1% of the total population in 2001 and 16.4% of the total population in 2002. Non-Hispanic women comprised 34.5% in 2000, 34.2% in 2001 and 33.8% in 2002.

This allows readers a much clearer picture of the under-representation of Hispanic women in medical school in Texas. The per capita of Hispanic women is increasing and while the per capita of non-Hispanic women is decreasing (Peoples, 2004). Taking the per capita rise in the Hispanic woman population and small rise, of Hispanic women in Texas medical schools compared to the decreasing per capita of the non-Hispanic women while larger number of White women provides ample base for demonstration of the under-representation of Hispanic women. It appears this trend

will continue. The under-representation of Hispanic women in medicine forms a major impact on communities especially during a time when medical care is in short supply.

That being the case, it is the goal of this researcher to work toward mobilizing Texas medical schools, communities in Texas, middle and high school parents in Texas and the Texas legislature to do what needs to be done to help Hispanic women and indeed all minority students to become prepared for a career in the health science field, should that be their goal. It behooves the powers that are in Texas to coalesce to help Hispanic women matriculate into medical school should they have an interest in pre-medicine and meet the qualifications to successfully compete for a place in medical school.

This research investigated the stressors that impact these women during their medical school training and any coping strategies they use. This research focused on how the stressors hindered or promoted the women's progress and the coping strategies they employed while in medical school. Therefore, this research sheds light on strategies the women use to overcome barriers to enter medical school, those coping strategies that supported them, and those, which helped the women to achieve their academic goals. This research begins investigating relevant stressors in these women and their coping strategies as a possible avenue for explaining why Texas colleges have so many Hispanic women in premed programs, which evidently are not entering medical school in Texas (McIver, 2000; Mabry, 2004, Personal Communication).

The objectives of this project were accomplished by:

1. Selecting and then compiling the stress questionnaire packet.

2. Designing the events of the interview.
3. Selecting the medical schools that would accept this research.
4. Obtaining internal review board (IRB) permission at each school.
5. Procuring the population of Hispanic women together.
6. Creating the model used during this project, (Figure – 1), which elaborates the need for immediate, constant, and substantial support for all minority medical students in Texas.
7. Analyzing the data in order to answer the research questions.

The results of this research are presented in the current chapter. The demographic information, analysis of the stress questionnaires, information extrapolated from stories the women told during the interviews, any ancillary findings, and a summary are also included.

Dr. Victor Borden of Purdue University contributed one of the found "treasures" in this research, adapted here in Table 4. For the last ten years, Borden and Brown (2003) have compiled data of graduation of minority medical students.

Table 4:
MD Degrees Conferred on Hispanic Women: 1992-93 Through 2001-02 Texas, California, Florida, and Illinois

Institution	Years State	Location	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-00	00-01	01-02	10 Yr Total
University of Texas Medical Branch	TX	Galveston	4	6	7	13	16	22	11	22	15	25	141
Health Science Center	TX	San Antonio	10	9	14	11	12	10	14	11	7	17	115
Health Science Center	TX	Houston	8	5	4	8	9	16	14	19	14	8	105
Southwestern Medical Center	TX	Dallas	7	6	6	10	3	4	3	4	4	5	52
Baylor College of Medicine	TX	Houston	5	5	3	5	6	6	6	4	7	3	50
Texas Tech University Health Sciences Center	TX	Lubbock	2	2	2	4	4	6	5	2	4	2	33
Texas AandM Health Science Center	TX	College Station	0	0	0	0	0	0	0	5	1	0	6
	Sub-Total Texas		32	33	36	51	50	64	53	66	52	60	452
University of California	CA	Los Angeles	8	6	9	5	7	8	10	12	9	13	87
University of California	CA	San Francisco	6	4	10	7	6	5	13	10	7	9	77
University of Southern California	CA	Los Angeles	4	4	6	6	0	4	7	13	4	8	56
University of California	CA	Davis	6	4	4	5	4	5	4	4	3	4	43
University of California	CA	San Diego	3	8	6	0	15	3	0	3	3	0	41
Stanford University	CA	Stanford	4	4	0	5	3	5	6	5	3	5	40
University of California	CA	Irvine	4	4	1	5	7	8	4	0	2	1	36
Loma Linda University	CA	Loma Linda	1	6	3	2	2	1	4	3	4	0	26
	Sub-Total		36	40	39	35	44	39	48	50	35	40	406

Table 4 continued

Institution	Years State	Location	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-00	00-01	01-02	10 Yr Total
	California												
University of Miami	FLi	Miam	7	7	11	14	10	8	6	17	11	7	98
University of Florida	FL	Gainsville	3	2	0	2	2	4	0	4	4	4	25
University of South Florida	FL	Tampa	3	2	1	5	2	4	0	3	1	1	22
	Sub-Total Florida		13	11	12	21	14	16	6	24	16	12	145
University of Illinois	IL	Chicago	16	9	14	14	11	16	9	17	15	13	134
Northwestern University	IL	Chicago	2	3	0	2	4	3	4	2	4	1	25
Loyola University Chicago	IL	Chicago	1	2	1	1	5	4	1	2	0	0	17
University of Chicago	IL	Chicago	2	0	1	3	1	2	1	0	1	2	13
Finch University Health Science Medical School	IL	Chicago	1	1	1	2	2	1	2	2	0	0	12
Rush University	IL	Chicago	1	1	0	0	0	0	0	3	2	3	10
Southern Illinois University	IL	Carbondale	0	0	1	0	1	0	1	0	1	1	5
	Sub-Total Illinois		23	16	18	22	24	26	18	26	23	20	216

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System IPEDS), Completions" surveys. (This table was extrapolated from Table 3A found in the Appendix which was prepared August 2003 by Victor M. H. Borden, Indiana University-Purdue University Indianapolis, personal communication), which shows the data on medical school graduates for Hispanic women in North and South America for the ten years of 1992-2002 (Borden, V.M. and Brown, P.C. (2003, July 31).

Borden compiled a chart just for this research, which shows medical degrees awarded to Hispanic women from 1992-1993 to 2001-2002 school years in the United States found in Appendix H. If one factors out Puerto Rican women, Borden shows that UTMB at Galveston, Texas has the highest rate of graduation of Hispanic women of any medical school in the United States for the past ten years. From Borden's chart, this researcher extracted information for Texas, California, Florida, and Illinois. This information is found in the following Table. Each of the four states has a large Hispanic population. Looking at the table one can quickly see that UTMB has the highest total amount of Hispanic women graduates of 141, than any of the other medical schools in the four states. The University of Illinois has the second highest total with 134 Hispanic women graduates.

Demographic Information

Demographic information was gathered from a series of questions. These questions concerned:

1. The women's ethnicity, marital status, number of children, age, birth order, number of siblings and religion.
2. The educational achievement of caregivers who provided for the women during the women's formative years.
3. The women on their individual perception of having or not having had mentors and support, whether negative or positive.
4. The status of the family during the woman's formative years, which was vital to understand the path the women took to be where they are presently.

5. Factors concerning a facilitative environment such as job, distance from school and commute to school.
6. The self-identity of the women
7. General demographic variables

Demographic information is presented in tables 5-11, which are found on the following pages.

As noted from the information found in this table, only 20% of the women were not of Mexican descent. Almost 67% were unmarried while just two of the women had children. Twenty-five percent of the women were 24 years old while 20% were 26. Almost half of the women were first born, while just one woman was an only child. Most of the women came from small families. Ten have only one sibling, while only one woman has five siblings. Almost all are Catholic. Only three women were not Catholic.

Table 5:
Demographic General Variables of the Women
(n = 24)

Variable	Freq	%
Mexican Descendent		
Yes	19	79.2
No	5	20.8
Marriage Status		
Yes	8	33.3
No	16	66.7
Number of Children		
None	22	91.7
One	1	4.2
Two	1	4.2
Age of Participant		
22	3	12.5

Table 5 continued

Variable	Freq	%
23	4	16.7
24	6	25.0
25	3	12.5
26	5	20.8
27	1	4.2
28	1	4.2
31	1	4.2
Birth Order of Participant		
First	11	45.8
Second	7	29.2
Middle	5	20.8
Only Child	1	4.2
Number of Siblings		
One	10	41.7
Two	7	29.2
Three	2	8.3
Four	3	12.5
Five	1	4.2
None	1	4.2
Religion of Participant		
Catholic	21	87.5
Protestant	3	12.5

Educational Attainment of Mentor

The women were asked about mentors and if there was a mentor what was education of those mentors. This table shows that a high percentage of the women have had at least one mentor. Looking at the educational attainment of the mentors, five were faculty with an MD or Ph.D.; seven were family members, most of whom had advanced academic or professional degrees. The women declared one priest and two

family friends as mentors. The data shows that five of the mentors were faculty with an M.D or Ph.D.

Table 6:
Demographic Variables: Educational Attainment of Mentor
(n = 24)

Variable	Freq	%
Mentors		
Yes	15	62.5
No	9	37.5
Educational attainment of mentor		
Faculty		
PhD	4	16.6
MD	1	4.2
Family member		
MD	3	12.5
Ph D	1	4.2
MS	2	8.3
Some college	1	4.2
Priest		
BS	1	4.2
Family friend		
RN	1	4.2
Professional degree	1	4.2

On an interesting note, during the interview, several women complained that even though they may have had mentors, they had never had any that looked like them. They stated that they wanted to see more professional minority women choose to mentor those following them.

Education of the Women

The women were asked about undergraduate college; their year of graduation, and college attended; target specialty for medical school; whether they were working in

a job outside of medical school; and how far they drove to school. Please note that at the time the women answered the questionnaire, only one student worked at a job outside of school. Soon after she answered the questionnaire packet, she reported she quit her job because her grades were jeopardized, and the medical school had told her she was in danger of failing. Therefore, during this research, the number of women not working changed from 23 to 24.

Table 7:
Demographic Variables: Education of the Women
(n = 24)

Variable	Freq	%
Year of Undergraduate Graduation		
2000	4	16.7
2001	3	12.5
2002	11	45.8
1996	1	4.2
1997	1	4.2
1998	1	4.2
1999	3	12.5
Undergraduate College		
UTPA	5	20.0
TAMU – International	1	4.0
TAMU – College Station	6	24.0
UT – El Paso	4	16.0
UTSA	2	8.0
UT – Austin	2	8.0
Dartmouth	1	4.0
Rice	1	4.0
Trinity	1	4.0
MIT	1	4.0
Target Specialty		
OB/GYN	1	4.0
Family Practice	4	16.0
Pediatrics	9	36.0
Psychiatry	3	12.0
Dermatology	1	4.0

Table 7 continued

Variable	Freq	%
Internal Medicine	1	4.0
Infectious Disease	1	4.0
Radiation Oncology	1	4.0
Not Sure	3	12.0
Work Status		
Working	1	4.2
Not Working	23	95.8
Miles to School		
1	13	54.2
2	5	20.8
4	2	8.3
5	4	16.7

This table illustrates that almost half of the women graduated in 2002. Six of the women attended Texas AandM University in College Station and five attended The University of Texas Pan American, while four attended the University of Texas at El Paso. Regarding target specialties, 36 % of the women are entering pediatrics, while 16 % are considering family practice, and 12 % are hoping to become psychiatrists. As noted, one woman is going into OB/GYN, one into dermatology, one into internal medicine, one into infectious diseases, one into radiation oncology, and one woman is undecided. Most of the women lived within one mile of the medical school. However, more than 16 % had to travel at least five miles to get to school.

Highest Educational Attainment of Parents

The women were asked about educational attainment of caregivers during formative years. As can be seen many of the mothers had at least some college or an advanced degree. Only two mothers did not attend high school. Four of the fathers had advanced and professional degrees, while eight of them graduated with a BS or BA. Two of the fathers did not attend high school. One woman did not state the educational attainment of her father.

Table 8:
Demographic Variables: Highest Educational Attainment of Parents (n=24)

Educational Attainment	Freq	%
Mother		
College		
Masters degree	4	16.6
Pharmacy School	1	4.2
Associate Degree	1	4.2
BS/BS	6	25.0
Some College	2	8.3
High School		
High School Graduate	5	20.8
GED	1	4.2
10th Grade	1	4.2
Some High School	1	4.2
Other Schooling		
Finished the 8th Grade	1	4.2
Finished the 4th Grade	1	4.2
Father		
College		
DVM	1	4.2
Ph.D.	1	4.2
MD	1	4.2
Masters	1	4.2
BA/BS	8	33.3
Community College	1	4.2
Some College	5	20.8
High School		

Table 8 continued

Educational Attainment	Freq	%
High School Graduate	2	8.3
Some High School	1	4.2
Other Schooling		
Finished the 8th Grade	1	4.2
Finished the 3rd Grade	1	4.2
Not Stated	1	4.2

Support During Formative Years

In this table demographic information was obtained concerning the women's support during their formative years, More than half give credit to both parents or just mother for support in their decision to become a medical doctor.

This table clearly shows that the women felt their mothers were the biggest support, while only one woman cited her father. It was pleasant to note that 50 % of the women had help from both parents

Table 9:
Demographic Variables: Support During Formative Years
(n = 24)

Caregiver	Freq	%
Mother	9	375
Father	1	4.2
Mother and Father	12	50.0
Grandparent	2	8.3

Support in Decision to Enter Medical School

This table presents the results of asking each woman whom she credited for her decision to become a medical doctor. This table shows that support of both parents is most important to an Hispanic woman in helping her to prepare for and decide on a professional career. Support of mother followed at 12 %, and mentors were included at 8 %.

Table 10:
Demographic Variables: Support in Decision to Enter Medical School
(n = 24)

Individual	Freq	%
Both Mother and Father	9	37.5
Mother	4	16.7
Father	3	12.5
Other	3	12.5
Mentor	2	8.3
Grandparent	1	4.2
Other family member	1	4.2
Teacher	1	4.2

The women were asked to give the reason for wanting to enter the medical field. This table illustrates their altruistic mindset. The women exhibited an altruistic mindset in their reasons for becoming a medical doctor. The women listed as their reasons for entering medical school to be their contribution to the community, or helping people and making a difference in patients' lives. Interestingly, one woman reported that she "wanted to improve the flaws in the field."

Table 11:
Demographic Variables: Reason for Becoming a Medical Doctor
(n = 24)

Response Given	Freq	%
Can help people	8	33.3
Can contribute to the medical community and can make a difference in patient's lives	6	25.0
To become a doctor has always been a goal	4	16.7
A calling by God to the profession	2	8.3
Happiest with this profession	1	4.2
Want to improve the flaws in field	1	4.2
Love working with patient's/children	1	4.2

Discussion of Demographic Information

The demographic information was handled in the previous tables 5-11. These tables contain demographic information from which readers can begin to form a profile of Hispanic women in Texas medical schools. Most of the women are of Mexican descent, unmarried, have no children, are first born, have one sibling, are between 22 and 31 years of age and are Catholic. More than half of the women have family support and can point to both parents or just mother as one that has helped and supported them throughout their formative years and into medical school. Most of the women are from families that value education for sons as well as daughters and over one-half have had at least one mentor. The educational attainment of caretakers of the women during formative years was mixed but a large number had a college degree. Most of the women graduated from college in 2002.

Most of the women are specializing in pediatrics, not working outside of school, and live within one mile of the medical school they attend. With the exception

of Dartmouth and Massachusetts Institute of Technology all of the women graduated from Texas schools and except for Rice and Trinity came from the Texas AandM system or University of Texas system.

Tables 5-11 contained the demographic information that helped established the base line for this research. Once demographic information was investigated, it was important to examine the answers the women provided in the survey of stress and coping found in the table below.

The Comprehensive Scale of Stress Assessment - Global Inventory

This Inventory was used as a comprehensive but cursory look at the stress levels in the women and how much they know about their stressors, symptoms, coping resources, stress from relationships and school. It shows how intense the women felt their stressors were. This table also allows examination of possible answers for both research questions. For ease of understanding, this table has been divided into the following sections:

- Knowledge of stress
- Stressors
- Symptoms of stress
- Coping resources
- School

As demonstrated in Table 12, the women's knowledge of stress shows that 100% of them are stressed. The questions concerning stressors shows that almost 50% of these women have intense stress and the typical strain they felt shows that more than 87% have moderate to very high strain. As to their number of stressors 54.2% stated the number of stressors was large to extremely large. The women were asked about

coping with stressors and 41.7% agreed they have problems in coping. As to the intensity of their stressors, 33.3% of the women agreed that it was “much like me.”

There were five questions concerning the symptoms of stress. Over 58% of the women have some of the symptoms listed, while 41.7% stated that a person under strain exhibits symptoms “somewhat like me.” The women were asked about emotions and feeling from strain and stress to which 37.5% stated they have a moderate number of emotions. When asked about getting to a place where there is no more need to try 62.5% stated they never reach this point.

There were two questions concerning coping resources to which more than 45% state their current coping resources would be rated somewhat more than average and 50% stated that their coping resources allow them to deal with stress to a great extent.

There were six questions concerning relationships, three of which dealt with primary relationships and three that dealt with social relationships. The majority of the women felt pleasant to very pleasant toward their primary relationship partner and 37.5% felt about evenly divided between able and unable to control that relationship. Over 33% stated that too high or too low of arousal was unlike their primary relationship. Fifty percent of the women stated that their social relationships are overall pleasant and 33.3% felt they were somewhat able to control what happens in their social relationships. As to the question about arousal in a social relationships, 37.5% stated that a person with too low or too high arousal was “a little like me.”

Questions concerning School found that 58.3% of the women felt their situation was pleasant and 41.7% felt they were somewhat able to control what happens. Asked

about arousal at work or school and 41.7% of the women stated that it was neither too high nor too low of arousal.

Table 12:
The Comprehensive Scale of Stress Assessment: Global Inventory (n=24)

Variable	Freq	%
Knowledge of Stress		
Given the meaning of the word "stressor" please estimate how frequently you are stressed currently		
Much more than average	8	33.3
Somewhat more than average	11	45.8
About average	5	20.8
Somewhat less than average	0	0.0
Much less than average	0	0.0
Stressors		
Now indicate how intense, on the average, your stressors are currently		
Extremely intense	0	0.0
Intense	11	45.8
Moderate	12	50.0
Of low intensity	1	4.2
Of extremely low intensity	0	0.0
The typical level of strain I feel currently would best be called		
Very high	1	4.2
High	10	41.7
Moderate	10	41.7
Low	2	8.3
Very low	1	4.2
My number of stressors currently is:		
Extremely small	0	0.0
Small	3	5
Modest	8	33.3
Large	10	41.7
Extremely large	3	12.5
Sometimes people have some stressors that are very hard for them to cope with even if they don't have very many		

Table 12 continued

Variable	Freq	%
stressors. The description of such a person is:		
Very much like me	0	0.0
Much like me	2	8.3
Somewhat like me	10	41.7
A little like me	5	20.8
Very little like me	7	29.2
Sometimes people have one or more stressors that are very intense and happen over and over (even though they might not have very many stressors). This has been:		
Very much like me	2	8.3
Much like me	8	33.3
Somewhat like me	6	25.0
A little like me	4	16.7
Very little like me	4	16.7
Symptoms		
Things like tense muscles, shakiness, dry mouth, fast heartbeat, cold or sweaty hands, headaches, urinating a lot and shallow breathing or other symptoms of tension may occur. I currently have:		
Almost no symptoms like this	6	25.0
A few symptoms like this	14	58.3
A fair number of symptoms like this	3	12.5
Many symptoms like this	1	4.2
Very many symptoms like this	0	0.0
Sometimes people, while under a strain have one or more such symptoms that are intense or happen often. Currently this wold be:		
Very much like me	1	4.2
Much like me	4	16.7
Somewhat like me	3	12.5
A little like me	10	41.7
Not at all like me	6	25.0

Table 12 continued

Variable	Freq	%
People under a lot of stress often have unpleasant emotions such as sadness, urges to cry, deadness or lack of feeling, nervousness or jumpiness, irritability, fear or other related emotions. Currently I have:		
Very many feelings of this type	1	4.2
Many feelings of this type	3	12.5
A moderate number of feelings of this type	9	37.5
A few feelings of this type	9	37.5
Very few feelings of this type	2	8.3
Sometimes persons under a strain have one or more such feelings that are intense or persistent (though they may not have a large number of such feelings). Currently this would be:		
Very much like me	1	4.2
Much like me	3	12.5
Somewhat like me	8	33.3
A little like me	9	37.5
Not at all like me	3	12.5
People under stress sometimes get to the place where they feel that there is simply no use trying to go on. Currently I feel this:		
All of the time	0	0.0
Almost all of the time	0	0.0
Some of the time	4	16.7
A little of the time	5	20.8
None of the time	15	62.5
Coping Resources		
My current coping resources would be rated:		
Much more than average	5	20.8
Somewhat more than average	11	45.8
About average	7	29.2
Somewhat less than average	1	4.2

Table 12 continued

Variable	Freq	%
Much less than average	0	0.0
My "coping resources allow me to deal with stressors:		
To a very great extent	7	29.2
To a great extent	12	50.0
Somewhat	4	16.7
Somewhat less than enough	1	4.2
Not nearly enough	0	0.0
Relationships		
Currently my relationship with my primary relationship partner is:		
Very pleasant	15	62.5
Pleasant	6	25.0
Neither pleasant nor unpleasant	3	12.5
Unpleasant	0	0.0
Very unpleasant	0	0.0
With respect to my primary relationship, I feel:		
Very unable to control what happens	0	0.0
Somewhat unable to control what happens	5	20.8
About evenly divided between able and unable	9	37.5
Somewhat able to control what happens	5	20.8
Very much able to control what happens	5	20.8
Primary relationships, whether for positive or negative reasons can often be too high or too low in arousal. Currently, this is:		
Very much like my primary relationship	4	16.7
Much like my primary relationship	3	12.5

Table 12 continued

Variable	Freq	%
Somewhat like my primary relationship	5	20.8
Unlike my primary relationship	8	33.3
Very unlike my primary relationship	4	16.7
Currently, with respect to my social relationships, other than my primary relationship, I feel:		
Very unable to control what happens	7	29.2
Somewhat unable to control what happens	8	33.3
About evenly divided between able and unable	6	25.0
Somewhat able to control what happens	2	8.3
Very much able to control what happens	1	4.2
School		
My school situation currently is:		
Very unpleasant	1	4.2
Unpleasant	2	8.3
Neither pleasant nor unpleasant	6	25.0
Pleasant	14	58.3
Very pleasant	1	4.2
In my school situation, I feel:		
Very able to control what happens	8	12.5
Somewhat able to control what happens	10	41.7
About evenly divided between able and unable	6	25.0
Somewhat unable to control what happens	3	12.5
Very much able to control what happens	2	8.3

Table 12 continued

Variable	Freq	%
Some people have work that is too high or too low in arousal. Currently this is:		
Very much like my job	1	4.2
Much like my job	5	20.8
Somewhat like my job	7	29.2
Unlike my job	10	41.7
Very unlike my job	1	4.2

Sheridan and Radmacher. (1987)

This comprehensive survey of stress found in the GIS gave a good overview of the stress, stressors, symptoms of stress and if the women were coping with stress. This allowed a quick survey and perspective of answers for Research Questions 1 and 2.

Research Question 1

Research Question 1 asked: What stressors, if any, do Hispanic women medical students in Texas display? Qualitative information came from interviews with the women, which readers will find later in this chapter. Quantitative data came from empirically derived measures found in Tables 13-17, which follow.

Community Oriented Primary Care (COPC)

This table examined specific and general stress found in medical students. The questionnaire was originally given to first-year medical students at the University of

California, Irvine School of Medicine. This population will be known as “Original” and was neither gender nor ethnic specific. The current population will be known as “Current.” This table compared the percentages found in the original population and those of this current study, showing the congruence between the populations to provide a better understanding of how well the women in this current project felt they “fit” in medical school and if they were happy with their decision to enter medical school and with their academic achievement. A staggering 96 % were stressed as compared to 53% of the original population. A high percentage of the current population is more stressed now than before medical school as compared to the original population. They seem to be getting enough sleep to function during the day and get about as much sleep as they thought they would get in medical school but many are tired. Almost 60% are studying more than they thought they would before entering medical school as compared to only 21% of the original population. More of the original population spends time for leisure than the current population. A low number of 29% are satisfied with their academic achievement so far as compared to 33% of the original population.

Only 43% of the original population is happy with their decisions to become medical doctors as compared to 79% of the current population. The women are fairly happy with their current health status. Interestingly, about the same percentage for both populations have discovered misconceptions about medical school and are stressed by this.

Of interest are the specific stress elements in that about half of both populations felt they entered medical school with adequate knowledge, but academics causes the most stress and personal life gives them the most pleasure

Table 13:
Congruence of COPC General Stress with Norm Population and This Study Percentage of Yes Answers

Variable	Percentages	
	(n=58)	Current (n=24)
General Stress		
Do you think you are Stressed?	53	96
Are you more stressed now than you thought you would be before medical school?	28	75
Are you satisfied with your current life?	68	75
Do you get enough sleep to function well in the daytime?	41	46
Do you get as much sleep as you thought you would before entering medical school?	45	63
Are you tired more than 50% of the time?	33	54
Is medical school more challenging than you thought it would be?	27	50
Are you studying more than you thought you would before entering medical school?	21	58
Do you spend at least 10% of your time for leisure?	77	58
Are you satisfied with your academic achievement thus far?	31	29
Are you happy with your current health status?	45	67
Are you happy with your decision to become an MD?	43	79
Have you had any misconceptions you might have had about medical school that has added to your stress?	33	54

Table 13 continued

Variable	Percentages	
	(n=58)	Current (n=24)
Specific Stress		
Did you enter medical school with adequate knowledge?	48	54
What part of your life causes you the most stress? ACADEMICS	77	71
What part of your life makes you the happiest? PERSONAL	93	100
What part of your life makes you saddest?		
ACADEMICS	46	38
PERSONAL	30	21
FINANCES	18	33

Note: The Community Oriented Primary Care (COPC) questionnaire on general stress was extrapolated from a questionnaire constructed and administered in 1999 at The University of California Irvine College of Medicine by medical students as a Patient-Doctor-Student Project that investigated *Stress in First Year Medical Students: A Stress Questionnaire*. The medical students were Mark Lensky, Project Leader, Shabnam Noori, Karen Matsukuma, Ori Melamud and Heidi Chen (Lensky et al., 1999)

Stress Level of the Women

It was found from the previous table that the women were highly stressed. Next the women were asked about their perceived stress level. More than 50 % stated that they often feel stressed, and almost 17% feel stressed all the time as found in Table 14 below.

Table 14:
Stress Level of the Women
(n = 24)

Variable	Freq	%
Sometimes	6	25.0
Often	14	58.3
All the time	4	16.7

Stressors Listed and Ranked by the Women

For this table the women were asked to list and rank their most important stressors. Multiple answers were given so the number of responses is thirty- three. The table shows that half of the women listed the difficulty and intensity of school and academic bias. Not far behind, at about 29 %, are issues of family or illness and distance from family. Time constraints, grades, and high self-expectations for performing well at school fall far short in the stressor list but still are listed as important stressors.

Table 15:
Stressors - Listed and Ranked - by the Women
(n=24)

Variable	Freq	%
Difficulty and intensity of school and academic bias	12	50.0
Family / Illness	7	29.2
Distance from family	7	29.2
Not enough time/Time constraints	2	8.3
Grades	2	8.4
Children	2	8.3
High self-expectations and performing well at school	1	4.2

To examine possible stressors in the women on a deeper level, information was obtained in the inventory of stressors.

The Inventory of Stressors

This table gives understanding into what stressors trouble the women. For ease in understanding, this table has been divided into the following sections.

- Critical Self
- Life Perspective
- Group Stress
- School and Home Environmental Stress
- Negative Stressors
- Positive Stressors
- Family and Friend – Relationship Stress

Almost 88% of the women reported they have real purpose in their life, while 33.3% stated that being called “stupid” is one of their stressors. It stressed over 70% to want to be accepted by others. It is good to know that the majority feel they have a purpose in life, however, it is an alarming thought that half of the women are critical of themselves and have a low opinion of their worth.

Negative Stressors

It was amazing that only about 4% are stressed by having little challenge in their work or play. It is amazing because it clarifies that most of the women are challenged daily by family, friends, professors, and by the overload of information and even sometimes by internal voices on their non-traditional path. Likewise about 22% are stressed by having tasks with which they cannot cope, around 17% are stressed by loss of heath or loss of status. Almost 20% are stressed by making decisions that cannot solve problems. The majority of the women reported that they are stressed by watching the news, feeling angry, thinking about problems confronting them and 100% of them are stressed by the possibility of losing a job in school. The point to take away from this section is that these women know that everyone is looking at them to see if they are going to fail and they told this researcher that this was problematic and very stressful. They struggle on a daily basis with the yanking rope of this non-traditional world they have placed themselves in.

Positive Stressors

About fifty percent stated they do not have a well-balanced and nourishing diet and 54.2% stated they are not getting enough exercise. This is a very troubling point. None of the women are stressed by rarely or never working long hours, showing that 100% are stressed by working very long hours on schoolwork. Likewise only about 8% are stressed from rarely or never having too much to do showing again that the majority work very hard to achieve their goals and are stressed from that. Along the same lines about 30% are stressed from rarely or never having to work at jobs that are

too simple for them, showing that the majority of the women are stressed from working hard to complete the jobs in school. About 17% are stressed by never traveling on congested public transportion or in traffic jams. Almost everyone is under stress daily from congestion whether on the road, in a room of family members or classroom. It just adds to the stress these women already feel.

On the flip side 79.2% are stressed by getting to have a good laugh and by having opportunities to have fun, which the women reported a stressor because that they were torn between spending time with friends and family or doing schoolwork. This causes a very real “pull and tug” on the women. The majority of the women also answered they were not stressed by having enough leisure time showing once again that the women do not take much personal time to rest down in leisure time.

Group Stress

This section concerns being part of a group or not going along with the group to which 50% stated groups stress them. Perhaps the women were thinking of groups such as the Anglo medical students, who have shown an exclusionary mindset especially in the past. The women reported that for the most part some Anglo students were biased against them and often made comments to them concerning their ethnicity and possible academic inferiority. Two statements concerned stress that comes from speaking in front of a group of strangers to which 79.2% are stressed by this and stress from being in a situation where one is not sure of the right thing to do stresses 62.5% of the women. Being in front of a group and being in a situation when it is unclear what is

expected can bother almost anyone in a societal situation. The women do involve themselves in many groups and it seemed to bring them joy.

Family and Friend – Relationship Stress

These women are stressed daily over concerns about family and what they may be doing to the family during their medical education. Most of the questions were answered negatively or were close to half percent. Two statements concerned seeing friends socially to which 83.3% agreed it is a stressor and 95.8% stated that having friends and family who would help them is a stressor. Questions concerning family, particularly, can mean very real stressors in the life of these women. The women struggle daily trying to remain socially active while throwing themselves totally into their studies. Almost every human is troubled in today's world with mental demands. Almost everyone worries about whether or not they have the extrinsic group in place to come to their side when trouble appears. There is that question down in the pit of a stomach that asks "do I have control over this situation and how much am I going to have to manipulate or cry to get help from family or friends." Three statements concerned relationships with children, primary others and love of parents to which 91.7% of the women stated that none of these issues were stressors. Seventy-five percent are not stressed by friction in the family and 70.8% of the women are not stressed by a move away from home or variation in sexual activity. Over 87% of the women are not stressed by disruption of their marriage. It appears these women for the most part are stable, which helps them cope with stressors.

School and Home Environmental Stressors

All of these statements concern fairly straightforward issues that most people find in their external environment. There are five statements in which the answers were close to 50%. There are ten statements that the majority of the women answered negatively in the range of 58.3% to 95.8% and just one statement to which 70.8% of the women agreed. The women are stressed by being bombarded by questions and requests (70.8%) but the majority is not stressed by noise level in their working environment, which is interesting. Over 66% are not stressed by being clear on what is expected of them and only about 8% are stressed by demanding their rights at work. This is a large number of women who are not afraid to demand their rights. This researcher applauds these women for being capable of standing up for their rights. Only about 8% are stressed by coping with bureaucratic machinery. Just fewer than 38% are stressed by being watched while working and while working in drab areas. Just fewer than 30% are worried by stressful working conditions. The majority of the women are not stressed by working against a tight deadline.

Life Perspective

This researcher pondered why only about 30% reported they are stressed by asserting their rights or privileges, when in the previous section just over 8% stated it bothered them to demand their rights at work. This is a curious point. It is just musing, but perhaps fewer women would consider standing up to parents or friends as a life perspective and more women considered their life as an adult and their work in medical school in the previous section. Of interest also is that 70.8% are stressed by making

decisions independently. This would not necessarily stress most Anglo students. About 17% are stressed by rarely or never suffering from discomfort or pain. The majority of these women are stressed by suffering because of parents who may live far away or are possibly ill and by the bias that is extant in the world toward women and double minority women especially in a non-traditional field of study. Only 8% stated they are stressed by rarely or never having to do jobs. Anyone who has gone through medical training knows that sometimes the “scut" work of a medical student is tedious. Some of the statements concerned making major decisions in life to which about half of the women stated this is a stressor or making independent decisions in life to which 70.8% gave this as a stressor or living a stimulating, interesting life to which over 66% stated this was a stressor and having enough time and money to meet expenses to which 66.7% gave as a stressor. Over 70% stated it does not stress to have the authority to meet their responsibilities at work.

Table 16:
Inventory of Stressors
(n = 24)

Variable	Yes		No	
	Freq	%	Freq	%
Critical of Self				
Feeling accepted by others.	17	70.8	7	29.2
Having someone call something I've said or done "stupid."	8	33.3	16	66.7
Having a low opinion of myself	13	54.2	11	45.8
Feeling I have no real purpose in life	3	12.5	21	87.5
Negative Stressors				
Having my leisure plans upset.	14	58.3	10	41.7
Seeing little challenge in my work or play	1	4.2	23	95.8
Watching or reading the news	18	75.0	6	25.0
Suffering a loss of status.	4	16.7	20	83.3
Feeling angry.	16	66.7	8	33.3
Failing or forgetting to perform some important responsibility.	11	45.8	13	54.2
Being interviewed for a job.	2	8.3	22	91.7
Thinking about major problems confronting me	19	79.2	5	20.8
Angrily telling someone off.	8	33.3	16	66.7
Losing my health and being forced to change my lifestyle.	4	16.7	20	83.3
Having to make decisions where I will lose out not matter what I do.	5	20.8	19	79.2
Being in a situation where I am unsure of the right thing to do.	15	62.5	9	37.5
Losing my job	24	100.0	0	0.0
Having to do jobs I can't cope with	3	12.5	21	87.5
Being overburdened with responsibility.	13	54.2	11	45.8
Positive Stressors				
Rarely or never having too much to do.	2	8.3	22	91.7
Getting to have a good laugh.	9	79.2	5	20.8
Rarely or never traveling on congested public transport or in traffic jams.	4	16.7	20	83.3
Having opportunities to have fun.	19	79.2	5	20.8
Having sleep patterns that are good and regular.	7	29.2	17	70.8
Having a nourishing, well-balanced diet.	13	54.2	11	45.8
Getting enough exercise	11	45.8	13	54.2

Table 16 continued

Variable	Yes		No	
	Freq	%	Freq	%
Getting the reward I had hoped for.	10	41.7	14	58.3
Rarely or never working long hours.	0	0.0	24	100.0
Having enough leisure time.	7	29.2	17	70.8
Rarely or never having to work at jobs that are too simple for me.	7	29.2	17	70.8
Group Stress				
Not going along with the group	12	50.0	12	50.0
Family and Friend – Relationship Stress				
Dealing with my children's problems and questions	2	8.3	22	91.7
Having my mother or father say something like "You don't really love me."	2	8.3	22	91.7
Having my primary relationship partner (spouse or mate) stare at a possible rival who seems quite attractive.	2	8.3	22	91.7
Having my sexual needs met.	13	54.2	11	45.8
Watching an argument between members of my family.	10	41.7	14	58.3
Making decisions that affect my family's future.	14	58.3	10	41.7
Finding myself in a position in my primary relationship where anything I say or do will be wrong.	11	45.8	13	54.2
Experiencing a great deal of family friction	6	25.0	18	75.0
Having thoughts of losing my primary relationship partner	10	41.7	14	58.3
Moving away from home to a new town	7	29.2	17	70.8
Having the opportunity to see friends socially.	20	83.3	4	16.7
Having variation or fresh stimulation in my sexual activities.	7	29.2	17	70.8
Undergoing disruption of my marriage.	3	12.5	21	87.5
Feeling that something extremely unpleasant could happen to me or to someone close to me, and being helpless to do anything about.	11	45.8	13	54.2
Feeling I have friends or relatives who will help me when I need help.	23	95.8	1	4.2

Table 16 continued

Variable	Yes		No	
	Freq	%	Freq	%
School and Home Environmental Stressors				
Experiencing high-level noise at work or at home.	10	41.7	14	58.3
Being clear about what is expected of me.	8	33.3	16	66.7
Planning an important contract or piece of work.	13	54.2	11	45.8
Demanding my rights at work	2	8.3	22	91.7
Not having to cope with bureaucratic machinery.	2	8.3	22	91.7
Having someone act as if they dislike me.	12	50.0	12	50.0
Being around angry people.	11	45.8	13	54.2
Being watched while I am working	9	37.5	15	62.5
Working or living in situations where things are well organized.	11	45.8	13	54.2
Being around people who are talking in a loud voice.	9	37.5	15	62.5
Rarely or never working against a tight deadline.	1	4.2	23	95.8
Having my abilities at work valued and put to good use.	11	45.8	13	54.2
Being bombarded by questions and request.	17	70.8	7	29.2
Spending time in work areas or room that are drab, uncomfortable and depressing.	7	29.2	17	70.8
Working at a task that requires constant attention, and leave little room for initiative	7	29.2	17	70.8
Having to do work with inadequate lighting.	4	16.7	20	83.3
Life Perspective				
Feeling committed at home or at work.	14	58.3	10	41.7
Asserting my rights or privileges.	7	29.2	17	70.8
Having things to do that interest me.	16	66.7	8	33.3
Having regular opportunities to express my viewpoint.	12	50.0	12	50.0
Carrying out work that is mentally demanding.	23	95.8	1	4.2
Rarely or never suffering from discomfort or pain	4	16.7	20	83.3
Making major decisions in my life.	14	58.3	10	41.7
Living a stimulating, interesting life.	16	66.7	8	33.3
Keeping my emotions to myself	13	54.2	11	45.8
Making decisions independently.	17	70.8	7	29.2

Table 16 continued

Variable	Yes		No	
	Freq	%	Freq	%
Having the authority to meet my responsibilities at work.	7	29.2	17	70.8
Having enough time to myself	15	62.5	9	37.5
Knowing the end product of my work.	13	54.2	11	45.8
Being able to perform satisfactorily on my job.	13	54.2	11	45.8
Having enough money to meet expenses.	16	66.7	8	33.3
Rarely or never having to do jobs, I have no interest in.	2	8.3	22	91.7

Sheridan and Radmacher. (1987)

Table 16 shows the inventory of stressors that was established; it seemed important to find out what symptoms of stress the women perceived if any.

The Inventory of Stress-Related Symptoms

For ease in understanding, this table has been divided into the following sections:

- Cardio-Pulmonary
- Gastrointestinal
- Integumentary
- Urinary
- Reproductive
- Musculoskeletal
- Neural
- Special Senses

As readers will quickly see from this table, the majority of the women do not exhibit many stress-related symptoms. Of course, if even half or less of these women are troubled with multiple symptoms then it is cause for alarm. As has been brought

out in the literature, medical doctors should know more about stress and its impact in order to be more attuned to their patients who exhibit stress-related illness.

Even if one includes answers in the 50% range, there are only eleven statements throughout the entire questionnaire to which the majority of the women answered affirmatively. Interestingly, all these affirmatively answered statements are found in the neural system section except one statement found in the musculoskeletal system showing that 54.2% of the women felt aches and pains in upper back or neck.

In the neural symptom section the affirmative answers are in the range from 50% to 79.2%. Starting at 50%, the women had tension, 54.2% felt depressed and 62.5% felt tired easily. Almost 71% of the women were irritable, had difficulty sleeping, were troubled with headaches especially in the evening and had thoughts that would not stop running through their mind. Seventy-five percent were bothered from concentration problems that caused distraction and 79.2% could not stop thinking of several things at a time and complained of anxiety and feeling worried.

Since this section concerned illness and stress, it seemed important to include those statements in the 50% range. Therefore, in the Cardio-Pulmonary system 45.8% of the women stated they had fast heart rate and pulse but 100% stated they are not troubled with high blood pressure. In the Gastrointestinal system 41.7% of the women stated they have problems with compulsive overeating and 100% are not troubled with swallowing difficulties or difficulty breathing. In the Musculoskeletal system, 45.8% of the women have muscle cramps, soreness of muscles and low back pain. In the neural

system 45.8% stated they have trouble paying attention to what other people are saying.

Even thought this table shows the majority of women were not troubled with many symptoms, the table does show that some women throughout the questionnaire answered, “Yes” to almost every symptom listed. This is alarming. There were some symptoms to which all women answered “No” such as high blood pressure, trouble swallowing, difficulty breathing, compulsive sexual activity, visual complications, spots before the eye and ringing in the ears. The take away from this section is that most of the women have no symptoms from stress but those that they do have are in the neural system which can cause great harm. Also the fact that some women answered almost every symptom is another cause for alarm.

Table 17:
The Inventory of Stress–Related Symptoms
(n = 24)

Variable	Yes		No	
	Freq	%	Freq	%
Cardio-Pulmonary System				
Chest Pains	3	12.5	21	87.5
Fast heart rate, fast pulse.	11	45.8	13	54.2
Skipped heartbeats.	2	8.3	22	91.7
Feeling faint.	5	20.8	19	79.2
Fluttery feelings in the chest.	4	16.7	20	83.3
High blood pressure	0	0.0	24	100.0
Cough	6	25.0	18	75.0
Rapid (fast) Speech.	6	25.0	18	75.0
Gastrointestinal system				
Nausea and/or Vomiting	4	16.7	20	83.3
Burping	4	16.7	20	83.3
Abdominal distension (Swelling in the Stomach	5	20.8	19	79.2
Constipation	7	29.2	17	70.8
Compulsive overeating (unusually strong desire to	10	41.7	14	58.3

Table 17 continued

Variable	Yes		No	
	Freq	%	Freq	%
overeat).				
Indigestion, heartburn, acid stomach.	5	20.8	19	79.2
Gas.	7	29.2	17	70.8
Dry mouth, especially at night.	2	8.3	22	91.7
Tooth grinding, especially at night.	7	29.2	17	70.8
Trouble swallowing.	0	0.0	24	100.0
Diarrhea.	8	33.3	16	66.7
Poor appetite.	4	16.7	20	83.3
Wheezing, difficulty breathing	0	0.0	24	100
Integumentary System				
Cold hands or feet.	9	37.5	15	62.5
Sweaty hands.	5	20.8	19	79.2
Unusual sweating	3	12.5	21	87.5
Itching or rashes.	5	20.8	19	79.2
Frequent blushing.	1	4.2	23	95.8
Hives.	1	4.2	23	95.8
Allergic reactions	7	29.2	17	70.8
Urinary sysem				
Frequent urination.	5	20.8	19	79.2
Reproductive System				
Loss of interest in sex.	7	29.2	17	70.8
Compulsive sexual activity	0	0.0	24	100.0
Trouble responding sexually	5	20.8	19	79.2
Musculoskeletal System				
Unusual Weakness	3	12.5	21	87.5
Painful Limbs	5	20.8	19	79.2
Vague pains	7	29.2	17	70.8
Muscle cramps, soreness.	11	45.8	13	54.2
Low back pain.	11	45.8	13	54.2
Aches and pains in upper back or neck.	13	54.2	11	45.8
Neural System				

Table 17 continued

Variable	Yes		No	
	Freq	%	Freq	%
Irritability (grouchiness)	17	70.8	7	29.2
Difficulty sleeping	17	70.8	7	29.2
Headache, especially in the evening.	17	70.8	7	29.2
Numbness or prickly feelings (as when your hands or feet "go to sleep.")	5	20.8	19	79.2
Trembling.	3	12.5	21	87.5
Tension (feeling uptight).	12	50.0	12	50.0
Anxiety (feeling worried)_.	19	79.2	5	20.8
Feeling tired easily.	15	62.5	9	37.5
Nightmares.	5	20.8	19	79.2
Sleeping too much	9	37.5	15	62.5
Depression (feeling down in the dumps or blue).	13	54.2	11	45.8
Thought that keep running through my head.	17	70.8	7	29.2
Thinking of several things at a time.	19	79.2	5	20.8
Trouble concentrating, easily distracted.	18	75.0	6	25.0
Feeling emotionally numb.	4	16.7	20	83.3
Not being able to sit still, fidgeting.	8	33.3	16	66.7
Proneness to angry outbursts (temper tantrums).	4	16.7	20	83.3
Rapid shifts of mood.	6	25.0	18	75.0
Trouble paying attention to what other people are saying.	11	45.8	13	54.2
Using tranquilizers or other drugs for nervousness, tension and related problems.	1	4.2	23	95.8
Inability to wind down even after the workday is over.	5	20.8	19	79.2
Getting upset easily.	7	29.2	17	70.8
Sleeping too much	9	37.5	15	62.5
Panic attacks	1	4.2	23	95.8
Frequent minor diseases (colds, flu).	7	29.2	17	70.8
Special Senses System				
Twitching eyelids.	5	20.8	19	79.2
Frequent blinking.	1	4.2	23	95.8
Dimness				
Dilated (large) pupils	2	8.3	22	91.7
Blurred vision.	4	16.7	20	83.3

Table 17 continued

Variable	Yes		No	
	Freq	%	Freq	%
Spots before the eyes	0	0.0	24	100.0
Ringing in the ears.	0	0.0	24	100.0

Sheridan and Radmacher. (1987)

Cohesion and Review of Tables 12-17

Table 12 showed that 100% of the women were stressed, and 87% have moderate to very high strain. Over half have a large to extremely large number of stressors. In Table 13 96% of the women thought they were stressed, while 75% are more stressed now that what they thought they would be before medical school About half found medical school more challenging that they thought it would be. About 71% stated that academics stressed them most. Table 14 found 100% of the women stressed in that 58.3% are often stressed and 16.7% are stressed all the time and 25% are sometimes stressed. In Table 15 fifty percent of the women are stressed from difficulty and intensity of school and academic bias while almost 30% are stressed from family and distance from the family. Table 16 detailed the women's inventory of stressors and brought out that about 50% of the women are stressed with a low opinion of themselves. They are stressed from long hours of study, tight deadlines and the challenge of medical school. It is an alarming fact that only 54.2% stated they do not

eat well-balanced meals and 54.2% stated they do not get enough exercise. Working very hard to achieve their academic goals stressed the women. The women are very stressed by the yearning to spend time with friends and family while knowing they have schoolwork. Table 17 dealt with symptoms of stress and this information showed that the women did not have many symptoms of stress. All the symptoms but one was in the neural system. The women were bothered by concentration problems, distracted from their work and irritability. They had trouble sleeping and about 71% had headaches especially in the evening.

This concludes the quantitative information for Research Question 1 and is a good introduction to the qualitative information from the personal interviews with the women, which will complete the answer to the Research Question 1. The stories from these interviews follow in qualitative form.

Qualitative Measure: The Stories Told by the Women

The qualitative information to answer Research Question 1 was found in answers to the personal interview questions. Following are a compilation of stories the 24 Hispanic women told. These stories stem from the questions asked during the interview. Clearly the reader will observe the high and sometimes unique stress these women feel from these stories.

The Hispanic culture remains patriarchal, and one can see evidence of heavy overtones of male domination of females in the family unit. Hispanic males still are much more able to leave the family unit and matriculate into a professional field such as medicine than are the females. One woman told of an uncle who supported his sons

through college, but when it came time for the daughter to go to school, “He completely abandoned her financially.” One fair-skinned Hispanic woman is in love with a darker-skinned professional Hispanic man. She has been told by her dad that she will be “disowned by the family” if she marries this man. This researcher just recently learned about the importance of the “One-drop of black blood” (Salas, 2004) or “Black legend (Kanellos, 1998) to the Hispanic culture. This impacts the thoughts of Hispanics and forms an emotionally laden issue. *La Familia* is the Warf and woof of Hispanic life and is still deeply entrenched in dedicated roles for males and females. This family unit can bring great stress to a daughter, sister or wife who wishes to leave the family and go to medical school (Marin & Marin, 1991). These authors further stated that, “The value of ‘familialism’ (or ‘familismo’ or ‘familism’) has been proposed as one of the most important culture-specific values of Hispanics.” The term ‘Familism’ refers to the central position that a family holds in the life of the individual. All decisions by the individual are made with regard to the well-being of the family" (Warrix & Bocanegra, 1998, p. 3). This is borne out in this research by the statement “They [family] are not very supportive of my goals and sometimes say, I should try to do something else besides being a doctor, like being a teacher:” Some of the women talked about internal struggles stemming from role conflicts.

One woman stated, “At times I wonder if, as a female, I should be pursuing such a demanding career. I want to have a family one day, and I am concerned [whether] this career will be conducive to being a mother.” Marriage and medical school together can be very stressful. In speaking of her husband, a woman related that

he told her to “Spend more time with me . . . Put dinner on the table at 5:30 please.” When a woman is ready to graduate and matriculate in the field of work, families can become very insistent about what the daughter needs to do. One student is very stressed because “Mom is in denial that I may go out of state for residency, she wants me to come back home and practice in the hospital close to home, which is in effect a smaller clinic setting.” Hispanic women who are sensitive and cognitively gifted may prove to be a threat to the family unit and the role that has been chosen for the woman.

However, the women told of some families who were so deeply concerned with the concept of “good education” for their sons and daughters that they moved to the United States from Mexico or other South American countries or to different parts of Texas in order to give their children a good education. These women reported they perceived that this singular act truly helped them in their education toward medical school. The families who are far sighted about the role of education in their daughters’ lives have sacrificed many of their traditional thoughts concerning the roles of women and have worked hard to get their daughters through school. On the whole, many of these women had professional parents and several parents had or were working toward doctoral degrees. The love that most of these women have for their families is intense and appears to be a large part of their support and coping strategies. On the flip side, the love between the women and their families can add additional stress; worries about family, and worries that come from withholding information about problems, complaints, failures, and stress indigenous to medical school from their family

Society places demands and gender schemas ” (Valian, 1999) on all women of double minority. One statement from a participant was that “There are tons of stereotypes to overcome.” Another revealing statement was “Culture shock to incoming Hispanic women.” This was especially evident from the women coming from schools in the Rio Grande Valley.

The medical schools in Texas often have dinners for the medical students and their families. When asked the question “Whose parent or parents are medical doctors?” many Anglo students stand with their parents. This is a very important point to note. A student who has heard medical terminology from birth should be very much prepared for the academics of medical training. This may be stressful for someone who has not had the family experience of discussing medical business over the nightly diner table. Many of the Hispanic women medical students interviewed struggle daily with the language of medicine.

Finances and Stress

Kassebaum et al.(1996) told readers that rising student debt and consequences of student loans are stressful issues for students. Calkins, Arnold and Willoughby (1994, p. S24) remarked: “The emergence of ‘financial problems’ as the principal stressor raises the question of how high tuition and fees can be raised before debilitating stress occurs.” Grijalva and Coombs (1997) reported that many “minority students abandon plans for a medical career because of the costs involved.” Even though most readers would not consider a medical student as impoverished some of the women in this study are just barely surviving from month to month monetarily.

Sapolsky (1998) stated poverty leads to “disproportionate amount of psychological stressors.”

Many of the women depend solely on student loans and find themselves in a limbo of living from loan check to loan check. This brings on a tremendous, unrelenting stress as the student tries to manage incoming bills. Of interest, many of these women in this study send as much as one half of each loan check home to help support their families. The women are very concerned about making enough money later on to pay off the enormous student loans they have accrued. Some of the women have scholarships and some depend on their family for support.

Others factor in some days of the week that they go without food to make ends meet. It is a great help if the family is socio-economically fit, as the women come into medical school almost debt free from their undergraduate schooling. These women are grateful for any financial help they receive. If the woman was married, and her husband had a professional career, she appeared to be fairly “worry free” with respect to finances. However, some parents who were not in a position to help with finances, the student had a major base of support that was critically missing which might hinder her academic success. One woman stated: “My parents do not support me at all. I’ve been working since I was eleven.” This woman has learned to depend solely on herself for support.

Family Thoughts on Higher Education of Women

Bowman and Allen (1990) found that family could be a stressor. Holtzman, Díaz-Guerrero and Swartz (1975) found that Mexicans tend to be more family-centered

(Marin & Marin, 1991). Olmos et al. (1999) stated, “Latinos continue to base their identity on the family, culture, religion, and language.” Wolf (1994) stated that women, in general, in medical school “Described their families as less supportive of their career choice.” Tekian (1997) stated, “Underrepresented minorities often face considerable socioeconomic problems, including financial hardship, poorly financed schools, and lack of proper support from family.”

White et al. (2001) acknowledged that children “From the beginning learn the major lesson of patriarchy.” Abalos (1986) stated, “The [Latino] father can coerce, meditate, and bargain, but he will not allow female members of the family to physically isolate themselves or to develop an area of autonomous jurisdiction such as a life style that allows them their own jobs, paychecks, and schedules.”

Twenty-one women stated that their families were very encouraging. However, some families were concerned about the length of time that medical school was taking and the cost. Some women have just decided to make “School their life.” Doing so is easier if they are unmarried. If they are married, a significant other can feel cheated of time spent with his medical student wife and demand more time, which is very stressful to the woman. One woman pondered however, “My husband’s family sternly disapproves of me pursuing a profession regardless of time.” Sometimes it is that parents “Just don’t understand.”

Stress from Religion

The question concerning religion was asked in two ways:

1. What about church tenets or beliefs?

2. What about the church view on the roles of women?

Many of these women have been raised in a traditional Catholic home. Some have remained faithful Catholics and attend services and Mass. Some are looking around for another religion. Some felt that the Catholic Church had supported them, while others felt there was bias toward women. One woman stated: “Catholicism limits us to traditional female roles and does not allow us to expand our horizons.” Another woman recalled that the parish priest was appalled that she identified herself primarily as a medical student rather than as a woman and future wife.

Stress appeared to come from guilt of not making it to Mass very often. Skipping church often made one woman feel like “a very guilty Catholic.” Some women have given up some of their beliefs, while others have left the Catholic Church. Concerning church tenets or beliefs and the question of the church’s view on the roles of women, the attitude of most of the women were answered in one of three ways:

Hispanics are traditionally Catholic.

There is no bias or stress from religion

Religion was cited as having helped the women “all the way.”

The women stated that they felt the more modern churches are changing their views about the roles of women. The mothers of some of the women disagree with the view of the Catholic Church on women and have raised their daughters accordingly. Other women do not always consider religion when making decision. One woman felt the church’s view of the roles of women was “dumb” and admitted she does not pay attention to them.

Some women separated God from religion and stated they just do not care about religion. One woman stated, “I know I am doing something that I can glorify God with so that moves me forward, not the church’s views.”

Hispanophobia

Both Kanallos (1994, 1998) and Powell (1971) used the term “Hispanophobia” to describe the prejudicial fear toward Hispanic people. Some of the women needed clarification concerning the meaning of this word. Some women had not sensed this fear but did sense they were viewed differently for being in medical school. One woman stated, “I definitely feel there is Hispanophobia! I feel many of my classmates prefer not to hang out with Hispanics.” One woman stated that she did not know if it was a phobia, but “I do think that we are viewed differently for being here.” Another stated that she “only experienced this from other classmates, who have their own group and refuse to talk to Hispanics as well as Blacks and Asians.” This researcher was told by some of the participants that more Hispanic women should have participated but they did not want to be singled out in research that pointed to them being Hispanic women.

“Unique” Stressors

Long and Martinez (1994, p. 183) stated, “Clearly, Hispanic professional women are a unique population.” Grijalva and Coombs (1997) found, “Nearly every Latina interviewee was challenged by associates concerning her intellectual qualifications for a medical career.” Kanellos (1994) reminded readers that Hispanic females, as a whole group, might be considered vulnerable because of traditional

gender roles. Grijalva and Coombs (1997) found Hispanic women medical students troubled with work related stress and school related stress.

Distance from family stress

Grijalva and Coombs (1997) found that some Latina medical students felt lost and lonely when they left home and found it was difficult to fit in when they returned home.

Most of the women in this project answered the interview question concerning distance from the family by stating it was troubling. These women try very hard in spite of tight schedules to get home or to keep in contact with their families. To de-stress, some of these women used the connection to their mother as a lifeline every day as a coping strategy. However, there were others who had an ill parent or some other family crisis who chose to keep from telling their parents of their hurts, stressors, perceived failings, or needs. This became an internalized, numbing stressor to these women.

Great distances in miles between the student and her family can lead to blended stressors. If the parents live close by, it can bring great joy, comfort, and support, or it may bring more stress. One woman stated: “We live eight hours away from family, which decreases some stress, [but] we lack the support as well.” They may not feel the stress felt by those who have families close by. However, some women and their mothers, have been torn apart by the long distances between them. One woman told this researcher that the first semester was very hard, while another stated that Mom and

I were both depressed in my first two years of medical school. If the women can see their families often, it seems to help decrease their stress level.

School-related stress

Grijalva and Coombs (1997) found one medical school that began a preparatory training program for minority students that "undercut the moral and self-esteem of the Latinas." Hernández and Morales (1999) described research in which Latinas working in higher education revealed "Strong images of an inhospitable and non-supportive place to work and suggests that Latina women are inhibited from achieving the same levels of success as men or other women in higher education." Lacefield, (2001, p. 8) remarked that "Hispanics are more likely to be placed in classes for educable mentally retarded, limited-English proficient, and bilingual education than in classes for the gifted. However, Montero-Seibruth (1996) recalled that Achor and Morales (1990) believe that negative messages casting doubts on abilities of a person to succeed based on their ethnicity and gender served not as an impeder, but as an impetus to prove the message wrong.

To answer this particular interview question most of the women stated they are bothered by school-related stress. Grades, time commitment, projects and "the continuous demands from faculty and myself keep a constant level of stress present." Stress was reported to be there "all the time." Some felt that the expectations of performance were very stressful. Many of the women have had educational careers where they have always been expected to do well in programs such as honors or gifted

and talented. High stress comes from not only working to pass but also working to pass with high marks.

The women reported that some of the subjects came as a shock to them and that they did not feel ready for the material presented. Even more stressful, they felt they had less–than-appropriate study habits for many of the subjects. Some women struggled with bad grades especially during their first year. However after the numbing effect of the first year was over many of the women were feeling more secure. Sadly, one woman told this researcher of not feeling as safe at school from her third year on, because of an egregious statement by an administrator who said that there were no Hispanic women where she had come from, and "I need to be doing it better because I am an Hispanic woman."

If the women were involved in extra activities such as minority clubs, the time constraint along with the normal stress found in medical school compounded their daily life. Some women felt that school-related stress was their biggest issue, while others who had stressors emanating from other sources stated that school stress was "not even close to the top of the list of my sources of stress." Some of the women stated: "Certain subjects are very demanding and I didn't feel ready or hadn't found appropriate study habits." One woman attempted to work at a discount store during one semester and struggled to regain her grades when school officials told her that she would fail if she continued to work.

Academic discrimination

Grijalva and Coombs (1997) stated that many of the women medical school interviewees "felt threatened coming in", realizing they weren't "as prepared or as smart." Lacefield (2001, p. 8) reported:

> The quality of education for Mexican American women nationally lags behind other groups. They are underrepresented in higher education not only because of the lower quality of their educations but also because of sexism, economics, family responsibilities, support networks, lack of role models, and lack of mentors. Mexican American culture does not place a high premium on using women's success in the labor market as a gauge for determining their worth.

The knowledge that someone would be considered academically limited because of gender or ethnicity is extremely troubling. Some women, however, truly did not feel they were as well prepared for medical school as others [males and other ethnic females] in their class. Others felt it was a "burden to prove that lower standards aren't necessary for you." One student remarked "I feel because I did go to a predominantly Hispanic school; my education seems to be judged inferior to [that of] other students." The women, for the most part, understood and felt that there was not much difference between their preparation and that of the other students. However, they knew that others assumed that because they came from the Rio Grande Valley, they went to high schools and colleges that were deemed less academic than others and that they are considered academically inferior. However, it weighs heavily on the mind that there is question concerning academic preparation and this can, in fact, diminish learning in a student.

Achievement issues

Eccles, Barber and Jozefowicz (1999) believe that "Gender roles affect behavioral choices largely through their influence on identity formation, which in turn shapes expectations for success and values. Kitano (1998) revealed that some gifted Hispanic women had school principals, counselors and teachers "Who communicated low expectations" and who even discouraged Hispanic women from seeking college admission. Grijalva and Coombs (1997) found some Latina women medical students were labeled as "educationally handicapped" and who were told they needed "special attention." Thorne (1995) found that "Even after achieving success, Latina women continue to struggle with psychosocial and culture realities that have impact on their achievement goals and future success." The interview question concerning achievement issues brought out responses such as, "I do not feel I am achieving well, and I think sometimes people may feel I am not achieving because I am Hispanic." Other women pointed out that "the medical profession is becoming increasingly competitive and achievement issues are a major stressor." One woman stated, "Although I have the ability to accomplish goals, at times I lack self confidence."

Assumption of academic inferiority

Zambrana (1996) observed, inadequate educational background and lack of information on resources and opportunities as factors of under-representation of Hispanic women in the health professions. Grijalva and Coombs (1997) found implied reverse discrimination in comments made concerning friends who had not been admitted to medical school despite high GPAs and MCAT scores, which made

friendships distrustful and hostile. Garcia (2001, p. 385) stated, “Educators should not have lower expectations of language - and ethnic minority students.”

This particular stressor is erected on bias, and prejudicial judgments that spring from this bias. Many of these women were in gifted programs during elementary, middle, and high school, and some went to very prestigious eastern universities. However, a fourth-year Hispanic woman student told of a fourth-year Anglo student who made a biased remark assuming the academic inferiority of students from a college in the Rio Grande Valley who had been brought to their medical school for the week and whom they both were mentoring. She criticized him about it, and he had not even realized the impact of his statement. Another student stated, “I think Hispanics in general are considered not very smart or not as capable.” One woman admitted that she "can not read fast or spell very well.” One woman felt that “it is assumed that I made it into medical school because I am Hispanic. I have been told this on more than one occasion.” Finally, one student stated, “once you get a bad grade, faculty do stereotype no matter the race.”

Quality of prior education

Grijalva and Coombs (1997) in contrasting Hispanics to other population felt that “Their medical school classmates typically have superior educations from kindergarten through college.” Bennett (2001) stated, “Inadequate pre-collegiate education for Hispanics is a major barrier to college access.” Garcia (2001, p. 377) stated “Mexican American students, coming from social and economic circumstances

that will make them particularly vulnerable, will undertake their schooling with several ‘strikes’ against them”:

1. They are likely to be under equipped with school materials, not the best that money can buy.
2. They are likely to be ‘taught’ by individuals who do not meet the highest standards.
3. They will need to acquire the knowledge of the schooling culture along with the language in which that culture is immersed.

Many of the women in this research felt they were not prepared for medical school. The women stated that there are judgments by others concerning their previous education. Several students commented that others questioned the quality of undergraduate college education because I went to this or that school. One woman stated that faculty was constantly asking “about my undergraduate education and it makes me feel inadequate, since I didn’t attend a well-known university.” Some felt troubled by this from the very first year of medical school, while others felt it in their undergraduate work but not so much in medical school.

Intellectual qualification

Grijalva and Coombs (1997) stated that “Challenges about academic qualifications usually took the form of inquires or assertions about undergraduate grades and MCAT scores.” Garcia (2001, p. 375) told readers “results show that 40% or more of Hispanic students are one grade level or more below expected and normal achievement levels by the eighth grade.”

Many of the women participants felt they were “Judged as intellectually inferior” because of their ethnicity. Some women felt that in the beginning of medical school, they were intellectually limited, but as they progressed in school, they did not have those feelings anymore. One stated, “Usually, people assume I’m the cute, small girl with little to say. I think that as soon as I open my mouth, however, I easily convince them of my intellect and wisdom.” Some women reported feeing “unintelligent” in front of attending doctors and residents.

Cultural barriers and double cultural strain

Long and Martinez (1994, p. 186) shared the thought that “Professional Hispanic women face the challenge of balancing two cultures: the majority middle-class culture and their ethnic culture and this can cause internal conflict leading to lower self-acceptance.” Montero-Seibruth, (1996) spoke of “divergent expectations”

The interview question concerning cultural barriers brought out issues that appear to be very problematic. One woman summed up her answer very succinctly, “But they forget I was raised under an Hispanic tradition of strong family values, machismo, etc. Sure I wish I could do things with the ease the way they do, they don’t understand that my upbringing has affected me – even scarred me – and that prevents me from doing things their way.” Others remarked that it is stressful just knowing prejudice exists. Knowing this bias occurs appears to have driven many of the women to a point of determination to overcome these barriers.

Social assumptions about gender and ethnicity

Grijalva and Coombs (1997) stated “Latino cultural expectations that women will become wives and mothers created problems for physicians in training.” Powlishta, Sen, Serbin, Poulin-Dubois and Eichstedt (2001, p. 116) stated “In addition to learning about gender categories and stereotypes, children also develop gender-typed preferences and behaviors from an early age” and this is troubling to most women.

The women in this research group stated that stress arises from knowing that society expects you to be a mother and housewife first, and from the judging that comes from being one ethnicity and not another. One woman stated, “Physicians always ask me about my family and what they think of my career choice. I think I show my strengths by being a mother, Hispanic and intelligent.” Some felt that people are shocked by their academic achievement. One woman summed this up as a societal schema that - “Women are the weaker sex and Mexicans aren’t that smart.”

Double challenges—gender and ethnicity

Shervington, Bland and Myers (1996) and Kitano (1998) spoke of double challenges of ethnicity and gender, and the barricades erected from this bias. Grijalva and Coombs (1997) participants stated, “They [Mexican males] have certain ideas about what women should be doing and find educated women too threatening.”

One woman in this project answered the interview question of double challenges by stating, “Sometimes felt, but makes me want to fight more” and “I don’t like having my buttons pushed that way because it hurts me and makes me angry.” Another student stated, “It’s impossible to ignore, as subliminal as it seems most of the

time." One woman stated, "As Hispanic females, we were raised to believe that our role was to take care of our husband and raise our children. It is a haunting thought when you have to wake your children early in the morning to take them to daycare [in order to go to class]." Those single women felt fortunate that they did not have children or a husband to care for at this time, while those with children worried about spending enough time with them.

Gender-related discrimination

Grijalva and Coombs (1997) told readers that "Because parents and family members often perceived a medical career as interfering with a woman's 'proper' gender role, family members sometimes challenges interviewees about their personal priorities." Carr et al. (2000), were told by participants in their research of women medical faculty, that during any stage of their careers the women sense that gender bias is personal and systemic in the medical field while most of their male colleagues see their own professional advancement as occurring based solely on their own merits and not on their gender.

The women participants responded to the interview question about gender bias with these comments: "I constantly deal with gender bias." "I'm in a male-dominated profession." "I learn more about male patients than female ones. "'He' is often stated without including 'she.'" "You feel you have to prove that you are equal or better." One woman put it well: "Being a woman puts an extra pressure on me to prove that I can be just as competitive as any man." A very few stated they had not experienced gender bias.

Translation-related stress

Grijalva and Coombs (1997) found Latina women who constantly are called to translate. Montero-Sieburth (1996) stated Latina academicians are assigned all the Latino students as advisees and asked to translate into Spanish anything that may needed on the behalf of these students. Translation-related stress often is found when a Hispanic doctor is asked by another doctor to interpret for a patient who is Spanish speaking. This stressor has been found often during residency, especially in the intern year. Interns who do not speak Spanish ask a Spanish-speaking intern to interpret for a Spanish-speaking patient, never realizing that they are asking the Spanish-speaking intern to do extra work.

Some of the women in this project had already been asked to interpret and had dealt with the stress of it. One woman felt that because of her ethnicity, she was called to translate, rather than perform the actual procedures, and therefore missed out on educational opportunities**.** Some women stated that if they did not know all the Spanish words that they were embarrassed to be called on to interpret. One woman summed it up further by stating “I was raised in an English-speaking home” [and] “others just don’t understand that although I am Hispanic, it does not mean that I speak good Spanish.”

Ethnic discrimination

Kanellos and Powell both used the term “Hispanophobia” (Kanellos, 1994, 1998; Powell, 1971) Kanellos (1998) stated that Hispanophobia has been pervasive and consistent throughout U.S. history and into the present.” Hernandez and Morales’

(1999, p. 55) participants were frustrated and angered in their career in higher education and all the participants agreed that the ladder they were climbing "was made even more difficult by virtue of their ethnicity." Grijalva and Coombs (1997) participants stated: "They see you as a good little brown doctor."

The women in this research project appeared to have more stress from the issue of ethnic discrimination than from gender-related bias. Comments in answer to the interview question were "People crack jokes about my ethnicity, especially since I don't speak Spanish. I'm called a 'Generic' Mexican." Others spoke of "Stress felt when you know you are being looked at for your race." One woman felt that because of her ethnicity "Many judgments are made about me and my abilities." Some women sensed that, because of their ethnicity, other students and the faculty did not take them seriously. They felt they had to constantly prove their intelligence. One woman pointed out that "Hispanics in Texas are often seen as lazy and she wanted to tell everyone that "I AM NOT LAZY." All in all, most women felt that the issue of ethnicity, though troubling, was in deed softened by the emphasis of diversity that is being fostered at The University of Texas Medical Branch and Texas AandM University System – College of Medicine.

A few participants did not feel ethnic bias was an issue in their life. One woman stated, "When people see or think of me, I don't think 'Hispanic' is the first word to come to mind."

Role strain and multiple-role conflicts

Charles and Walters (1998, p. 326) stated, “Gender differences in depression are largely the result of differences in roles and the stress and expectations that go with them.” However, Barnett (1993, p. 441) found that “Studies of full-time employed men and women in dual-earner couples indicate more similarity than difference in the relationship between role stressors and psychological distress.”

The responses to the interview question of role strain revolved around competing demands between time, school, society and family life. Reports for the of the women were “demands on time are overwhelming.” The women also stated it is “Very difficult to juggle demands of family and school.” One woman stated that “My family always comes first, then school and society is at the bottom of my preoccupations.”

One student stated, “As a daughter, I am expected to stay quiet and subservient, not speak my mind. As a female in my family, I am expected to keep house when I come home, even when I’ve been gone for weeks and the horrible mess isn’t mine. I am not supposed to be a breadwinner and I am not supposed to display any sort of intellect.” Another stated, “My role strains are, I want to succeed for myself; I want to be someone my community can look up to; I want to be a role model for women; I want to serve my Lord, but it seems these goals are difficult to accomplish and blend together,” One women answered this interview question with this statement “In clinic, I have to play two roles, that of a medical student and that of a translator, because the bulk of the patients are Spanish speaking. I do double the work.”

Perceived social support

Rospenda, Halpert and Richman (1994, p. 496) found results that suggested "Social support in general is related to lower levels of academic performance for both men and women and that the negative effects of support from outside the medical school context may be particularly salient for women." However, Taylor et al. (2000) found that women "Tend and Befriend" to decrease stress.

Of the 24 participants in this research, only three stated they receive no support from their families. Almost all the women responded to this interview question that family, friends, and some kind of faith in God were their biggest sources of support. Others reminded us that there are counseling services available. One woman felt that there are female Hispanic patients who need more than only men doctors, and she takes comfort in that thought.

These women seemed to be stressed somewhat from guilt stemming either from time spent in studies and not with family and friends or from spending time with family and friends and not studies. Some women stated, "Problems with in my family and relationship between my friends do stress me." Other women stated, "Family, friends and God are the best supports outside of school." Some third- and fourth-year students had made friends with faculty not connected with the medical school that were their "cheerleaders" and with whom they were able to discuss school–related stress, which lifted their spirits. The pull from different roles the women must manage in juggling time spent with family, friends or studies forms a delicate tightrope the women must walk.

Answers to this interview question source of support outside school ranged from “I have very little support outside of school,” “I hardly talk to my family anymore. Many of these women, it was found, receive no financial support from their families. They felt that they simply could not write home and ask for items that cost money, while they knew that Anglo students had no compulsion at all against frequently asking their parents for money. Mentors were very important, as were dads, husbands and moms who understood.

Lack of confidence or low self-esteem

Grijalva and Coombs, (1997) participants frequently felt incompetent and concealed self-doubts and anxieties, which were rarely shared with mentors, or colleagues. Gutek and Done (2001, p. 383) research findings “Suggest women’s self-perceptions suffer when praise for performance is commingled with praise for looks.” Tolman and Brown (2001, p. 140) stated that, Latina girls attempts to accommodate their culture at home and the school culture “reflect their mothers’ own struggles to raise daughters within two cultures.”

One woman in this current project stated, “I have low confidence and self-esteem. I sometimes feel that I am not smart enough or that I don’t learn as well as others.” Another stated, “I get sad and anxious.” Some women have felt lost and lose self-esteem by all the roles they must handle. For fourth-year students, self esteem increases as they near graduation. Some other students feel that “Poor performance has affected my self esteem. I feel lack of confidence is a huge stress.” Tests seem to distress the women particularly if they have not done well on them. This seems to

diminish their self- esteem. One student stated, “Low self-esteem and confidence riddle my life.”

Lack of role models and mentors

Mentors are characteristically missing in minority research. Shervington et al. (1996) found African-American women medical students lack role models. Montero-Sieburth (1996) stated that Latinas have not experienced the same access or support for gaining a foothold in academia” as have the African American women. Montero-Sieburth continued that there might be a “Latina faculty member in an institution where she is the only one of a kind representative for Latinos.”

One participant in this project wished she had “Someone who I could talk to, that I could relate to as well.” Another woman remarked, “I don’t think I’ve ever had a role model.” One woman stated it very succinctly, “Lots of role models, mentors, but not too many Hispanics,” while another replied, “I can’t say that I lack role models and mentors, but I definitely don’t have one that’s just like me.” Others felt it had been hard to find someone who understood them and what they are going through. The statement that it is “Somewhat discouraging not to see more Hispanics” in medical school was repeated many times by the women. One student reported that, “It is hard going to medical school and not having any Hispanic professors, especially Hispanic female mentors” and “It’s hard not being able to identify with anyone.”

Research Question 1 Answered

Research Question 1 was answered from both qualitative and quantitative information. The qualitative information came from interviews with the women and

concerned the women's answers to questions concerning stress in their lives. The information found is reported in quantitative and qualitative form found below.

Quantitative Measure

From Tables 12 and Tables 13-17, readers have seen that the women perceive that they are highly stressed. They ranked their most important stressors (high stress) as difficulty and intensity of school, academic bias, family or illness, and distance from family.

Seventy percent of the women appear to be happy about their decisions to enter medical school, but academics and finances do add more stress to their lives. Over 50 % agreed that misconceptions they had about medical school has led to higher stress. Over 50% of the women are critical of themselves and have a low opinion of themselves.

Qualitative Measure

The stories that were told by the women during the interview helped readers to understand more fully how the women struggle. The information derived from the interview query to "list your stressors" consisted primarily of the stress from money problems, doing well in school, passing each Step in the United States Medical Licensing Examinations (USMLE), and boards, application for residency, family, relationships, what the future holds, childcare, distance from their families, and time constraints. The finding from these interviews showed that the women struggle with stress from role strain, finances, and gender-and ethnic-related biases.

Cultural barriers and double-minority strain are most problematic. However, the most egregious bias comes from the academic world where one would expect more compassion and more careful treatment. The women stated that this bias was so subtle they felt defenseless against it. The women reported that they were stressed by classmates and others assuming they were academically inferior. They are also troubled by questions from others about academic achievement issues and quality of their prior education. They also must defend themselves against questions concerning intellectual qualification, which often times come from their teachers.

Research Question 2

Research Question 2 asked: What coping techniques do the Hispanic women medical students recognize they are using to counter stress found in medical school in Texas? This research question was answered from both qualitative and quantitative information. The qualitative information came from interviews with the women and concerned the women's coping strategies and stress hardiness, which can be found later in this chapter.

Qualitative Measure: The Stories Told by the Women

Qualitative information came from the interviews of the women and the stories they told found below.

Information found in the personal interview such as areas of vulnerability, stress hardiness and altruism help to answer Research Question 2. From the interviews, this researcher sensed that the women really had never considered the question of coping techniques. A few struggled to answer this and a few women did not respond to

this question leaving this researcher sensing that either they did not know how they coped or they felt they were not coping well. From the interviews, the strategies mentioned were talking with their mother and friends, crying, hugging and being hugged, exercising, running, writing in a journal, spending time with parents, sewing and crafts, being able to rest every night from classes, calling mom and talking for 30 minutes and tending a vegetable garden. Those women near graduation were enraptured by being almost finished. Many of these women have a deep faith in God and felt that faith helps them cope with daily living. These women are all stressed and exhibit unique stressors. However, they are coping fairly well with these stressors. They appear happy and excited about their career choice. Below are the interview results for the women's personal coping and hardiness.

Stress Hardiness

Kobasa coined the term "hardy personality" (Greenberg, 1999; Seaward, 1997). The hardy personality presents three traits, which work to act as a buffer to stress. Seaward and Greenberg stated these three traits are:

1. Commitment: The dedication to oneself, one's work and one's family, which gives the individual a sense of belonging.
2. Control: This means a sense of personal control, a sense of causing the events rather than helplessness.
3. Challenge. The ability to see change and even problems as opportunities for growth rather than threats to one's existence.

The women in this research rely on that fact that others have gone before and helped pave the way for them. This seems to bring solace to the women. These women rely heavily on family and faith in God. Most felt strongly that they adapt easily. Some run and exercise to relive their stress. Most felt they were tenacious and committed to finish medical school and therefore most felt that they were very stress hardy and had their life under control. The challenge of their life in different roles as double minority, woman, daughter, sister, and a non-traditional role of a medical student does stress them. However, during the interview, this researcher found the women to be very stress hardy considering the career path they have chosen and the stress that comes from being in a historically male oriented field, the prejudice toward them as a double minority and the ethnic and cultural biases.

Areas of Vulnerability

Kanellos (1994) stated that Hispanic women are vulnerable. Cohen et al. (1995, p. 17) stated vulnerability factors are characteristics that make people more or less susceptible to stressor-induced disease. They further stated two variables of vulnerability are social support and feelings of control.

Women in this research stated that family, relationships and academics were vulnerable areas. Many women perceived themselves as being academically vulnerable. One woman stated, “I feel I have the hopes of my family and undergraduate school” riding on whether I make it or not. Other women answered that they were vulnerable everywhere and that the future was so uncertain that they had to work very hard just to maintain. Some of the women chose not to answer the questions of

hardiness and vulnerability leading perhaps to the assumption that they do not even consider these issues or do not know how to face these issues

Altruism

Minorities "have been found to be altruistic and more likely to practice in underserved regions than non-minority" (Carlisle et al., 1998; McFarland et al., 2000).

Altruism was deemed by this researcher to be a part of an answer to the second research question because women have been found to turn to other women during stressful times as a coping strategy. Altruism concerns caring for others. Women all tend to be mindful of others for the most part. This sort of mindfulness blends in with the "Tend and Befriend" theory of Taylor, et al (2000).

Some women stated that their altruistic mindset was part of the path that brought them into medical school. They want to help patients and if the patient is a child, they want to help the parents also. One woman responded that she felt that, "[as a] minority, I want to serve my community. As a female, I would like to be a role model to other women as well." These women can be applauded for their altruistic feelings. One woman stated it very well: "I devote myself to serve others." This is very important since the rural areas are in critical need of medical doctors who have an altruistic mindset.

Quantitative Measure

Answer to Research Question 2, which asked about stress resistance of the women. This information can be found in the quantitative measures of two tables and their discussion, which follow.

The Personal Style Inventory (PSI)

This table measured the stress resiliency of the women. For ease in understanding, this table has been divided into the following sections

- Critical of Self
- Life Perspective or Resolve
- Positive, Resourceful Ways of Dealing with Stress
- Beliefs
- Creative Handling of Stress
- Predicable Routines
- Altruism and Relationships
- Positive Outlook and Control of Life Negative Ways of Dealing with Stress

Critical of self

There were six questions dealing with critical feelings to self such as critical of how a situation was handled, critical of how a job was handled, inward criticizing self about appearance or skill and feelings of flaw or defects in self when something bad happens. In looking at this table readers will note that almost 100% of women answered that they are critical of themselves, while in Table 15 only half found this to be a problem**.**. More than half of the women felt they get angry or critical of themselves when they get into a bad situation. However, almost all the women answered that they do not feel it is some flaw or defect in them when something happens. Just fewer than 60% of the women felt they must be totally adequate at just about everything or they are not worthwhile. Many students both sexes and any ethnicity can be critical of

themselves but these women have made the statement that they are critical of themselves and this is something that needs to be further examined.

Negative Ways of Dealing with Stress

Interestingly very few of these statements were answered affirmatively. Most of the questions were answered No. As noted, 87.5% of the women stated, that they have trouble letting go of things that they would be better off giving up. This is an area that many women would answer affirmatively and 66.7% of the women stated, that they usually make things worse by thinking how awful it is that something does not go the way they wanted. This section shows clearly that the women are most likely attempting to handle their stress in a positive way.

Positive, Resourceful Ways of Dealing with Stress

As readers will note from the previous section, these women appear stress hardy. One statement in this section was statistically negligible in the 50% range. Sixty-Six percent of the women stated that when something is done it's done and they don't worry about it, which shows that 34% of the women do worry over issues, projects, tests and relationships. For the last statement, 79.2% of the women answered that troublesome things have a way of working themselves out. Readers will note that these statements show a positive, resourceful way that the women feel they deal with stress

Creative Handling of Stress

Over 58% of the women stated that their typical reaction to a bad situation is to think and do things that make them feel calmer and better. The rest of the statements

ranged from 79% or higher and were answered “Yes” showing once again that these women are positive and creative in working through issues and problems.

Positive Outlook and Control of Life

Readers will note that one statement is statistically negligible. All of the women stated that they have roles where what they do is quite important. More than half of the women do not feel adequate about asking for what I want. More than half do not fee they are largely in control of their life. Almost 92% of the women do not feel safe standing on their own two feet and doing their own thinking and acting. This is a critical piece of information. Traditionally Hispanic women have been reared to be dependent and this might be an indication of traditional mindset by the women. The rest of the statements were answered affirmatively in the range from 75% to 95.8%. This section showed that these women have a very healthy outlook of whom they are and what they are about doing but that they is work that can be done in support of these women so that they can become even more actualized and autonomous.

Life Perspective or Resolve

Just over 70% of the women stated they would not do things that they don’t believe are right. Over 91% of the women stated events in their life are not chaotic and unpredictable. All the women believe life is good. Looking closely at the affirmative answers readers will note that three of these statements were answered by 95.8% of the women. This section as the other sections so far show that most of these women are resolved and positive in their mind.

Beliefs

The two statements in this sections showed that 75% to 87.5% of the women believe in a “higher power” and feel their life makes sense.

Predictable Routines

The two statements in this section answered affirmatively showed that 75% to 83.3% of the women have predictable routines that give them comfort and have traditions that they value and take part in regularly.

Altruism and Relationships

This was the largest section containing twenty statements. Two statements that were both answered by 100% of the women showed they gain great comfort and feel better from talking their problems over with others. Clearly this is important information and shows the need for mentors that have been trained to facilitate these women. Talking over problems and thereby lessening stress is a point that has been brought out by other researchers of Hispanic women medical students, by medical doctors and by researchers looking at “Tend and Befriend.” This concept deals with women talking through issues with other women. Three of the statements in the 50% range were deemed statistically negligible. Four of the statements were answered “No” showing that 58.3% of the women feel annoyed by people disagreeing with them, almost 63% of them criticize people regardless if it is to their face or not, almost 80% of the women feel they have a close relationship with someone, 87.5% of the women are not all consumed by needs for love and 83.3% are upset by being rebuked by someone in authority.

The range of 58.3% to 95.8% answered "Yes" to statements about relationships and altruism. Almost all the women stated that they typically hold back from doing what they want to do because someone important might not like it. Toxic individuals affect most folks and these women are no different as shown by 91. 7% stating that they feel annoyed by people who are rude, while 87.5% are really irritated by some people. Over 70% can't stand disapproval even though it comes from some one who isn't very important and 79.2% know people they just "don't like." Almost 60% tend to be over-involved with others to the point of sacrificing their own happiness. More than 66% find it hard to say "No" to others to the point of exhaustion and to the point of doing things that they don't even want to do. Two statements show altruism in that over 83% of the women stated they are just as polite to formal relationships as to family members and almost all the women generally put other people's needs ahead of their own. These findings are shown in Table 18.

Table 18:
The Personal Style Inventory
(n = 24)

Variable	Yes		No	
	Freq	%	Freq	%
Critical of Self				
I am pretty critical of myself	22	91.7	2	8.3
When something bad happens to me, I get angry or critical with myself for having gotten into the situation	15	62.5	9	37.5
When something bad happens, I usually think it's due to some flaw or defect in me.	1	4.2	23	95.8
I spend a lot of time inwardly criticizing myself (my appearance, my skills, what I've done, etc.).	12	50.0	12	50.0
If a job I do doesn't come out just about perfect, I usually end up critical of myself and/or others.	13	54.2	11	45.8

Table 18 continued

Variable	Yes		No	
	Freq	%	Freq	%
I tend to feel that I must be thoroughly adequate, achieving and good at just about everything or I am not a worthwhile person	14	58.3	10	41.7
Negative Ways of Dealing with Stress				
When I am in a stressful situation, I am likely to "freeze" and do nothing about it.	5	20.8	19	79.2
When things bother me, I am likely to hold them in and let them build up inside me.	10	41.7	14	58.3
I tend to deal with troubles by ignoring them and seeing if they go away.	4	16.7	20	83.3
Often, when dealing with difficult situations, I do things that end up making things worse for me.	6	25.0	18	75.0
Positive Resourceful Ways of Dealing with Stress				
I am likely to deal with trouble by having fantasies of being in a more pleasant situation.	7	29.2	17	70.8
I spend a lot of time painfully worrying about things that end up not happening at all	11	45.8	13	54.2
When something goes wrong, I usually add to the upset by thinking how awful it is that it didn't go the way I wanted.	16	66.7	8	33.3
When I have trouble, most of my energy goes into trying to get away from painful thoughts and feelings.	12	50.0	12	50.0
When I talk to people about bad things that have happened to me, I usually feel little sense of relief or comfort afterwards.	13	54.2	11	45.8
I often can't get myself to let go of things, such as a bad relationship or a job that I would be probably be better off giving up.	21	87.5	3	12.5
I tend to think that there is not use trying to improve my life.	3	12.5	21	87.5
My responsibilities have little meaning to me, except as a way to get by.	2	8.3	22	91.7

Table 18 continued

Variable	Yes		No	
	Freq	%	Freq	%
Once I have done what I can about a situation, I tend to put it out of my mind until further action is needed.	13	54.2	11	45.8
As far as I am concerned, when something is done it's done and I don't worry about it.	8	33.3	16	66.7
The way I see it, troublesome things just have a way of working themselves out.	19	79.2	5	20.8
Creative Handing of Stress				
I frequently take good care of, calm, and comfort myself	12	50.0	12	50.0
My typical reaction to a bad situation is to think and do things that make me feel calmer and better	14	58.3	10	41.7
I know some things I can do to make me feel better when I am upset, and I usually do those things when I am under stress	23	95.8	1	4.2
I commonly see difficult situations as a challenge	21	87.5	3	12.5
If I have a stressful day, I almost always find ways to recuperate before I have to face the next day.	19	79.2	5	20.8
The way I see it, there is almost always a way to get a job done.	23	95.8	1	4.2
When something bothers me, I spend the time and effort it takes to get clear about what it means to me.	19	79.2	5	20.8
When under stress I am usually focused on looking for creative solutions to the problem.	22	91.7	2	8.3
Positive Outlook and Control Of Life				
When something good happens to me, I am likely to think it's due to my talent or skill, or having worked hard.	19	79.2	5	20.8
I am likely to look at the bright side of troublesome situations.	19	79.2	5	20.8
I seldom use alcohol, tranquilizers, or other chemical substances in order to deal with feelings of stress and strain	20	83.3	4	16.7

Table 18 continued

Variable	Yes		No	
	Freq	%	Freq	%
I feel that I am good at communicating y feelings to other people.	19	79.2	5	20.8
I usually express my emotions and feel satisfied about it afterwards	20	83.3	4	16.7
I usually feel o.k. about asking for what I want.	9	37.5	15	62.5
I usually feel o.k. about saying how I feel.	19	79.2	5	20.8
I tend to stand on my own two feet and do my own thinking and acting.	2	8.3	22	91.7
I see myself as being largely in control of my life.	9	37.5	15	62.5
In some ways I feel kind of special, and that things will work our ok for me.	18	75.0	6	25.0
I usually put myself in a good position to deal with problems before they come along.	23	95.8	1	4.2
I often get to enjoy myself.	13	54.2	11	45.8
I have roles (e.g. in job, school, family or community) where what I do is quite important.	24	100.0	0	0.0%
Life Perspective or Resolve				
I never get angry	19	79.2	5	20.8
Somewhere in my upbringing I got a wise perspective on life and the world.	23	95.8	1	4.2
In general, my life experiences make sense to me.	18	75.0	6	25.0
I'm the kind of person who tends to think that things will work out as well as can reasonably be expected.	23	95.8	1	4.2
I believe, in spite of troubles, that life is basically good	24	100.0	0	0.0%
I never hesitate to admit it when I have made a mistake.	18	75.0	6	25.0
Though I would like for people to live up to my expectations, I know I can get along without that if I have to.	20	83.3	4	16.7
Sometimes I do things that I don't believe are quite right.	7	29.2	17	70.8

Table 18 continued

Variable	Yes		No	
	Freq	%	Freq	%
The events of my life have largely seemed chaotic and unpredictable.	2	8.3	22	91.7
Beliefs				
When dealing with problems, I feel confident that there is some form of higher power that will help me.	21	87.5	3	12.5
In general, my life experiences make sense to me.	18	75.0	6	25.0
Predictable Routines				
I have many predictable routines in my life that give me comfort.	18	75.0	6	25.0
There are rituals and traditions (e.g. religious and family ones) that I value and take part in regularly.	20	83.3	4	16.7
Altruism and Relationships				
I generally put other people's needs ahead of my own	22	91.7	2	8.3
There are some people I just don't like	19	79.2	5	20.8
When under stress, I usually talk out my feelings with someone who is likely to understand and care.	24	100.0	0	0.0%
When I am troubled and talk over my problems with others, I am likely to come away feeling better.	24	100.0	0	0.0%
I can't stand disapproval, even when it comes from someone who isn't very important to me.	17	70.8	7	29.2
I don't feel annoyed when people are disagreeing with me	10	41.7	14	58.3
In my heart, I really don't feel I have a close relationship with anybody.	5	20.8	19	79.2
I really care about other people and often do things for their sake.	22	91.7	2	8.3
I feel that I am more anxious than most people about what other people think of me.	11	45.8	13	54.2
I typically hold back from doing what I want to do or think should be done because someone important to me might not like it.	23	95.8	1	4.2

Table 18 continued

Variable	Yes		No	
	Freq	%	Freq	%
I never criticize people unless it is to their face.	9	37.5	15	62.5
I am preoccupied with all-consuming needs for love.	3	12.5	21	87.5
I really can't stand it if I do even the smallest thing to upset another person.	12	50.0	12	50.0
It is so hard for me to say "No" to people that I end up wearing myself out doing things I don't want to do.	16	66.7	8	33.3
I tend to be over-involved with other people so much that my happiness depends too much on what happens to them.	14	58.3	10	41.7
I sometimes feel annoyed when people are rude.	22	91.7	2	8.3
When someone in authority rebukes me, I accept it without resentment.	4	16.7	20	83.3
I am just as polite and considerate of family members as I of people I have a more formal relationship with.	20	83.3	4	16.7
Sometimes people really irritate me.	21	87.5	3	12.5

Sheridan and Radmacher. (1991)

The Inventory of Stress Resistance

This table measured stress hardiness of the women. For ease in understanding, this table has been divided into the following sections:

- Critical Self
- Negative Ways of Dealing with Stress
- Life Perspective
- Positive Resourceful Ways of Dealing with Stress
- Positive Outlook and Control of Life
- Social Groups and Stress
- Creative Handling of Stress
- Family and Friend

Critical of Self

This section consists of five statements all answered "No" by the majority in the range of 62.5% to 95.8%, which point clearly to a very important piece of information. Almost 63% stated they are not critical of self, while 70.8% stated that lack of achievement does not limit their value or acceptance of self. Seventy-five percent stated that whether or not they are succeeding does make them a worthwhile person and 95.8% stated their goal is about improving their life. This is very interesting in that in Table 16, 91.7% of the women stated they were critical of themselves and in Table 14 half of the women have a low opinion of themselves, which is an alarming thought that this many women are critical of themselves

Negative Ways of Dealing with Stress

Even though the majority of the women appear to be facing their problems head on, readers should note that six of the fourteen "No" statements were in the range of 58.3% to 62.5%, which is a very slim majority of women who are positively handling

stressors. The other eight “No” statements show a much greater majority in the range of 70.8% to 95.8%. Be that as it may, the majority of the women do not feel they live in a fantasy world, nor blow their stack, become angry with others or ignore problems. The women appear to be working toward problem solving. Which has been shown by literature to be a good way to keep from becoming depressed. A large majority of the women stated they do not dwell on problems and are not frustrated when things do not go their way. A very small majority felt they do not hold their emotions, which decreases inner strain. Most stated that they do not stay tense after a difficult situation has passed. Almost 88% are not consumed by needs for love, while 66.7% do not neglect their own needs in order to be liked and loved by others. Over 83% of the women do not dwell on things that have not occurred yet. As information from this table points out, these women are working through their own problems and daily issues and are coping

Positive and Resourceful Ways of Dealing with Stress

The percentages in this table show that no more that 79.2% answered any statement. Half stated that rather than dwell on past or future problems they are likely to concentrate on making the best of the situation. Although statically negligible these statements raise a flag of concern. There were two “No” statements, 58.3% and 75%, which shows that the women are troubled with stress over issues and solutions to problems that they cannot get out of their mind once they are over and not keep on worry after the problem is past. Over 66% often get to enjoy themselves, while 70.8% have fun a lot and 79.2% regularly experience “life’s little pleasures.”

Creative Handling of Stress

Only one of the statements is statistically negligible at 50% but has very important implications. Only 50% of the women are attentive to preventive health. This should raise a warning flag to readers. Readers should note that 66.7% of the women stated they regularly take time to wind down and relax.

So far information has shown that 50% of the women are not attending to preventive health and some women are not taking time out for their personal good. The last five statements are answered by a large majority of the women. Over 91% would seek professional help and turn to others for help. Over 83% often are around people who support them and make them happy.

Finally 70.8% stated they tend to take a problem-solving approach to difficult situations which literature has shown is very positive way to depress

Positive Outlook and Control of Life

Only one statement is answered “No” in this section and it is by a small margin of 58.3%.

Four statements were answered affirmatively and at around 50%. Over 58% of the women told readers that they did not feel they could express their emotions fully. The four statistically negligible statements concerned feeling attractive, being on a higher than average status, thinking things are out of control of self and avoiding mistakes in the future. The twelve statements that were answered affirmatively concerned ability to communicate feelings to others and feeling okay about asking for what they want and about saying how they feel. Of interest 87.5% agreed that they do

best standing on their own two feet and doing their own thinking and acting. However, only 66.7% felt they were in control of their life and felt that things will work out as well as can be expected. Almost 80% of these women felt they have gained certain wisdom from some somewhere. Almost 88% of the women stated they remain overall happy about their life. The fact that many of them appear happy might be attributed, in part, to the fact that 91.7% of them have a strong sense of who they are, what they want, what they can do and how they feel. They remain flexible and they view difficult situations as challenges.

Social Groups and Stress

One statement was answered "Yes" by a very small margin of women and concerned having a large number of social contacts. It is surprising that more women did not answer this question "Yes." Two statements answered affirmatively by 66.7% of the women, concerned groups in which things are done in the right way and groups to which the women have a strong emotional bond. Two more statements also concerned groups, to which 70.8% of the women felt are worth belonging to and groups that perform one or more important functions. Almost 80% of the women are members of one or more formal or informal groups. A little more than 83% of the women belong to a group that has a standard and principles they really believe in and 87.5% belong to a group in which other members are loyal to and supportive of the individual. Finally 100% of the women stated they are not socially isolated. This is important information because research has shown that women turn to others during stressful times to work out problems.

Life Perspective

This section contains ten statements of which three statements are statistically negligible Over 66% stated they are not often nervous, while 79.2% stated they usually feel good about how they have dealt with a situation. Almost all the women stated that events of life are not chaotic and unpredictable and 100% felt their work in life is not just a way to make a living. Of interest, 70.8% stated that they are not outraged when a person frustrates them and do not dwell on how terrible that person is and that they should be punished. This is alarming because almost 30% of the women stated they have this very destructive perspective, which is not conducive to stress resistance and can be harmful to the women. Readers will note that 66.7% commonly feel a lot of inward pressure but 91.7% show their altruistic nature by often directing their work toward the good of others and themselves.

Family and Friends

Two statements show that 66.7% of the women stated they do not feel their family have many secrets, while 75% are not often troubled with family problems with which they cannot cope. Over 70% of the woman have stable, caring relationships, 70.2% have close relatives and 87.5% have close friends and a number of people in their life who show an interest in what they say. This is a huge insight into the personal life of these women they are supported through their family and friend.

Table 19:
Inventory of Stress Resistance
(n=24)

Variable	Yes		No	
	Freq	%	Freq	%
Critical of Self				
I tend to think that because of some things that have happened to me in the past, there is not use trying to improve my life.	1	4.2	23	95.8
I spend a great deal of time inwardly criticizing myself	9	37.5	15	62.5
I cannot accept myself unless I am always achieving a great deal.	7	29.2	17	70.8
Even though I might know better, I generally feel that I am only of value as long as I am accomplishing a lot.	7	29.2	17	70.8
I tend to feel that I must be thoroughly competent, adequate, and achieving in all respects or I am not a worthwhile person.	6	25.0	18	75.0
Negative Ways of Dealing with Stress				
When things bother me I am likely to store them up and then blow my stack.	8	33.3	16	66.7
I usually deal with life difficulties by ignoring them and seeing if they go away.	1	4.2	23	95.8
Often, when dealing with difficult situations, I take actions that I should have seen would make things worse.	2	8.3	22	91.7
I am likely to deal with difficult situations by having fantasies of being in a more pleasant situation.	7	29.2	17	70.8
I often have to hold my emotions in and have them place an inner strain on me.	9	37.5	15	62.5
When under stress, I am likely to have trouble sleeping or sleep too much.	19	79.2	5	20.8
When under stress, I am likely to get angry with other people a lot.	10	41.7	14	58.3
When under stress, I am likely to eat too much.	16	66.7	8	33.3
When under stress, I am likely to feel tense, anxious, or shaky	16	66.7	8	33.3
When I have been in a difficult situation, I get very tense and stay tense long after the difficulty has	9	37.5	15	62.5

Table 19 continued

Variable	Yes		No	
	Freq	%	Freq	%
passed.				
I spend a great deal of time painfully worrying about things that end up not happening at all	9	37.5	15	62.5
I am able to take reasonable risks and learn from the results.	11	45.8	13	54.2
My desire to be liked, loved, or appreciated by other people leads me to neglect my own needs.	8	33.3	16	66.7
If I can't come up with a quick solution to problems, I let myself go on and on being upset about them.	4	16.7	20	83.3
I am preoccupied with all-consuming needs for love.	3	12.5	21	87.5
When something goes wrong, I usually add to the upset by swelling at length on how awful it is that it didn't go the way I wanted.	9	37.5	15	62.5
It makes sense to me that I should be upset and frustrated for along time when things don't go the way they should	3	12.5	21	87.5
I spend a lot of time making myself feel bad by dwelling on things that haven't yet occurred.	4	16.7	20	83.3
Positive Resourceful Ways of Dealing with Stress				
Once I've done what I can about a situation, I tend to put it out of my mind until further action is needed.	10	41.7	14	58.3
Rather than dwell on past or future problems, I am likely to concentrate on making the best of the situation.	12	50.0	12	50.0
As far as I am concerned, when something is done, it's done and I don't worry about it.	6	25.0	18	75.0
I regularly experience life's little pleasure (for example, laughing, having a good meal, seeing beautiful scenery, having a good night's sleep or other pleasant thing).	20	83.3	4	16.7
I often get to enjoy myself.	16	66.7	8	33.3
A lot of times I have fun.	17	70.8	7	29.2

Table 19 continued

Variable	Yes		No	
	Freq	%	Freq	%
Creative Handing of Stress				
If I need professional help, I have the resource needs to obtain it	22	91.7	2	8.3
I am attentive to preventive health	12	50.0	12	50.0
I regularly take out time to wind down and relax	16	66.7	8	33.3
I have people I can turn to when I need help.	23	95.8	1	4.2
I am often with people, who make me feel wanted, liked, respected, understood, appreciated, or accepted.	20	83.3	4	16.7
I am often around happy people.	20	83.3	4	16.7
I tend to take a problem-solving approach to difficult situations.	17	70.8	7	29.2
Positive Outlook and Control Of Life				
Whether for physical or psychological reason, many people find me attractive	12	50.0	12	50.0
My position in life gives me higher than average status	13	54.2	11	45.8
I usually feel that I am better able than most people to deal with difficult situations	17	70.8	7	9.2
I feel that I am quite good at communicating my feelings to other people.	15	62.5	9	37.5
I usually feel that I can express my emotions fully.	10	41.7	14	58.3
I usually feel okay about asking for what I want.	15	62.5	9	37.5
I usually feel okay about saying how I feel.	15	62.5	9	37.5
I do my best to stand on my own two feet and do my own thinking and acting.	21	87.5	3	12.5
When things go wrong, I usually see them as being due to things that are out of my control.	12	50.0	12	50.0
I feel that I have gained, whether from my family, from my cultural background, or from some other source, something beyond mere knowledge that could rightly be called “wisdom.”	19	79.2	5	20.8
In general, my life experiences make sense to me.	23	95.8	1	4.2
I see myself as being largely in control of my life.	15	62.5	9	37.5
I’m the kind of person who tends to think that things will work out as well as can reasonably be expected,	16	66.7	8	33.3

Table 19 continued

Variable	Yes		No	
	Freq	%	Freq	%
Overall, I feel happy about my life	21	87.5	3	12.5
I have a strong sense of who I am, what I want, what I can do, and how I feel, but I am at the same time flexible	22	91.7	2	8.3
I often see difficult situations as a challenge.	22	91.7	2	8.3
My attitude toward mistakes is to think of how I can avoid them in the future, then forget about them	12	50.0	12	50.0
Social Groups and Stress				
I belong to a group that I see as doing things in the right way.	16	66.7	8	33.3
I belong to a group that has standards and principles that I really believe in.	20	83.3	4	26.7
I belong to a group in which other members are loyal to and supportive of me.	21	97.5	3	12.5
I am a member of one or more formal or informal groups	19	79.2	5	20.8
I have a large number of social contacts.	14	58.3	10	41.7
I am pretty much socially isolated	0	0.0	24	100.0
I belong to a group that I really feel is worth belonging to.	17	70.8	7	29.2
There are groups to which I feel a strong emotional bond.	16	66.7	8	33.3
I belong to a group that performs one or more important functions.	17	70.8	7	29.2
Family and Friends				
There are a number of people in my life who show an interest in what I say	21	87.5	3	12.5
I have close friends	21	97.5	3	12.5
I have close relatives	19	79.2	5	20.8
I have a stable, caring relationship with someone	17	70.8	7	29.2
I often have family problems I can't really cope with.	6	25.0	18	75.0
There were many secrets in my family	8	33.3	16	66.7
Life Perspective				

Table 19 continued

Variable	Yes		No	
	Freq	**%**	**Freq**	**%**
What I do is often directed at working toward the good of others and myself.	22	91.7	2	8.3
I am often nervous	8	33.3	16	66.7
I commonly feel a lot of inward pressure.	16	6.7	8	33.3
I frequently feel bad about how I dealt with a situation	5	20.8	19	79.2
I am likely to keep going over in my mind mistakes I have made.	13	54.2	11	45.8
I feel that I am more anxious than most people about what other people think of me.	9	37.5	15	62.5
I often behave as though I feel that I need someone else to think for me and make my decisions.	4	16.7	20	83.3
The events of life have largely seemed chaotic and unpredictable.	2	8.3	22	91.7
I often feel overwhelmed by situations and events in my life.	12	50.0	12	50.0
My work has little meaning to me, except as a way to make a living	0	0.0	24	100.0
I can’t stand disapproval, even when it comes from someone who isn’t very important to me.	13	54.2	11	45.8
I feel outraged when a person frustrates me, and I spend a lot of time thinking of such things as how terrible they are or how they deserve punishment	7	29.2	17	70.8

Sheridan and Radmacher. (1987)

Cohesion and Review of Tables 18-19

These two tables differed in that Table 18 contained no section on Belief or Predictable Routine and Table 19 contained no section on Group or Family or Friend. Of interest though are the items that were duplicated in the two tables from the Positive Outlook and Control of Life section and some of the results from those questions.

Table 19 showed that 87.5% agreed that they do best standing on their own two feet and doing their own thinking and acting while Table 18 showed that 92% do not feel safe standing on their own two feet and doing their own thinking and acting. It appears these women want to be autonomous but they do not feel safe in that mode.

Table 19 showed that 58.3% do not feel they can express emotions fully while in Table 18, 83.3% stated they usually express emotions and feel satisfied afterwards. These are confusing results.

In Table 18, 62.5% don't feel largely in control of life while in Table 19, 62.5% do feel largely in control of life. Once again these are confusing results.

Confusing also is that in Table 18, 62.5% said they don't feel good about asking for what they want, and 37.5% said they did. Yet in Table 19, 62.5% said they did feel good about asking for what they want and 37.5% said they didn't. These answers have been exactly flipped.

In Table 18, 20.8% said they didn't feel ok about saying how they feel and 79.2% said they did while in Table 19, 37.5% said they didn't feel ok about saying how they feel and 62.5% said they did, which are fairly close results

In Table 19, only 54.2% stated their position in life gives them higher than average status and in Table 18, 100% stated they have roles where what they do is quite important while in Table 18, 75% feel they are kind of special and that things will work out ok for them.

In Table 18, 79.2% stated they look on the bright side of troublesome situations and in Table 19, 70.8% feel they are better able than most in dealing with difficult situations. Table 19 brought out that 66.7% felt that things will work out as well as can reasonably be expected. In Table 19, 91.7% often see difficult situations as a challenge. In Table 18, 79.2% felt that when good happens it is due to their talent or skill or having worked hard.

Table 19, 87.5% overall feel happy about life, while in Table 18, 79.2% usually look at the bright side of troublesome situations. In Table 18, only 54.2% often get to enjoy them selves.

In Table 19 almost 92% felt they have a strong sense of who they are, what they want, what they can do and how they feel but are still flexible.

Research Question 2 Answered

Research Question 2 was answered from both qualitative and quantitative information. The qualitative information came from interviews with the women and concerned the women's coping strategies and stress hardiness.

Quantitative Measure

From Table 12 and 16 - 17 readers can glean priceless information on how stress hardy the majority of these women are. They are not socially isolated as these

tables brought forth. They have family ties that support them and friendships that they draw from. They have a sense that they can turn to others for support. They belong to groups of family, friends, church, the United Latin American Medical Students (ULAMS) and the American Medical Women Association (AMWA). They tend and befriend (Taylor et al., 2000) to ease the stress of school and the problems of life. The women are not troubled with many symptoms or ill health and the PSI shows that they are very strong women. It becomes very apparent, even to a novice researcher, that the women in this population are very stress hardy and healthy. This corresponds to a finding by Dr. Kyriakos S. Markides of UTMB, in the large, longitudinal research, has shown that aging Hispanics living in impoverished conditions, which should be highly stressed, are in deed very healthy for their age. Markidas calls this the "Hispanic Paradox." Interestingly, Kessler et al. (1999) found "Minorities to be in better mental health than non-Hispanic Whites" even though 60.9% of their population reported "exposure to day to day discrimination (p. 208)."

Qualitative Measure

From the interview question "list your coping style" the women compiled a list that included faith in God; drawing on inner strength arising from God; family, friends and other students with whom they can talk through their problems; they exercise; separate themselves from school for brief periods or "holidays", at which times, however, they apparently feel guilt for taking time from academic pursuits; they journal, relax, and sleep; they take joy in life; and seek counseling. Twenty-three of the women stated that they have people that they knew that they could turn to for help and

support. From the interviews this researcher found the women to be coping as well as can be expected for their career choice. They seemed happy and contended although stressed from the tediousness and fast pace of their schoolwork. However, the women are vulnerable from family issues and relationships, academics and as one women stated vulnerable all over.

Summary of Results

The answers to the two research questions arose from quantitative measures and qualitative measures. The answer to Research Question 1 came from quantitative measures comprised of information derived from the reasons given by the women for becoming a medical doctor, two questionnaires which investigated how well the women felt they were doing in medical school and if the women believe they had made the right decision to become a medical doctor and stress thereof and a comprehensive survey of perceived stress. The qualitative measures were comprised of the stories the women told concerning stressors in their life. The answer to Research Question 2 came from quantitative measures comprised of two questionnaires concerning the personality of the women and their stress hardiness. The qualitative measures were the stories the women told concerning their coping strategies and their stress hardiness.

The women are stressed with the normal stress found generally in medical students and with unique stressors that have been found in Hispanic women in medical school. The women in this study are stress hardy and appear happy, well adjusted and sure of their goals. They are, however, very aware of the bias against them that arise from others prejudicial mindset and this is very stressful to them. Some struggle under

non-support by their family for their career choice. Yet, these women appear strong and dedicated to their goals. They are dedicated to achieving their goals no matter the bias and barriers that the world puts in their path. Achor and Morales (1990, p. 280-281) found from their study of Chicana doctoral students that this drive may be forged from "negative messages casting doubts on the abilities of persons of their ethnicity and gender to succeed, served not as an impeder, but as an impetus to prove the message wrong." There is the need for support for them through policy change, alumnae help, education of families and communities and more understanding of this population and their needs and further research which will illuminate this population to a greater extent.

Ancillary Findings

This researcher was truly amazed to find translational stress with a twist. Some of these women spoke dialectic Spanish and were embarrassed to be called to translate.

Another issue that was startling concerned international students who have gone without food for several days while scholarships evaporate because of their international status. Co-sponsors for these women are almost non-existent.

Language appears to be a very definite issue. These women many times struggle with words they do not understand. Many Anglo students come from families that include medical doctors and may have heard medical terms used from childhood. The Hispanic women, for the most part, have not been exposed to this type of vocabulary in their upbringing.

Many of these women send more than half their student loan money home every semester.

The medical insurance the women must carry as medical students is a great cost and can be a great burden to them. There were complaints that the insurance was costly, and when they needed to go to the doctor, often the insurance did not pay much.

The women who did not take part in this research became an interest to this researcher. When asked, the women who did participate implied that they (other women who did not participate) did not want their ethnicity to be pointed out.

Fifty to one hundred percent of the women reported during the questionnaires that they were critical of themselves and had low self esteem.

Finally, it was heartwarming to learn that a large amount of stress comes from worry about the door closing to other minority women matriculating on and being accepted into medical school. These women worry that if they do not make it, the door will close. They know that people are watching to see if they fail. One woman had heard that a counselor at her college in the Rio Grande Valley was monitoring more carefully the Hispanic students he sends to medical school. He has been embarrassed by the lack of success of some of the minority students. The women had heard that this recruiter has raised the MCAT score he uses in his recruitment of minority students into Texas medical schools.

CHAPTER V

DISCUSSION, SUMMARY OF RESEARCH, RECOMMENDATIONS AND CONCLUSIONS

Discussion

In order to accomplish this research, this investigator examined literature concerning the history of women in medicine, the under-representation of Hispanic women in Texas medical schools, and ethnic and stereotypical prejudice. Of interest for inclusion was what the literature reported about stress. The investigative parameters of stress are detailed in points 1-8 below.

1. How stress is defined by the literature
2. How stress is evaluated
3. The stressors found by medical students and Hispanic women
4. The emotions associated with stress
5. Normative (the usual, normal) stress in medical school
6. Role conflict and role stress, gender and stress and discrimination
7. Stress and Hispanic women
8. Unique stressors found in female Hispanic medical students

The work of Holtzman et al. (1975) concerning the passivity of Mexican school children compared to the activity of United States school children was an excellent piece for this research. The investigation of the women's coping strategies, hardiness and stress management was important to answer the second research question

The focus and progression of the research involved a study of stress in female Hispanic medical students in Texas. Stress in medical students is well documented in the literature. However, little is known of Hispanic women, who are double minority status, with unique stressors and who are enrolled in medical school. More to the point, even less is known about stress in Hispanic women enrolled in Texas medical schools.

Of vital interest to this research is how the women fit with the reports from literature which has shown that diurnal stress of medical school is ubiquitous, but especially so to women of color because of double biases, double challenges, unique stressors, divergent expectations and enormous barriers. It is not surprising, but nevertheless very important that the findings of Grijalva and Coombs (1997) that "Latina physicians and medical students experienced great stress at work and at home, with unique stressors." On a very formative level, Calkins et al. (1994, p. S24) asserted that "It is possible that how one feels about one's self in relation to the majority student group can result in a heightened sense of stress prompted by a student's cultural background." The majority student group that has historically dominant in medicine is the Anglo male.

The Essential Purposes of This Research

To recap the reasons this research was begun and why it took the path taken, following are the basic purposes of this research:

1. To measure the degree to which Hispanic women perceive stress in Texas medical schools

2. To identify perceived factors which cause stress among female Hispanic medical students in Texas
3. To identify stressors in female Hispanic medical students in Texas
4. To identify how female Hispanic medical students in Texas reduce stress

To accomplish these goals, instruments were collected that comprehensively measured perceived stress, and these were integrated into a self-reporting questionnaire package, which was delivered to each participant at Texas AandM University School of Medicine and to The University of Texas Medical Branch. Information was gained through a packet of questionnaires and personal interviews of the women. There was a need to identify any unique stressors in Texas Hispanic women medical students and to find any stress-resistant habits this population might have. The interview featured questions concerning recognizable unique stressors, and each woman received a research packet that included: The demographic sheet, a consent form, the Community Oriented Primary Care Questionnaire (Lensky et al., 1999) and the Comprehensive Scale of Stress Assessment Version III (Sheridan & Radmacher, 1987).

In order to internalize the issues in this research, a model (Figure 2) was created for this research and represented five areas of literature findings. These include

1. Increased stress in double minority Hispanic women in medical school in Texas
2. Possible unique stressors
3. Under-representation of minorities in medicine
4. The crisis in medicine

5. The need for substantial, active, constant support for this population.

During this study, a second year participant "failed out." She emailed this researcher that she believed it had been "God's plan for her to become a medical student." The medical school quickly tried to put help in place for her but it just was not to be. The last time she emailed, she was going east with her family. This obvious academic "waste" seemed to rest on these facts:

- She never seemed to get her coping strategies in place.
- The medical school was not prepared to help her fully.

Of great interest is the fact that there were a high percentage of mentors in this population. However, statements were made that there were no mentors that "looked" just like me." The women want minority women mentors who understand cultural, ethnic and minority issues found in medical school for professional Hispanic women.

The stories the women told are an invaluable look into each of their lives, the struggles they have, the barriers and discrimination they have encountered and are continuing to discover, the stress that they live with and their vulnerability. However, these women are very stress hardy. They "tend and befriend" (Taylor et al., 2000) and they assertively pursue what a lot of them consider as "God's path" for their life. They are worried about their families and look forward with fear but with a positive nod to the future. They are worried about what the unknowns of the future and the cost that their education is exacting from them and their family. They are sensitive, intelligent, focused young women. These women pull support from mentors, family, friends and their faith in God.

Summary of Research

The stress questionnaires and the interviews show that stressors do exist in this population of female Hispanic medical students. However, they also appear to be stress hardy. This information begins to form a pattern or profile of the female Hispanic student in Texas medical schools. One woman stated, “I want so badly to succeed. I think they [Anglos] assume they will succeed, while I can’t. I have to fight for it. It’s so hard, and there is so little support. They’ll never understand how hard I’ve fought to get here.”

Hispanic women are part of the population of URM. There is a severe shortage overall of medical doctors in Texas. Texas needs to increase recruitment of minority students and then support them into practice.

This population exhibited a very high percentage of mentors and almost 46 % were first born. Fifty percent were either first born or only child. About 40 % have one sibling.

The unique stressors that have been found in other Hispanic women populations are certainly evident in this research, for the most part. However, these women participants have exhibited very successful coping strategies that they call forth and use daily. There is certainly need for more research into why these women have made it and others have not.

The daily grind for these women appears to be met with quiet determination, seeing friends, and support from family and friends. Although worried over how well their family is doing, the language of medicine, bills, fear of failure, worry about each

of the three upcoming Step exams in the USMLE and residence positions, they continue onward with their coursework. They appear, for the most part, to be achieving goals that heretofore were only dreams in the minds of young Hispanic women. They are forging ahead and intent on pushing that door open wider than it has ever been pushed before. Time will tell how they fare. The "unique stressors," study habits and the language of medicine may form barriers for the women on a daily basis, which is troubling.

Elevated Stress Level

The women in this research population exhibited high stress as found in the literature. The literature showed that the extreme stress of medical school was and is a well-documented historical problem (Kassebaum et al., 1996; Morton et al., 1996; Vitaliano et al., 1984; Wolf, 1994). Texas A&M University College of Medicine and The University of Texas Medical Branch have worked on including classes in stress, which is a relatively new concept in medical schools. Klamen (1997), stated, "Most medical students have never been exposed to a formal stress management program."

Stressors Found in Population

The Hispanic women are struggling to fit into a world that most of their parents could never envision. Some of the eight married women chose professional non-Hispanic mates. Several married women spoke of decreased stress because in-laws were totally supportive, emotionally and monetarily, of their decision to enter medical school. Single women spoke of parents who were supportive emotionally but who had no way of supporting them financially. Montero-Seibruth (1996) spoke about divergent

expectations in discussing the role of mediator that a professional Hispanic woman assumes “between two or more worlds of value and meaning. It is a role confounded by incompatible or divergent expectations.”

The participants in this research exhibited, along with other stressors, the nine stressors found by Grijalva and Coombs (1997). The women verbalized that they knew they were able to do as much as their other male and female classmates. In fact, they are very gifted intellectually. However, they struggle daily with the difficulty and intensity of school and academic bias, grades, especially high grades, high self-expectations of performing well at school, the assumption of academic inferiority and questions about the quality of prior education. Some of them have low self-esteem that they worry about constantly. For many of them, their less-than-workable study habits and struggles with medical terminology work to hurt them, and in fact, further lower their self-esteem. The women who were parents reported that they worried constantly about their children and time spent away from their children.

The women are concerned with the health, emotional and financial well being of their family and possible illness of family members. The distance from family is problematic. Women with a strong bond to their mothers are very stressed by the long distance from home. The literature brought out that stressors are “Situations, circumstances, or any stimulus that is perceived to be a threat” (Seaward, 1997). Psychointrapersonal relations and social influences stress this population. While the influence of family and friends sometimes became overbearing for these women, for the most part, it played a very positive role in helping the women focus on their

studies. Time constraints and simply not having enough time to take care of all daily responsibilities is very stressful.

Vulnerability of Population

Kanellos (1994) reminded readers that Hispanic females, as a whole group, might be considered vulnerable because of traditional gender roles. The women in this research struggle with societal, cultural and gender issues. They spoke of vulnerability from childhood. The literature brought out that Hispanic women (Wortham, 1998) could be vulnerable as children because of cultural scripts, stereotypes (Kite, 2001), gender schemas (Valian, 1999) and cultural and societal mindsets (Glick & Fiske, 1999).

Hardiness of Population

A large majority of this population had coping strategies built up from family and friend support groups and faith in God. For the most part they had a belief that becoming a medical doctor was God's plan for their life. The literature review brought forth researchers who have investigated stress in medical students and the necessity of coping strategies. One such author was Virshup (1985), who remarked "Medical school is so radically different from college that coping strategies that worked for you in college may no longer suffice." This may cause extreme anxiety to any "adaptive capacities or lack of adaptive capacities" (Wolf, 1994) of a woman who may already feel less than hardy, more vulnerable and less able to cope.

Prejudice and Discrimination Against Population

The women stated that Anglo students often stand apart from Hispanic, Black and Asian medical students and do not associate much with them. Work by Triandis et al. (1984) highlighted the concept of *Simpatía*. *Simpatía* is the script that forms the daily cultural interplay of Hispanics. "The interaction among non-Hispanics in the presence of this script [*Simpatía*] among Hispanics is likely to lead to misunderstanding when Hispanics and non-Hispanics interact. (p. 1363)." As to racial and gender bias, the women felt there had been some racial and gender bias but not sexual harassment as such. They had been troubled with bigotry. They felt and spoke of the subtlety of bias and stated that even though they knew that it was there, it was hard to point out. Carr et al. (2000) felt that "Ethnic minority women may find it difficult to determine whether offensive, harassing, or discriminating behavior is gender-based or ethnicity-based."

The literature search revealed that the few historical accounts concerning women in medicine from antiquity onward were dismal. Women were mostly expunged from medicine throughout the ages, and as time passed, women were less and less able to become physicians. Incredibly, however, the reports from literature plainly revealed that "racism" (Sheehan et al., 1990); "sexual harassment" (Baldwin et al., 1996, p. S25) "gender bias" (Lenhart & Evans, 1991) "bigotry and hate" which are age-old threats and impediments are still extant today (Nora et al., 1996).

The literature illuminated the work accomplished by Maccoby and Jacklin (1974), which clearly showed there is "No difference in how the two sexes learn." This

was deemed important since Hispanic women taught by this researcher are aware of the fact that they have been biased against by a societal world where men consider themselves smarter than their female peers.

Hispanic Culture and This Population

As expected, this population was family-oriented and the love that flowed both ways was apparent with most of the women for the most part. They use family as a major support. A knowledge of the Hispanic family as a unit was deemed to be very important in order to understand these women. The literature brought out the work of Abalos (1986) in his *Latinos in the United States*: *Politics of the Latino Family* (Chapter 2). Holtzman et al. (1975) stated, "Americans perceive aggressive, competitive emotions as highly active, while Mexicans tend to see as more active the static, internalized emotions, such as shame, which calls for self-modification." Triandis, Marin, Liasansky and Betancourt (1984) discussed the cultural script that Hispanics follow which may make it difficult for an Hispanic woman to fit into a professional career.

Non-Traditional and Strong Women in This Population

The women in this research seem to be breaking the historical and cultural pattern. Abalos (1998) speaks to this in Act I; Hispanic women struggle but can not break away from the security of the tradition, while in Act I, Scene 2, a Latina woman listens to her inner voice and Act II, she makes a break with patriarchal emanations and some of the ethnic traditions that have been a part of this Hispanic culture for so long. The women in this research all appeared to be well aware of who they are, what they

are about and appeared to have arrived at autonomy. They are dynamic women on a mission. For better or worse, these women are breaking some bonds, making some bonds and becoming authentic, actualized professionals. Notwithstanding, the Hispanic family remains the basic unit of moral fiber and a basis of support for children. Unlike most Hispanic families, many Anglo families have children who become so self-actualized adults that they leave the family totally out of the mix on their way to the professional world. As noted, Holtzman et al. (1975) pondered this same thought pattern with their seminal work.

Many of the Hispanics in the Border area of Texas are part of the underserved, undereducated, undervalued, disenfranchised, and marginalized poor of Texas (Strayhorn, 1998) Several of the women stated their family socioeconomic status was low—poverty level. This leads to a germane fact drawn from the literature, that minority professionals are more willing to work with those who are poor and/or minorities than are non-minority professionals (American Association of Medical Colleges, 1998). People who have struggled for survival remember what it was like. Very often when they get into a position, such as becoming medical doctors, they remember what it was like. This researcher got the idea that most of this population will never forget what it was like, and they will be better medical doctors because of it. They will offer helping hands to those underserved, undereducated, undervalued, disenfranchised, and marginalized poor of Texas. What better information could there be than that for Texas, when there is such a critical need for more medical doctors? The altruistic mindset of an Hispanic woman medical doctor! Why is there such an under-

representation of Hispanic women in Texas medicine? This question begs for an answer.

Under-Representation of Hispanic Women Medical Doctors in Texas

The number for this research population was small because there just are not many Hispanic women in Texas medical schools. The research shows that currently, the United States and Texas are in a "zero hour" crisis that has been brewing for years in medicine. There is a dearth of medical doctors compared to current and future need for the growing and aging population of Texas and nationally**.** There is a need for about twice as many Hispanic medical doctors as are currently produced nationally (Carlisle et al., 1998).

Altruism of This Population

The women were found to be very altruistic. Some women stated that altruism is what brought them into medical school. They want to help patients and if the patient is a child, they want to also help the parents. One student responded that she felt "as a . . . minority, I want to serve my community. As a female, I would like to be a role model to other women as well." These women can be applauded for their altruistic feelings. One woman stated it very well: "I devote myself to serve others." The literature search found that minority medical doctors have been found to be altruistic and more likely to practice in underserved regions than non-minority" (Carlisle et al., 1998; McFarland et al., 2000).

Recommendations for Future Research

There needs to be research in all areas to support and help all minority medical students. It is important that medical schools understand minority medical students; where they come from, tenets of their culture and what they might need to help them achieve their academic goals. Institutions need to "catch on" that incongruities and inequalities of bias are consequential and can cause stress, which may in part contribute to the continual under-representation of Hispanic women in medicine today. Texas is thinking well along lines of early intervention with the independent school districts health science academies and the legislative emphasis on minorities with programs such as the Joint Admissions Medical Program (JAMP), which is a connector between high school and college for pre-medical interest. There is a need for research into models for pre-medical recruitment of minorities into Texas medical schools.

Further research of programs that help students relieve the extreme stress is much needed. Stewart, et al. (1995) recommended that "Medical educators and those with the responsibility for curriculum development should be more aware of the stresses of medical life and take prophylactic actions for the prevention of short-term and long-term stress-related problems for medical students."

Further research to develop and train personnel in stress intervention programs to help defray student stress is needed as well. Wolf et al. (1988) declared that if medical schools provided intervention, such as stress-management courses, "Medical students will be more likely to take responsibility for their own health during residency training and clinical practice and will be more likely to advocate this preventive

approach with their patients." Short-term intervention, even for one month, has been found to be very important in helping students retrain themselves to handle stress.

Further research into programs to train mentors for this population should offer demonstrable benefits. There is a need for research into the sociological issues and costs to the community of professional Hispanic women who are departing from traditional Hispanic mind thought.

How to Improve the Study

The recommendations for improvement include extending the number of participants in the study. Adding female Anglo medical students as participants to the study as a control would have helped in understanding the true stress level of Hispanic women in medical school**.** Adding Hispanic men to the study would improve the study, as one could get a clearer look at the stressors in the men and compare those to the women. Comparing female Hispanic medical students to female Hispanic premed students would add another view in this study. There appears to be many minority women who start out on track in universities in Texas, and yet the number of Hispanic women that enter and matriculate in medical schools in Texas is very small (McIver, 2000; Mabry, 2004, Personal communication). It would be very interesting to compare the two groups to see what they have in common and what they have not in common.

Applying Findings from Current Research

This researcher is already working towards a longitudinal study with the current research population into practice. There is a need for a baseline that can be used with this population and for other researchers. Assays of cortisol saliva will provide an

analysis of the circadian rhythm. Another project that will begin soon is an investigation into the premed Hispanic women in universities all over Texas. A cortisol saliva baseline will be obtained with this population also.

Recommendations

1. Research that compares female Hispanic premed and medical students should be very interesting and should answer a few of the questions about why Hispanic women are so under-represented in Texas medicine.
2. Research should examine the extent to which denial might lead to underestimating the exposure to discrimination by Hispanic women. Kessler et al. (1999) suggested that "women are more likely than men to discount the discrimination they face and to deny being personally discriminated against."
3. Increased support in all areas for all minority medical students is important. This researcher is working to enlist the alumnae of each of the medical schools to adopt minority students in order to help them with electric bills, loan pay-back, clothes, books and a multitude of other items especially relevant to mentoring and stress-reduction techniques.
4. Ongoing plans should be in place for increased recruitment of minority medical students and legislation to insure more recruitment of minority medical students.
5. A legislative package is needed that will somehow work around or rise above Hopwood to dramatically increase minority recruitment.

6. Stress-management programs should be offered at the medical schools for the students Wolf et al. (1988) declared that if medical schools provided interventions, such as a stress management course, “Medical students will be more likely to take responsibility for their own health during residency training and clinical practice and will be more likely to advocate this preventive approach with their patients.” Maintenance of personal physical and mental health lies in the middle of the seven elemental points of Peterkin’s (1998) list of necessary “Elements of a Physician’s Well-Being.” Shapiro et al. (1998) found that short-term stress reduction intervention might prove a useful complement to medical and premedical education.
7. An in-depth focus on training mentors especially in the faculty for minority medical students should be in place and ongoing. Even though a large number of this population declared mentors and derived support from them, there is a great need for more mentors and minority mentors, which are easily accessed by students in medical schools in Texas. Training for mentors needs to be in place in the medical schools. Training for educators is also vital, as this research showed faculty members as being important mentors. Faculty should be trained to help minority students with the barriers that other students do not have. However, Verdugo (1995) correctly points out that using Hispanic faculty for role models and mentors only works if they have status and power within the institution, which often is not the case.

8. Education of the families is very important. An elemental phenomenon persists in that ethnic, gender and minority prejudicial mindset cannot be legislated or prompted. Cultural thought must change and it must begin in family units and with each individual. Fieldwork research grants should be sought out to allow researchers to go into the families of Hispanic women and teach the family how best to educate their daughters.
9. TEA must become aware of the problem of how stress impacts academic achievement. If TEA would help develop stress reduction programs that are firmly in place in the middle and high schools in Texas, minority students graduating from Texas schools then would have these measures in place when entering medical school. Virshup (1985) stated that coping strategies that are in place before medical school probably would not hold up. TEA should work to bring the Higher Education Coordinating Board and the AMA together to effect adequate stress-management programs in place in the schools from middle school through medical school.
10. TEA must become aware of the need to increase course work that can lead to medical school offered in middle and high schools in Texas. Not having a parent who is a medical doctor is no excuse for Hispanic women to struggle over the language of medicine. Any student graduating from any school in Texas and declaring an early interest in pre-medical studies should have a good grounding in medical terminology. Courses in medical terminology are vitally important for minority medical students who are troubled with

the language of medicine. The women in this population are very troubled by words they do not comprehend. The medical schools should have programs in place such as computer programs that help the students learn the roots of the medical terms and how those medical terms are applied.

11. TEA should work with the schools to develop a K-16 schema. Dr. Manuel Salinas at TAMU – Kingsville has been working on this concept for years. In May 2004, he told this researcher that Hispanic families feel that high school is the "end prize." Communities and educational institutions should work toward Hispanic students graduating from high school and matriculating in college. Increasing academies in Texas high schools is important. The health science academies work toward medical terminology, study habits and in general preparing students to enter the allied health fields, including medical school.
12. TEA should help minority students to establish workable study habits. The women were not sure how to study. The medical schools should have programs in place to help students learn how to study.
13. The entire minority recruitment process for Texas medical schools needs to be reformed.
14. Retrospective research in the Hispanic medical community should be undertaken to find out what made these Hispanic medical doctors successful.

15. Qualitative research focusing on retention of minority medical students is needed.
16. Sociological research into the cultural phenomenon of transition, that is, Hispanic women marrying Anglo men and Hispanic men marrying Anglo women. Many of the women in this project had married Anglo men and were separating themselves from their culture.
17.

Conclusions

We are missing major points in serving this population. Hispanic women medical students have not gotten the support they need. Interventions and support for all minority medical students are not necessarily in place in medical schools in Texas.

Looking back over the literature examined for this current project leads one to question how the literature and current work inputs into Texas medicine. However, a more germane question might be how this research fits with past literature and research findings and what kind of difference it will make to Hispanic women medical students in Texas. Examined in this project were major points from the literature that impact Hispanic women medical students and their stress level. The personal interview with each woman was very important as it allowed each woman to get to know this researcher. Marin and Marin (1991) pointed out the importance of an investigator becoming known to Hispanic participants to help defray possible problems with missing data, low self-disclosure to strangers and extreme answers questions in the stress questionnaire package.

The results found during this research are invaluable to further research and to anyone interested in the health and the wellbeing of the current population of Hispanic women in medical school in Texas and also to future students. The data showing that more than half of these women do not take care of themselves with regular sleep patterns, well balanced diets and exercise may be well be issues with most medical students. However the stress that these women bear up under is multiplied by the egregiousness of the continued harassment by faculty and other students concerning their academic qualifications. These women struggle daily with medical terminology and somewhat less with needed study habits. Gender and ethnic bias is subtle, but ongoing and highly stressful. These women are non-traditional and strong. They felt that they were on a mission from God to become medical doctors. An ancillary finding of interest to sociologists is that these women for the most part appear to be pulling away from the traditional Hispanic cultural norms. This researcher could not attract more participants because as one woman stated “they” don’t want to be associated with anything pointing to their ethnicity.

The altruistic sensibility of the women and their “tend and befriend” attitude helps them become less stressed. They are very socially minded and care about their family and friends. They are stressed by the tug and pull between the intensity of school and needs in their relationships.

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APPENDIX A

INFORMED CONSENT LETTER

To: Participating medical students

Anita Connelly Nicholson, is a doctoral student at TAMU – College Station and the principal investigator in the research study looking into possible reasons for the under-representation of Hispanic women medical students in Texas. The purpose of this research is to analyze the dimensions of stress in Hispanic women medical students in Texas. You are being asked to participant in this study because you are in medical school in Texas and you have indicated to someone at your school that you are Hispanic.

I will be a part of a research group of Hispanic women medical students at my school during 2003. My participation will entail an interview and filling out a questionnaire. I can refuse to answer any question in the interview or on the questionnaire that makes me feel uncomfortable. I understand that any information obtained during this time will be kept confidential. I will not receive any personal benefits for my participation in this group. I can contact the wellness center at my school, if I feel I need to learn more about stress and stress management techniques.

This research study has been reviewed and approved by the Institutional Review board - Human Subjects in Research, Texas A&M University. For research-related problems or questions regarding subjects' rights, the Institutional Review Board

may be contacts through Dr. Richard E. Miller, IRB Coordinator, Office of Vice President for Research and Associate Provost for graduate studies at 979 845 1811.

I have read and understood the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study. I understand that if this group session becomes too inconvenient for me that I can leave at any time without any repercussions from my school. I have been given a copy of this consent form.

Signature of Subject_____

Date_____

I am willing to participate in this study.

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APPENDIX B

PERSONAL DEMOGRAPHIC INFORMATION

PERSONAL INFORMATION:

1. Ethno-Racial Self-Identifier: Mexican decent? Yes____ No____

2. Marital status? Married__ Single___ Separated___ Divorced___ Widowed_____

3. How many children do you have? _____

4. Your age?_____ Your sex? Female____ Male____

6. Your birth order in your family?_____ Number of siblings?_____

7. Highest educational attainment of your mother? _____ Of your father? _____

8. Have you had someone in your life that has mentored you? Yes _____ No_____

8a. Highest educational attainment of this mentor? _____

8b. What is/was the position of your mentor?

Family___Faculty __ Priest __

9. Family religion? _____

10. Socioeconomic status of mother, father or other family member you lived with during your early formative and childhood developmental years._____

11. Occupation of adult you lived with during your early formative and childhood developmental years?

Mother _____

Father _____

Other adult _____

12. Who was the adult you credit most for supportive involvement with you during your teen years?

Father ___ Mother ____ Both ____Grandparent _____ Other _____

13. Why have you chosen to become a Medical Doctor?

_____

_____

_____

14. What person(s) influenced you the most, in making the decision to enter medical school? Mother____ Father _____ Both ____ Grandmother _____ Grandfather _____ other family member _____ Teacher _____ Counselor _____ Peer _____ Mentor _____ Other (Please name) _____

15. Undergraduate college? _____Year of graduation? _____

16. What is your target specialty interest after graduation from medical school? _____

17a. Current employment status? Working ____Not Working_____

17b. If working, what is your workload most days?

Personal Information continued

Part time _____ Full time _____ Holiday and vacation time _____

Overtime _____

18a. Do you commute to school? _____

18b: If a commuter, how far do you have to drive or ride?

1-5 miles _____5-10 miles ____ 10-15 miles _____ Over 15 miles ____

19. How often do you feel you are stressed? Not at all _____ Rarely _____ Sometimes _____ Often _____ All the time _____

20. Please list (from most intense to least intense) three stressors that you perceive currently to be your greatest stressors

1. _____

2. _____

3. _____

21. In a sentence or two define stress, as you understand it

_____

_____

_____

_____

_____

_____

_____

APPENDIX C

INTERVIEW ELEMENTS

EVENT ELEMENTS OF INTERVIEW

1. What stress do you perceive comes from family and Society?
    - What about Finances?
    - What about family thoughts on higher education of females?
    - What about competing demands between school, society and or family life?
    - What about distance from family stress
2. Stress from religion
    - What about church tenets or beliefs?
    - What about the church view on roles of females
3. School related stress
4. Unique Stressors, Biases and Discrimination that may bother you:
    - Gender related bias
    - Ethnic related bias
    - Cultural barriers and double cultural strain
    - Academic related bias
    - Achievement issues
    - Assumption of academic inferiority discrimination
    - Question of quality of prior education
    - Question of intellectual qualification
    - Hispanophobia

- Social assumptions of gender and ethnicity
- Source of support outside of school
- Translational related stress
- Lack of role models and mentors

5. What areas of your life do you feel you are vulnerable?
6. In what ways are your stress hardy
7. How are you affected by double Challenges of gender and ethnicity?
8. What are your role Strains or multiple Roles Conflicts?
9. How are you affected by lack of Confidence/low self esteem?
10. What social support do you perceive you have?
11. What altruistic thoughts do you have?
12. Name five Coping and Adaptive Styles

APPENDIX D

STRESS

STRESS

It was amazing to this researcher that while searching through many recent science texts in my role as a biology teacher and role as a researcher to begin to comprehend just how little the academic world knows about or has considered the concept of stress. Hubbard & Workman (1997) pointed out that not much is known about stress. One thing that readers can know is that stress is damaging. The diurnal stress can cause disease. There are many people in the Texas-Mexico Border area who are stressed daily from cares of life and struggles of survival and who are low on the social-economic status rung. Sapolsky (1998, p 300) stated, "If you want to see an example of chronic stress, study human poverty which brings on a disproportionate amount of psychological stressors."

A Hispanic woman on the premed tract or one that is already in medical school perhaps may be from an impoverished family. This seminal thought provides important information toward a better understanding of the etiology of stress as it applies to a Hispanic woman in medical school whose parents are of low socioeconomic status.

The Path of Stress

Biological, psychological and sociological stressors are relayed from the senses to the brain (Weiner, 1990), which in turn instructs the physical body how to react, while attempting to maintain homeostasis (Seaward, 1997) or to regular oscillations with no steady state as (Weiner, 1990) suggested. McEwen & Mendelson (1993, p. 101) taught that there is a "difference between the stressor and the stress response....The stress response consists of a cascade of neural and hormonal events that have short- and long-lasting consequences for both brain and body." These same

authors stated that, stressors turn on the activity of the neural cascade while some stressors activate the discharge of adrenaline from the adrenal medulla, as well as hormones from the hypothalamus that initiate the neuroendocrine cascade that culminates in glucocorticoid release from the adrenal cortex.

What happens during a stress event that could cause such as response? Benson, H. (1996, p. 133) envisioned the human body as being engaged in a "Kind of tug-of-war with stress on one end of the rope and relaxation on the other and it is stress that always seems to overcome relaxation." Verrillo & Gellman (1997, p 289) explained that, "Stress affects the vascular system, digestive system, endocrine system, central nervous system, the immune system and most metabolic processes." Stress causes digestion problems as hydrochloric acid is increased and gastric acid is inhibited and stress can cause pancreatitis (Greenberg, 1999, p 29).

Physiologically, continual stress and stressful events raise hippocampal cortisol to high levels leading to decreased short-term memory (Khalsa, 1997, p 39). Rabin (1999, p 130) found the "Size of the hippocampus is smaller in individuals who experienced increased levels of stress, and tasks that depend on a functioning hippocampus are performed less well in those individual who experience increased stress levels."

As if it were not problematic enough, it appears that cortisol and thyroxin produced during the stress response stay active for a long while. Thyroxin is still active for up two weeks and may cause illness one or two weeks after a stressful event (Seaward, 1997, p 33). The striving for, or prodding toward a medical education may add much stress to an already overloaded system of a Hispanic woman who has had to deal with double biases her entire life.

Therefore, readers have found that the stress reaction begins with the senses pouring input about the environment to the thalamus, which then relays it on to the

neocortex. Khalsa (1997, p 119) envisioned that “The neocortex and limbic system have a dialogue about the sensory information and if it looks threatening enough, the neocortex tells the limbic system it should be afraid.” Neurons are triggered by stressful experiences, physical trauma, fear, or anger (McEwen & Mendelson (1993, p 104) and the fear registered by the limbic system sounds the alarm to the hypothalamus, which relays the alarm to the pituitary. Attending to this sensory input, the hypothalamus activates the sympathetic nervous system and sets the stress process of the body in motion while also prompting the two major stress reactivity pathways i.e. the autonomic nervous system of the PNS and the endocrine system (Johnston & Wallace, 1990, p 3-4).

McEwen & Mendelson (1993, p 101) told readers that, there is a “difference between the stressor and the stress response. The stress response consists of a cascade of neural and hormonal events that have short- and long-lasting consequences for both brain and body.” These same authors (p 103) also stated that, “Stressors turn on the activity of the neural cascade while some stressors activate the discharge of adrenaline from the adrenal medulla, as well as hormones from the hypothalamus that initiate the neuroendocrine cascade that culminates in glucocorticoid release from the adrenal cortex.”

In order to better understand the physiological nature of stress, it was important to investigate the stress pathway, including the stressor, the central nervous system (CNS), the peripheral nervous system (PNS), the neocortex, the limbic system, the amygdala and the two stress reactivity pathways of the endocrine system and the

autonomic nervous system (ANS). The limbic system is a group of interconnected deep brain structures, located in the CNS and containing the thalamus, hypothalamus, pituitary gland and amygdala. “The hypothalamus is the head ganglion of the ANS (Kandel & Schwartz 1981, p 446), controls the sympathetic nerve system of the ANS” (p 431) and consists of a series of glands throughout the body that secrete stress hormones (Thomas, 1989, p 588).

The glands most closely associated with the stress response are the thyroid, pituitary, and adrenal glands. The thyroid gland produces thyroxin and controls metabolism by controlling the rate that glucose is oxidized into body heat and energy (Morris, 1985, p 50). The pituitary produces adrencorticotrophin (ACTH) in response to Corticotrophin-releasing hormone (CRH) from the anterior hypothalamus and secrets the vasopressin that has been produced in the hypothalamus (Seaward, 1997, p 32-33). Marieb (1991, p 251) reflected common knowledge that the adrenal medulla in response to ACTH produces the catecholamines of epinephrine and norepinephrine which appear early in stressful events readies the body for fight or flight, while the adrenal cortex produces the glucocorticoid of cortisol for prolonged continuing stressors. This same author (p 251) continued, “If the stress continues on and on, the adrenal cortex may just burn itself out.”

Dobbin, Harth, McCain, Martin & Cousin, (1991, p 339) found “Immune responses were totally different immediately after medical students writing examination as compared to the baseline and post exam measures.” Depending on the coping ability of the person, it is possible that a Hispanic woman medical student might

not ever allow her mind and body to relax. The human body has the means to handle stressors in a very direct and effective way. The problems arise when the body experiences diurnal, continual, day in and day out stress that is apparent in the hurried and hectic lifestyle of present day life. This sort of unchecked continual stress, such as that of a medical student, can override the psyche and damage the body physiologically. Khalsa (1997 p 29) exclaimed there are simply more neurological stressors now with all the biochemical ramifications while "Technology-induced exhaustion is at an historical high." Modern stress tends to be a chronic grind; killing the heart and brain. It helps in the understanding of stress to understand how it is defined.

How is Stress Defined?

Of interest to this research is how stress is defined. Weiner (1990, p 23) tells readers that, "No agreed-upon definition of stress exists." Bond & Hyner, (2000) acknowledged that "Defining the term stress has been one of the most arduous challenges in the mental health field and this difficulty stems from the fact that the stress response transpires on many levels" (p 162). Biological, psychological and sociological stressors are relayed from the senses to the brain (Weiner, 1990), which in turn instructs the physical body how to react, while attempting to maintain homeostasis (Seaward, 1997) or to regular oscillations with no steady state as (Weiner, 1990) suggested. McEwen & Mendelson (1993, p. 101) taught that there is a "difference between the stressor and the stress response....The stress response consists of a cascade of neural and hormonal events that have short- and long-lasting consequences for both

brain and body." These same authors stated that, stressors turn on the activity of the neural cascade while some stressors activate the discharge of adrenaline from the adrenal medulla, as well as hormones from the hypothalamus that initiate the neuroendocrine cascade that culminates in glucocorticoid release from the adrenal cortex.

There are three defining terms connected to stress:

1. "Distress" is experiencing too many stressors in a short period of time or too many stressors over a longer time. Distress exceeds ones ability to cope effectively and remain in control" (Greenberg, 1999, p 5).
2. "Eustress", which describes positive stressors in which a person is challenged but sees a potential for growth and uses stress for the better. Both distress and eustress evoke the same physiological reactions. (Greenberg, 1999, p 5).
3. Seaward (1997, p 7), described an additional third descriptor as "neustress or sensory stimuli that have no consequential effect and are considered neither good nor bad." Therefore, academic to this discussion was the concept that "Definers share an interest in a process in which environmental demands tax or exceed the adaptive capacity of an organism, resulting in a psychological and biological changes that may place persons at risk for disease" (Cohen, Kessler & Gordon, 1995, p 3).

Dr. Charles Sheridan gave readers a concise view of the history of the varied path the study of stress has taken. Presented in a personal communication, dated October 12, 2000:

> The earliest concepts of stress focused on the physiological stress response:
>
> 1. The fight or flight response model by the physiologist, Walter Cannon, in which the body reacts to stress by secreting adrenaline and nor-adrenaline.

2. Hans Selye focused on the secretion of Cortisol, an anti-inflammatory and immune suppressant. There occurred a major shift from the model of physiological response to the idea that stressors come from events that occur in one's world. This was the work of Holmes and Rahe who created a scale that listed things that happen in a life that can cause stress.
3. A third major shift currently has directed our attention to vulnerabilities to stress. Proponents argue that we all have enough stressful life events to make us sick and the real issue is finding out why some people manage to stay well.

Hans Selye first applied the term stress as the wear and tear on the body to the human condition (Seyle, 1978, p 1; Kabat-Zinn, 1990, p 235 & 245). Seyle (1978, p 369) stated, "We have repeatedly had to correct certain misconceptions which arose because people tend to think of the very general biologic phenomenon of stress." Seaward (1997, p 18) provided the epitome that "Medical science is slowly changing its concept of stress from just a physical response to include the complex of psychology, sociology, theology, physics and clinical medicine." Ornstein & Sobel (1987, p 202) taught "The concept of stress needs to be modified, since the outcome depends so much on the nature of the stressor (type, frequency, duration, and intensity), the individuals appraisal of the stressor as a threat or a challenge, the resources at the person's disposal to cope with it, and the individual's need for stimulation and excitement."

Smolak (1993, p 118) told readers that the stressors facing adults are 1. Normative life crises, which are not necessarily negative. 2. Non-normative life crises, which are not necessarily negative, but may not contain peer support that is available for normative life crises. 3. Hassles, which range from minor health problems, to major problems, to unexpected company. As the adult develops, Smolak (1993, p 297) reminded readers that personality, physical and cognitive, family and social

development or changes are issues that can add stress to the adult and that it is the "daughters who are generally care givers to parents, or siblings if needed." Within the Hispanic culture *"La familia"* is of great importance. The family and social ties that bind an Hispanic woman may cause additional, overt stress for her (Olmos, Ybarra and Monterrey, 1999, p 84) as she struggles along side her peers on the way to becoming a physician. In the next sections readers will once again look into stressors and the path they take.

What are Stressors?

Readers found in the second chapter that stressors are "Situations, circumstances, or any stimulus that is perceived to be a threat and they can be divided into three categories" (Seaward, 1997, p 8-9).

1. Biological/ecological influences are those external influences such as sunlight, gravitational pull, earth's orbit/axis rotation and the effect of technological advances, which may have upset the balance in a life but can be positively influenced by lifestyle changes.
2. Psychointrapersonal influences make up the greatest percentage of stressors and involve those thoughts, values, beliefs, attitudes, and perception that we use to defend our identity or ego.
3. Social influences include environmental issues such as overcrowding, personal space, major life change or the accumulations of daily hassles or acute stressors.

There is a path that stress takes that stems from the biological, psychological and sociological stressors, which are relayed from the senses to the brain (Weiner, 1990, p 25). The brain in turn instructs the physical body how to react, while attempting to maintain homeostasis (Seaward, 1997, p 6) or to regular oscillations with no steady state as (Weiner, 1990, p 27) suggested. Notwithstanding, Gilman & Newman (1989) taught that neurons vitally important to homeostasis are concentrated in the hypothalamus and "act through three closely related processes:

1. Secretion of hormones.
2. Central control of the autonomic nervous system.
3. Development of emotional and motivational states" (p 191).

How is Stress Evaluated?

Appropriate to this research is a short discussion of the evaluation of stress. In the book *Measuring Stress* by Cohen, Kessler & Gordon (1995) readers will find stress measurement delineated into three broad traditions encompassing the thought systems concerning evaluation of stress. 1. Environmental: the focus on objective, substantial adaptive demands and vulnerable or hardy states. 2. Psychological: the focus on an individual's subjective evaluations of their abilities to cope with the demands posed by specific events or experiences. 3. Biological: concentrates on the activation of specific physiological systems repeatedly modulated by both psychologically and physically demanding conditions.

Along with the confusion of defining stress there is also confusion on evaluating stress especially from those being researched. Hahn & Smith (1999, p 97) stated that not only do overlapping definitions of daily hassles and chronic stressors contribute to measurement problems, but even when "definitions of daily hassles and chronic stressors were independent, people still did not categorize events from traditional daily hassles and chronic stressor measures in a common manner." In this next section readers will gain an understanding of how researchers view stress and gender.

Gender and Stress

In examining this topic, Kessler and McLeod (1984, Abstract) argued that women are more vulnerable to stress due to their emotional involvement with the lives of those around them. They demonstrated for the first time the emotional cost of caring is reason for a substantial part of overall relationship between sex and stress." Rabin (1999, p 130) found "Higher urinary cortisol excretion in women was associated with poorer memory, and increased cortisol excretion that over time was associated with a decline in memory." Kessler and McLeod (1984, Abstract) stated that, "Not only do men and women respond to the same types of stressors differently, but women and men have different stressors."

In recent literature Taylor, Cusino, Lewis, Gruenwald, Gurung & Updegraff (2000) have proposed a "Biobehavioral alternative to Cannon's (1932) "flight-or flight response." They have determined that women "tend and befriend" to deal with stress. This concept is built on the bio-behavioral attachment or care giving system that depends, in part, on oxytocin, estrogen, and endogenous opioid mechanisms, among other neuroendocrine underpinnings, which may have evolved according to principles of natural selection and by virtue of differential parental investment (p 29). The concept of tend/befriend is very interesting since Sapolsky found in rat studies (1998, p 312-314) that if a young rat is picked up just 15 minutes per day and held or has a mother who spends more time licking and grooming her pups, the spiral of high glucocorticoids and subsequent death of hippocampal neurons is upended. Hispanic women medical students who find great release from being with family and friends

apparently are also protecting their brain, which helps them in their studies and subsequently becoming medical doctors.

Seaward (1997) reminded readers “Children model their behavior on that of parents and other figures of authority (p 112). Disruptions may appear in development because of barriers and biases found in early childhood. Erikison’s psychological stages of development in early childhood are built on the premise that “Mistrust, shame, guilt and inferiority stem from maladaptive or missed stages of development and most likely will be exhibited adult behavior” (Wortham, 1999, p. 40). Eccles, Barber & Jozefowicz (1999, p 181) found:

> If a female grows up in a gendered world with strong pressures toward conformity to that world, the child will attach great importance to behaving in accord with the norms of this gendered world. If the child grows up in a world that both encourages and reinforces independence, flexibility, and individual choice and provides extensive models of gender-role transcendence, she is likely to place much less importance to conformity to gender-role stereotypic behavior norms.

Emotions

Emotions associated with stress are illusive in definition. Young (1961, p. 409) stated that an emotion is defined as an acutely disturbed affective state of the individual that is psychological in origin and revealed in behavior, conscious experience, and visceral functions. This definition has been extended to include persisting, relatively stable, states of disturbance within the individual, which underlie repeated emotional outbreaks. Such persisting disturbances include states of conflict, expectations, incompatible attitudes, motives, and other conditions of emotional upset. The

dominance and control of the cerebral cortex is weakened during emotion and the sub-cortical mechanisms take over more of the control. This weakening of cerebral dominance is associated with frustration, the clash of motives, painful stimulation, and thwarted expectation. In this cascading effect, the symphonic blend of these emotions can create additional problems making it harder to see a way out of a situation, which can lead to feelings of vulnerability and helplessness" (Kabat-Zin, 1990, p 241).

Anger and Fear

There are two major emotions associated with the stress response. They are unresolved fear and anger (Seaward 1997) and a "by-product of anger and fear is depression" (p. 102).

Anger

Cunningham (1997, p. 85) stated, anger or "Hostility may be one of the most serious elements of the stress-prone personality and may present more health-related problems than being hurried or time obsessed." Seaward, (1997) reported that anger is an emotion brought about by perceived violations of expectations of the individual. He also stated that, "Anger is influenced by the source of provocation with a passive style toward figures of higher authority, and a more active style with people of equal or lower status."

Vitaliano, Maiuro, Mitchell & Russo (1989) found when medical "students believe their success is threatened it may lead to frustration and anger . . . when students believe the information they are expected to master is overwhelming, they may feel helpless, which can also lead to anger." Mean while, Seaward, (1997, p. 93)

reported that the “Inability of women to express feelings of anger has fueled much personal frustration and depression over the decades.” Lerner (1985) stated the taboos against “women feeling and expressing anger are so powerful that even knowing when we are angry is not easy” (p. 2).

Biaggio (1988, Paper, p. 8) mentioned: Women experience anger in response to many of the same circumstances as men; they may even experience similar levels of anger. However, it seems likely that women are suppressing, even, internalizing their feelings of anger. The cost of this suppression may, however, be lowered self- esteem, a sense of powerlessness, and fear of responding to or of even recognizing provoking or unfair conditions that give rise to anger. Women are more likely to feel shame, or direct their anger inward, which often manifests it’s self in physiological symptoms. Tavris, (1989, p. 251) felt that “The sense of injustice is made, not born, and although we think of anger as the handmaiden of justice, it is not its inevitable companion; anger depends on our perceptions of a situation, perceptions of injustice included.”

From the earliest phase of childhood, the world tells a woman to check emotions, sending the definitive message that “it is not socially acceptable to exhibit various emotions.” leaving adults with a lot of “unresolved emotional baggage” (Seaward, 1997, p. 91). Tavris (1989, p. 195) reminded readers that “Men are allowed, even encouraged, to feel angry, because it is part of the masculine role; women are supposed to suppress their anger because it is unladylike to display temper.” Lerner (1985, p. 22) stated, “Women are actively taught to cultivate and express all those qualities that men fear in themselves and do not wish to be weakened by . . . And of

course, cultural teachings that discourage us from competing with men or expressing anger at them are paradoxical warnings of how hurtful and destructive the weaker sex might be to men if we were simply to be ourselves." Ornstein & Sobel (1987, p. 66) stated, "Passivity and refusal to express anger may well lead to a biological deterioration or it may heighten the magnitude of the stress that someone experiences." Readers are reminded that Holtzman, Diaz-Guerrero & Swartz (1975) found Mexican children to be passive.

Fear

Fear is "a learned response to one or more exposures" and comes in many forms "including embarrassment, prejudice, anxiety, despair, worry, arrogance, doubt, intimidation and paranoia" (Seaward, 1997, p. 99). Beck, Emery & Greenberg (1985) told readers that anxiety is an emotional, unpleasant feeling state evoked when fear is stimulated while fear is the cognitive appraisal of danger.

How do the emotions of stress, fear and anger, portend with stressors found in Hispanic women? Seaward (1997, p. 100) said that learning to "Identify, empathize, and resolve our feelings such as anger, anxiety, depression, pessimism and loneliness is in itself a necessary form of disease prevention." Hispanic women may exhibit chronic stress that they themselves are unaware of. The stress found in medical school might be called normative stress. All students find new stressors upon entering medical school. A continuum appears to exist between functioning well, being distressed and becoming impaired, with external (environment-related) and internal (personal-related)

stressors determining where an individual will lie on the continuum. Daly & Willcock (2002)

Seaward (1997) differentiated fear from anger in that there is a rush of adrenaline and serge of energy with anger while fear on the other hand is a very draining emotion. Benson, H. (1996) stated that of all the emotions, fear appears to be particularly strong and "We often feel the effects of fear in marked physiological ways" (p. 84-86). Beck, Emery & Greenberg (1985, p. 9) told readers that, "Fear involves the intellectual appraisal of a threatening stimulus; anxiety involves the emotional response to that appraisal."

Role Conflict and Role Stress

Kanellos (1994, p. 39) explained, "The traditional cultural stereotype of the Hispanic female is based on dualistic perspective of the sexes and a strong belief in appropriate roles for each gender." In other words, deviation from the "'natural' gender roles" (Kanellos, 1994, p 39) is not traditionally accepted. This would, in effect, make Hispanic women medical student vulnerable. The following information by Rabin should sound a note to all women graduate students who are highly stressed and who may not have effecting coping strategies. He found in women (1999, p. 130) "Higher urinary cortisol excretion was associated with poorer memory, and increased cortisol excretion over time was associated with a decline in memory."

Chavkin (1996, p. 131) stated, "Sex orgender is understood to have both biological and social meanings, and we are aware that it is often difficult to disentangle

these two threads." It makes sense that both heredity and environment influence behavior.

Mealey (2000, p. xii) stated, "Folk, or common knowledge includes many facts about sex difference.... Folk knowledge is subtle and pervasive and can be easily marshaled in the context of social manipulation." Simple as it seems, one simply cannot point to biology only as a set point for one gender or the other (Fausto-Sterling, 1992

The Hispanic women who aspire to become medical doctors were all children once who have traveled over an insensitive road and through many barriers that were very roll gender defined in order to be in the position they are now.

Conclusion

Early childhood researchers reported that the changing environmental landscape of the home, society and diversity issues might leave the child at risk for failure (Wortham, 1999). Calkins, Arnold & Willoughby (1994, p. S24) revealed, "It is possible that how one feels about one's self in relation to the majority student group can result in a heightened sense of stress prompted by student's cultural background." Historically the Anglo male has been the majority group in medical school. Sapolsky (1998) reminded readers about socio-economic status, stress and disease and this is seminal as many Hispanic Texas families are extremely poor. Women from these impoverished families may matriculate on into medical school. They must cope with the normative stress found in medical school and the unique stressors of a Hispanic

woman. Stress for Hispanic women is doubled edged and is for the most part unlike the stress configuration in other populations.

APPENDIX E

THE LATINO FAMILY CONTINUITY AND CHANGE

1. Abalos, DT. (1986). *The Politics of the Latino Family*. In David T. Abalos. Latinos in the United States: The Sacred and the Political, Indiana: University of Notre Dame Press. Chapter 3 (p 62-80).

2. Cultural Scripts and Cultural Terms

THE LATINO FAMILY CONTINUITY AND CHANGE

The Latino family has been all but ignored in the literature. Oscar Lewis has written some fascinating studies, but they did little to help us move beyond a sensitive awareness of what is. Often all families of whatever racial or ethnic background were grouped together in studies and discussed under headings that betrayed a white middle-class orientation. We now move to study the patterns of the Latino family, to evaluate those linkages and to speak of breaking old patterns for the sake of new ones. Much of what follows will allow people other than Latinos to recognize themselves. Traditional families the world over have remarkably similar patterns of interaction.' Our hope is to present a theoretical framework, which is not culture bound.

The Latino family has provided a strong container for the security of its members but the cost to those same individuals seeking to grow within and beyond the group has been prohibitive. There is a poverty of relationships available to the members of the Latino family. The father is the source of the mystery (and in some cases a strong mother, grandmother, or aunt), the eldest son replaces the father in his absence, and the women exist to serve the needs of the roan and the household. The father can coerce, meditate, and bargain, but he will not allow female members of the family to physically isolate themselves or to develop an area of autonomous jurisdiction such as a life style that allows them their own jobs, paychecks, and schedules. But not even the father is free, since he is an extension of the father's role in the Latino family that he inherited. The mother often becomes an institutionalized mediator who is dedicated to softening the conflict between members of the family. It is her role to reconcile the children who have attempted rebellion. Outsiders who appear on the scene are dangerous insofar as they do not accept the repertory of relationships within the family. That is, if a friend was malcriado, "poorly raised," he might contaminate the sons or daughters by introducing bad ideas or attitudes into the self-contained unit of the family. What this means is that they might inject possible new ways of relating that threaten the sovereignty of the father. For this reason Latino immigrants were alarmed by the culture in the United States that stressed autonomy for children. A veil of sin, shame, and guilt quickly surrounded any attempt to question the authority of the father. This sense of guilt is a fragment of the old paradigm of emanation, which is dying. Sons were given freedoms denied to daughters. As an extension of the father, the son was expected to repeat the manly exploits of the father. But for many Latino families "A daughter is the jewel of the family, one cannot be too careful with them.” In other words, a daughter carries the honor of the family, and she can be made pregnant, thus dishonoring the family.

LATINO WOMEN AND PATTERNS OF DEPENDENCE

Women from the Latino culture have, for centuries, belonged to men whether a father, husband, brother, bishop, or other male guardian (emanation). Their ability to create conflict or change was minimal. Their lives were limited to cooperating with and seeking to continue the strength of the male who gave them security. Women were unable to create alternatives and exercised only those strategies acceptable to the culture and subjection. Women were allowed to withdraw only into a psychic state of moodiness or isolation. An aunt or other mediator could intercede on their behalf and win for them some concessions or buffering. If the stress and strain went beyond all reason, a woman could become bold enough to confront the dominant male in her life and ask for a better life or direct bargaining. If she succeeded or failed, she was still left with the only option of returning to normal, that is, seeing herself only as an extension of others and therefore limited to what they would permit. This was their life space: possession and domination softened by a limited isolation, a brooding silence, mediators, and bargaining. Women were devoid of the right to be physically left alone, the right to go away to renew themselves (isolation), denied any autonomy (boundary management), and, ironically, forbidden even to descend into depression (incoherence) lest it cast a shadow on the family image of contentment. People forbidden to feel their own deep discontent cannot generate the conflict and the energy necessary to break the old and transform their lives (transformation. In an interview a Peruvian woman stated that if she hurt her husband, "she would feel dirty, cheap, and useless." It is these internalized feelings fostered by linkages of dependence that allowed the tradition of male-female roles to be repeated generation after generation. For centuries Spaniards possessed their wives. Indian males, having lost connection to their indigenous culture, which at the very least recognized the complementarity of the masculine and feminine, began to ape the Spaniard as male role model. Sadly, they tried to regain their dignity by emphasizing their power over women. In many conversations with relatives and friends some outline of the demonic possessiveness operative in the Latino family began to emerge. Men and women have done terrible things to one another in the name of stability and cariho, affection. Adjustment, balance, and harmony in the Latino family meant accepting one's inherited role. Thus, a woman accepted as her fate a male who would do what he wanted. Often this male freedom expressed itself in a sexual manner. A Latina woman has known and knows that she will never be able to control her husband's affection. Many felt free to go out with other women and do as they please. But she too would have her revenge. To compensate for this loss a wife turned to the son, who became the object of her frustrated affection. The son was made to feel loyal to the mother against the defiler, the father. In cases of abandonment this protective filial role was intensified. When the young man married, he could not so readily shake this first loyalty; he ended by accepting the oft-repeated warning of his mother, "Your mother comes before anybody, even your wife." The cycle is put in motion again: the rejected wife will now do to her son (this may be one reason why sons are preferred over daughters) what her mother-in-law did to her husband. Herein is a constant process of violence whereby a mother who has been violated prevents a son from developing his own self-hood. He becomes an eternal son so that she might remain an eternal mother and thus fulfill her empty life. In a similar vein young women in the Latino culture are also felt to be disloyal, even on a sexual level, to their fathers when they prefer another macho to their father.

Tragically, both Latino men and women realize at a later time that they have really married their own mothers and fathers. Too often in looking for freedom from a dominant parent by marrying, they were not conscious that they had internalized the whole way of life of the parent. To break externally with the mother or father was not enough since the internalized need of belonging to others or possessing others has not

been exorcised. Similarly, as we shall see in more detail in chapter five, the god of emanation who legitimizes their cultural patterns of dependence has also not been confronted. Thus we repeat the same old dramas and relationships with new persons. It is these cycles and feelings of loyalty that are now being broken and questioned by Latina women. Women who merely find sources of mystery within their sons or families still fail to find it within themselves. Many Latinas use a relationship of emanation to avoid facing the failure and unhappiness of life. It is therefore emanation in the service of incoherence. The relationship of incoherence following the loss of one's original security is not transformed but deepened by escaping to find total security in one's children. What makes it painfully incoherent is that they are conscious of what they are doing but cannot or will not create a new life. This constitutes an attempt to replace the broken container of the way of life of emanation with a new one that merely hides and perpetuates the incoherence, thereby turning the relationship of incoherence into a whole way of life.

Men have always been aware of a certain mysterious power in women, which they sought to control. Taboos arose regarding the menstrual cycle, veiling women, and purifying women after childbirth. Women were identified with the moon, dark forces, the demonic, and the irrational. Women in traditional societies have learned to cope with male jealousy and dominance through a process of covert manipulation or subversion. Women were allowed to work their mystery, or the relationship of emanation, only in the home. Here the dominance of the male was reversed. The male could afford to be seduced, to show dependence, and to allow himself to be magnanimous. For a short period he is an extension of her feminine prowess and mystique. This helps to explain why women have always gained concessions or better bargains from men through their cooking and sexual prowess. However, the threat that this domesticated power might become a source of public competition is a haunting, irrational threat to many men. In some cases women even gained power in the family. Yet there was still no transformation since any change strengthened the system, that is, the existing relationships. The changes only allowed a woman to exercise her mystery over a man because he failed. They are the same linkages based on power and domination. Consequently the person in power has changed, but men and women are still trapped in the same relationships: one is the extension of the other; the other is controlled by the mate; one or the other can withdraw into themselves; mediators are sought; and bargaining is set in motion to gain a better deal. These five relationships enacted within the way of life of emanation are not adequate, and it is the breaking of these linkages and way of life that constitutes the current revolution in the Latino family and in male-female relations.

There is something new happening within people. Women are breaking the old connections, in some cases with the support of their husbands. Such a revolution is threatening the role, identity, sexual status, socialization process, and hierarchical structure of the family. The container of the paradigm of emanation is broken, and those lingering fragments of the traditional culture create more and more incoherence.

The response of the Latino male to the breakdown of his traditional role is often one of a refusal to deal with the problem. In some cases a male drinks himself out of a job and into oblivion. The wife takes over as the possessor and wielder of power. But this frees no one; the same relationships are maintained in which the self cannot be released, only possessed. There is a mutual castration: neither men nor women can assert their own consciousness; they are powerless but to repeat. Latino males who are facing opposition from their wives see this frustration, as the result of not being able to find a woman who will love them-as their mothers loved their fathers. They consider the failure to achieve total security in total possession as the core of their problem. The issue is to be able to love a woman as an *equal* and not as a projected mother or challenge to the mother. When a *macho* looks at a woman he sees not a person but an image in his mind that he projects. Thus, he really sees his own image, seeks to embrace that image, and ends in a narcissistic nightmare. Such relations reveal with a vengeance the poverty of power. Males have power to control but are reduced to whimpering children when it comes to the capacity to transform their lives and their relationships to women. The end result of these kinds of sexist relationships cripples *both* men and women. Men cannot grow and become full persons unless they can love

women as equals and accept those aspects of themselves, which are feminine. The breaking of the traditional patterns of dependence of women on men creates the relationship of incoherence: they stand in the presence of each other and admit that they do not know how to relate to each other. To try to reestablish the old patterns or to refuse to create new and better patterns is to enact all relationships in the paradigm of incoherence, that is, a man now resorts to power and domination and refuses to accept the changes in the other or himself. Thus he builds a fortress in a desert, and all have to suppress their new consciousness. But there are alternative ways by which Latino men and women can relate to each other.

CURTURAL SCRIPTS AND CULTURAL TERMS

Gordon, S.M., 1994, p. 307) stated, “Cultural awareness of health care practices and beliefs is increasing, but knowledge regarding Hispanic folk remedies and health care practices and beliefs is limited. This is part of an outcry by some researchers and medical doctors, concerning the need for educators and medical students to understand “cultural competence” (Flores, Abreu, Schwartz & Hill (2000, p. 846) in order to better serve the underserved and marginalized population of Hispanic patients. Others such as Marin & Marin (1991, p. 11 & 17) are interested in this topic and have acknowledged that “Researchers working with Hispanics need to understand not only the sociodemographic characteristics of Hispanics but also their cultural values and norms that may affect the process and outcome of a given study.”

Triandis, Lisansky, Marin & Betancourt (1984, p. 1363) suggested a “Cultural Script" of Simpatía in which there are cultural values of allocentrism, familismo, power distance (including respeto), personal space, time orientation and gender roles. Marin & Marin (p. 1) stated, “Because it is allocentric, Hispanic culture differs in important ways from the individualistic, competitive, achievement-oriented cultures of the non-minority groups in the United States.” In fact “Hispanics prefer interpersonal relationships in groups that are nurturing, loving, intimate, and respectful while non-Hispanic Whites prefer confrontations and superordinated relationships.”

Spiegel, Smolen & Jonas (1986, p. 1157) found that “Although interpersonal stress was inversely related to morale in both male and female students, the relationship was stronger for females and these variables strongly predicted the academic performance

of female students." Rospenda, Halper & Richman (1994, p. 500) stated that, "Generally, there are greater expectations of and demands placed on women in terms of interpersonal relationships."

Familism is a cultural value that involves an individual's strong identification with and attachment to their nuclear and extended families, and strong feelings of loyalty, reciprocity, and solidarity among members (Marin & Marin, 1991, p. 13). Life within the family may be so involved that it might act as a weight on a Hispanic woman's pulling her mind and energies away from her studies in medical school. Rospenda, Halpert & Richaman (1994, p. 496) found "Social support in general was related to lower levels of academic performance for both men and women, and that the negative effects of support from outside the medical school context may be particularly salient for women."

Verbal and nonverbal communications from Hispanics usually are characterized by respeto (respect) and communications back to Hispanics should also be respectful. Respeto is the appropriate deferential behavior that is culturally expected on the basis of positions of authority, age, gender, social position, and economic status (AMA, 1994). Medical school personnel would be considered authority figures, which must be respected. Hispanic women are raised to fear and respect authority figures. Marin & Marin (1991, p. 15) informed readers that, "In groups with high power distance, the maintenance of personal respeto in interpersonal relations allows individuals to feel that their personal power, whatever it may be, is being acknowledged."

Simpatía is a Hispanic cultural script that emphasizes and promotes smooth and pleasant social relationships, striving to achieve harmony in interpersonal relations (Marin & Marin, 1991, p.13). Simpatía, or "Kindness" in Spanish, is a value placed on politeness, pleasantness in the face of stress, and avoidance of hostile confrontation (Flores, Abreu, Schwartz & Hill (2000, p. 844). In an interesting twist in research, Hurtado, Rodriguez, Gurin and Beals (1993, p.160) suggest an "Intriguing hypothesis that the most highly educated and economically successful Mexican descendants may

be the ones who are most resistant to ‘exiting’ the group and if resistance to assimilation is true, it will affect the ethnic socialization of children and the institutionalization of Mexican descendants’ culture.” Finally, Knight, Bernal, Cota, Garza & Ocampo (1993, p. 127) listed three sets of socialization relationships:

1. Key family background variables are related to what Mexican American parents teach their children about their culture.
2. Children’s ethnic identity is related to the children’s family background, such as parents’ generational status, parents’ acculturation and parents’ language use.
3. Children’s ethnic identity is related to what parents teach their children about socialization.

APPENDIX F

MEDICINE WOMEN

MEDICINE WOMEN

Setbacks, obstacles and barriers are just a normal part of diurnal life. Every human walks a tight rope and lives on the edge at sometime in their life and this can be extremely stressful. However, it is egregious and constant stress when societal thought, family, religion and institutions contrive to erect a schema that the world then uses prohibit one gender from the pursuit of education and a professional medical career.

More often than not, from time immortal, there has been bias, bigotry and down right sabotage when women penetrate into male dominated fields, such as medicine. In fact, with the exception of a few specialty areas and a few historical interludes, a woman seeking a career in medicine has been disadvantaged due to gender (Hurd-Mead, 1938, p. 6; Magner, 1992, p. 267-275; Luchetti, 1998, p. 1; Bonner, 1991, p. 70). Lucas (1994, p. 155) described how “Opinion had long held that women neither required nor were fit for serious academic pursuits.” Solomon (1985, p. 2) stated “Women’s roles were set from birth, their identities derived from family membership – as daughters, wives and mothers – and functions performed with the family unit determined women’s employment.”

However, Hurd-Mead (1938, p. 18) let readers know that “In a mortuary chapel at Thebes is a picture of a slave girl around 1420 B. C. skillfully operating on the foot of a woman patient while the men of the family look on in evident admiration and sympathy.” Achterberg (1990, p. 9 and p 17) stated, “At the very dawn of humankind, females were regarded as a prodigious source of wisdom and power; bringing and saving life and up until about 2600 BC women were allowed to practice healing with

little or no restriction." During the reign of Rameses III, there are references to a House of Life suggesting a small number of scribal scholars of exceptional ability entered upon more extensive courses of higher study such as medicine (Lucas, 1994, p. 9-10). It appears some females may have attended these classes inasmuch as female occupations during this time included doctor and scribe. "That women were allowed to be scribes is of great importance and most unusual, because it shows that women had the power to transcribe the culture through their own senses" (Achterberg, 1990, p. 17).

Nevertheless, throughout the centuries there has been an erosion of women's power while a general societal bias toward any academic achievement of women arose. It was the Church's view that man was superior to woman and man with great hubris assumed free reign over all women. It naturally followed that women should not be educated or able to teach a man (Manger, 1992, p. 80). Helen Ellerbe in her book, *The Dark Side of Christianity* (1995, p. 8), stated that during the fourth century "When Christian monks hacked the great scholar Hypatia to death with oyster shells, St. Cyril explained that it was because she was an iniquitous female who had presumed, against God's commandments, to teach men."

Ellerbe felt that, (1995, p. 114) "The church created the elaborate concept of devil worship and then, used the persecution of it to wipe out dissent, subordinate the individual to authoritarian control, and openly denigrate women." Many of the witch-hunts were aimed at women and women healers or herbalist (Achterberg, 1990, p. 82-85). If this was not enough the creation and use of forceps, not only brought men firmly into the delivery rooms but trained 'men only' in the use of this

tool (Achterberg, 1990, p. 65-126). During the dark ages, as the Church assumed leadership, activity in the fields of medicine, technology, science, education, history, art and commerce all but collapsed" (Ellerbe, 1995, p. 41). Achterberg (1999, p. 38 correctly reminded readers in a contrapositive note "Jesus himself challenged the religious and social institution of His day with a frontal assault on patriarchy, shocking His contemporaries with His open consort with and esteem for women."

Solomon, (1985, p. 2) stated, "In the wilderness of the seventeenth century America, college was out the reach of most men, for lack of social status, and of all women, by virtue of their sex." Women in medicine have had to struggle, and cheerlessly fight for justice. In her book *Medicine Women: The Story of Early American Women Doctors* (1998, p. 1), Luchetti told readers that women in medicine have traversed a circuitous path from midwifery to medical train and then back. The story of American women in medicine began with their powerful ascendancy as healers and midwives in the early years of the colonies.

> From a powerful post of healers and midwives to their gradual decline as they were eclipsed by men, who entrance into the ranks brought new standards of exclusionary professionalism. All-male medical schools, state medical boards, and licensing pushed healing women into the subcategory of midwife or nurse far from a position of respect.

Shut out from being able to practice medicine or to enter medical classes, many women turned to other types of medicine such as midwifery, the health movement and the short-lived "Doctoresses", nursing and the healing ministry (Achterberg 1990, p.

115). These alternative types of medicine women, who relied on herbal remedies and stressed the natural healing abilities of the human body, were labeled "Irregular physicians" by the medical establishment who considered themselves regular doctors. Achterberg (1990, p. 142) told readers, “By 1860 there were an estimated 2,500 homeopathic physicians with hundreds of thousands of followers; over two-thirds were women.”

One would imagine that most women would not have opted to go into medicine. However, there were women who pressed on in their desire to become a physician. In his book *To The Ends of the Earth: Their Search For A Medical Education*, (1992, p. 6), Bonner recounts that “In all the world in 1850, no regularly established medical school anywhere consistently opened its doors to women. In 1847, when Elizabeth Blackwell, the first female MD graduated in the United States, applied to Geneva Medical School in New York, the “Male students at first thought it was a joke but were not so amused when she actually was accepted” (Luchetti, 1998, p. 21). When she graduated at the top of her class (Trager, 1994, p. 254), Dean James Hadley insisted that the experiment was over and closed the doors to other women (Bonner, 1992, p. 6). Even though a few women were able to preserver in medical education, proving that a woman could become a physician, they were still overpowered and assaulted by a society that would not allow them to practice medicine (Bonner (p. 7). Bonner continued that it was “Small wonder then, that few women braved the censure and ridicule of their contemporaries to seek a problematic career in medicine.”

It wasn't until 1837, "for the first time ever, four ladies were allowed to enter Oberlin Ohio Collegiate Institution; in 1841 three of them received the first bona fide college degrees ever granted to women in this country" (Fletcher, 1943, p. 380). Solomon (1985, p. 58) stated, however, that there were such waves of reaction to coeducation, along with a fear that women would take over, that qualms arose in the colleges from fear that women students would interfere with male academic performance. In an untypical move, John Hopkins University opened its medical school in 1893 with an endowment stipulation that women were not to be barred because of their sex (Marti-Ibanez (1962, p. 274). However, the doors of most medical schools in America remained solidly closed for women until World War 1 (p. 313). Luchetti (1990, p. 21) told readers that women's education was so "Stigmatized that even as late as 1920, institutions such as Harvard only grudgingly allowed a woman to attend classes; but they could not receive a degree."

Kate Campbell Hurd-Mead's lamented in her very in-depth treatise, *A History of Women in Medicine* (1938) "If women had been able to work collectively for the reform of their condition, the story of medical women during the past three centuries would undoubtedly have been far more brilliant" (p. 388-389). She introduced readers to Daniel Defoe (p. 389), a staunch proponent of education for women during the 17th century, who stated "I have often thought of it as one of the most barbarous customs in the world, considering us as a civilized and Christian country, that we deny the advantage of learning to women."

Valian (1999, p .187) stated, “Long standing and continuing inequalities between women and men exist in salary, promotion, and ability to reach the top, is medicine. Valian continued (p. 214) that currently “Women physicians tend to be concentrated in lower-earning specialties and, with increased experience, earn less than men physicians.” Eccles, Barber & Jozefowicz (1999, p. 181) found:

> If a female grows up in a gendered world with strong pressures toward conformity to that world, the child will attach great importance to behaving in accord with the norms of this gendered world. If the child grows up in a world that both encourages and reinforces independence, flexibility, and individual choice and provides extensive models of gender-role transcendence, she is likely to place much less importance to conformity to gender-role stereotypic behavior norms.

Readers have seen that the history of what women have had to bare is like a Greek Tragedy with great overtones of moral implications where women, academics, societal and religious bias collided (Petersdorf, Turner, Nickens & Ready, 1990; Shervington, Bland & Myers (1996; Hurd-Mead, 1938; Manger, 1992: Luchetti, 1998; and Bonner, 1992). This current information allows readers to glean the amazing realization of the barriers and limits with which women still must deal in their quest for human rights and the right to choose a career. Baxter, Cohen & McLeod (1996, p. 375) remarked, “Because women and men tend to have different styles of dealing with certain situations, a ‘male style’ of behavior may become associated with male-dominated specialties such as surgery.”

APPENDIX G

SOCIAL ECONOMIC STATUS OF CAREGIVERS

DURING FORMATIVE YEARS

Socio-economic status and occupation of primary caregiver during formative years
(n = 24)

Number of Responses	Occupation	SES
Caregiver Mother		
4	Teachers	Low to upper middle
7	Homemakers	Low to middle
1	Pharmacist	Upper middle
1	Secretary	Low to middle
1	Factory worker	Low to middle
1	Teachers aide	Middle
1	Counselor	Middle
1	RN	Middle
1	MHMR Coordinator	Middle
1	Self-employed	Middle
1	Manger fast food restaurant Low	
2	Bookkeeper or secretary	Middle
1	Unemployed	Poverty
1	Office manager	Middle
Caregiver: Father		
1	Judge	Low
1	Pharmacist	Low
1	Landscaper	Poverty
1	Military	Upper middle
1	Electrical Engineer	Upper middle
1	Government	Low to middle
1	Factory worker	Low to middle
1	Mechanical Engineer	Middle
1	Warehouse manager	Middle
1	Mechanic self-employed	Middle
1	Garbage Collector	Middle
1	Gas Measurement Tech	Middle
1	Medical Tech	Middle
1	Heating and Cooling	Middle
1	Manager of freight lines	Middle
1	MD (Mexico)	Low
1	DVM- Customs	Middle
1	Telephone cable repairman	Middle
1	Engineer or Ph.D. Professor	Middle
1	CEO	Middle
1	Retired	Low
1	Does not work	Low

Number of Responses	Occupation	SES
1	Insurance Salesman	Middle
1	Not listed	Middle

APPENDIX H

MD DEGREES CONFERRED TO HISPANIC WOMEN: 1992-93

THROUGH 2001-02, UNITED STATES AND PUERTO RICO

Table H:
MD Degrees Conferred to Hispanic Women: 1992-93 through 2001-02
United States and Puerto Rico

United States and Puerto Rico	State	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	10 Yr Total
Grand Total		**303**	**312**	**325**	**402**	**389**	**411**	**449**	**423**	**437**	**446**	**3897**
Total, Excluding Puerto Rican Institutions		**224**	**229**	**236**	**292**	**288**	**301**	**326**	**339**	**330**	**338**	**2903**
University of Puerto Rico-Medical Sciences Campus	PR	33	46	51	57	52	57	55	45	53	51	500
Universidad Central Del Caribe	PR	26	21	23	26	27	29	27	24	16	20	239
Ponce School of Medicine	PR	20	16	15	27	22	24	24	1	25	16	190
The University of Texas Medical Branch	TX	4	6	7	13	16	22	11	22	15	25	141
University of Illinois at Chicago	IL	16	9	14	14	11	16	9	17	15	13	134
The University of Texas Health Science-San Antonio	TX	10	9	14	11	12	10	14	11	7	17	115
University of Medicine And Dentistry of New Jersey	NJ	9	13	5	13	15	11	8	9	14	13	110
The University of Texas Health Science Center	TX	8	5	4	8	9	16	14	19	14	8	105
University of Miami	FL	7	7	11	14	10	8	6	17	11	7	98
University of California-Los Angeles	CA	8	6	9	5	7	8	10	12	9	13	87
University of New Mexico-Main Campus	NM	3	4	8	8	13	11	11	11	7	11	87
University of California-San Francisco	CA	6	4	10	7	6	5	13	10	7	9	77
San Juan Bautista School of Medicine	PR	0	0	0	0	0	0	17	14	13	21	65
Albany Medical College	NY	1	3	1	1	2	2	18	2	28	1	59
University of Southern California	CA	4	4	6	6	0	4	7	13	4	8	56
University of Texas Southwestern Medical Center at Dallas	TX	7	6	6	10	3	4	3	4	4	5	52
University of Arizona	AZ	4	3	0	6	4	6	6	7	4	10	50
Baylor College of Medicine	TX	5	5	3	5	6	6	6	4	7	3	50
University of California-Davis	CA	6	4	4	5	4	5	4	4	3	4	43
University of Colorado Health Sciences Center	CO	5	5	5	5	2	6	7	2	2	3	42
University of California-San Diego	CA	3	8	6	0	15	3	0	3	3	0	41
Weill Cornell Medical College	NY	2	7	2	4	6	2	4	3	4	6	40

Table H continued
United States and Puerto Rico

Stanford University	CA	4	4	0	5	3	5	6	5	3	5	40
Harvard University	MA	1	4	2	6	5	1	6	5	5	4	39
Tufts University	MA	2	1	4	3	2	6	8	3	5	5	39
Mount Sinai School of Medicine	NY	3	4	4	3	3	5	3	5	2	7	39
University of Wisconsin-Madison	WI	0	0	4	4	4	7	5	6	6	3	39
University of California-Irvine	CA	4	4	1	5	7	8	4	0	2	1	36
University of Michigan-Ann Arbor	MI	2	8	6	2	4	2	3	2	2	3	34
New York Medical College	NY	3	4	4	6	1	1	1	3	3	7	33
Texas Tech University Health Sciences Center	TX	2	2	2	4	4	6	5	2	4	2	33
Yeshiva University	NY	3	3	3	1	1	0	7	5	6	3	32
University of Washington-Seattle Campus	WA	1	2	2	5	3	2	6	5	3	3	32
Michigan State University	MI	6	1	1	2	1	3	1	6	3	6	30
Medical College of Wisconsin	WI	1	2	0	2	3	3	7	5	3	4	30
Suny Health Science Center at Syracuse	NY	0	1	1	9	6	5	0	0	5	2	29
University of Pennsylvania	PA	2	1	4	7	2	4	2	4	1	2	29
Temple University	PA	1	1	6	1	3	1	5	6	2	2	28
Suny Health Science Center at Brooklyn	NY	2	2	2	2	1	4	3	3	3	5	27
Loma Linda University	CA	1	6	3	2	2	1	4	3	4	0	26
Yale University	CT	2	2	2	1	1	3	5	3	1	6	26
Howard University	DC	3	1	1	1	1	3	1	6	3	6	26
Louisiana State University-Health Sciences Center	LA	5	5	2	4	4	0	1	2	2	1	26
University of Florida	FL	3	2	0	2	2	4	0	4	4	4	25
Northwestern University	IL	2	3	0	2	4	3	4	2	4	1	25
University of Kansas Medical Center	KS	2	3	1	0	1	4	5	4	3	2	25
Tulane University of Louisiana	LA	3	3	1	0	5	1	5	3	3	1	25
Wayne State University	MI	2	0	5	2	2	3	3	3	3	2	25
Suny at Stony Brook	NY	1	4	1	2	4	2	1	4	2	4	25

Table H continued
United States and Puerto Rico

University of Iowa	IA	0	2	3	1	4	1	5	2	3	3	24
Ohio State University-Main Campus	OH	1	1	1	4	1	4	2	2	4	4	24
Creighton University	NE	3	1	1	1	1	0	6	3	4	3	23
University of Oklahoma Health Sciences Center	OK	3	1	4	0	2	5	1	1	4	2	23
George Washington University	DC	0	1	2	1	3	3	5	3	4	0	22
University of South Florida	FL	3	2	1	5	2	4	0	3	1	1	22
University of Rochester	NY	3	2	2	1	1	0	2	3	3	4	21
New York University	NY	2	2	0	4	1	2	3	0	2	4	20
Georgetown University	DC	3	3	1	0	1	2	0	0	4	5	19
Case Western Reserve University	OH	3	0	0	0	4	3	1	4	2	1	18
Pennsylvania State University-College of Medicine	PA	0	2	5	1	0	1	3	2	2	2	18
Loyola University Chicago	IL	1	2	1	1	5	4	1	2	0	0	17
Boston University	MA	2	3	1	2	2	0	1	3	3	0	17
Suny at Buffalo	NY	0	4	3	1	2	1	2	1	1	1	16
Brown University	RI	1	0	2	2	3	1	1	2	3	1	16
University of Minnesota-Twin Cities	MN	1	1	2	3	1	1	2	3	0	0	14
The University of Connecticut Sch of Med And Dent	CT	1	2	0	1	1	3	1	2	3	0	14
Medical College of Georgia	GA	0	0	3	3	1	3	1	0	1	1	13
University of Chicago	IL	2	0	1	3	1	2	1	0	1	2	13
University of Nebraska Medical Center	NE	2	0	0	2	3	2	0	0	3	1	13
Finch University of Health Science-Chicago Med Sch	IL	1	1	1	2	2	1	2	2	0	0	12
University of Missouri-Kansas City	MO	1	0	0	1	2	1	2	1	1	2	11
Columbia University In the City of New York	NY	1	1	0	0	0	0	1	1	2	5	11
University of Vermont And State Agricultural Coll	VT	1	2	0	2	2	1	1	1	1	0	11
Eastern Virginia Medical School	VA	1	2	0	3	2	1	1	1	0	0	11
Virginia Commonwealth University	VA	0	0	1	2	2	1	1	0	2	2	11
Rush University	IL	1	1	0	0	0	0	0	3	2	3	10

Table H continued
United States and Puerto Rico

Johns Hopkins University	MD	2	0	1	1	0	3	1	0	2	0	10
University of Missouri-Columbia	MO	1	1	1	3	1	2	0	1	0	0	10
Oregon Health & Science University	OR	1	0	0	3	1	2	2	0	1	0	10
University of Pittsburgh-Main Campus	PA	0	0	1	1	1	3	1	1	1	1	10
Thomas Jefferson University	PA	0	2	0	1	0	0	1	2	1	3	10
Dartmouth College	NH	0	1	1	1	1	0	1	1	1	2	9
University of North Carolina at Chapel Hill	NC	0	0	1	2	1	1	2	0	0	2	9
University of Cincinnati-Main Campus	OH	0	1	3	0	1	0	0	1	1	2	9
Indiana University-Purdue University-Indianapolis	IN	1	1	1	1	1	1	0	1	0	1	8
University of Maryland-Baltimore	MD	0	0	1	2	2	0	2	1	0	0	8
Mayo Medical School	MN	0	1	0	0	2	2	1	0	0	2	8
Medical College of Ohio	OH	3	0	0	0	1	0	1	0	0	3	8
Wright State University-Main Campus	OH	1	1	0	2	0	0	0	1	1	2	8
Drexel University	PA	0	0	0	0	0	0	0	0	0	8	8
Emory University	GA	0	0	2	2	1	0	1	1	0	0	7
University of Alabama at Birmingham	AL	1	0	0	1	1	0	1	0	1	1	6
University of Louisville	KY	1	0	1	1	1	0	1	0	0	1	6
Saint Louis University-Main Campus	MO	0	1	0	0	0	0	0	2	2	1	6
Washington University In St Louis	MO	0	0	2	0	1	1	0	1	0	1	6
University of Nevada-Reno	NV	1	0	0	1	0	1	1	1	0	1	6
East Carolina University	NC	1	0	0	1	0	2	1	0	0	1	6
Medical University of South Carolina	SC	0	0	1	0	0	1	0	0	2	2	6
Meharry Medical College	TN	0	1	1	0	0	0	0	0	2	2	6
Vanderbilt University	TN	1	0	0	0	2	1	0	0	2	0	6
Texas A & M University System Health Science Ctr	TX	0	0	0	0	0	0	0	5	1	0	6
Morehouse School of Medicine	GA	1	1	1	0	0	0	1	0	0	1	5
Southern Illinois University-Carbondale	IL	0	0	1	0	1	0	1	0	1	1	5

Table H continued
United States and Puerto Rico

Wake Forest University	NC	1	0	1	1	0	0	0	1	0	1	5
Northeastern Ohio Universities College of Medicine	OH	0	0	2	0	0	1	0	0	1	1	5
University of Utah	UT	0	0	0	1	0	0	2	0	1	1	5
University of Virginia-Main Campus	VA	0	0	0	0	0	0	0	2	3	0	5
University of Arkansas For Medical Sciences	AR	1	0	1	0	0	0	1	0	1	0	4
University of Massachusetts Medical Sch Worcester	MA	0	0	0	1	0	1	0	1	0	1	4
Duke University	NC	0	0	0	0	0	0	1	0	2	1	4
University of South Carolina at Columbia	SC	0	0	1	1	0	0	1	0	0	0	3
East Tennessee State University	TN	0	0	0	0	0	0	1	1	0	1	3
Mercer University	GA	1	0	0	0	0	0	0	0	1	0	2
University of Kentucky	KY	0	0	0	0	0	0	1	1	0	0	2
University of North Dakota-Main Campus	ND	0	0	0	1	0	0	1	0	0	0	2
University of Hawaii at Manoa	HI	0	1	0	0	0	0	0	0	0	0	1
University of Mississippi Medical Center	MS	0	0	0	0	0	0	1	0	0	0	1
University of South Dakota	SD	0	0	0	0	0	0	0	0	1	0	1

SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System IPEDS), Completions surveys. (This table was prepared August 2003 by Victor M. H. Borden, Indiana University-Purdue University Indianapolis, personal communication)

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EDUCATION

1989	B.S. Clinical Nutrition	Texas Women's University
1997	M.S. Adult Education	Texas A&M University
2004	Ph.D. Educational Human Resource Development	Texas A&M University

EXPERIENCE

2004-Present	Coastal Bend Community College *Instructor*	Beeville, TX
2003–2004	Corpus Christi I.S.D. *Substitute Teacher*	Corpus Christi, TX
2002-2004	Alamo Community College *Adjunct Instructor*	San Antonio, TX
2002-2004	Del Mar College *Adjunct Instructor*	Corpus Christi, TX
1996-1997	Texas A&M University *Graduate Assistant Instructor*	Kingsville, TX
1993-1994	West Oso High School *Science Teacher; Coordinator, College Bound Program*	Corpus Christi, TX
1991-1993	Pace Middle School Summer Camp *Biology Teacher*	San Antonio, TX
1991-1993	Southwest High School *Biology Teacher*	San Antonio, TX

PROFESSIONAL TRAINING

Certificate	The Grant Institute Professional Program Development and Grant Communication
Convention	Society for Neuroscience The Institute for the Achievement of Human Potential, Philadelphia, PA; Worked with brain-injured children for 8 days

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